

Haib Copper Project – Environmental and Social Impact Assessment (ESIA)

Social Impact Assessment

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Executive Summary

INTRODUCTION

The Haib Copper Project is regulated under Exclusive Prospecting Licence (EPL 3140), issued in 2007 by the Ministry of Industries, Mines and Energy (MIME). An associated Environmental Clearance Certificate (ECC 01233) was issued in 2014 by the Ministry of Environment, Forestry and Tourism (MEFT). The project site lies approximately 25 km north-east of Noordoewer, near the Orange River on Namibia's southern border. Noordoewer is the closest settlement and represents the primary community linked to project impacts and benefits.

Urban Dynamics Africa (Urban Dynamics) in Namibia, has been appointed by Knight Piésold Consulting to conduct a Social Impact Assessment (SIA) on the proposed development. The SIA is based on technical and financial information supplied by the client which is assumed to be accurate. This includes information on *inter alia* investment, and the outcome of technical modelling studies and associated spatial extent of certain impacts.

REGULATORY FRAMEWORK

In preparing the SIA, due cognisance were taken of national legislation and policy, national strategic policy frameworks and international guidance and principles for socio-economic assessment. National legislation guiding the assessment includes the Constitution of the Republic of Namibia, the Environmental Management Act and its regulations, the Minerals Prospecting and Mining Act, the Labour Act and the National Heritage Act. Strategic Guidance is provided by Vision 2030, the Harambee Prosperity Plan II and the National Development Plan 6 (NDP6). International guidance and principles were derived from the 2030 Agenda for Sustainable Development and from the International Finance Corporation (IFC) Performance Standards.

PROJECT DESCRIPTION

The mining component of the Project comprises an open pit mine, a 40 million tonnes per annum (Mtpa) crushing, milling and flotation concentrator, as well as infrastructure on and off site necessary to support these operations (waste rock dumps, stockpiles, tailings storage facilities, power infrastructure, roads, offices, etc.). A hydrometallurgical plant consisting of a 3-7 Mtpa heap leach, a copper solvent extraction, impurity removal, and a copper electrowinning plant will be built after initial production during the operations phase.

The operation will achieve a combined throughput of 40 Mtpa. The mining schedule indicates a total material movement of approximately 87.5 Mtpa, providing approximately 24 years' supply of mineralised material. This equates to a total of 1.58 billion tonnes of material to be mined. The processing of the mineralised material will extend to 33 years. As the resource estimate is updated and ongoing optimisations are implemented, these quantities will be updated.

The proposed Project's water demand is 20 million cubic metres per year (Mm³/yr). Full abstraction from the Orange River is being pursued under this ESIA process. Raw water supply from the Orange River assumes seasonal reliability of supply. Off-channel storage facilities will offset the impacts of no water abstraction ability during low or drought periods and that water will only be pumped to the off-site storage reservoir during periods of surplus flow, which is defined as periods when the flow rate of the river exceeds the current demand downstream of Vanderkloof Dam at any point along the river. The proposed system comprises an, intake structure, a low-lift pumping station and two high-lift booster pumping stations, as well as a pipeline to a site reservoir.

A combination of on-site mine camp accommodation and accommodation in Noordoewer will be used during construction and operation to accommodate between 3,500 and 5,000 workers during the construction phase and 1,350 during the operational phase.

The power supply concept design includes a hybrid solution combining a solar PV plant (150 MWp (megawatt peak)) and a connection to the regional grid system from the local service provider, the Namibia Power Corporation (NamPower).

THE SOCIO - ECONOMIC ENVIRONMENT

The proposed mine is located within the //Kharas Region. While Noordoewer is the closest settlement to the mine, it is also located along the Orange River, serving as the border between Namibia and South Africa. Grunau is the second closest settlement to the mine, approximately 140 km to the north while Keetmanshoop, the regional capital is located about 300 km north of Noordoewer. The project is situated within the Karasburg West constituency.

The Population

The population in the //Kharas Region grew at a rate of 2.96% per annum between 2011 and 2023 which is very similar to the national growth rate,

The Karasburg Constituency was divided into Karasburg East and West in between the 2011 and 2023 Censuses. If the numbers for both East and West are combined and compared to 2011, the population of the two constituencies combined grew at a rate of 5.5% per annum, which is faster than any other constituency in the region.

From the population distribution, the population of the two constituencies are mostly found in Karasburg, Grunau, Noordoewer and Aussenkehr.

The Age and Sex distribution of the Karasburg West Constituency is vastly different from the other constituencies and points toward working age migratory labour making up a large part of the population. The mean household size is also the lowest of all constituencies at 2.4 persons per household.

Social Facilities

There is a primary school in close proximity to the project site in Noordoewer and virtually all schools in the region are located in urban areas.

The number of learners per school is slightly higher than the national average at 430 per school with a learner/teacher ratio of 24.6 learners per teacher.

The Khomas region has the highest literacy rate of all regions (95.8%) followed closely by the //Kharas Region at 95.6%.

The Karasburg West constituency has the highest proportion of people over the age of six (68.56%) who completed secondary school of all //Kharas Constituencies and the region as a whole.

Health facilities in the //Kharas Region are concentrated in the urban areas with district hospitals in Keetmanshoop, Karasburg and Lüderitz, a private hospital in Oranjemund. Health Centres are in Noordoewer, Bethanie and Aroab. Thirteen more clinics spread across the region completes the picture.

Access to Services

The Karasburg West Constituency has the poorest access to infrastructure services in almost all aspects.

It has the lowest use of electricity for cooking and lighting, lowest level of piped water inside the houses, highest percentage of households without access to a toilet and the highest percentage where waste is dumped in the bush.

Housing in the Karasburg West Constituency has significantly more households living in traditional type dwellings and in informal structures than in the other constituencies of the region. This is likely due to the seasonal nature of employment in agriculture in the constituency.

Poverty and Employment

The incidence of multidimensional poverty in the //Kharas Region is the second lowest of all regions in the country (19.6%) with only the Erongo Region being better off with 16.6%. Poverty intensity levels in the //Kharas Region is the lowest of all regions in Namibia at 39.4%.

Youth unemployment in both the Karasburg Constituencies are higher than 40%.

Using the broad definition of unemployment, youth unemployment in the Karasburg East constituency is 55.4% while it is 47.6% in the Karasburg West Constituency.

A number of key concerns related to the socio-economic impacts of the Haib Copper Project were raised by stakeholders during the consultation process. These are considered in the SIA and are summarised below, grouped by topic.

- Local Employment and Procurement
- Agriculture, Tourism and Livelihoods
- Education and Skills Development
- Water Consumption and Pollution
- Transport and Logistics
- Safety and Mine Closure
- Population Influx and Housing Shortages
- Increased Social Pathologies
- Protection of Cultural and Sacred Sites
- Land Rights and Access
- Social Services

ASSESSMENT OF IMPACTS

This assessment uses a simple, clearly defined method in order to accurately determine the significance of a predicted impact on, or benefit to, the surrounding social environment.

The purpose of impact assessment is to identify and evaluate the likely significance of potential impacts on identified receptors and resources according to defined assessment criteria, to develop and describe measures that will be taken to avoid, minimise, reduce or compensate for any potential adverse effects, and to report the significance of the residual impacts that remain following mitigation.

MACRO ECONOMIC IMPACTS

Three significant Macro Economics impacts were identified and assessed. These show that the project is likely to have highly significant positive macro-economic impacts for Namibia and the //Kharas Region.

Contribution to Gross Domestic Product (GDP)

GDP is the monetary measure of the total market value of all the goods and services produced in a country in one year. It is assessed that the project will contribute N\$3.6 billion per annum to the Namibian GDP at an assumed copper price of N\$175 000 per ton and a N\$/US\$ exchange rate of 16.5. With GDP at N\$245.1 billion in 2024, this equates to an increase of 1.47% in GDP as a result of the project in year one. This will obviously decline as GDP grows at an assumed 3% per annum (excluding the contribution of the project) to a contribution of about 0.58% in year 33. It must also be noted that the contribution is not linear and is likely to be less during the first few years and then increase during peak production and then decline during the last

few years of production. The impact of the project on GDP is assessed as a **positive impact of high significance**.

Taxes and Royalties

It is estimated that royalties and export levies will amount to an average of N N\$406.5 million per annum varying between a lower N\$276 million in the first year to a higher N\$654 million in the peak production years.

The project will contribute an additional N\$1.6 billion or 1.79% per annum to government income . The impact is therefore assessed as a **positive impact of high significance**.

Contribution to Exports and Trade Balance

The value of the copper concentrate and copper cathode exported (copper cathode should strictly speaking be classified under manufactured products) would be about N\$11.4 billion per annum on average over the LOM. This is a substantial contribution to export earnings and would increase export earnings by 12.89% and the contribution of metal ores and uranium from 36% to 43.6%. This leads to an assessment of the impact as a **positive impact of high significance**.

SOCIAL AND MICRO ECONOMIC IMPACTS

Local Employment and Income from Procurement

The creation of employment can be divided into the construction phase and operational phase. It is estimated that about 3,500 direct employment opportunities will be created during the construction phase which will last for about 3 years while about 1 500 indirect employment opportunities can be expected during the operational phase of the project. However, a project such as the Haib Copper mine has a wider impact on employment creation and indirect and induced jobs are invariably created. Based on information in the 2024 Annual Review of the Chamber of Mines in Namibia, the current mines that are in operation in the country produce 10 169 direct jobs and 9 094 indirect jobs (through contractors) (Chamber of Mines of Namibia, 2024). This is 0.89 indirect jobs for every direct job. However, a project such as this can also be expected to create induced jobs. These are jobs that will be generated by income generated by the mining activity being spent in the local economy on items such as accommodation, retail, food, information technology, accounting, etc. The impact is assessed as a **positive impact of high significance**.

However, it is possible to further enhance the impact through the following dedicated actions:

- Establish a **dedicated information portal** for the project that can be accessed easily by phone, tablet or computer.
- Develop a project-level **local content policy** with clear guidance, requirements and monitoring mechanisms to ensure that the proponent and its contractors are obliged to include local content in their tender offers and their teams.
- Develop and implement a Responsible Mining Plan

Education, Training and Skills Development

Given substantial direct, indirect and induced employment creation, it may be difficult for local people from the region specifically and Namibia in general to capture those opportunities without training and skills development. It is clear that the project proponent cannot at this stage commit towards specific programmes but it was confirmed several times that bursary schemes and training initiatives will form part of the social

development planning if the project proceeds. It was stated that a skills mapping exercise will be undertaken, with training opportunities linked to mining requirements. In addition, there are a number of local education institutions, such as the Unam Southern Campus and the VTC in Keetmanshoop, that are aligned to provide training and skills development in the mining and related fields. It is assessed that this will result in a **positive impact of moderate significance**.

The following will help to enhance the impact and increase its probability rating:

- Undertake a skills mapping exercise to understand the existing skills and define the skill deficit in detail by sector or job category/type.
- Prepare a training and skills development framework which details how employees will be identified, enabled to undergo suitable training and accommodated in the workforce.
- Compile and publish a detailed inventory of employment opportunities for people with fewer skills and lower education levels to enable those people (who are often marginalised, vulnerable and not empowered to navigate the modern communication and social media) to find jobs and training opportunities. Such information should be published through an easily accessible format that does not require computer or smart phone hardware, perhaps with a community liaison officer.

If these enhancement measures are implemented it may improve the impact rating to a **positive impact of high significance**.

Impact of Population Influx on Noordoewer

The Constitution of the Republic of Namibia guarantees freedom of movement and the freedom to stay where one chooses. Namibians are therefore free to migrate to wherever they want and where they can best ensure or enhance the quality of their livelihoods. High levels of unemployment, especially amongst the youth, support the propensity of residents to migrate to the places where they see the best potential to make a good life for themselves. The settlement of Noordoewer is already under pressure from population growth and have been unsuccessful in accommodating its current population in a planned and serviced urban environment. The demand for housing already outstrips supply and not enough infrastructure is in place to provide the required utility services. Planning and proclamation of new erven in the settlement has taken years and falls short of demand.

Once a decision about the development of the mine becomes known it is certain that people will move to Noordoewer to position themselves favourably to capture direct, indirect and induced jobs that may become available. This has happened virtually everywhere where news about mining employment becomes public. The current services and facilities are barely able to serve the existing residents and population influx will put further pressure on these resources. In addition, Noordoewer is a settlement that is managed by the //Kharas Regional Council via a settlement office with too few staff to handle any additional pressure.

The potential impact of the project on population influx and resultant pressures on the settlement is rated as a **negative impact of moderate significance**.

The following measures are recommended for implementation by the operators:

- Provide the Regional Council and Settlement Office with forward-looking information on project implementation, planning and resource requirements throughout the project to support effective local planning.
- The proponent should coordinate with ministries and NGOs to ensure alignment with government's social and infrastructure development priorities and avoid creating parallel systems. Social engagement and partnerships should be formed to ensure alignment and coordination. A broad framework for such coordination and cooperation should be developed as an important first step.

- Develop a project wide grievance mechanism which provides recourse to any person, stakeholder or resident to register a grievance on any matter or impact, positive or negative, that may influence them and that require attention or resolution. Such a grievance mechanism must clearly indicate how and where grievances can be registered, how it will be processed objectively, how the result will be communicated and how it can be appealed.

Social Pathologies

Noordoewer and Aussenkehr are already subject to substantial in-migration of people in the productive age groups. This is evident in the age and sex distribution of the Karasburg West Constituency. During the public consultation and the social assessment meetings in Noordoewer, residents and leaders indicated that the settlement already experiences severe social pathologies, most notably, teenage pregnancies (which have been decreasing as a result of focussed attention), high levels of drug and alcohol abuse amongst the youth, gender-based violence and prostitution disguised as relationships between young (often underaged) girls with older men.

The impact is assessed as a **negative impact of moderate significance**.

In order to mitigate the potential negative impact, it is suggested that the following measures to assist the Noordoewer community to deal with the social pathologies plaguing the community should be undertaken.

- Develop a substantial part of housing for mineworkers in Noordoewer to enhance the sustainability of the town and ensure long term community building which can extend beyond the life of mine.
- Develop a code of conduct for employees and contractors to be used during both the construction and operation phases of the project to guide the behaviour of employees and contractors with respect to involvement in alcohol and drug abuse and transactional sexual relationships. While this is unlikely to succeed by itself, it at least provides an avenue to the project proponent to deal with staff that cause problems in the host community.
- Utilise the general grievance redress mechanism developed for the project to enable the community to record grievances related to staff involvement in social ills and enable the project proponent to deal with these issues through the correct and designated channels.
- Prepare a community development support framework whereby targeted CSIs can be provided to the community to deal with social pathologies through training, awareness raising and development programmes to help community members commit to responsible community life and respectful and acceptable social behaviour.

Agriculture and Land Rights

There is a number of farmers who graze their livestock, mostly sheep and goats, on the all three of the farms associated with the project. A dedicated meeting with the farmers revealed that they have been using the land for grazing and other farming purposes for many years, yet without any form of authorisation or permit from the government, with the most significant activities occurring in the vicinity of Haibmund, the confluence of the Haib and Orange rivers.

The operator wishes to close this road/track and fence the mining area to improved safety and security and prevent conflict with farmers. However, no other access to Haibmund presently exists, and if the road/track is closed, access for the farmers will be lost, influencing their livelihoods. Although these farmers do not have legal tenure, they have been cultivating and farming the area for decades and their rights must therefore be considered. The impact is rated as a **negative impact of high significance**.

In order to mitigate this impact, it is necessary that an action plan be prepared wherein the detail of agreements, which may include compensation and consent, is detailed. This would be beneficial to both the farmers and the project and will enable informed consent from the farmers linked to fair compensation.

Water Abstraction and Conflict with Agriculture

The economy of the Noordoewer/Aussenkehr area is based on irrigated agriculture and river tourism. This needs water to survive and is of great importance to the farmers and tourism ventures along the river. During the public consultation farmers stressed that the water of the Orange River was already over allocated and this was felt by the farmers especially during dry years. Farmers were also concerned about water quality and contamination risks and they referenced the situation in Tsumeb where pollution levels are reported as very high. A Water Resources and Water Demand Impact Study was prepared and the results showed that the Orange River Project (ORP) at the 2024 development level is already slightly over-utilised. There is thus no more surplus yield available from the ORP to supply increasing water requirements during the low flow periods.

This necessitated that the pumping regime and infrastructure for the mine be revisited to include an on-site reservoir and that pumping will only occur during periods of surplus flow. For the purpose of this assessment, it is therefore assumed that the water supply system for the mine will consist of an off-channel storage dam and that pumping from the river will only take place during periods of surplus flow. Based on this, the impact was assessed as a **negative impact of moderate significance**.

To mitigate this impact and provide further assurances it is imperative that the pumping is monitored and managed to ensure compliance, even when the mine ownership may change. Constructing the pump intake works in such a way that it will make it impossible to pump during low flow periods will add substantial confidence that the water abstraction can be accommodated without impacting on the minimum flow requirements needed to satisfy the demand from irrigation, domestic/industrial, existing mining, the Ecological Water Requirements (EWR) and water losses.

In addition, the Hiab Mine must become part of any water users forum and partake in discussions and feedback about the water abstraction regimes and issues related to water abstraction and quality.

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Acronyms and Abbreviations

Cu	Copper
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EPL	Exclusive Prospecting License
ESIA	Environmental and Social Impact Assessment
ESMS	Environmental and Social Management System
GDP	Gross Domestic Product
GHG	Greenhouse Gas Emissions
HPP	Harambee Prosperity Plan
IFC	International Finance Corporation
MPI	Multi-dimensional Poverty Index.
MSME	Micro, Small and Medium Enterprise
Mtpa	Million Tons per annum
MVA	Megavolt Amperes
NDP	National Development Plan
NPC	National Planning Commission
NSA	Namibia Statistics Agency
PS	Performance Standard
PV	Photovoltaic
SDG	Sustainable Development Goal
SIA	Social Impact Assessment
TSF	Tailings Storage Facility

Glossary

Baseline	Information gathered at the beginning of a study which describes the environment prior to development of a project and against which predicted changes (impacts) are measured.
Construction Phase	The stage of project development comprising site preparation as well as all construction activities associated with the development.
Cumulative Impacts	Direct and indirect impacts that act together with current or future potential impacts of other activities or proposed activities in the area/region that affect the same resources and/or receptors.
Environment	The external circumstances, conditions and objects that affect the existence of an individual, organism or group. These circumstances include biophysical, social, economic, historical and cultural aspects.
Environmental Authorisation	Permission granted by the competent authority for the applicant to undertake specific activities.
Environmental and Social Impact Assessment	A process of evaluating the environmental and socio-economic consequences of a proposed course of action or project.
Environmental and Social Impact Assessment Report	The report produced to relay the information gathered and assessments undertaken during the Environmental and Social Impact Assessment.
Environmental and Social Management Programme	A description of the means (the environmental specification) to achieve environmental and social objectives and targets during all stages of a specific proposed activity.
Hydropower Plant	A hydropower plant transforms the hydraulic energy of a watercourse, whether it is natural or artificial, into renewable electricity.
Impact	A change to the existing environment, either adverse or beneficial, that is directly or indirectly due to the development of the project and its associated activities.
Mitigation measures	Design or management measures that are intended to minimise or enhance an impact, depending on the desired effect. These measures are ideally incorporated into a design at an early stage.
Operational Phase	The stage of the works following the Construction Phase, during which the development will function or be used as anticipated in the Environmental Authorisation.
Scoping	The first phase in an ESIA process, to consult with stakeholders to determine issues and concerns and determine the extent of and approach to an ESIA and ESMP. This process results in the development of a scope of work for the specialist studies, ESIA and ESMP .
Specialist study	A study into a particular aspect of the environment, undertaken by an expert in that discipline.
Stakeholders	All parties affected by and/or able to influence a project, often those in a position of authority and/or representing others.

1 INTRODUCTION

1.1 BACKGROUND

The Haib Copper Project is regulated under Exclusive Prospecting Licence (EPL 3140), issued in 2007 by the Ministry of Industries, Mines and Energy (MIME). An associated Environmental Clearance Certificate (ECC 01233) was issued in 2014 by the Ministry of Environment, Forestry and Tourism (MEFT). The project site lies approximately 25 km north-east of Noordoewer, near the Orange River on Namibia's southern border. Noordoewer is the closest settlement and represents the primary community linked to project impacts and benefits.

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1.2 ASSUMPTIONS AND LIMITATIONS

The SIA is based on a number of assumptions and subject to some limitations. However, the validity of the assessment is not expected to be affected by these assumptions and limitations:

The SIA is based on technical and financial information supplied by the client which is assumed to be accurate. This includes information on *inter alia* investment, and the outcome of technical modelling studies and the associated spatial extent of certain impacts.

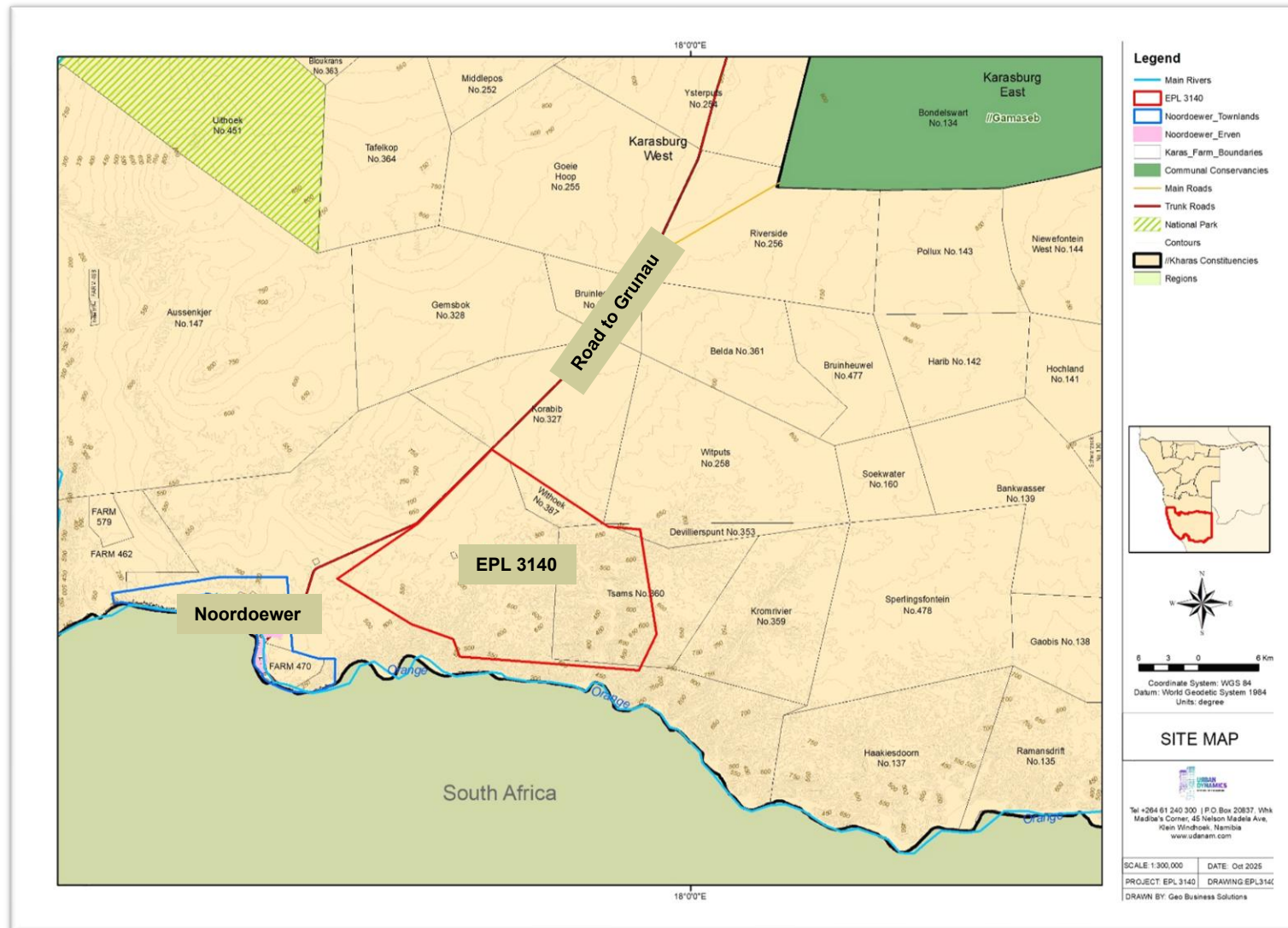
The report is based largely on secondary data gathered during a desktop analysis, the results of the public consultation process (and key focus group discussions specifically), extensive experience with development projects in Namibia and primary data collected by other specialists.

It is assumed that the 2023 Population and Housing Census Data provides a valid and up to date profile of the people living in the area of influence of the project.

This SIA focuses on societal impacts. Worker-related aspects are covered by different and specific labour legislation, regulations and standards which the project proponent must comply with.

Other assumptions made in the report are explicitly stated in the relevant sections.

Figure 1: Haib Copper Project - Locality Map



2 REGULATORY FRAMEWORK AND APPROACH TO THE ASSESSMENT

2.1 NATIONAL LEGISLATION AND POLICY

This section provides a review of applicable and relevant national legislation and policies. This review serves to inform the developer of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled before the proposed project may commence.

Table 1: National Legislative and Policy Framework

Legislation/Policy	Relevant Provisions	Implications for this project
THE CONSTITUTION OF THE REPUBLIC OF NAMIBIA, 1990	Article 95 mandates the sustainable use of natural resources and environmental protection.	Uphold environmental protection and sustainable development principles.
ENVIRONMENTAL MANAGEMENT ACT, 2007 (ACT NO. 7 OF 2007)	Establishes the framework for environmental management, including Environmental Impact Assessments (EIAs) and public participation (Section 27). Provides detailed regulations for conducting EIAs, including requirements for public participation. The Environmental Management Act mandates stakeholder engagement and consultation with Interested & Affected Parties (I&APs) during the EIA process.	Obtain an environmental clearance certificate; evaluate social and environmental impacts; ensure public participation. Conduct thorough public consultations during the EIA process. Engage stakeholders and consult with I&APs, ensuring public participation and addressing concerns throughout the EIA process.
THE ENVIRONMENTAL MANAGEMENT ACT, 2007 (ACT NO. 7 OF 2007) ASSOCIATED REGULATIONS OF 2012	Listed activities that require an Environmental Clearance Certificate before starting, ensuring significant impacts are assessed.	Assess and mitigate significant social and environmental impacts; involve public consultation. Listed activities related to this project include mining and quarrying activities, waste management treatment, handling and disposal activities, water abstraction from groundwater or a river, hazardous substance treatment, handling and storage and infrastructure development.
THE ENVIRONMENTAL MANAGEMENT ACT, 2007 (ACT NO. 7 OF 2007) ASSOCIATED REGULATIONS OF 2012	Requirements for the public consultation process provided in Section 21.	Notice must be given to all interested and affected parties, through: - a site notice, - written notice to owners and occupiers of land adjacent to the project site - notice to local authority councils, regional councils and traditional authorities with jurisdiction over the site area - advertising the intention to apply for an ECC once a week for two consecutive weeks in at least 2 newspapers circulating the area It determines the content and size of the notices and requires that the public consultation process must ensure that: - information containing all relevant facts in respect of the

		application is made available to potential I&APs, and that consultation with I&APs is facilitated in such a manner that all I&APs are provided with a reasonable opportunity to comment on the application.
ENVIRONMENTAL MANAGEMENT ACT NO. 7 OF 2007 SIA GUIDELINES.	Part of the EIA process; evaluates the social consequences of projects, ensuring potential impacts on communities are considered and addressed.	Conduct an SIA to evaluate and mitigate social impacts, involving inclusive and comprehensive public consultation.
CABINET COMPENSATION POLICY GUIDELINES FOR COMMUNAL LAND (applied with effect from April 2008)	Explains situations that may give rise to compensation e.g. where land is taken for public service sector developments; - Gives direction on how compensation shall be determined; - Helps affected land owners to choose an option they consider fair; and - Is applicable in cases where an occupant of land within a proclaimed local authority boundary has been occupying the affected land in accordance with customary laws of the area.	This document should inform and guide the resettlement plan to be compiled for this project.
MINERALS (PROSPECTING AND MINING) ACT (No 33 of 1992)	Provides list of activities that require an environmental assessment, including: Mining and Quarrying. Activities such as exploration or prospecting and mining for minerals.	Proponent must undertake a full Environmental Impact Assessment, covering Scoping, Environmental Impact Assessment (ESIA) and the development of an Environmental Management Plan (EMP) covering the complete project lifecycle including preconstruction, construction, operation, decommissioning and aftercare. Aspects of the Environmental Management Plan are usually incorporated into an Environmental Management System
LABOUR ACT, 2007 (ACT 11 OF 2007)	Details requirements regarding minimum wage and working conditions (S39-47).	Proponent should ensure that all contractors involved in the construction of the services infrastructure for this project comply with the provisions of these legal instruments. Furthermore, Contractors are to keep dust and noise nuisances to a minimum.
HEALTH AND SAFETY REGULATIONS GN156/1997 (GG1617)	Details various requirements regarding health and safety of labourers.	
NATIONAL HEALTH ACT, 2015 (Act 1 of 2015)	Section 56 states that "A person may not cause a health nuisance or may not permit to exist on a land or premises owned or occupied by him or her, or of which he or she is in charge, a health nuisance or other condition liable to be injurious or dangerous to health."	
NATIONAL HERITAGE ACT, 2004 (Act 27 of 2004)	- Section 46 prohibits the disturbance in any form of heritage resources declared as protected. - Section 48 (1) states that "A person may apply to the [National Heritage] Council for a permit to carry out works or activities in relation to a protected place or protected object"	All protected heritage resources (e.g. human remains etc.) discovered, need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be relocated.

2.2 NATIONAL POLICY GUIDELINES

2.2.1 Vision 2030

Vision 2030 was launched in June 2004. It provides a comprehensive framework to fundamentally transform the Namibian political and economic landscape in areas such as land reform, housing, the environment, health, education and building an economy that provides equal opportunities for all. Key milestones for Vision 2030 by the year 2030 include that Namibia should -

- • be an industrialised nation,
- • enjoy high per capita income,
- • be a highly educated nation,
- • have abundant prosperity and
- • have interpersonal harmony, peace and political stability”

Vision 2030 holds that conditions for sustainable development can only be met if at least the three fundamental objectives of economic development, social development and environmental development are adequately addressed at the same time, within politically and culturally acceptable ways.

Further emphasis is placed on waste management, local agenda 21 action plans aiming for social, economic and environmental sustainability, sustainable water and energy policies, decentralising responsibilities to the lowest appropriate level, developing effective partnerships with and among all actors of civil society, private and community sectors and creating and maintaining safe public spaces.

Other sub-visions that provide elements of strategic guidance include poverty reduction underpinned by opportunities for equitable economic growth, local economic development and employment creation, and by minimum standards ensuring equitable access to services.

2.2.2 National Development Plans (NDPs)

The method for achieving an ongoing planning framework is through an interactive process between the National Planning Commission (NPC) and all stakeholders in accordance with their respective roles leading to medium term plans (5-year national development plans), setting targets and endeavouring to broaden participation in the national economy by all sectors in order to eliminate discrepancies in developmental opportunities. Vision 2030 is operationalised through the National Development Plans and the Vision 2030 target are thus also monitored and evaluated through the performance of the National Development Plans.

The latest is the 6th National Development Plan which underlines a primary belief in Fostering Economic Growth, Inclusiveness and Resilience for Sustainable Development. NDP 6 is organised around four pillars founded on the principles of sustainable development. These are Economic Growth, Transformation and Resilience, Human Development and Community Resilience, Environmental Sustainability and Effective Governance and Public Service Delivery. These pillars are aligned with Namibia's commitment to eradicate poverty and inequality. Elements of all four pillars are of importance to the Hiab Copper Project.

Economic Growth, Inclusiveness and Resilience for Sustainable Development strategies revolve around two thematic areas namely consolidating growth from current sources and boosting ***new sources of economic growth and employment and creating economic infrastructure for the future***. Under the first, focus areas are agriculture value chain development, agro-processing,

manufacturing, green hydrogen, oil and gas, nuclear industry, MSME and informal sector upscaling, private sector development and support, tourism and gaming, **mining** and international relations and trade. **Under Economic Infrastructure for the Future**, focus is placed on **transport and logistics, energy infrastructure, bulk water supply**, digital infrastructure, emerging technologies and cybersecurity.

Under the pillar of **Human Development and Community Resilience**, four thematic areas are highlighted namely cultural and creative industries, **education and development**, enhancing the demographic dividend and **population health and development**.

Environmental Sustainability strategies revolve around unlocking the green/blue economies and renewable resource base, preparing for climate related challenges and disasters and improve resilience.

Effective Governance and Public Service Delivery strategies revolve around upscaling public service coordination and public service delivery, including **transparency, governance, security and rule of law** and decentralisation.

2.2.3 Harambee Prosperity Plan II

A further addition to the national planning structure is the second version of the Harambee Prosperity Plan launched in March 2021 (HPP II). The HPP II is to be implemented from 2021 to 2025. While outdated, the HPP II provides strategic clues for this project. The Plan commits the Government to accelerated development programmes and improvements to service delivery and economic growth. The Harambee Prosperity Plan II has five pillars, three of which (Economic Advancement, Social Progression and Infrastructure Development) provide important clues for the assessment.

Economic Advancement has 3 goals and 16 activities. Of the 16 activities, the following are important strategic intents which the Haib Copper Project must consider:

- Review the existing regime for the allocation of fishing rights, quotas and **mineral licenses**.
- **Avail sufficient quantities of water for mining industry**.
- Identify and prioritize **investment into projects with high employment creation opportunities**.
- Design and offer competitive **investment incentives** to facilitate local and **foreign direct investment** attraction and retention.
- Establish a holistic National MSME Fund to support a coordinated enterprise development value chain.

2.3 INTERNATIONAL PRINCIPLES FOR SOCIO-ECONOMIC ASSESSMENT

Socio-Economic Impact Assessment includes the processes of analysing, monitoring, and managing the intended and unintended positive and negative social consequences of a project with the primary purpose of bringing about a more sustainable environment within which people live, work and subsist.

The management of the social issues of the proposed Haib Copper Project is dependent on the particular circumstances of the project activities and includes the following activities:

- • Identify and undertake an assessment of likely social impacts of the project.
- • Prepare a social baseline relevant for decision-making and documenting social changes.
- • Identify and recommend changes to the project and undertake other actions to mitigate negative social impacts or enhance positive impacts.

- Enhance local content.
- Assist in closure planning.

The following principles guided the assessment activities:

- Respect for the local people and their rights.
- Recognition of the diversity and diverse interests, of various stakeholder groups.
- Valuing the views of the local communities.
- Integrating the social and natural environment to ensure that mutual interests and impacts are adequately covered.

2.3.1 2030 Agenda for Sustainable Development

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries (developed and developing) in a global partnership.

Table 2: 17 Sustainable Development Goals

GOAL 1 End Poverty in all its forms everywhere	GOAL 2 End Hunger, achieve food security and improved nutrition and Sustainable Agriculture	GOAL 3 Ensure Healthy live and promote well-being for all at all ages	GOAL 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	GOAL 5 Achieve gender equality and empower all women and girls
GOAL 6 Ensure availability and sustainable management of water and sanitation for all	GOAL 7 Ensure access to affordable, reliable, sustainable and modern energy for all	GOAL 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	GOAL 9 Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation	GOAL 10 Reduce inequality within and among countries
GOAL 11 Make Cities and human settlements inclusive, safe, resilient and sustainable	GOAL 12 Ensure sustainable consumption and production patterns	GOAL 13 Take urgent action to combat climate change and its impacts	GOAL 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development	GOAL 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss
GOAL 16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	GOAL 17 Strengthen the means of implementation and revitalise the global partnership for sustainable development			

They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth, all while tackling climate change and working to preserve our oceans and forests. It basically supersedes the pre-2015 agendas. The 17 SDGs are provided in Table 2 with a brief description of what each aim for. These SDGs underpin important principles that also found its way into the SIA and is largely supported by the national guidance documents discussed earlier. The SDGs bind all nations in a pact that ensures upward movement of all countries at the bottom of the ladder through partnerships among themselves and with other first world countries in the development process.

SDG 8 aims to promote sustainable GDP growth in least developed countries, through economic diversification, technological advancement and innovation focused on high value added and labour-intensive sectors. It further aims to promote development-oriented policies that support productive activities that create decent jobs, and support entrepreneurship, creativity and innovation with particular emphasis on formalisation and growth of micro, small and medium enterprises (MSMEs). It targets 2030 to achieve full and productive employment for all women and men of all ages and persons with disabilities with equal pay for work of equal value. It aims to reduce the number of youths not in employment, education or training, promote safe and secure work environments and eradicate all forms of forced labour, child labour, and human trafficking.

SDG 9 aims to promote sustainable industrialisation through ensuring quality, reliable sustainable and resilient infrastructure to support economic development and human well-being. It wishes to raise industry's share of employment and GDP and focus on enabling the development and growth of small-scale industry through access to finance and integration into value chains and markets. It emphasises that industry must be made more environmentally friendly and sustainable, receive more research effort and spending and increase access to research and information.

2.3.2 International Finance Corporation (IFC) Performance Standards

The IFC Sustainability Framework (IFC, 2012) consists of:

- The Policy on Environmental and Social Sustainability, which defines IFC's commitments to environmental and social sustainability;
- The Performance Standards (PS), which define the clients' responsibilities for managing their environmental and social risks; and
- The Access to Information Policy, which articulates IFC's commitment to transparency.

The eight 2012 IFC PSs on Environmental and Social Sustainability are recognised as comprehensive standards used by international finance institutions to provide a framework for an accepted international approach to the management of social and environmental issues:

- **PS1: Assessment and Management of Social and Environmental Risks and Impacts**, underscore the importance of managing environmental and social performance throughout the life of a project. It requires the client to conduct a process of environmental and social assessment and to establish and maintain an Environmental and Social Management System (ESMS), appropriate to the nature and scale of the project and commensurate with the level of its environmental and social risks and impacts. PS1 aims to:
 - Identify and evaluate environmental and social risks and impacts of the project;
 - Adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimise, and, where residual impacts remain, compensate/offset for risks and impacts to workers, affected communities, and the environment;

- Promote improved environmental and social performance of projects through the effective use of management systems;
- Ensure that grievances from affected communities and external communications from other stakeholders are responded to and managed appropriately;
- Promote and provide means for adequate engagement with affected communities throughout the project cycle on issues that could potentially affect them; and
- Ensure that relevant environmental and social information is disclosed and disseminated.

PS2: Labour and Working Conditions, recognises that the pursuit of economic growth through employment creation and income generation should be accompanied by protection of the fundamental rights of workers. PS2 aims to:

- Promote fair treatment, non-discrimination and equal opportunity of workers;
- Establish, maintain and improve the worker-management relationship;
- Promote compliance with national employment and labour laws;
- Protect workers, including vulnerable categories of workers such as children, migrant workers, workers engaged by third parties and workers in the client's supply chain; and
- Promote safe and healthy working conditions and the health of workers; and avoid the use of forced labour.

PS3: Resource Efficiency and Pollution Prevention, recognises that increased economic activity and urbanisation often generate increased levels of pollution to air, water, and land, and consume finite resources in a manner that may threaten people and the environment at the local, regional, and global levels. Thus, PS3 aims to:

- Avoid or minimise pollution from project activities;
- Promote more sustainable use of resources (including energy and water); and
- Reduce project-related Greenhouse Gas (GHG) emissions.

PS4: Community Health, Safety and Security, recognises that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. PS4 aims to:

- Anticipate and avoid adverse impacts on the health and safety of affected communities during the project life from both routine and non-routine circumstances; and
- Ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimises risks to the affected communities.

PS5: Land Acquisition and Involuntary Resettlement, recognises that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons that use this land. PS5 thus aims to:

- Avoid, and when avoidance is not possible, minimise displacement by exploring alternative project designs;
- Avoid forced eviction;
- Anticipate and avoid, or where avoidance is not possible, minimise adverse social and economic impacts from land acquisition or restrictions on land use by (i) providing compensation for loss of assets at replacement cost and (ii) ensuring that resettlement activities are implemented with

appropriate disclosure of information, consultation and the informed participation of those affected; and

- Improve, or restore, the livelihoods and standards of living of displaced persons.

PS5 emphasises that affected communities must be adequately consulted and compensated. PS5 integrates with PS1 and PS7 by ensuring that resettlement and livelihood restoration efforts are transparent, inclusive, and culturally sensitive. The standard also requires that a gender-disaggregated view be taken of how men's and women's livelihoods are impacted differently. Displaced persons should also be allowed to raise concerns about compensation timeously through a grievance mechanism that provides for impartial dispute resolution.

PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources, recognises that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development. PS6 aims to:

- Protect and conserve biodiversity;
- Maintain the benefits from ecosystem services; and
- Promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities.

PS7: Indigenous Peoples, recognises that Indigenous Peoples, as social groups with identities that are distinct from mainstream groups in national societies, are often among the most marginalised and vulnerable segments of the population. PS7 thus aims to:

- Ensure that the development process fosters full respect for human rights, dignity, aspirations, culture and natural resource-based livelihoods of Indigenous Peoples;
- Anticipate and avoid adverse impacts of projects on communities of Indigenous Peoples, or when avoidance is not possible, to minimise and/or compensate for such impacts;
- Promote sustainable development benefits and opportunities for Indigenous Peoples in a culturally appropriate manner;
- Establish and maintain an ongoing relationship based on informed consultation and participation with the Indigenous Peoples affected by a project throughout the project's life-cycle;
- Respect and preserve the culture, knowledge and practices of Indigenous Peoples.

While there is no universally accepted definition of Indigenous Peoples, they are generally recognised as distinct social and cultural groups who:

- Self-identify as members of a distinct group and are acknowledged as such by others;
 - Have a collective attachment to geographically distinct habitats or ancestral territories and the natural resources found there;
 - Maintain distinct social, economic, and cultural institutions that are separate from those of the dominant society; and
 - Speak a unique language or dialect, often different from the region's dominant language.
- **PS8: Cultural Heritage**, recognises the importance of cultural heritage for current and future generations. As such, PS8 aims to:

- Protect cultural heritage from the adverse impacts of project activities and support its preservation; and
- Promote the equitable sharing of benefits from the use of cultural heritage.

PS1 thus 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.

IFC PSs 2 through 8 present requirements to avoid, reduce, mitigate or compensate for impacts on people and the environment, and to improve conditions where appropriate. Where social or environmental impacts are anticipated, the client is required to manage them through its ESMS consistent with PS1.

The IFC PSs are matched with corresponding Guidance Notes that provide guidance on the requirements contained in the standards and on good sustainability practices to help clients improve project performance.

2.4 METHODOLOGY

This section provides an outline of the approach and methodology used in the study.

2.4.1 Defining the Study Area

The area of influence of the proposed project activities defines the spatial extent of the baseline information.

The area of influence for this SIA includes:

- EPL 3140, including the HAIB Riverbed where it traverses the EPL area;
- The farming activities taking place on the Remainder of Farm 462 including the “farms” at Haibmund;
- The access road along the Haib Riverbed to Haibmund;
- The settlement of Noordoewer;
- The Orange River and farming and tourism activities on both sides of the river;
- The road between Noordoewer and Grunau as a result of increased heavy vehicle traffic; and
- The access road between the mine and Noordoewer.

2.4.2 Broad Approach to Quantifying Potential Socio-Economic Impacts

2.4.2.1 Impact Assessment

Potential socio-economic impacts of the proposed project were identified based on the baseline data, project description, engagement with stakeholders, review of other studies for similar projects and professional experience. The impact evaluation is a stepwise process whereby the receptors are identified and a sensitivity rating assigned, the magnitude of an impact determined, the significance of the impact rated, mitigation measures identified and post mitigation significance determined.

The impact assessment methodology provided by Knight Piésold Consulting is provided in **Appendix A**.

2.4.3 Literature Review and Site Meetings and Interviews

Social baseline data was sourced through a desktop review of a range of available secondary data. The 2023 Population and Housing Census was used extensively because it provides recent socio-economic and demographic data for the area of impact of the Project. Trends were investigated using older census data and other studies such as the National Household Income and Expenditure surveys and National Accounts. While the regional disaggregation of data is not yet available, Namibia Statistics Agency (NSA) availed Excel Spreadsheets with disaggregated data for the //Kharas Region to Urban Dynamics to aid the analysis. Data sources are provided as referenced. Fieldwork was done through meetings with key stakeholders and visits to the site and potentially impacted areas and findings of the assessment will be shared with all stakeholders during a second round of consultation.

3 PROJECT DESCRIPTION

3.1 INTRODUCTION

The mining component of the Project comprises an open pit mine, a 40 million tonnes per annum (Mtpa) crushing, milling and flotation concentrator, as well as infrastructure on and off site necessary to support these operations (waste rock dumps, stockpiles, tailings storage facilities, power infrastructure, roads, offices, etc.). A hydrometallurgical plant consisting of a 3-7 Mtpa heap leach, a copper solvent extraction, impurity removal, and a copper electrowinning plant will be built after initial production during the operations phase.

The operation will achieve a combined throughput of 40 Mtpa. The mining schedule indicates a total material movement of approximately 87.5 Mtpa, providing approximately 24 years' supply of mineralised material. This equates to a total of 1.58 billion tonnes of material to be mined. The processing of the mineralised material will extend to 33 years. As the resource estimate is updated and ongoing optimisations are implemented, these quantities will be updated.

The proposed Project is currently in the exploration and studies phase, whereby the feasibility of the Project is being defined through ongoing investigations and analysis. The site layout has been designed around critical landform features such as topography, sensitive biodiversity areas, and heritage features. The optimisation has additionally considered the efficiencies required for the mining operation.

The components of the project are indicated in Figure 2.

3.2 OPEN PIT

The Haib deposit straddles the ephemeral Volstruis River and forms the basis for the open pit. The open pit consists of four target areas which will combine to form the larger pit.

3.3 THE CONCENTRATE PROCESSING PLANT

The concentrator processing plant has been laid out to the west of the pit on the gravel plain. The crushers and ROM tip pads are located directly west of the pit edge..

Mineralised material will be crushed and conveyed either from the primary and secondary crushers or after reclamation from mineralised material strategic stockpiles. Mineralised material will be delivered to a stockpile to feed the concentrator processing plant.

The typical processing plant supporting infrastructure comprises a change house, administration facility, workshop, stores, reagents stores, sewerage and water treatment facilities. The final copper and molybdenum concentrate will be dried in a filter press and exported by road.

The Concentrator design is based on a 40 Mtpa facility, executed in a single phase and comprising crushing, milling and flotation circuit modules. The Concentrator will treat higher grade primary sulphide material for recovery of copper and molybdenum (Mo) minerals and will produce separate copper and molybdenum flotation concentrates (dependent on market conditions and feed grade), which will be trucked to and shipped to international customers.

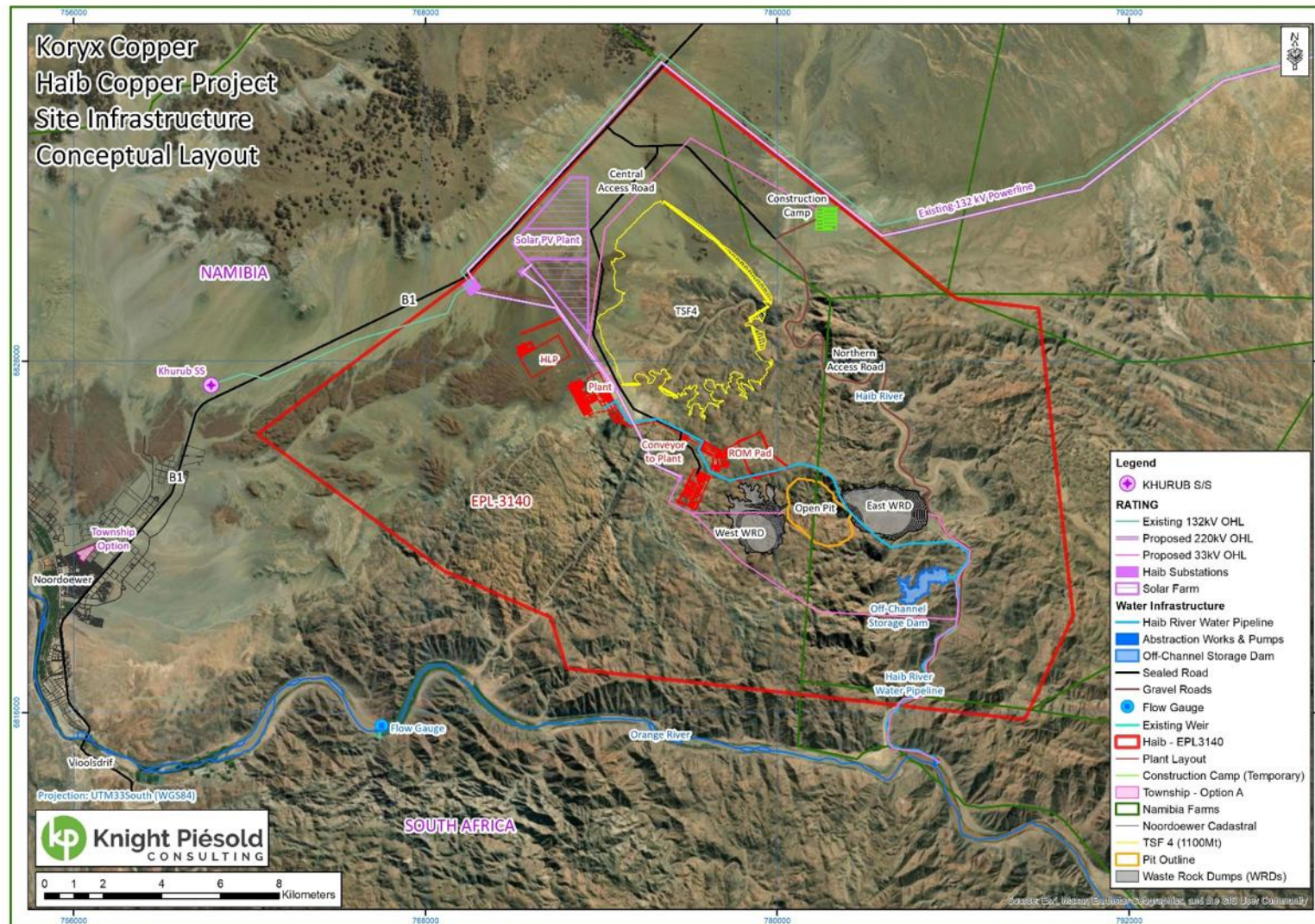


Figure 2: Conceptual Layout of the Overall Site Infrastructure.

3.4 HEAP LEACH PLANT PROCESS

The area in the north-west of the EPL footprint on the flatter plain has been identified as a site for potential Heap Leach and Hydrometallurgical plant. Although the Heap Leach process is not currently included in the mines base case, it has been included in this application. Mineralised material will still be crushed at the ROM pads east of the pit and conveyed to the Agglomeration plant before being stacked on the Heap Leach pad.

The heap leach plant is sized to process between 3 to 7 Mtpa of ROM feed. This circuit will treat the lower grade sulphide material to produce Grade A copper cathode product that will be trucked, railed and shipped to international customers. The hydrometallurgical process uses crushing and screening, conveying, agglomeration, heap leach construction, bacterial heap leach processing, copper solvent extraction, iron removal and copper electrowinning steps that have all been applied on many other mineral projects worldwide. Copper cathode produced in this circuit will be exported to the market.

3.5 TAILINGS DISPOSAL

The Project mining schedule shows that approximately 1,100 Mt of tailings will be generated through the Life of Mine- 33 years.

Following the evaluation of various alternatives, the TFS option selected comprises:

- Raised ring feed structure, sized to use a larger area to be self-raised with a lower rate of rise
- Max storage capacity: 1,120 Mt / 800 m³
- Max Footprint: 2,763 ha
- Max Embankment: 39 Mm³
- Design: Centreline facility
- Height: ~118m

The water management system comprises of a pumping station set on a floating barge linked to a decant causeway. Laboratory testing to determine additional tailing properties, including compaction characteristics (dry density and moisture content), permeability, consolidation behaviour, and shear strength, is currently ongoing.

3.6 WASTE ROCK DUMP AND STOCKPILES

Waste Rock Dump (WRD) was designed as close to the pit exits as possible to optimise productivity and to minimise waste mining costs and environmental impact. Rehabilitation requirements were considered in the dump location and design, and all dumping areas will undergo a mineralised material sterilisation campaign before waste dumping. The waste rock dumping strategy aims to reduce hauling distances and facilitate the progressive rehabilitation of waste dumps wherever possible. In-pit dumping will also be deployed where possible. The WRD will be developed during the first 24 years after which active extraction of ore will stop and processing will continue for the extent of LoM.

The WRD is placed to the east of the open pit (1,500 Mt). Design criteria includes 30m high benches, 30m wide berm and deposition at 35% angle of repose.

3.7 ACCESS AND HAUL ROADS

The proposed Mine will be accessed from Windhoek or Noordoewer through the B1 National Highway, and then via sets of farm roads and tracks developed during the various exploration programmes. The access road aligned along the gravel plain towards the Plant from the B1 highway was selected. Based on the capital cost, maintenance costs, ease of construction, dust mitigation, and visual aesthetics, a sealed road option is recommended for the mine access road for use by commercial haulage trucks,

buses, and general vehicles. An access route along the Haib River will be used for access to the abstraction facility on the Orange River.

3.8 BULK WATER ABSTRACTION AND SUPPLY INFRASTRUCTURE

The proposed Project's water demand was estimated to be up to 20 million cubic metres per year (Mm^3/a), of which supply is planned from a supply point on the Orange River and will be sourced via NamWater through an agreed volumetric tariff structure.

The water requirements of the Haib Copper Mine include the following:

- Construction Phase: The upper estimate of water required for the construction phase (3 years) of the Haib Copper Mine is $3.5 \text{ Mm}^3/\text{a}$.
- Operational Phase: During operations, the Haib Copper Mines' annual water demand is expected to be $20 \text{ Mm}^3/\text{a}$ over the Life of Mine (33 years).
- Decommissioning Phase: Water required for decommissioning of the Haib Copper Mine is expected to be similar to that of the construction phase, however, the specifics under this phase are unclear.

Limited groundwater resource availability results in groundwater use for potable water only and will require treatment.

3.8.1 Abstraction Works and Water Storage

Abstraction works and supply is proposed and includes the following infrastructure:

- A side intake water abstraction structure (Figure 2). The position of the abstraction works is envisaged directly upstream of the Haib River and Orange River confluence on the Namibian bank, expected to include the following:
 - Intake screens to prevent entry of large flotsam and debris
 - Intake pumps
 - Hopper bays with Jet-pumps
- A delivery pipeline approximately 8 km from the abstraction works to the off-channel water storage dam (abstraction works to booster pump station and from the booster pump station to the off-channel water storage dam). The pipeline will be routed and buried within the Haib River, located on the outside banks of the river, with some sections crossing the mainstream. Flow meters will be installed to effectively record abstraction volumes and rates.
- Booster Pump Stations
 - Booster pump stations will be required along the pipeline route, depending on the hydraulic analysis and pipeline material limitations. These pump stations will be positioned outside of the Haib River design floodline.
- Off-channel water storage dam
 - The dam is expected to be a concrete faced rockfill dam (CFRD) with a capacity of up to 20 Mm^3 with total surface footprint of approximately 160 ha at full supply level (FSL) with spillway. The volume and height of the dam will be optimised during detailed design. The dam is sized for intermittent high flow operation

3.8.2 Associated infrastructure

- An overhead Transmission Line (OTL) and access roads need to be developed to the abstraction works, each pump station and other areas requiring power and maintenance.
- Flow gauging station

- A flow gauging station will be constructed at the existing gauging weir along the Orange River. This weir was historically used by DWS but has been discontinued.
- The water level monitoring installation will be situated on the northern bank (Namibian bank) of the Orange River inclusive of:
 - Well: concrete well installed in the riverbank connected to the river by intake pipes. It calms turbulence so the internal water level perfectly matches the river level.
 - Gauge housing: A small shelter on the bank that securely protects the data loggers, telemetry equipment, and batteries from weather and vandalism
- The purpose of this station is to ensure real time observed flow is directly integrated into the operating procedures for abstraction of water from the Orange River.
- NamWater is currently in the process of applying to MAFWLR for an ECC towards authorising the construction and operation of the Orange River abstraction works (abstraction and supply infrastructure).

3.9 MINE HOUSING INFRASTRUCTURE

For operations, mine housing will be situated within Noordoewer and the civil and electrical infrastructure is designed to accommodate 1 350 personnel, as aligned to the operational phase requirements. Designs for mine housing will include various types of worker accommodation, public open spaces, cafeteria, clubhouse and associated infrastructure services to ensure functionality. Sewerage will be managed through a trickle filter plant treated to Namibian Water Affairs standards and the outflow stored in a lined evaporation dam. The treated outflow can also be utilized for irrigation of lawns and certain crops. Solid waste will be managed at a storage area to be managed in line with available facilities. Potable water supply will be supplied from the NamWater water treatment facility located in Noordoewer, as well as raw water from the supply canal running parallel to the Orange River and treated at a dedicated water treatment facility.

For construction, the intention is to locate the bulk of construction personnel on site and early works and/or overspill in Noordoewer in operational housing (where it can be completed in time). The intention with this approach is to maximise the benefits of infrastructure development and economic growth in the Noordoewer community. The construction camp will provide serviced platforms for contractors to construct housing units during construction phase for up to 5,000 personnel. Sewerage will be managed through a trickle filter plant treated to Namibian Water Affairs standards and the outflow stored in a lined evaporation dam. The treated outflow can also be utilized for irrigation of lawns and certain crops. Solid waste will be managed at a fenced off solid waste area. Raw water will be sourced via the off channel storage dam (Orange River Water) and treated at a dedicated water treatment facility on site.

3.10 BULK POWER SUPPLY

The power supply concept design includes a hybrid solution combining a solar PV plant (150 MWp (megawatt peak)) and a connection to the regional grid system from the local service provider, the Namibia Power Corporation (NamPower). The system is sized to meet the proposed Project's peak demand that may be up to a maximum of 150 MVA (megavolt-amperes) and annual consumption of 1,123.3 GWh (gigawatt-hour). However, power optimisation studies are still ongoing and expected to provide improvements through introducing efficiencies. The grid supply is recommended to be via a double circuit overhead transmission line (OHTL) configuration for redundancy. The solar PV supply will include either 30% or 100% supply, subject to regulatory approval.

4 SOCIO-ECONOMIC BASELINE

4.1 GEOGRAPHIC AND ADMINISTRATIVE OVERVIEW

4.1.1 National Overview

Namibia is divided into 14 Regions, with each Region being administered by a Regional Council under the management of a Chief Regional Officer. Each Region is led by a Governor who is the political head of the region, represents the President and central government and oversees the exercise of any executive function of the government in the region.

Regional Councils in Namibia play a crucial role in the governance and development of the country's regions. Their responsibilities include development planning, acting as a link between local communities and central government, implementing decentralisation policies to bring government closer to the people, overseeing local authorities and delivering essential services such as education, healthcare, and infrastructure development, tailored to the specific needs of their regions.

At local level, a hierarchy of urban areas serves each region. Municipal Councils manage the larger urban areas, which are designated as municipalities, while Town Councils manage proclaimed towns and Village Councils lead proclaimed villages. Settlement areas are smaller developing urban concentrations, such as Noordoewer, and are managed by the regional councils.

Located within the //Kharas Region, Noordoewer is the closest settlement to the proposed mine and it is also located along the Orange River, serving as the border between Namibia and South Africa. Grunau is the second closest settlement to the mine, approximately 140 km to the north while Keetmanshoop, the regional capital is located about 300 km north of Noordoewer. The project is situated within the Karasburg West constituency, as presented within Figure 3 below.

Figure 4 provides the terrestrial context of Namibia and the area within which the proposed project is located (GeoBusiness Solutions, 2025).

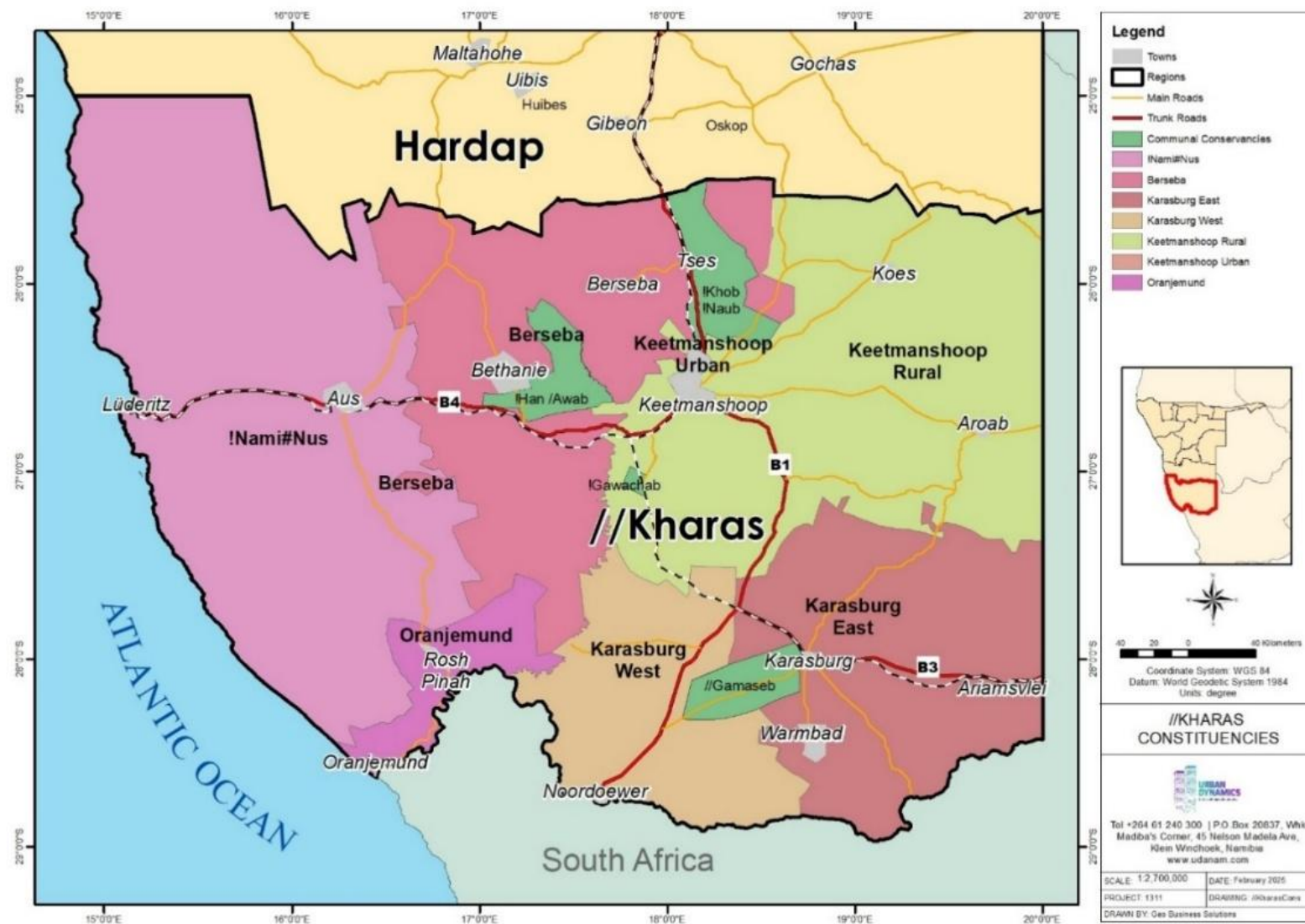


Figure 3: The //Kharas Region and its Constituencies (GeoBusiness Solutions, 2025)

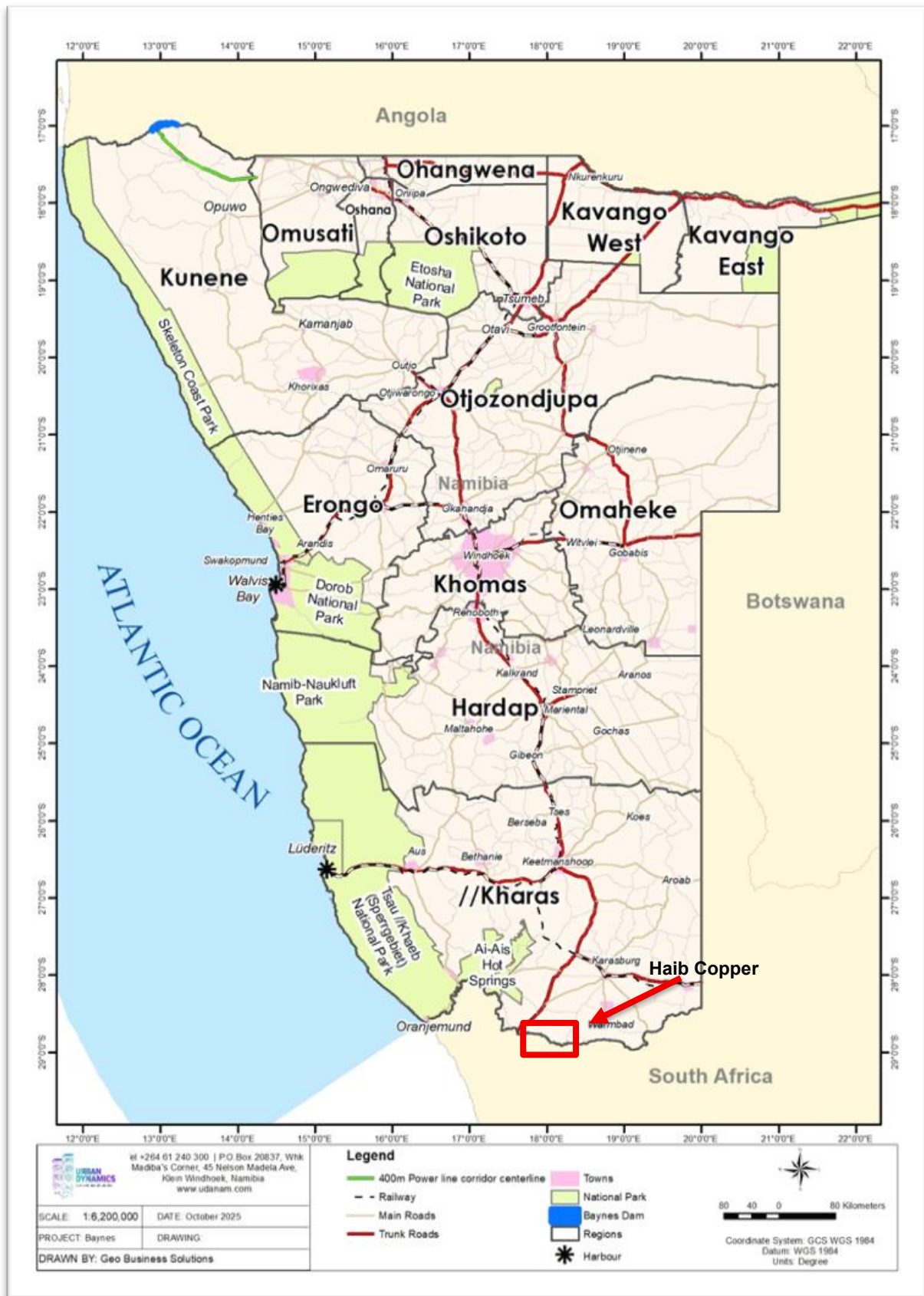


Figure 4: Namibia and Its Regions

4.1.2 The //Kharas Region

The //Kharas Region is bordered by the Hardap Region to the north and South Africa to the south, as indicated in Figure 3. The region is divided into seven constituencies: !Nami#Nûs, Berseba, Oranjemund, Karasburg East, Karasburg West, Keetmanshoop Urban, and Keetmanshoop Rural.

At the heart of this region lies Keetmanshoop, the largest town and administrative centre, which hosts the //Kharas Regional Council. Municipalities and town councils include Karasburg, Oranjemund, and Lüderitz, while proclaimed settlement areas, such as Aus, Warmbad, Grünau, Ariamsvlei, Aussenkehr and Noordoewer, complete the region's urban landscape.

According to the latest Namibia Household Income and Expenditure Survey (NHIES) (Namibia Statistics Agency, 2017)), the average national annual household consumption was N\$ 119 065. In comparison, the average annual household consumption for the //Kharas Region stood at N\$ 116 857, which is slightly below the national average. The highest average household consumption was in Khomas, followed by Hardap, Erongo, Oshana and //Kharas in fifth position (Namibia Statistics Agency, 2017).

Key economic drivers include the Lüderitz harbour, diamond mining in and around Oranjemund, mining at Rosh Pinah, vegetable and grape production along the Orange River, grape farming in Aussenkehr, small stock and game farming across the region, and a wide variety of tourist ventures, especially the Fish River Canyon and the lodges established around it and activities on the Orange River. These sectors form the backbone of the region's economy. Offshore oil exploration and the potential development of the Venus Oil Field is likely to make a substantial contribution to the region's economy, should it be found viable. A Final Investment Decision for the development of the Venus Field is expected during 2026.

Within the Karasburg West Constituency, the settlement of Noordoewer serves as the focal point for the constituency's economic and social activities with Aussenkehr being the only other settlement.

4.2 SOCIO-ECONOMIC CHARACTERISTICS OF THE STUDY AREA

According to the 2023 Population and Housing Census, Namibia's population numbered just over 3 million, increasing from 1 409 920 in 1991 to 1 830 330 in 2001 with an average annual growth rate of 2.6% over the period. From 2001 to 2011, the population grew at a rate of only 1.4% per annum to 2 113 077. Between 2011 and 2023 Namibia recorded an annual population growth rate of 3% with a total population of 3 022 041 (NSA, 2024).

The population of the //Kharas Region was reported as 109 893 people in 2023. The population grew at a rate of 1.1% between 2001 and 2011 (from 69 3292 to 77 421) and at 2.96% between 2011 and 2023 (from 77 421 to 109 893). With a declining fertility rate together with increased growth, this indicates increased migration into the region over the past intercensal period.

The Karasburg West and Karasburg East Constituencies account for 28.72% of the population within the region with 31 562 people. (Namibia Statistical Agency, 2024). Keetmanshoop is the biggest town in the region (27 862) followed by Lüderitz with 16 156 people.

The Karasburg Constituency was divided into the Karasburg West and Karasburg East Constituencies during the 2011 – 2023 intercensal period. The combined population of the Karasburg East and West Constituencies, where Noordoewer and Aussenkehr is located, (compared to the 2011 Karasburg Constituency) grew at a rate of 5.5% per annum between 2011 and 2023. This is a high rate of growth if compared to the other constituencies in the region. Figure 5 provides the detail of the constituency growth rates.

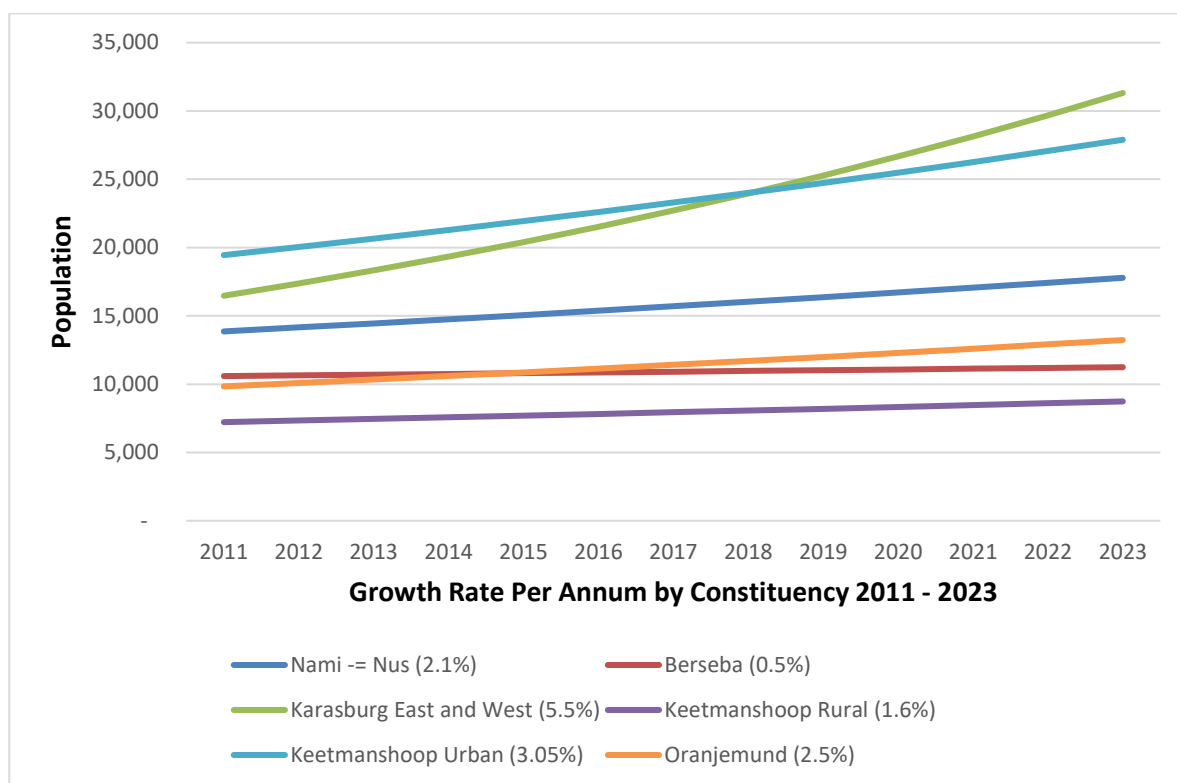


Figure 5: //Kharas Population Growth by Constituency 2011 - 2023

4.2.1 Indigenous Peoples

According to the Guide to Indigenous Peoples' Rights in Namibia, Namibia has a considerable number of indigenous peoples living in its territory as citizens. The majority of these people are the San and Ovahimba, but there are also other groups such as the Ovahimba and the Ovahimba. Namibia has various obligations towards these indigenous peoples and has a duty to respect their rights (Ombudsman: Namibia, 2008).

However, national statistics are not disaggregated to a level that can isolate data and statistics on these groups and they are, in terms of statistics, incorporated into the general population census. While the Government of Namibia only regard the mentioned groups as indigenous peoples, the Nama people are increasingly re-defining themselves as indigenous and are seeking recognition, respect and inclusion into the formal economy of Namibia.

With reference to the site upon which the Haib Copper Mine is to be established, it is zoned commercial farmland, owned by the Government and not under the administration of any traditional authority as defined by the Traditional Authorities Act or included under the area of jurisdiction of a Traditional Authority.

4.2.2 Migration

The term "Lifetime Migration" means the extent to which people moved permanently from their place of birth to their current place of residence. Table 3 shows the number of migrants received by the //Kharas and Hardap Regions, compared to the Khomas Region (Windhoek), which has historically high in-migration. In the //Kharas Region, 38.5% of the population were born elsewhere, while 51.2% of the population of the Khomas Region and 25.7% of the Hardap population were born elsewhere. This indicates comparatively high levels of in-migration into the //Kharas Region with only the Erongo (54.5%), Khomas (51.2%) and Otjozondjupa (40.75%) Regions having higher percentages of migrants residing in the region (NSA, 2024).

Table 3: Lifetime Migration for the //Kharas, Hardap and Khomas Regions

Place of Birth	Place of Usual Residence		
	//Kharas	Hardap	Khomas
//Kharas	63 429	3 948	7 900
Erongo	1 559	1 414	11 942
Hardap	3 165	78 056	12 086
Kavango East	4 660	1 522	9 858
Kavango West	2 594	1 005	7 672
Khomas	4 863	8 526	229 474
Kunene	687	347	5 328
Ohangwena	5 706	2 135	44 469
Omaheke	639	1 454	11 946
Omusati	6 644	2 149	45 776
Oshana	4 126	1 058	21 794
Oshikoto	2 794	972	25 440
Otjozondjupa	1 116	919	14 929
Zambezi	1 609	306	6 245
Outside Namibia	2 179	1 640	27 785
In Migrants	42 341	27 395	253 170
Total Population 2023	109 893	106 680	494 605
% of Population that migrated from elsewhere	38.5%	25.7%	51.2%

(Namibia Statistics Agency, 2024a)

The majority of lifetime migrants into the //Kharas Region originate from the Ohangwena, Omusati and Oshana Regions with some 38.9% of lifetime migrants coming from these three regions.

4.2.3 Population Density and Distribution

Figure 6 provides an indication of the population density and distribution in the //Kharas Region. In the Karasburg West Constituency, densities are low ranging from 0.4 to 4 persons per km². Compared to the other constituencies in the region, the general population density is lower but there is a clear concentration at Noordoewer and Aussenkehr. The low density is in line with the largely commercial farming nature of the constituency.

4.2.4 Age and Sex Distribution

Figure 7 shows the age distribution of the //Kharas and Erongo Regions. In the //Kharas Region, as a whole, 37.1% of the population is in the 20 – 39 age group while 20.9% is in the 40 – 59 age group. This totals to 58% of the population being in the 20 – 59 year age group. There is substantial variation between the constituencies, but in the !Nami#Nûs Constituency, 35% of the population is in the 20 – 39 age group while 22.7% is in the 40 – 59 age group. With the exception of the Berseba Constituency (44.4%), more than 50% of the population is in the 20 to 59 year age group. In the Karasburg West constituency on the other hand, 75.1% of the population is between 19 and 60 years of age which is

an indication of people in the productive age groups migrating to the constituency in search of employment.

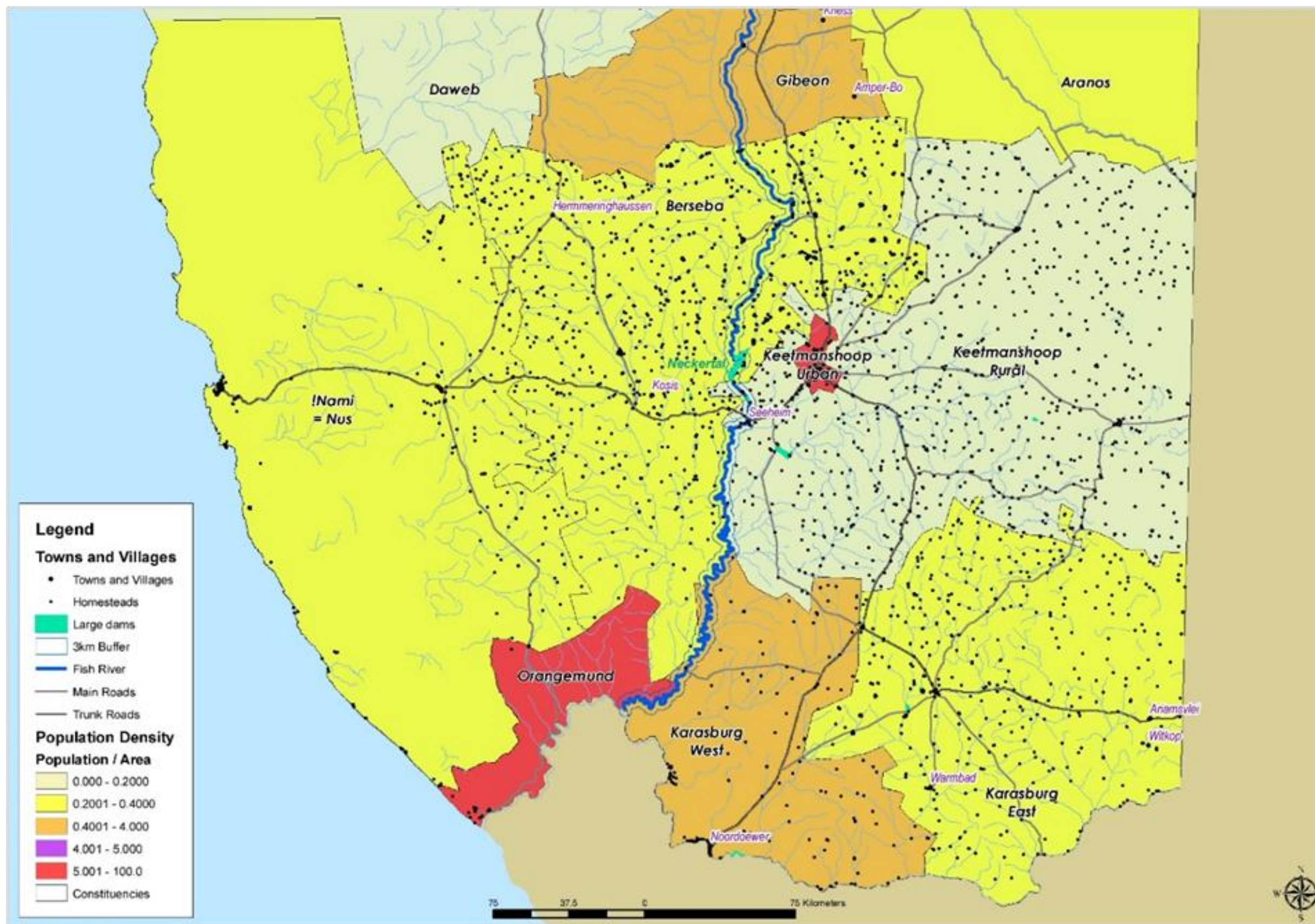


Figure 6: Population Density in the //Kharas Region 2011

Source: Map prepared from National Spatial database by GeoBusiness Solutions

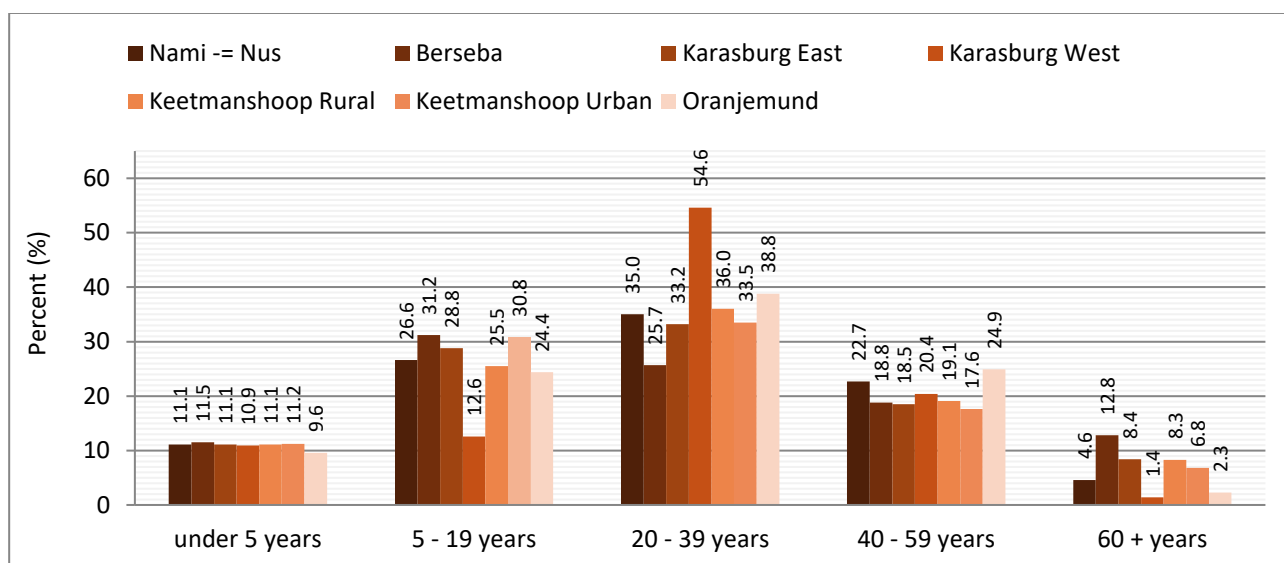


Figure 7: Age Distribution in the //Kharas Region Constituencies

This trend is further clarified in the age and sex distributions pyramids for the //Kharas Region and the Karasburg West and Karasburg East constituencies presented in Figure 10 - 10 (NSA, 2025).

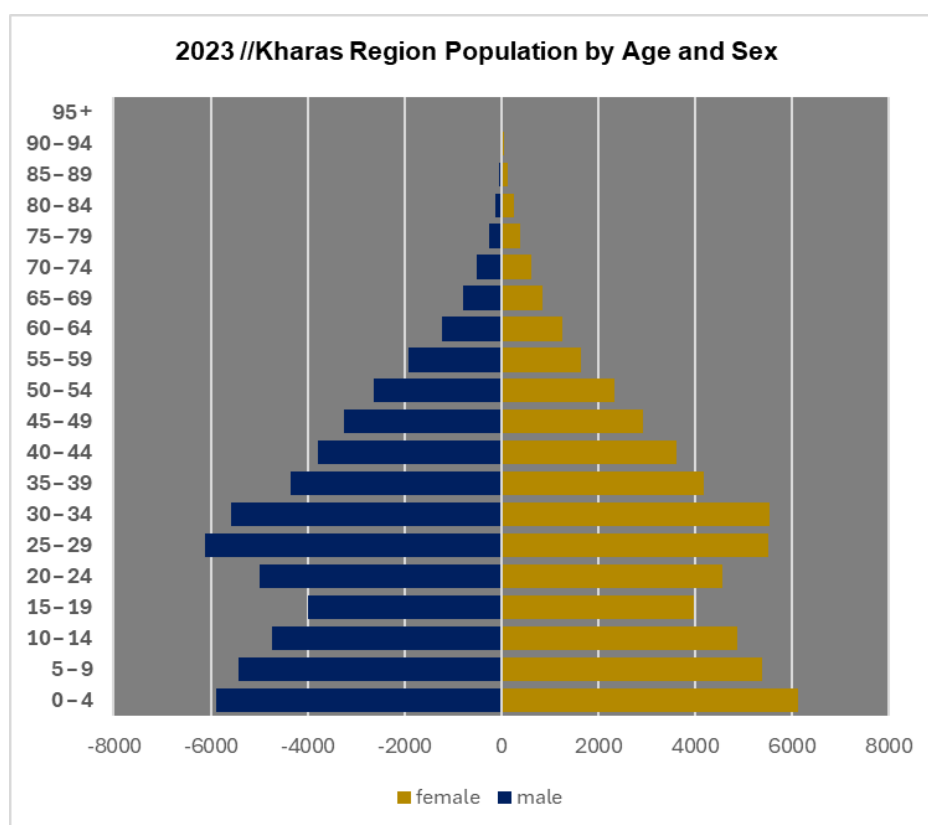


Figure 8: Sex and Age Distribution for the //Kharas Region

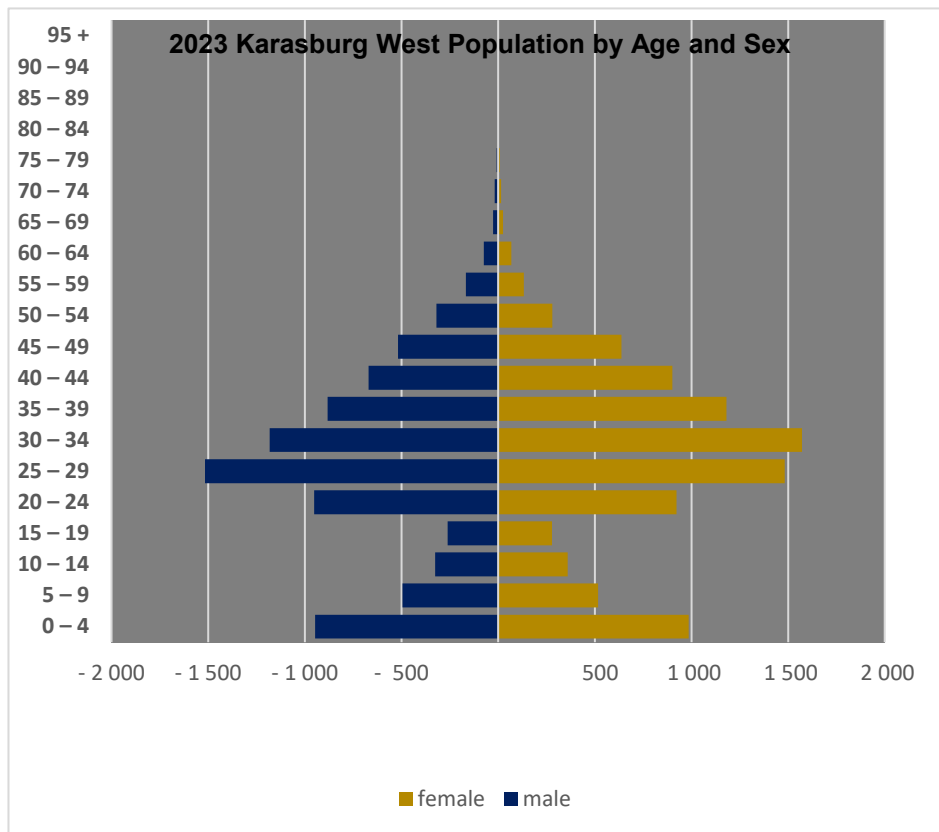


Figure 9: Sex and Age Distribution for the Karasburg West Constituency

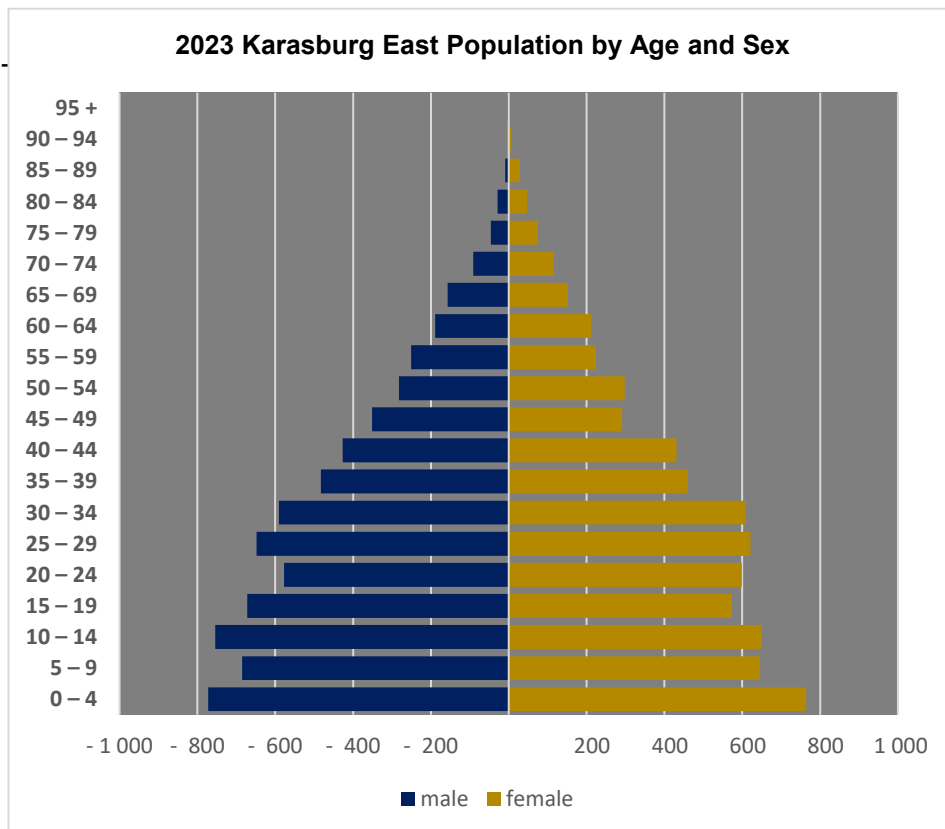


Figure 10: Sex and Age Distribution for the Karasburg East Constituency

The age and sex distribution for the Karasburg West Constituency, which is the constituency within which the project will be located, clearly illustrates the effect of the Noordoewer and Aussenkehr agricultural activities on the population with the vast majority being within the age groups of between 20 and 49 years. This is in contrast with the regional distribution as well as the Karasburg East distribution, which is much more normal for rural communities. The development of the mine may be expected to further contribute to this trend.

4.2.5 Household Size

There is a substantial difference in mean household size between the constituencies in the //Kharas Region. Keetmanshoop Urban has by far the largest mean household size with 3.9 persons per household while Karasburg West has the smallest at 2.4 persons per household. Also note the age distribution of the Karasburg West constituency, which has the highest percentage of people aged 20 – 39 years of all constituencies. This may be an indication that many younger people moved into that constituency and most likely have smaller families than in the other constituencies. The !Nami#Nûs Constituency had a mean household size of 3 persons.

Mean household size in the region is on the decrease. According to the previous census figures it was 4.1 in 2001, reducing to 3.6 in 2011 and still further to the current 3.1 in 2023. (NSA, 2025).

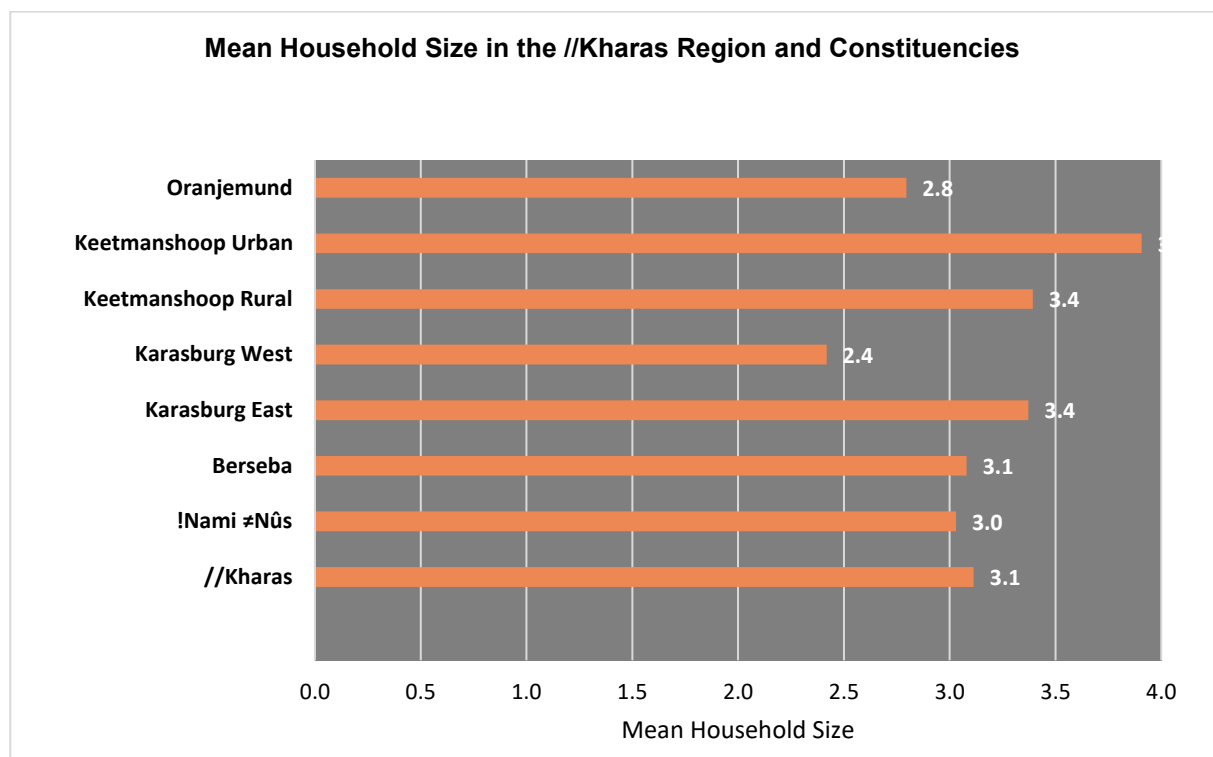


Figure 11: Mean Household Sizes in //Kharas Region

4.3 ACCESS TO SOCIAL SERVICES

The provision of services enables a population of an area to live meaningful lives and enables members to realise their potential. Health and Education are the main social services considered as basic to the successful development of a population.

4.3.1 Primary and Secondary Education

In 2023, there were eleven (11) secondary schools, nine (9) combined schools and thirty-seven (37) primary schools in the region (Ministry of Education, 2023). The map below shows the locality of the schools. As presented within Figure 12, a primary school is located in close proximity to the study area and virtually all schools in the region are located in the urban areas of the region.

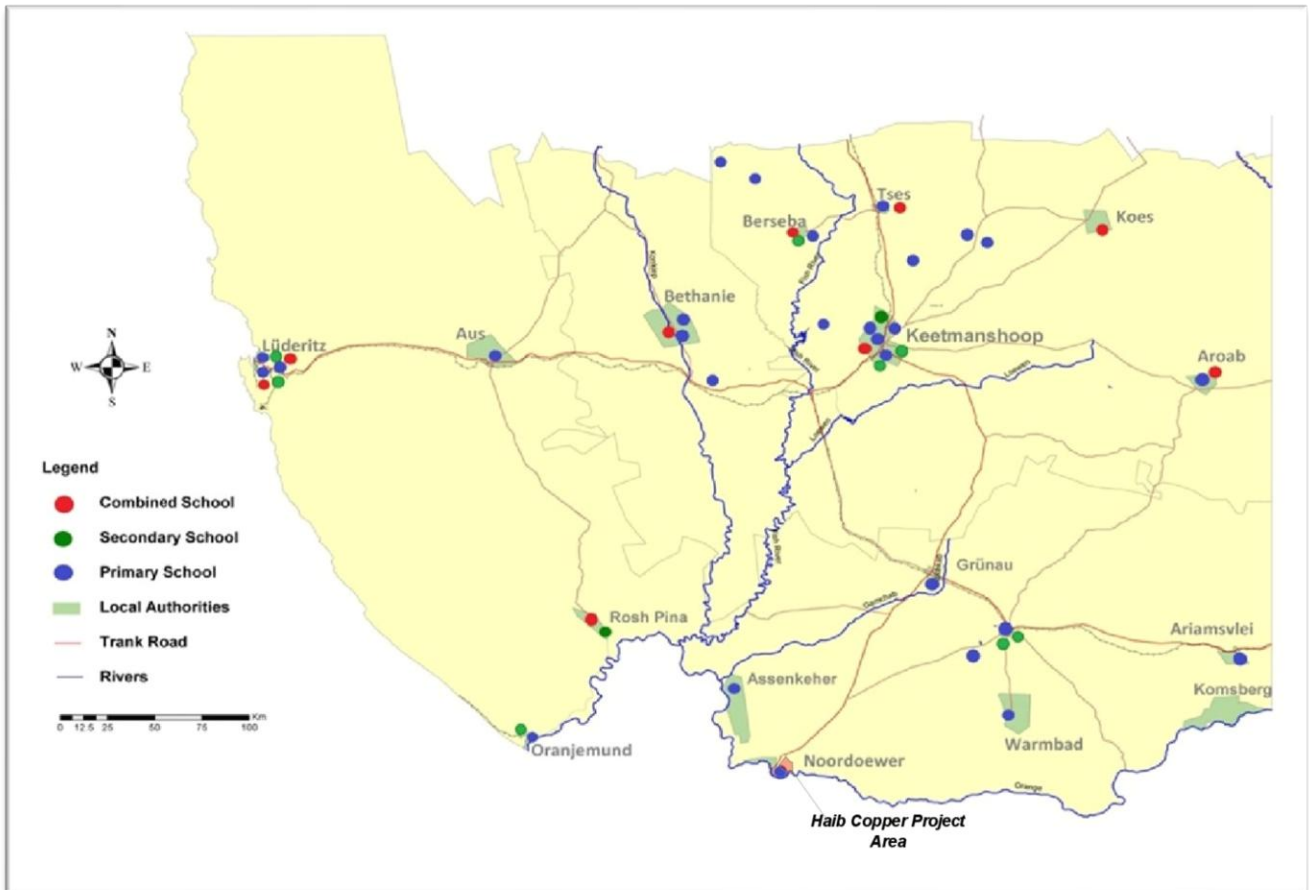


Figure 12: Schools in the //Kharas Region

Figure 13 demonstrates a steady increase in the number of learners in the region, from 22 388 in 2018 to 24 964 in 2023. The number of children per school increased from about 392 learners per school in 2018 to about 430 learners per school in 2023. This is slightly higher than the national average of 390 learners per school in 2023. The learner to teacher ratio in //Kharas increased from 22.9 in 2018 to 24.6 in 2023.

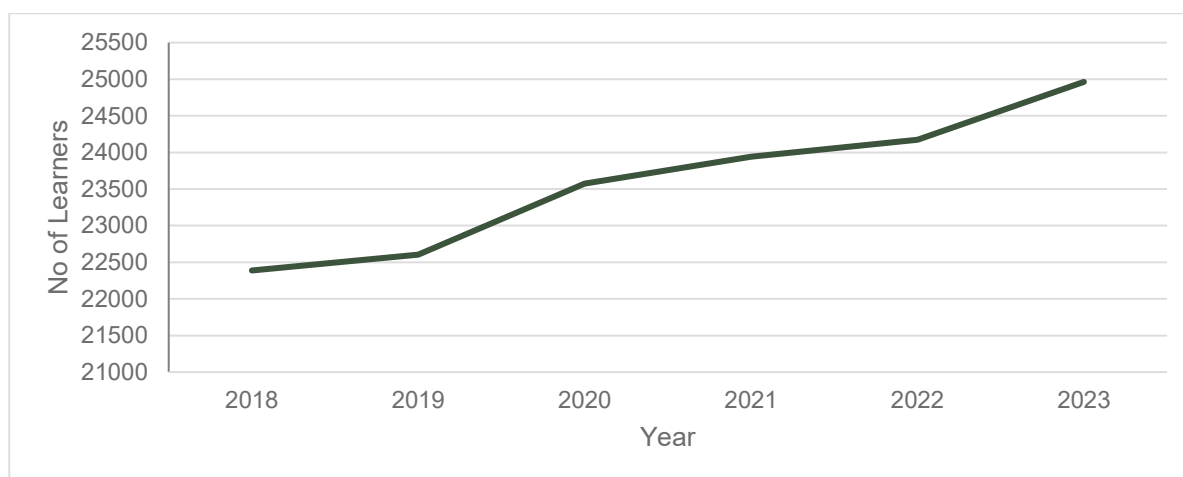


Figure 13: Growth in number of learners in the //Kharas Region 2018 - 2023

Figure 14 presents the literacy rates in Namibia by region according to the 2023 Population and Housing Census. The Khomas Region has the highest literacy rate in Namibia (95.8%) followed closely by the //Kharas Region at 95.6%, with the national rate at 87.3%. (Namibia Statistics Agency, 2024a). The literacy rates in all of these areas increased from the 2011 Census rates when 94% of the //Kharas population, 88.4% of the Hardap population and 85.3% of the national population were regarded as literate.

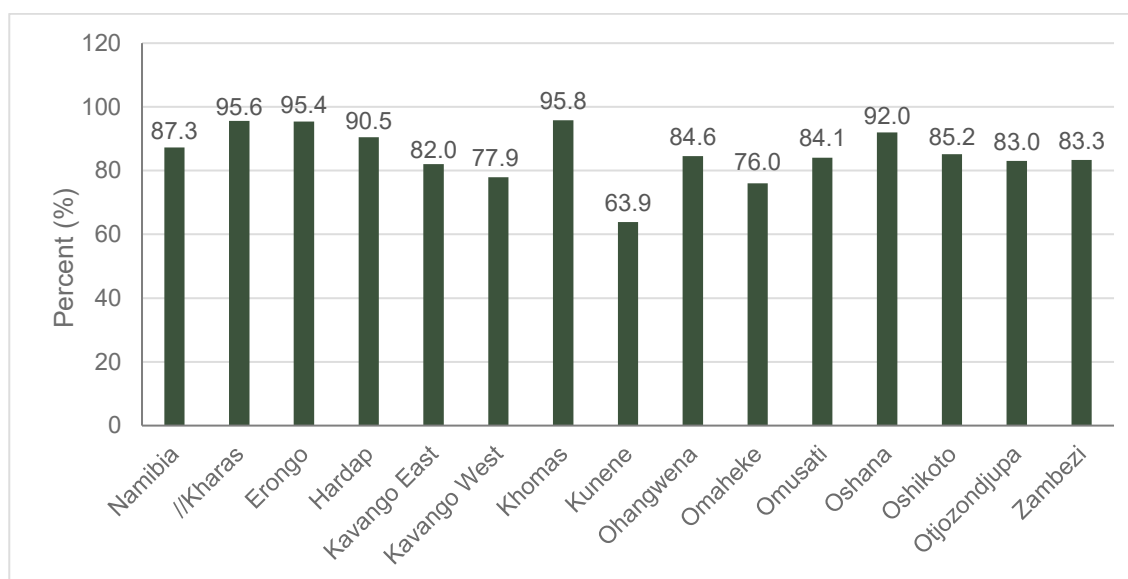


Figure 14: Literacy Rate by Region.

Considering education attainment levels, at the time of the 2011 Census, 22.9% of the //Kharas population over the age of 6 had completed secondary school as their highest level of education, while a small portion of the population had progressed to tertiary education (3.8%). (Namibia Statistics Agency, 2014(a))

By 2023, 58.05% of people aged older than 6 in the //Kharas Region indicated that they have a secondary education. The Karasburg West Constituency exhibits the highest proportion of the population over the age of 6 of all the constituencies having completed secondary school with 68.56% indicating that they completed secondary education. (NSA, 2025)

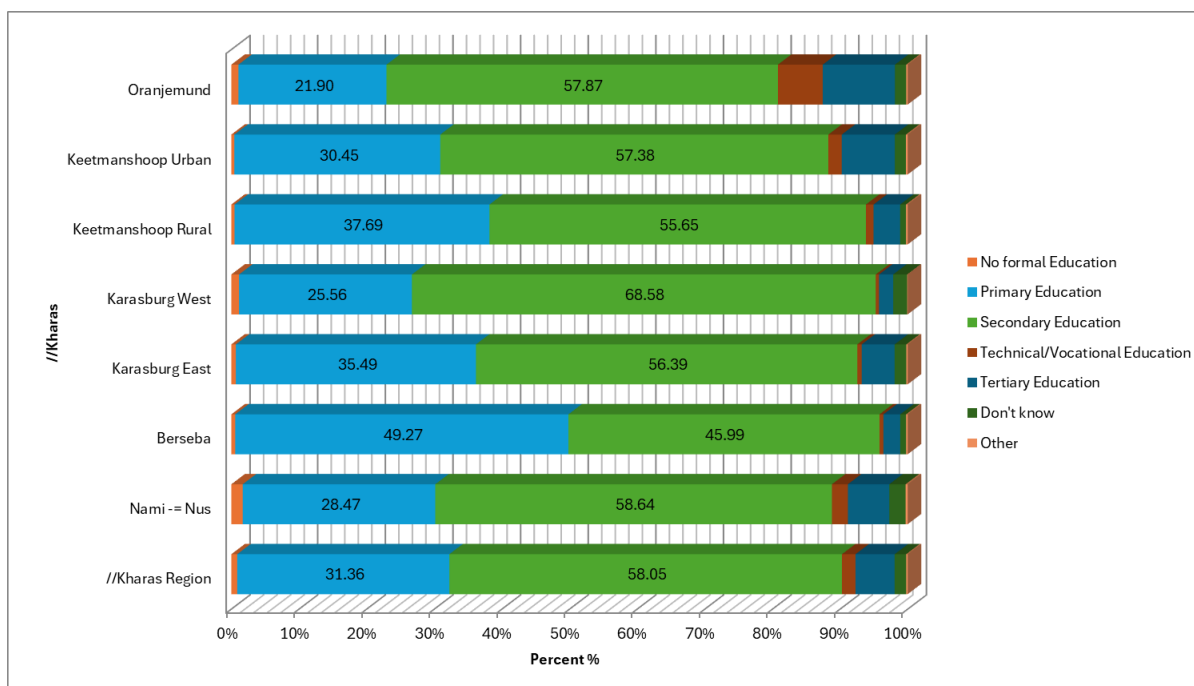


Figure 15: Educational Attainment in the //Kharas Region and its constituencies.

4.3.2 Health and Healthcare

Namibia recognises that health is a fundamental human right and is committed to achieving health for all Namibians. The latest Namibia Demographic and Health Survey compiled in 2013 identified the main health and well-being issues for Namibia as child and maternal mortality, Human Immunodeficiency Virus (HIV), Malaria- and Tuberculosis (TB)-related deaths, Non-Communicable Diseases (NCDs), and road accident deaths.

According to the Surveillance Report of the 2016 National HIV Sentinel Survey, the HIV Prevalence Rates at the time was 15.8% in Karasburg, 15.3% in Keetmanshoop, 15.5% in Lüderitz and 20.4% in Rosh Pinah (MOHSS, 2016).

Figure 16 provides the detail of the availability of health facilities. The region had three (3) district hospitals in the main urban centres, one (1) private hospital in Oranjemund, three (3) health centres and thirteen (13) clinics. Keetmanshoop Urban had one (1) district hospital, and two (2) clinics. Bethanie Noordoewer and Aroab each have one (1) health centre (MHSS 2023).

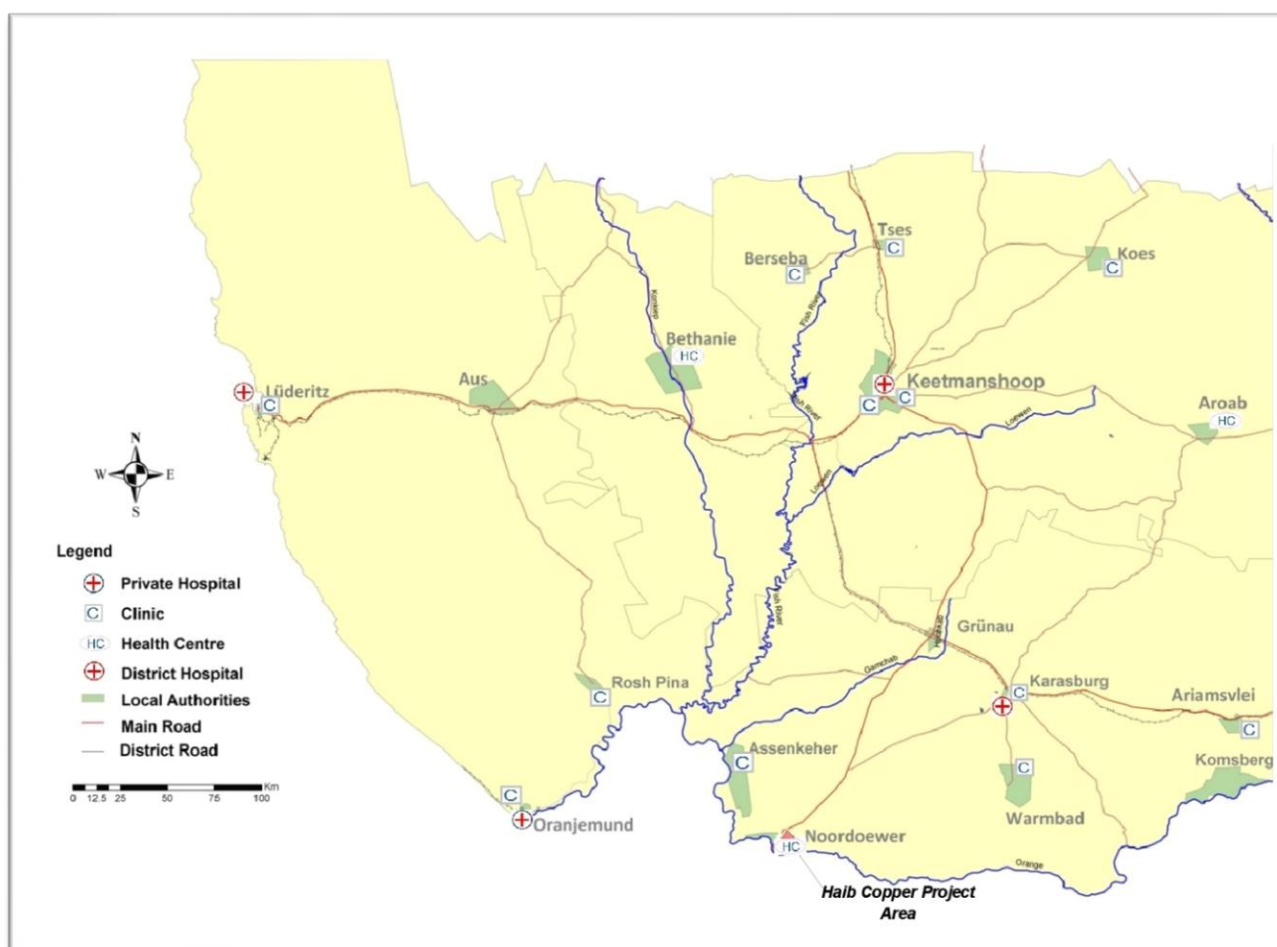


Figure 16: Health Facilities in the //Kharas Region, 2023

4.4 ACCESS TO BASIC SERVICES

In Namibia approximately 49.9% of households use electricity for lighting, compared to 66.5% in the //Kharas Region. However, in the Karasburg West Constituency only 17.23% of households obtain lighting from electricity from mains opposed to 65.78% in the Karasburg East Constituency. This is by far the lowest level of access of all constituencies in the region. Within the Karasburg West Constituency only 13.61% of households rely on electricity for cooking, whereas 45.13% rely on the use of wood or charcoal (Namibia Statistics Agency, 2024a)..

In the 2023 Census, safe water was defined as water from the following sources: piped water inside, outside, public pipe, well-protected, bottled water, and boreholes with tank covers. At national level, 91.4% of households have access to safe drinking water. Access to safe drinking water in the //Kharas Region stood at 90%, only slightly lower than the national average. In the Karasburg East Constituency, 85.1% of households have access to safe water while the figure for the Karasburg West Constituency is 74.2%, the lowest of all constituencies within the region (NSA, 2025). (NSA, 2024)

In the //Kharas Region, 23.83% of households respectively, do not have access to any sanitation. The situation is slightly worse in Namibia as a whole with 39.98% of households reporting no access to a toilet facility. Again, the Karasburg West Constituency is the worst off in the region with 58.81% of households without a toilet facility, against 27.18% in the Karasburg West Constituency. (NSA, 2025) (NSA, 2024)

With regard to waste disposal, 23.08% of households in Namibia and 9.14% of households in the //Kharas Region dump their waste in the veld. In the Karasburg West Constituency, this figure is higher than the national average, at 28.35% versus 6.9% in the Karasburg East Constituency.

Access to basic services at a regional and constituency level is provided in Table 4.

Table 4: Basic Services Profile by Namibia, //Kharas Region and Karasburg Constituencies.

Type of Basic Services	Percentage of Households			
	//Kharas Region (2023)	Karasburg East Const. (2023)	Karasburg West Const. (2023)	Namibia (2023)
Source of Energy for Cooking				
Electricity from Mains	43.2%	43.99%	13.61%	34.10%
Gas	28.8%	17.16%	39.77%	13.90%
Wood/Firewood	26.6%	37.71%	45.13%	50.30%
Source of Energy for Lighting				
Electricity from Mains	66.5%	65.78%	17.23%	46.90%
Candles	5.1%	9.53%	2.86%	3.70%
Battery Lamp/Torch/Cell phone	15.2%	14.35%	46.75%	33.30%
Source of Domestic Drinking Water				
Piped Water inside	43.79%	39.77%	12.97%	43.75%
Piped Water outside	15.17%	15.51%	16.99%	17.77%
Public Piped Water	20.97%	15.19%	33.27%	17.95%
Boreholes/boreholes with tank (Covered)	8.8%	29.53%	36.76%	10.55%
Type of Sanitation				
Flush toilet	71.22%	63.05%	28.30%	33.84%
Bucket Toilet	0.83%	1.54%	1.57%	3.73%
No Toilet Facility	23.83%	27.18%	58.81%	39.98%
Waste Disposal				
Regularly Collected	57.31%	51.95%	9.66%	36.89%
Irregularly Collected	4.47%	3.52%	9.62%	4.03%
Burning	15.68%	8.09%	8.09%	24.16%
Dump in the field/bush	9.14%	6.90%	28.35%	23.08%

4.5 EMPLOYMENT, INCOME AND POVERTY

4.5.1 Poverty and Inequality

Namibia was defined as an upper middle-income country and had a Human Development Index (HDI) of 0.665 in 2023, which places it in the medium human development level at 136nd place out of 193 monitored countries and territories. However, on 1 July 2025 Namibia was **redefined as a lower middle-income country**.

According to the UNDP, Namibia had an HDI of 0.665 in 2025, which is at a medium HDI Tier comparable to countries such as Guatemala and Cape Verde. (UNDP, 2025) Over the past decade, Namibia's economic growth has been volatile, averaging 3.6%, not enough to reduce one of the world's highest unemployment rates (over 30%). Poverty remains high relative to the country's income level, exacerbated by severe droughts and high reliance on commodity exports. However, Namibia has a unique chance to transform its economy. Recent major oil discoveries and development of the mining sector offer potential to increase economic growth, provide employment and lower poverty levels.

Table 5: Poverty Measures by Region

Region	Population Share (%)	H			A			MPI		
		Value (%)	CI		Value (%)	CI		Value (%)	CI	
//Kharas	3.8	19.6	12.9	26.2	39.4	35.8	43.1	0.077	0.047	0.107
Erongo	7.7	16.6	11.7	21.6	38.0	35.9	40.1	0.063	0.044	0.083
Hardap	3.8	26.9	18.3	35.5	40.4	38.4	42.4	0.109	0.071	0.146
Kavango East	5.8	70.0	62.3	77.7	47.4	45.0	49.7	0.332	0.291	0.372
Kavango	4.0	79.6	73.0	86.2	48.5	46.7	50.3	0.386	0.348	0.424
Khomas	17.6	25.2	19.5	31.4	39.5	37.3	41.6	0.101	0.076	0.125
Kunene	4.0	64.1	54.2	74.1	59.2	55.0	63.3	0.379	0.304	0.455
Ohangwena	11.4	56.6	50.3	62.8	42.7	41.3	44.2	0.242	0.212	0.272
Omaheke	3.3	51.4	38.0	64.9	43.8	40.5	47.1	0.225	0.171	0.280
Omusati	11.2	50.7	43.8	57.7	41.2	39.1	43.2	0.209	0.177	0.241
Oshana	8.1	33.1	27.1	39.1	37.8	36.3	39.3	0.125	0.102	0.148
Oshikoto	8.3	50.0	43.1	56.9	42.8	40.6	45.0	0.214	0.181	0.247
Otjozondjupa	6.8	40.5	31.5	49.5	50.9	45.2	56.6	0.206	0.149	0.264
Zambezi	4.3	60.7	51.8	69.5	42.9	41.2	44.6	0.261	0.224	0.297
National	100.0	43.3	41.0	45.6	44.0	43.2	44.9	0.191	0.180	0.202

Namibia's economy expanded by about 3% in the first half of 2025, driven by retail, financial services, and government activities, though diamond production and agriculture declined. GDP growth is forecast to dip to 3.1% in 2025 before rising to 3.5% in 2026. Major new energy projects could significantly boost medium-term growth. Key challenges are high unemployment (36.9%), skills shortages, and high inequality (Gini 59.1 in 2025 and down from 71.7 in 1993).

According to the Namibia Multidimensional Poverty Index (MPI), (Table 5) the **incidence of multidimensional poverty**¹ is highest in Kavango West (79.6%), Kavango East (70.0%) and Kunene (64.1%) while it is 19.6% in the //Kharas Region. As for the **poverty intensity levels**², Kunene region reported the highest rate of 59.2 percent, which indicates that on average, the multidimensionally poor individuals in the region are deprived in about 59 percent of the weighted indicators. The poverty intensity level in the //Kharas Region is 39.4 % as shown in Table 5. The National Average poverty intensity stood at 44% while the national incidence of multidimensional poverty was 43.3% (NSA, 2021)

4.5.2 **Employment**

The working age population in Namibia is defined as all people aged 15 years and older. Out of the population of 3 022 401, the working age population stood at 1 876 122 in 2023. Of these, 867 247 makes up the labour force. In essence, the labour force represents the total labour supply in Namibia, encompassing those who are already contributing their labour (the employed) and those who are willing and able to contribute their labour (the unemployed).

Figure 17 provides an indication of the proportion of the working age population that makes up the Namibian Labour Force in 2023 (Namibia Statistics Agency, 2024a).

In 2023 the labour force for the **//Kharas Region** stood at 48 044 persons (5.54% of the national labour force), with a labour force participation rate (LFPR) of 63.3% (68.4% among males and 58.0% among females), compared to the national average of 46.2% (and 51.1% for males and 41.7% for females). The unemployment rate in the region stood at 29.7 % compared to 36.9% in Namibia. The youth unemployment rate in the region was 37.9% compared to 24.8% Nationally. The youth is defined as all people aged 15 to 34 years of age. In Namibia, there were 455 030 youths in the labour force. Of these, 202 144, or 44.42% were unemployed. In the //Kharas Region, there were 24 133 youths in the labour force, of which 9 136 or 37.85% were unemployed.

The LFPR in the **Karasburg East Constituency** stood at 51.2% with the unemployment rate at **33.6%** and youth unemployment at **42.5%**.

The LFPR in the **Karasburg West Constituency** stood at 80.4% with the unemployment rate at **34.0%** and youth unemployment at **40.4%**. (Namibia Statistics Agency, 2024b)

¹ MPI is a multidimensional measure of poverty that assesses the simultaneous deprivations that are experienced by people in a society, based on three dimensions: 'Living standards', 'Health' and 'Education'

² MPI reflects both the incidence of poverty – what proportion of people are poor - and the intensity of poverty – how poor they are.

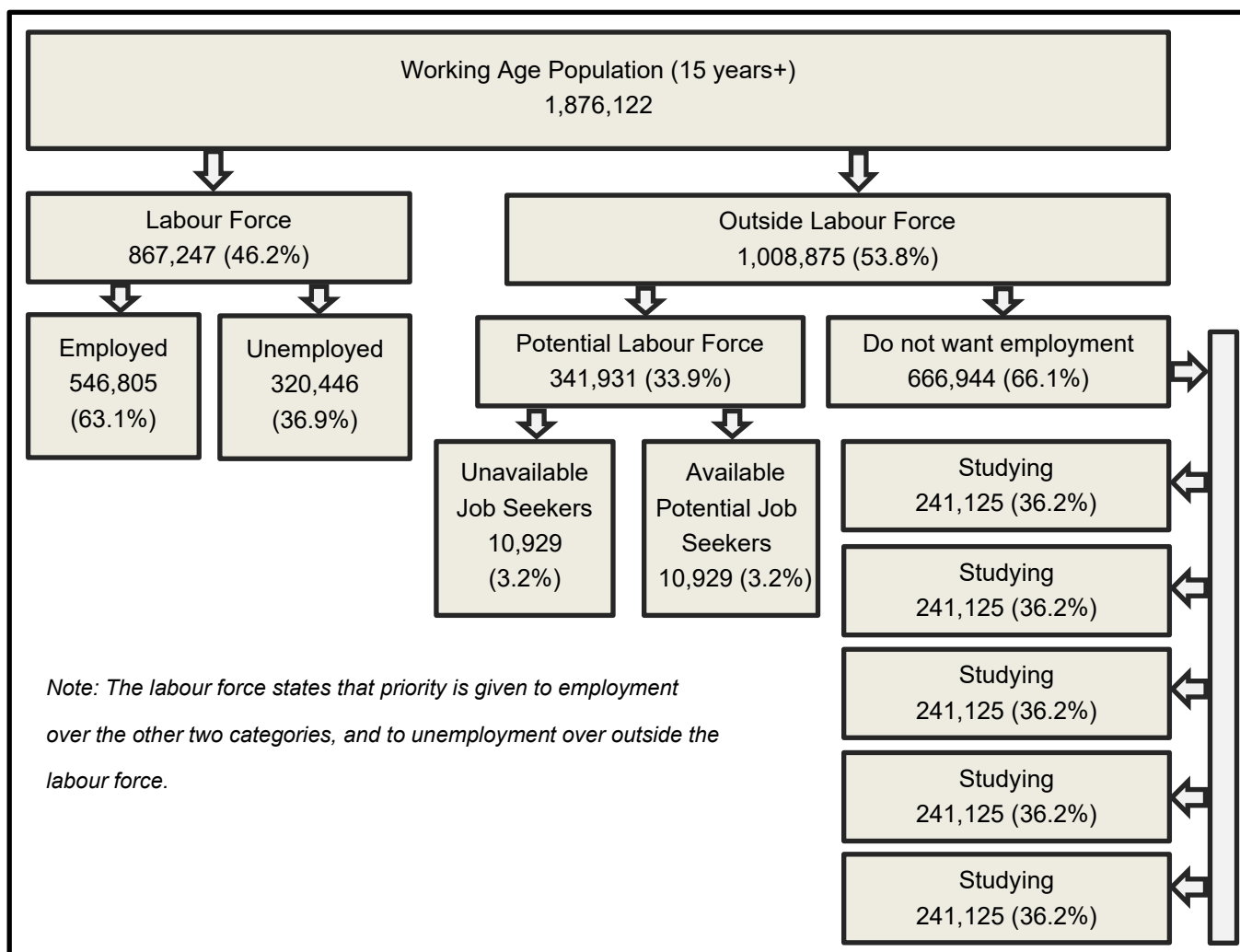


Figure 17: Namibian Labour Force

Table 6 provides some labour force indicators by region and constituency.

Table 6: Unemployment and Youth Unemployment

Region	Population (15 years and above)		Youth (15 – 34 years)	
	Unemployment Rate (UR)	Combined UR and PLF	Youth Unemployment Rate	Combined UR and PLF
NAMIBIA	36.9%	54.8%	44.4%	61.4%
//Kharas Region	29.7%	40.1%	37.9%	48.6%
Karasburg East Constituency	33.6%	47.2%	42.5%	55.4%
Karasburg West Constituency	34.0%	40.8%	40.4%	47.6%

Note: The potential labour force (PLF) refers to people who are available for work but are not actively looking for work.

The data indicates that in terms of the **broad definition of unemployment** (which includes both the unemployed that actively seeks work and those that don't) unemployment in the Karasburg East Constituency (33.6%) is lower than in the Karasburg Constituency (34.0%).

These are both higher than the Region as a whole (29.7%) and very similar to the National rate (36.9%). Broad Youth unemployment levels are very high with 47.6% in Karasburg West and 55.4% in Karasburg East.

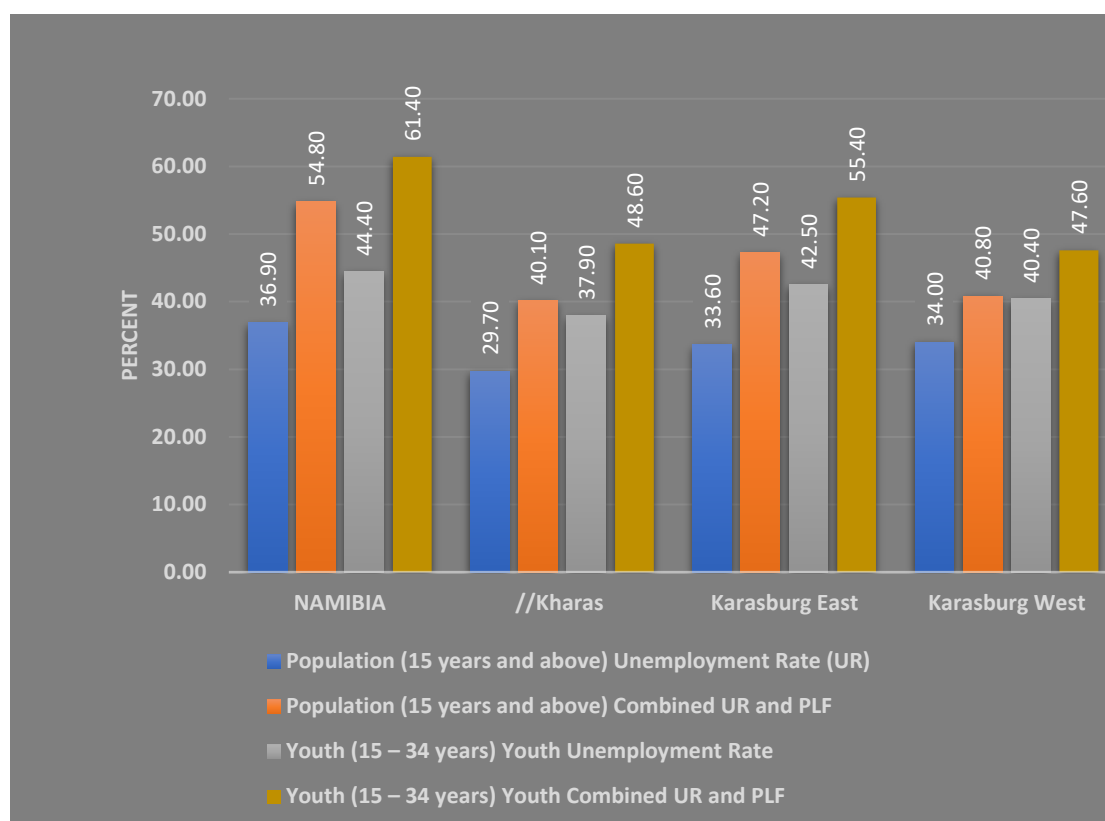


Figure 18: Levels of Unemployment – both Strictly and Broadly defined (Namibia Statistics Agency, 2024b)

Figure 18 shows both strict and broad levels of unemployment for Namibia, the region and the two focus constituencies. It is notable that, despite performing poorly on most demographic and services variables, the Karasburg West Constituency seems to have better employment levels than the Karasburg East Constituency and this is an indication of high levels of poverty despite higher levels of employment, which raises questions about the quality of employment opportunities and remuneration levels.

4.5.3 Household Income

The income that a household earns provides further indication of the well-being of such a household. Household incomes in Namibia, according to the 2023 Population and Housing Census Labour Force Report, is low for the majority of households in the country. Figure 19 provides a comparison between the percentages in each category for all individuals as well as for males and females separately. 45.1% of people earned less than N\$ 3 000 per month (gross) while very few (4.3%) earn more than N\$ 30 000 per month (Namibia Statistics Agency, 2024b)..

The lack of employment growth is the fundamental reason why income inequality has remained high. With low levels of private sector employment growth, Government has pursued a strategy of employing as many people as possible in the public sector (in central, regional and local government and in the public enterprise sector) without jeopardising the country's fiscal position. This has significant implications for public spending and windfalls from SACU, dividends, asset sales, and fishing and mineral rents have all been included in current revenue and spent on consumption rather than invested or used to reduce debt. Public debt has reached almost 70% of GDP as government has borrowed in

local, regional and international debt markets although this ratio is set to fall to nearer 60% by the end of the 2025/26 financial year following the tabling of the national budget in March 2025.

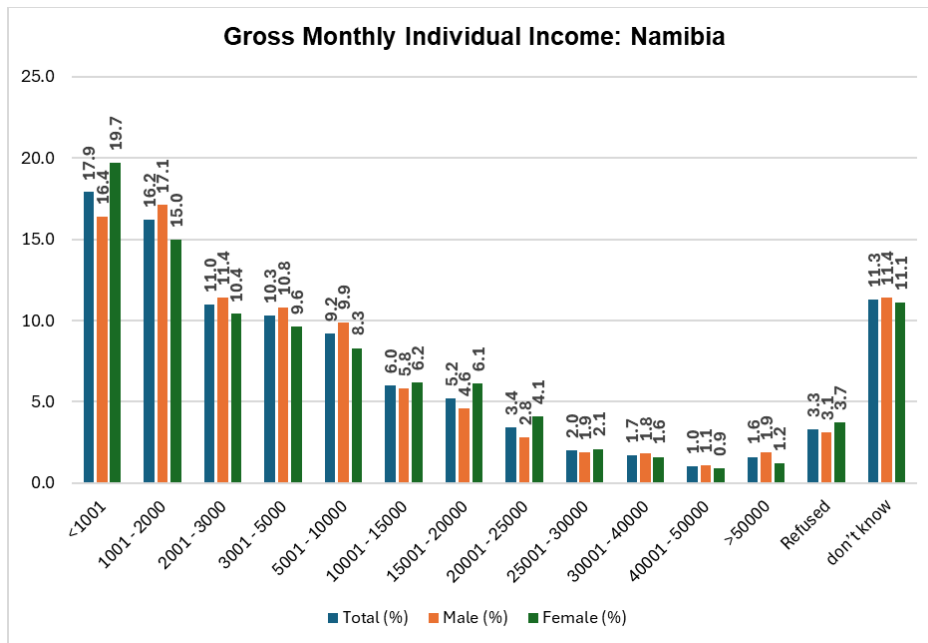


Figure 19: Gross Monthly Individual Income for Namibia

4.6 HOUSING AND LIVING CONDITIONS

According to the 2023 Population and Housing Census, 43.9% of households in Namibia and 57.3% in the //Kharas Region reside in formal dwellings. These include detached houses, semi-detached houses, flats, apartments, cluster houses, and Townhouses. This is higher (63.8%) in the Karasburg East Constituency, but much lower in the Karasburg West constituency at only 17.6%. Of note is the high percentage of households in the Karasburg West Constituency residing in traditional dwellings with another 32.8% of households in the constituency that reside in Informal Structures (Namibia Statistics Agency, 2024a).

Figure 20 shows the dwelling types utilised by households within the //Kharas Region and Karasburg Constituencies, contrasted against the national trend.

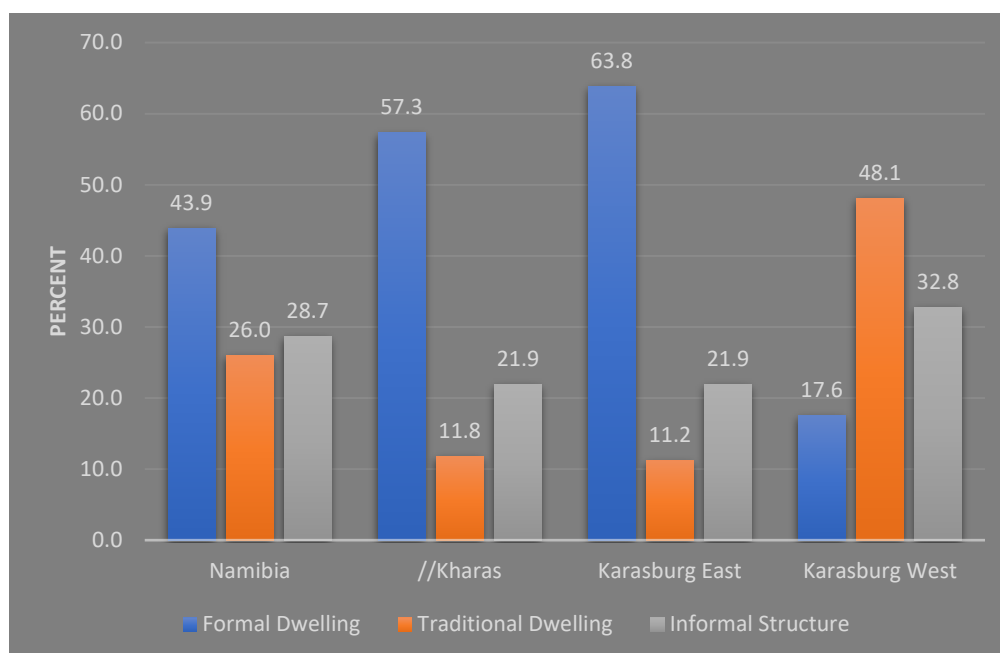


Figure 20: Main Type of Housing by Area

5 SUMMARY OF KEY SOCIO-ECONOMIC OBSERVATIONS AND KEY ISSUES RAISED

5.1 SOCIO-ECONOMIC OBSERVATIONS

5.1.1 Population

- The population in the //Kharas Region grew at a rate of 2.96% per annum between 2011 and 2023 which is very similar to the national growth rate,
- The Karasburg Constituency was divided into Karasburg East and West in between the 2011 and 2023 Censuses. If the numbers for both East and West are combined and compared to 2011, the population of the two constituencies combined grew at a rate of 5.5% per annum, which is faster than any other constituency in the region.
- From the population distribution, the population of the two constituencies are mostly found in Karasburg, Grunau, Noordoewer and Aussenkehr.
- The Age and Sex distribution of the Karasburg West Constituency is vastly different from the other constituencies and points toward working age migratory labour making up a large part of the population. The mean household size is also the lowest of all constituencies at 2.4 persons per household.

5.1.2 Access to Social Services

- There is a primary school in close proximity to the project site in Noordoewer and virtually all schools in the region are located in urban areas.
- The number of learners per school is slightly higher than the national average at 430 per school with a learner/teacher ratio of 24.6 learners per teacher.
- The Khomas region has the highest literacy rate of all regions (95.8%) followed closely by the //Kharas Region at 95.6%.

- The Karasburg West constituency has the highest proportion of people over the age of six (68.56%) who completed secondary school of all //Kharas Constituencies and the region as a whole.
- Health facilities in the //Kharas Region are concentrated in the urban areas with district hospitals in Keetmanshoop, Karasburg and Lüderitz, a private hospital in Oranjemund. Health Centres are in Noordoewer, Bethanie and Aroab. Thirteen more clinics spread across the region completes the picture.

5.1.3 Access to Basic Infrastructure Services

- The Karasburg West Constituency has the poorest access to infrastructure services in almost all aspects.
- It has the lowest use of electricity for cooking and lighting, lowest level of piped water inside the houses, highest percentage of households without access to a toilet and the highest percentage where waste is dumped in the bush.

5.1.4 Employment, Income and Poverty

- The incidence of multidimensional poverty in the //Kharas Region is the second lowest of all regions in the country (19.6%) with only the Erongo Region being better off with 16.6%. Poverty intensity levels in the //Kharas Region is the lowest of all regions in Namibia at 39.4%.
- Youth unemployment in both the Karasburg Constituencies are higher than 40%.
- Using the broad definition of unemployment, youth unemployment in the Karasburg East constituency is 55.4% while it is 47.6% in the Karasburg West Constituency.

5.1.5 Housing and Living Conditions

- Housing in the Karasburg West Constituency has significantly more households living in traditional type dwellings and in informal structures than in the other constituencies of the region. This is likely due to the seasonal nature of employment in agriculture in the constituency.

5.2 KEY ISSUES AND VIEWS RAISED BY STAKEHOLDERS

A number of key concerns related to the socio-economic impacts of the Haib Copper Project were raised by stakeholders during the consultation process. These are considered in the SIA and are summarised below, grouped by topic.

5.2.1 Local Employment and Procurement

Stakeholders raised the following key issues and observations in relation to **local employment and procurement**:

- An expectation that the project will benefit the local population in the sense that employment opportunities will be created and be available to local people wherever possible.
- How would benefits reach local people.
- Concern that the project will serve as just another commodity through which copper will be mined and exported without any value addition to benefit to the Namibian economy.
- Concern that the project would not align with the social development priorities of Government.

- Opportunities for local suppliers and SMEs must be secured and enhanced throughout the project life-cycle through a suitable procurement process and large companies must not be allowed to bypass them.

5.2.2 Agriculture, Tourism and Livelihoods

On land use arrangements for these various activities:

- People are worried about the co-existence of farming and mining.

5.2.3 Education and Skills Development

The following key issues and observations in relation to education and skills development were raised:

- Concern that local residents and youth may not have the skills required to be employed by the mine and questions about what can/will be done to prepare young people for future mining related jobs.
- Practical training opportunities and empowerment programmes will be essential for ensuring long term benefits of the project.
- There is a need for bursaries and professional training to allow youth to become engineers, geologist and managers.

5.2.4 Water Consumption and Pollution

With an economy built around irrigation agriculture, water abstraction and consumption was an important issue and the following broad issues were raised:

- Concern that if the water for mining activities is abstracted from the Orange River, it may result in not enough water being available to serve current water abstraction rights and permits, even if some are not used at the moment.
- Farmers stressed that the Orange River water was already overallocated and that environmental flow must be maintained at all cost.
- Concerned about the contamination risks the mine may have on water quality.

5.2.5 Transport and Logistics

The transportation of the concentrate is likely by road and people were concerned about:

- The potential traffic and safety impacts of transporting concentrate to the port of Lüderitz.

5.2.6 Safety and Mine Closure

Various issues of concern centre around health, physical danger, mine closure safety and socio-economic implications for employees:

- Community health safeguards must be put in place to protect the local people.
- Concern about the dangers of an open pit mine to surrounding communities.
- Concern that the mine footprint will become unsafe after mine closure unless it is planned properly.
- Socio-economic effects of mine closure at end of life of the mine i.e. what would happen to the workers.

5.2.7 Population Influx and Housing Shortages

People believe that the development will lead to an influx of people with resultant pressure on resources:

- Realisation that the development is likely to cause increased influx to the area with the resultant concerns of how they will be accommodated and how services will be provided and managed to prevent chaos. Emphasised an existing severe housing shortage in Noordoewer.
- Housing rental costs have already escalated substantially and seasonal farmworkers also contribute to the demand outstripping the availability of rental accommodation.
- Any infrastructure provided under the project must comply with Namibian specifications to ensure it is high quality and durable.

5.2.8 Increased Social Pathologies

The community is already plagued by social pathologies and it is likely to increase with a population influx and growth of the town.

- Alcohol and drug abuse are likely to increase, especially if expectations are created and then left unmet.
- With more influx, possibly of single men, people fear that teenage pregnancies are likely to increase. Young females in Noordoewer remain susceptible to wealthy, influential men.

5.2.9 Protection of Cultural and Sacred Sites

- While no specific overlapping sites are known, the importance of grave sites, ceremonial areas and intangible cultural heritage must be acknowledged and protected.

5.2.10 Land Rights and Access

The EPL is located on government-owned land but there are some farming activities, particularly at Haibmund, where people have been farming for decades.

- Fear that communal land rights, if applicable in this case, or other common use rights may not be respected.

5.2.11 Social Services

Influx and population growth that will result from the mine development will:

- Cause more pressure on social services such as schools and health facilities.
- CSR investments may be used to mitigate such pressure through infrastructure investment.

6 ASSESSMENT OF IMPACTS

6.1 Impact Assessment Methodology

The adequate assessment and evaluation of the potential impacts and benefits that may be associated with a proposed project necessitates the use of a scientific method that can reduce the subjectivity involved in making such evaluations. This assessment uses a simple, clearly defined method in order to accurately determine the significance of a predicted impact on, or benefit to, the surrounding social environment.

The purpose of impact assessment is to identify and evaluate the likely significance of potential impacts on identified receptors and resources according to defined assessment criteria, to develop and describe measures that will be taken to avoid, minimise, reduce or compensate for any potential adverse effects, and to report the significance of the residual impacts that remain following mitigation.

The impact significance rating system used for this assessment is based on the following equation:

Significance of Social Impact = Consequence x Probability

The consequence of an impact can be derived from the following factors:

Severity / Magnitude – the degree of change brought about in the environment

Reversibility - the ability of the receptor to recover after an impact has occurred

Duration - how long the impact may be prevalent

Spatial Extent - the physical area which could be affected by an impact.

The **severity, reversibility, duration, and spatial extent** are ranked using the criteria indicated in Table 2 in **Appendix A** and then the overall consequence is determined by adding up the individual scores and multiplying it by the **overall probability** (the likelihood of such an impact occurring). Once a score has been determined, this is checked against the **significance** descriptions indicated in Table 3 in Appendix A.

Following the assessment, consideration is given to how the impacts can be mitigated or enhanced, whereafter the assessment is repeated with due consideration of the effect of the mitigation measures on the significance of the impact.

6.2 ASSESSMENT OF MACRO-ECONOMIC IMPACTS

6.2.1 Contribution to Gross Domestic Product (GDP)

GDP is the monetary measure of the total market value of all the goods and services produced in a country in one year. The GDP of a country can be broken down into the contributions to GDP by sector, industry or activity. In assessing the social and economic impact of a new venture such as a mine, the contribution it makes to the economy is an important impact to be considered.

6.2.1.1 Impact Description

To estimate the gross value that an industry or activity contributes or adds to an economy, a formula that adds together wages, profits and depreciation can be used. Alternatively, the gross sales (revenue) of an industry less intermediate consumption can be used to approximate the value that the industry or activity adds to the economy. Intermediate consumption can be defined as the cost of goods and services, such as raw materials, utilities, services, contractors, etc., used to produce the final product.

Normally, these figures would be available from the financial statements of an industry or activity but in this case where the industry or activity is under planning and feasibility, estimates from the economic assessment and feasibility studies provide the only basis upon which the Gross Value Addition can be estimated. For this assessment, the estimates contained in the Preliminary Economic Assessment for the Haib Copper Project (PEA) prepared by Koryx Copper Inc. were used for the gross sales figures and to estimate the intermediary consumption for the project. Gross sales were sourced from the annual cash flow calculations while intermediary consumption was calculated as the costs of contractor mining in total, and the cost of labour, power, water and consumables for the 40 Mtpa Concentrator Plant and the 3-7 Mtpa Hydrometallurgical Plant.

Based on the calculations, averaged out per annum over the 33 year life of mine (LOM), the project will contribute **N\$ 3.597 billion** per annum to the Namibian GDP at an assumed copper price of N\$ 175 000 per ton and a N\$/US\$ exchange rate of 16.5. With GDP at N\$ 245,097 billion in 2024, (Namibia Statistics Agency, 2025) this equates to an increase of 1.47% in GDP as a result of the project in year one. This will obviously decline as GDP grow at an assumed 3% per annum (excluding the contribution of the project) to a contribution of about 0.58% in year 33. It must also be noted that the contribution is not linear and is likely to be less during the first few years and then increase during peak production and then decline during the last few years of production.

6.2.1.2 Impact Assessment

- **Severity/Magnitude**

The potential impact (benefit) of the project on the Namibian economy is deemed as **moderate magnitude (3)** since the contribution of the project to the Namibian GDP potentially adds 10.28% to the current N\$ 35 billion contributions to GDP by the entire mining sector.

- **Reversibility**

Should the activity be developed, the impact on the Namibian economy is rated as **Irreversible (5)**. The contribution to government income and revenue is likely to continue throughout the life of the project.

- **Duration**

Benefits would persist over the **long-term (4)** from project construction to decommissioning, albeit to varying degrees depending on the production profile, local procurement and contributions and other factors.

- **Spatial Extent**

Benefits would extend **nationally (4)** as the economy as a whole would benefit.

- **Probability**

The probability that the impact will occur if the project is developed is rated as **high (4)** because there are certain risks such as fluctuations in the price of copper, production problems and delays, etc. that may prevent, lessen or improve the positive impact.

- **Consequence**

•Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
2 – Low	5 – Irreversible	4 – Long Term	4 – National	4 – High

The overall consequence of the impact is calculated to be 60 $\{(2+5+4+4) \times 4\}$, which is a **positive impact of high significance**.

6.2.1.3 Enhancement Measures

It is not normally within the control of an industry or activity to influence contributions to GDP simply because there are many variables outside the control of the proponent. In general, an increase in the value of gross sales and/or a reduction in intermediate consumption could increase the contribution to GDP. However, the assumptions provide the basis of calculation and represent the most likely scenario.

6.2.1.4 Residual Impact Consequence

Since enhancement measures are not applicable because the impact is based on the best possible scenario, the residual impact remains positive and of high significance.

6.2.2 Taxes and Royalties

A project such as the Hiab Copper project will be required to pay royalties and export levies to the Namibian Government. In addition, normal income tax at a rate of 37.5% on net profit can be expected with the proviso that deductibility and depreciation allowances will likely reduce the effective rate and development capital expended prior to production is depreciated over a three-year period from the time that first revenue is produced

6.2.2.1 Impact Description

The PEA estimates the royalties and export levies to amount to an average of N\$ 406.5 million per annum varying between a lower N\$ 276 million in the first year to a higher N\$ 654 million in the peak production years. Tax becomes payable after the recoupment of capital expenditure, (which will take between 3 and 4 years) and is estimated to vary between N\$ 1.3 billion and N\$ 2.462 billion with an average of N\$ 1.36 billion per annum from year 4. To put this into perspective, the total government revenue for Namibia in 2024 stood at N\$ 91,858 billion (Namibia Statistics Agency, 2025) and grew at a mean rate of 9.1% over the past 5 years. This means that, based on the 2024 general government income, the project will contribute an additional N\$ 1.643 billion or 1.79% per annum to government income.

6.2.2.2 Impact Assessment

- **Severity/Magnitude**

The potential contribution of the project to government income is deemed of **low magnitude (2)** since the contribution of the project to income of government adds 1.79% to the current N\$ 91,858 billion of 2024 government income.

- **Reversibility**

Should the activity be developed, the impact on Government income is rated as **Irreversible (5)**. The contribution government income as assessed is likely to continue throughout the life of the project

- **Duration**

Income from tax, royalties and levies would persist over the **long-term (4)** from project construction to decommissioning but it may vary annually depending on production and market factors.

- **Spatial Extent**

Benefits would extend **nationally (4)** as the economy as a whole would benefit.

- **Probability**

The probability that the impact will occur if the project is developed is rated as **high (4)** and not definite because supply and demand factors and market conditions may influence the profitability of the venture.

- **Consequence**

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
2– Low	5 – Irreversible	4 – Long Term	4 – National	4 – High

The overall consequence of the impact is calculated to be 60 $\{(2+5+4+4) \times 4\}$ which is a **positive impact of high significance**.

6.2.2.3 Enhancement Measures

The more successful the venture, the higher the benefit to government income. If the profitability of the venture can be enhanced, it would also result in an increase in government income. It can be assumed that the operators of the proposed Haib Copper mine will strive to maximise profit as an internal objective, thereby also enhancing the impact of the project on government income through the income tax it must pay. Royalties and levies are paid irrespective of profit and can only be increased through increased turnover. Enhancement measures are therefore not

6.2.2.4 Residual Impact Significance

Since enhancement measures are not applicable because the impact is based on the best possible scenario, the residual impact remains positive and of high significance.

6.2.3 Contribution to Exports and Trade Balance

The current distribution of exported goods and services by type is provided in Figure 21 below. Metal ores, including Uranium, made up 36% of all exported goods and services in 2024 to a total value of N\$ 32.145 billion.

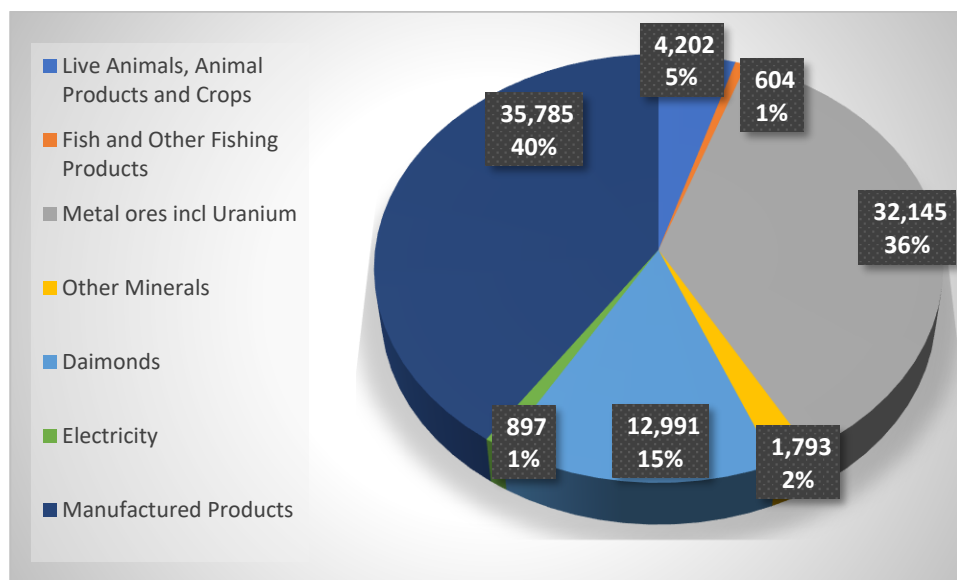


Figure 21: Export of Goods and Services 2024 (N\$ Millions)

6.2.3.1 Impact Description

According to the PEA, it is the intention of the project proponent to export all production from the mine. The value of the copper concentrate and copper cathode exported (copper cathode should strictly speaking be classified under manufactured products) would be about N\$ 11.395 billion per annum on average over the LOM. This is a substantial contribution to export earnings and would increase export earnings by 12.89% and the contribution of metal ores and uranium from 36% to 43.6%.

The total value of imported goods and services (at current prices in 2024) stood at N\$ 166,6 billion, exceeding total exports of N\$ 78 billion. The contribution of the project to export earnings can reduce the trade deficit by about 14.57%.

6.2.3.2 Impact Assessment

- **Severity/Magnitude**

The potential contribution of the project to exports and strengthening the trade balance is deemed of **low magnitude (2)** since the project could potentially increase overall export earnings by 12.89% and reduce the trade deficit significantly (but less than 20%).

- **Reversibility**

Should the activity be developed, the impact on the Namibian economy is rated as **Irreversible (5)**. The contribution to the value of exports and improvement in the trade balance is likely to continue throughout the life of the project.

- **Duration**

The increase in exports and improvement in the balance of trade is likely to persist over the **long-term (4)** from project construction to decommissioning but it will vary according to actual annual exports.

- **Spatial Extent**

Benefits would extend **nationally (4)** as the economy as a whole would benefit.

- **Probability**

The probability that the impact will occur if the project is developed is rated as **definite (5)**

- **Consequence**

•Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
2– Low	5 – Irreversible	4 – Long Term	4 – National	5 – Definite

The overall consequence of the impact is calculated to be 75 $\{(2+5+4+4) \times 5\}$ which is a **positive impact of high significance**.

6.2.3.3 Enhancement Measures

Enhancement measures are not applicable in the impact assessment sense since it coincides fully with the objectives of the operator (and any operator for that matter) to maximise production.

6.2.3.4 Residual Impact Significance

Since enhancement measures are not applicable because the impact is based on the best possible scenario, the residual impact remains positive and of high significance.

6.3 ASSESSMENT OF SOCIAL AND MICRO ECONOMIC IMPACTS

6.3.1 Local Employment and Income from Procurement

6.3.1.1 Impact Description

The creation of employment can be divided into the construction phase and operational phase. It is estimated that about 3,500 - 5000 direct employment opportunities will be created during the construction phase which will last for about 2 - 3 years while about 1 350 indirect employment opportunities can be expected during the operational phase of the project. It is assumed, for this assessment. That construction will last for two years and will create 5 000 direct employment opportunities during that period.

However, a project such as the Haib Copper mine has a wider impact on employment creation and indirect and induced jobs are invariably created. Based on information in the 2024 Annual Review of the Chamber of Mines in Namibia, the current mines that are in operation in the country produce 10 169 direct jobs and 9 094 indirect jobs (through contractors) (Chamber of Mines of Namibia, 2024). This is 0.89 indirect jobs for every direct job. However, a project such as this can also be expected to create induced jobs. These are jobs that will be generated by income generated by the mining activity being spent in the local economy on items such as accommodation, retail, food, information technology, accounting, etc.

Estimates of the ratio of direct jobs to induced jobs vary between 2 to 10 indirect and induced jobs for every mining job created. In order not to overestimate the extent of induced jobs created, this assessment assumes that two indirect and induced jobs will be created per direct job. With the Namibia Chamber of Mines statistics indicating 0.89 indirect jobs per direct job, it is assumed that 1.10 induced jobs will be created for each direct job. It is therefore anticipated that, as a conservative estimate, the Haib Copper project will create 3 500 to 5 000 direct jobs, **during the construction phase**. However, because of the short duration, indirect and induced jobs will be proportionately less than during the operations phase with 2 500 indirect and 3000 induced jobs estimated. **During operations**, there will be 1 350 direct jobs, 1 202 indirect jobs and about 1 485 induced jobs. Most of these employment opportunities will be in the semi-skilled and higher categories.

According to the data in the 2023 Labour Force Report, a total of 4 699 people in the Karasburg East Constituency and 9 420 people in the Karasburg West Constituency were employed at the time of the Census (Namibia Statistics Agency, 2024b).

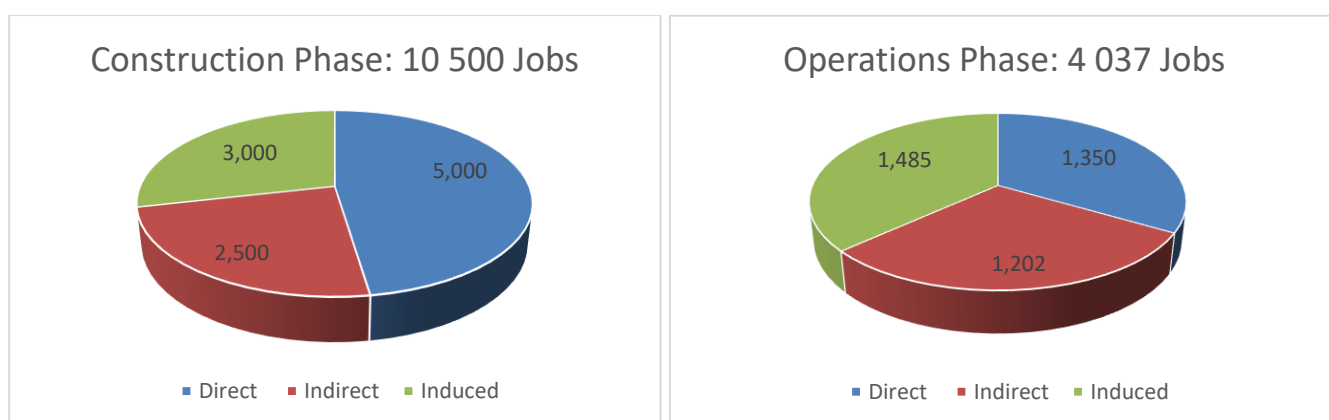


Figure 22: Anticipated Direct, Indirect and Induced Jobs from the Haib Copper Project.

The additional employment opportunities that will be generated by the project during construction will add 10,500 jobs to the existing 14,119 jobs that were filled in these two constituencies in 2023. This is an increase of 74% in the jobs that existed at the time and will last for the 2 years of construction.

Thereafter, there will be a reduction in jobs during the 33 years of operation to 4 037 jobs, representing a 28.59% increase from existing employment opportunities in the two constituencies.

6.3.1.2 Impact Assessment

- **Magnitude**

The magnitude of the impact of the project on providing jobs in an environment where unemployment is high is rated as **moderate (3)** because the project would add between 40% and 60% to existing jobs in the project area of impact.

- **Reversibility**

Should the activity be developed, the impact on the generation of employment opportunities is rated as **Irreversible (5)**. The contribution to employment and improved livelihoods is likely to continue throughout the life of the project.

- **Duration**

The increase in employment opportunities during the construction phase is short terms but operation based employment creation is likely to persist over the **long-term (4)** and only end on decommissioning.

- **Spatial Extent**

The benefits of the additions to employment opportunities will largely be **regional (3)** extending beyond 2km from the site and it will mainly be Noordoewer and its residents and the Karasburg West and Karasburg East Constituencies that will benefit.

- **Probability**

If the project is implemented, the probability of the impact occurring is rated as **definite (5)**

- **Consequence**

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
3– Moderate	5 – Irreversible	4 – Long Term	3 – Regional	5 – Definite

The overall consequence of the impact is calculated to be 75 $\{(3+5+4+3) \times 5\}$ which is a **positive impact of high significance**.

6.3.1.3 Enhancement Measures

During the public engagements, residents expressed a concern that they may not be able to access the opportunities presented by the project due to a lack of knowledge, lack of skill or the failure of the procurement process. They were clearly pleading for an undertaking or assurance that as many local people as possible will be employed on the project and that the project proponent will contribute towards enabling local residents with the required ability to qualify for the jobs offered on the project. The Government of Namibia is currently undertaking the compilation of a local content policy and the project proponent is committed to compliance with this policy.

With respect to the employment of contractors, residents were also worried that large contractors bring their own people from elsewhere and that little is left for locals to pursue in the form of contracts for local SMMEs and other small businesses. People also worried that they will not know of opportunities and by the time they become aware of it, posts have already been filled and contracts already awarded.

The impact assessment assumed conservative employment multiplier effects and the impact of employment creation and income from local procurement can be enhanced through ensuring that

people know about employment and contracting opportunities, that they understand the skill and experiential requirements for employment or small and larger scale contracting and that they have the basic knowledge to access the opportunities. The following specific actions will further enhance the impact:

- Establish a **dedicated information portal** for the project that can be accessed easily by phone, tablet or computer. This information portal should contain:
 - information of all the job categories with the qualifications required to access those jobs;
 - provide an indication of the number of jobs per category that will be required;
 - an indication of where such qualifications can be obtained;
 - notification of all vacancies and application detail;
 - notification of all upcoming procurement of contractors or services with requisite tender detail; and
 - clear explanations of required standards of performance, compliance and qualification.
- Develop a project-level **local content policy** with clear guidance, requirements and monitoring mechanisms to ensure that the proponent and its contractors are obliged to include local content in their tender offers and their teams. Care must be taken that such obligations are not framed in a way (such as “if possible”) that provides an “easy out” for contractors by claiming that no suitable compliant local content could be found. It must also include a component of capacity building where skill and experience levels of local companies are improved. In addition, the Local Content Policy should make specific provision for employment of people without formal qualifications, especially those from vulnerable groups and communities.
- Develop and implement a Responsible Mining Plan, which should routinely be updated throughout the Life of Mine .

6.3.1.4 Residual Impact Consequence

If the enhancement measures can be implemented successfully it is likely that the multiplier effect will increase to more common levels and that the magnitude will increase to **high (4)**

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
4– High	5 – Irreversible	4 – Long Term	3 – Regional	5 – Definite

The overall consequence of the impact after enhancement is calculated to be 80 $\{(4+5+4+3) \times 5\}$ which is a **positive impact of high significance**.

6.3.2 Education, Training and Skills Development

6.3.2.1 Impact Description

Neither in the project description nor during the public consultation process were detail provided about structured training, skills development and empowerment of local people, the youth and women as part of the project activities. Education officials stressed the need for bursaries and professional training to enable the youth to become engineers, geologists and managers. However, it was made clear that Koryx Copper could not at this stage commit towards specific programmes but it was confirmed several times that bursary schemes and training initiatives will form part of the social development planning if the project proceeds. It was stated that a skills mapping exercise will be undertaken, with training opportunities linked to mining requirements.

Data from the Chamber of Mines (Chamber of Mines of Namibia, 2024) indicate that mining development does contribute greatly to education and skills development as evidenced in the direct and indirect employment opportunities captured by local Namibians and it is implied that people were also trained and upskilled to fill those positions. The impact is positive and rated as follows:

6.3.2.2 Impact Assessment

- **Magnitude**

The magnitude of the impact of the project on providing education, training and skills development in an environment where broadly defined unemployment is higher than 40% and youth unemployment higher than 47% in the region and the two constituencies is rated as **low (2)** because the detail of education, training and skills development programmes have not been spelled out. Nevertheless, the University of Namibia and the various vocational training institutions in the country concentrates on providing skills for the mining sector and these are easily accessible.

- **Reversibility**

The impact of the project on training and skills development is rated as **Irreversible (5)**. Once people are trained and provided with a set of skills it can never be taken away.

- **Duration**

Once people are empowered with new skills through education, training and mentoring, the impact will be **permanent (5)** and will endure way beyond the life of the project.

- **Spatial Extent**

The reach of education, training and skills development programmes is likely to be **national (4)** and available to residents of Namibia.

- **Probability**

Without detail about structured training programmes, bursaries, shadowing opportunities and other training modalities, the probability is rated as medium with a 60% probability that it will occur.

- **Consequence**

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
2– Low	5 – Irreversible	5 – Permanent	4 – National	3 – Medium

The overall consequence of the impact is calculated to be 48 $\{(2+5+5+4) \times 3\}$ which is a **positive impact of moderate significance**.

6.3.2.3 Enhancement Measures

While it is acknowledged that the potential positive impact is high, commitment is needed to increase the significance of the impact of training and skills development. In order to reduce uncertainty about the probability of the project actually providing the needed support to get people educated, trained and upskilled, inclusive of financial support, more work is required at an early stage to at least prove a broad framework and perhaps a policy on how training and skills development will be approached and managed once the project is implemented.

The following will help to enhance the impact and increase its probability rating:

- Undertake a skills mapping exercise to understand the existing skills and define the skill deficit in detail by sector or job category/type.

- Prepare a training and skills development framework which details how employees will be identified, enabled to undergo suitable training and accommodated in the workforce.
- Compile and publish a detailed inventory of employment opportunities for people with fewer skills and lower education levels to enable those people (who are often marginalised, vulnerable and not empowered to navigate the modern communication and social media) to find jobs and training opportunities. Such information should be published through an easily accessible format that does not require computer or smart phone hardware, perhaps with a community liaison officer.

6.3.2.4 Residual Impact Consequence

Implementation of these enhancement measures is likely to increase confidence in the commitment of the project proponent to training and skills transfer and will increase the magnitude to **moderate (3)** and the probability to **high (4)**.

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
2– Low	5 – Irreversible	5 – Permanent	4 – National	3 – Medium

The overall consequence of the impact **after mitigation** is calculated to be 68 $\{(3+5+5+4) \times 4\}$ which is a **positive impact of high significance**.

6.3.3 Impact of Population Influx on Noordoewer

The Constitution of the Republic of Namibia guarantees freedom of movement and the freedom to stay where one chooses. Namibians are therefore free to migrate to wherever they want and where they can best ensure or enhance the quality of their livelihoods. High levels of unemployment, especially amongst the youth, support the propensity of residents to migrate to the places where they see the best potential to make a good life for themselves.

6.3.3.1 Impact Description

The impact is likely to occur to the same extent during **both the construction and operation phases** of the project. The settlement of Noordoewer is already under pressure from population growth and have been unsuccessful in accommodating its current population in a planned and serviced urban environment. The demand for housing already outstrips supply and not enough infrastructure is in place to provide the required utility services. Planning and proclamation of new erven in the settlement has taken years and falls short of demand.

Once a decision about the development of the mine becomes known it is certain that people will move to Noordoewer to position themselves favourably to capture direct, indirect and induced jobs that may become available. This has happened virtually everywhere where news about mining employment becomes public. The situation in Karibib is a good example where the town is overwhelmed by migrants who settle in shacks in informal settlements on the hope of finding employment. In fact, most towns where there are growing economic activity experiences the same trend.

This assessment deals specifically with the impact of population influx on Noordoewer and the social and infrastructure services of the settlement while the impact of influx on the social fabric is dealt with separately. Noordoewer has a primary school and a clinic. During the public consultation, people were concerned that company programmes will not align with government social development priorities, emphasised the need for broader, structured and sustained community development programmes that

address the total spectrum of needs, and listed a number of social service and infrastructure needs such as improved water supply, a school bus, a community hall and sport facilities.

The current services and facilities are barely able to serve the existing residents and population influx will put further pressure on these resources. In addition, Noordoewer is a settlement that is managed by the //Kharas Regional Council via a settlement office with too few staff to handle any additional pressure.

6.3.3.2 Impact Assessment

- **Severity/Magnitude**

The severity of the impact of population influx and pressure on resources and services is rated as **high (4)** because the uncontrolled influx that may occur is able to change the characteristics of life in Noordoewer dramatically. It could easily become a large sprawling informal settlement. The population pyramid of the Karasburg West Constituency clearly shows that such population influx already puts pressure on Noordoewer as a result of seasonal work availability in the agriculture sector.

- **Reversibility**

Population influx hardly ever reverses and people will generally stay on in the place to where they relocate in search of employment and a better life. The reversibility is rated as **recoverable (3)** because people would, albeit with some difficulty, adapt and maintain pre-impact livelihoods but only with support and intervention.

- **Duration**

The impact duration is assessed as **medium term (3)** with a duration of between 5 and 15 years. Population influx into areas where such projects are developed tapers off over time as more information about assumed opportunities become available and unrealistic expectations are expelled.

- **Spatial Extent**

The spatial extent is rated as **local (2)** extending to Noordoewer, which is the most directly affected urban area.

- **Probability**

The probability that the impact will occur is rated as **high (4)** with an 80% likelihood that it will occur.

- **Consequence**

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
4– High	3 – Recoverable	3– Medium term	2 – Local	4 – High

The overall consequence of the impact is calculated to be 48 {(4+3+3+2) x4} which is a **negative impact of moderate significance**.

6.3.3.3 Mitigation Measures

The only effective way in which to deal with these impacts is to understand the potential levels of influx and the demand for land required by the project and to prepare for it. The preparation of an Urban Structure Plan can go a long way to help with the planning to accommodate the growth in activity and population.

The missing link is likely to be the financial resources required to actually implement the land development programmes and the authority needs to seek support from government to help accommodate the growth of an important industry for the //Kharas Region and the Karasburg West

and East Constituencies. If the settlement, with the assistance of government, can plan ahead and ensure that suitably zoned land is planned and developed to accommodate the additional demand, the significance of the impact can be reduced to low.

The following measures are recommended for implementation by the operators:

- Provide the Regional Council and Settlement Office with forward-looking information on project implementation, planning and resource requirements throughout the project to support effective local planning.
- The proponent should coordinate with ministries and NGOs to ensure alignment with government's social and infrastructure development priorities and avoid creating parallel systems. Social engagement and partnerships should be formed to ensure alignment and coordination. A broad framework for such coordination and cooperation should be developed as an important first step. This should be done through the preparation of an Influx and Impact Management Plan and followed up with an Integrated Spatial Development Framework to guide urban development to accommodate the anticipated influx.
- Develop a project wide grievance mechanism which provides recourse to any person, stakeholder or resident to register a grievance on any matter or impact, positive or negative, that may influence them and that require attention or resolution. Such a grievance mechanism must clearly indicate how and where grievances can be registered, how it will be processed objectively, how the result will be communicated and how it can be appealed.

6.3.3.4 Residual Impact Consequence

If these mitigation measures are implemented the severity of the impact will reduce to **moderate (3)** and the duration likely to decrease to **short term (2)** and endure for up to five years. Spatial extent and probability remain the same.

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
3– Moderate	3 – Recoverable	2– Short term	2 – Local	4 – High

The overall consequence of the impact after mitigation is assessed to be 40 $\{(3+3+2+2) \times 4\}$ which remains a **negative impact of moderate significance**.

6.3.4 Social Pathologies

6.3.4.1 Impact Description

Noordoewer and Aussenkehr are already subject to substantial in-migration of people in the productive age groups. This is evident in the age and sex distribution of the Karasburg West Constituency. During the public consultation and the social assessment meetings in Noordoewer, residents and leaders indicated that the settlement already experiences severe social pathologies, most notably, teenage pregnancies (which have been decreasing as a result of focussed attention), high levels of drug and alcohol abuse amongst the youth, gender-based violence and prostitution disguised as relationships between young (often underaged) girls with older men.

Members of the Constituency Development Committee (CDC) raised concerns that these could worsen with an influx of workers and people in search of employment once the project commences. The impact is likely to occur to the same extent during **both the construction and operation phases** of the project.

6.3.4.2 Impact Assessment

- **Severity/Magnitude**

The severity of the impact of population influx on social pathologies is rated as **moderate (3)** because the uncontrolled influx that may occur is able to contribute substantially to social pathologies if left unchecked.

- **Reversibility**

The reversibility is rated as **recoverable (3)** because people would, albeit with some difficulty, adapt and maintain pre-impact level conditions but only with support and intervention from outside and from the project.

- **Duration**

The impact duration is assessed as **long term (4)** and will continue for the life of the project. New workers and migrants will continue to move in and out of the area and constant intervention is required to maintain awareness raising and community development initiatives to curb the social pathologies identified.

- **Spatial Extent**

The spatial extent is rated as **local (2)** extending to Noordoewer, which is the most directly affected urban area.

- **Probability**

The probability that the impact will occur is rated as **high (4)** with an 80% likelihood that it will occur.

- **Consequence**

•Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
3– Moderate	3 – Recoverable	4– Long term	2 – Local	4 – High

The overall consequence of the impact is calculated to be 48 $\{(3+3+4+2) \times 4\}$ which is a **negative impact of moderate significance**.

6.3.4.3 Mitigation Measures

The project proponent can realistically be expected to contribute in two ways, firstly by exerting an influence over the direct mine employees and contractor staff and secondly by assisting the Noordoewer community to deal with the social pathologies plaguing the community. The following measures are required:

- Develop a substantial part of housing for mineworkers in Noordoewer to enhance the sustainability of the town and ensure long term community building which can extend beyond the life of mine.
- Develop a code of conduct for employees and contractors to be used during both the construction and operation phases of the project to guide the behaviour of employees and contractors with respect to involvement in alcohol and drug abuse and transactional sexual relationships. While this is unlikely to succeed by itself, it at least provides an avenue to the project proponent to deal with staff that cause problems in the host community.
- Utilise the general grievance redress mechanism developed for the project to enable the community to record grievances related to staff involvement in social ills and enable the project proponent to deal with these issues through the correct and designated channels.

- Prepare a community development support framework whereby targeted CSIs can be provided to the community to deal with social pathologies through training, awareness raising and development programmes to help community members commit to responsible community life and respectful and acceptable social behaviour.

6.3.4.4 Residual Impact Consequence

If these mitigation measures are implemented the severity of the impact will reduce to **low (2)** and the duration will decrease to **medium term (3)** and endure for up to fifteen years. Spatial extent and probability remain the same.

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
2– Low	3 – Recoverable	4– Long term	3 – Regional	4 – High

The overall consequence of the impact after mitigation is assessed to be 48 $\{(2+3+4+3) \times 4\}$ which remains a **negative impact of moderate significance**.

6.3.5 Agriculture and Land Rights

6.3.5.1 Impact Description

Figure 23 provides the detail about the farms over which EPL 3140 is registered. These are Tsams No 360, Withoek No 387, Devillierspunt No. 353 and Farm Rem 462. All of these farms are owned by the state and no communal or commercial land rights have been allocated over these farms. However, there is a number of farmers who graze their livestock, mostly sheep and goats, on the all three of these farms. A dedicated meeting with the farmers revealed that they have been using the land for grazing and other farming purposes for many years, yet without any form of authorisation or permit from the government, with the most significant activities occurring in the vicinity of Haibmund, the confluence of the Haib and Orange rivers. There has already been conflict between the farmers and the EPL holder due to damage caused to water infrastructure to obtain water for livestock. A number of local farmers have been farming there for many years with some substantial cultivation activities (which have now ceased), livestock keeping, fishing and a piggery.

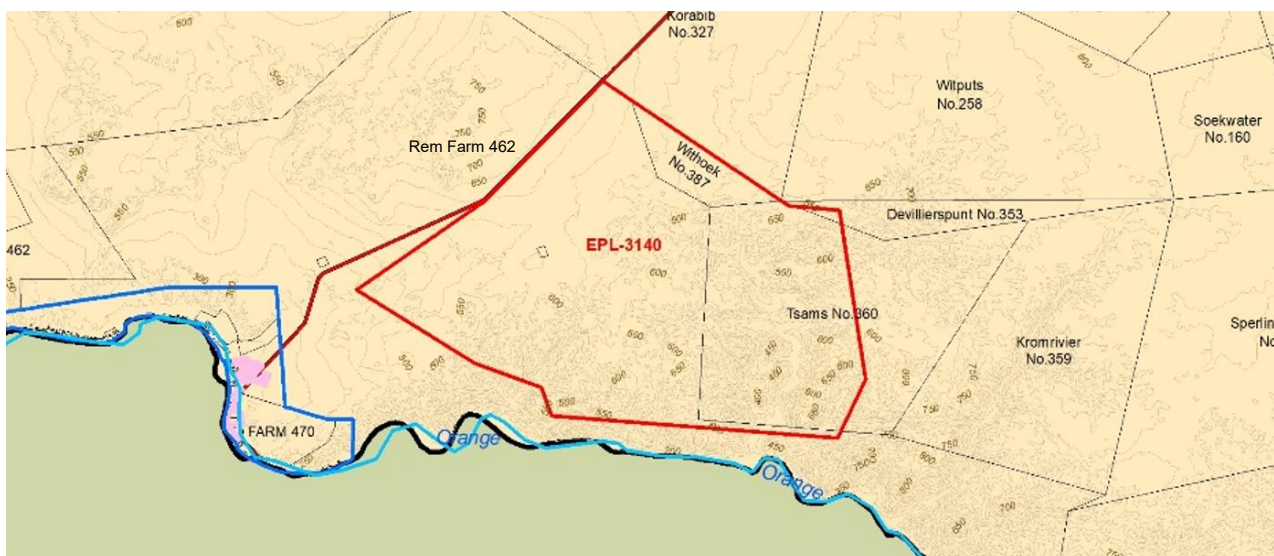


Figure 23: Farms Traversed by EPL 3140 upon which the Haib Copper Mine is to be established.

Plate 1 provide an indication of the farming activities and infrastructure at Haibmund, and the windmill at Withoek. Most structures are old and in disrepair while the former irrigation canal no longer exists. A few people were found catching and drying fish while there is an enclosure with a few pigs being

actively farmed. Access to Haibmund cuts through the middle of the EPL and follows the Haib River channel through Tsams.



Plate 1: Images of farm activities at Haibmund and Withoek (windmill)

The operator wishes to close this road/track and fence the mining area to improved safety and security and prevent conflict with farmers. However, no other access to Haibmund presently exists, and if the road/track is closed, access for the farmers will be lost, influencing their livelihoods. The current proposals include the construction of a pipeline drawing water from the Orange River at Haibmund and running along the Hiab River towards the proposed storage dam. This would further restrict access to the current track due to the sensitivity of the infrastructure.

Other farmers are actually using the farm Tsams, Farm Rem 462 and Withoek 387 to graze their livestock and they will also be excluded from those areas if the mine area is fenced, and will need to rely on reduced accessibility for grazing land.

Although these farmers do not have legal tenure, they have been cultivating and farming the area for decades and their rights must therefore be considered. However, the level of activity is considered low and decreasing with none of them being dependent on the area as their main source of livelihood. Should the road/track to Haibmund be closed and the mining area fenced off, it will have a substantial impact on some six farmers who are using the area. The impact is likely to occur to the same extent during **the construction and operation phases** of the project.

6.3.5.2 Impact Assessment

- **Severity/Magnitude**

The severity of the impact of closing the road to Haibmund and fencing the mining area on agriculture and the land rights of the impacted farmers is rated as **moderate (3)** because of the low intensity of activities taking place at Haibmund and the scale of livestock grazing in the area.

- **Reversibility**

The reversibility of the impact is rated as **irreversible (5)** because those that are affected will not be able to adapt to change and continue to maintain pre-impact livelihood activities.

- **Duration**

The duration of the impact is rated as **permanent (5)** and likely to endure beyond the project lifetime. Although possible, it is unlikely that anyone will want to return to already dilapidated infrastructure after 25 years to take up marginal farming activities again.

- **Spatial Extent**

The spatial extent of the impact is **local (2)** and occurs within 2km of the EPL extent.

- **Probability**

If the project proceeds as planned, it is **definite (5)** that the impact will occur.

- **Consequence**

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
3– Moderate	5 – Irreversible	5 – Permanent	2 – Local	5 – Definite

The overall consequence of the impact is calculated to be 75 $\{(3+5+5+2) \times 5\}$ which is a **negative impact of high significance**.

6.3.5.3 Mitigation Measures

While it is unlikely that primary livelihoods will be affected if the farming activities are seized, it is necessary to negotiate a settlement with the farmers to cease their farming activities due to a lack of access to Haibmund and exclusion from previous grazing areas due to project fencing. Such settlement should be based on the Cabinet Policy on Compensation in Communal land areas. A resettlement action plan should be prepared wherein the detail of the agreements, compensation and consent is detailed. This would be beneficial to both the farmers and the project and will enable informed consent from the farmers linked to fair compensation.

6.3.5.4 Residual Impact Consequence

If these mitigation measures are implemented the severity of the impact will reduce to **low (2)** and the reversibility as **reversible (1)** because the compensation would assist to adapt to the loss of livelihood. Duration reduces to **short term (2)** due to compensation while Spatial extent and probability remain the same.

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
2– Low	3 – Recoverable	2– Short term	2 - Local	5 – Definite

The overall consequence of the impact after mitigation is assessed to be 45 $\{(2+3+2+2) \times 5\}$ which remains a **negative impact of moderate significance**.

6.3.6 Water Abstraction and Conflict with Agriculture

6.3.6.1 Impact Description

The economy of the Noordoewer/Aussenkehr area is based on irrigated agriculture and river tourism. This needs water to survive and is of great importance to the farmers and tourism ventures along the river. During the public consultation farmers stressed that the water of the Orange River was already over allocated and this was felt by the farmers especially during dry years. Farmers were also concerned about water quality and contamination risks and they referenced the situation in Tsumeb where pollution levels are reported as very high. The slight overallocation of the water resource was confirmed by a specialist water supply alternatives assessment by Knight Piésold. These concerns were also shared by the traditional leadership of the Bondelswarts Traditional Authority, the Noordoewer Community Residential Committee and the //Kharas Regional Council who emphasised competition with irrigation and environmental flow requirements.

A Water Resources and Water Demand Impact Study (Knight Piésold Consulting, 2025a) was prepared and the results showed that the Orange River Project (ORP) at the 2024 development level is already slightly over-utilised. There is thus no more surplus yield available from the ORP to supply increasing water requirements **during the low flow periods**. When Haib Mine is using water supplied from the ORP at the 2024 development level, it will thus impact the assurance of supply to other users. This impact is, however, relatively small. The only approach to avoiding impacts downstream was to abstract in periods of surplus flow.

Surplus flow is defined as when the flow rate exceeds the current demand downstream of Vanderkloof Dam at any point along the river. The Blouputs streamflow gauge (D8H014) is located on the main Orange River downstream of the Augrabies Falls just before the Namibia border. This is a key gauging station used for monitoring and operating purposes of the ORP system. Each year as part of the annual operating analysis of the ORP, minimum monthly flows are set for flows at Blouputs. These flows are the minimum flow required to satisfy all the water requirements downstream of Blouputs to the Orange River Mouth. All water requirements are defined as the water users, irrigation, domestic/industrial, mining, the Ecological Water Requirements (EWR) and water losses (evaporation, seepage, groundwater recharge etc). These minimum flows were thus used as a trigger for abstraction for the Haib Copper Mine. In order to achieve abstraction only during periods of surplus flow, the flows at Blouputs must exceed this minimum flow. In other words, in order to avoid an impact on downstream users, water abstraction will only take place when the flow at Blouputs is higher than the required minimum flow.

Various scenarios to achieve this abstraction regime were considered and the study recommended an option with an off-channel storage dam filled by pumping the surplus flows in the Lower Orange River during high flow periods at a high rate to fill the dam. During low flow periods, no pumping will be undertaken and water will remain available to the various allocations for agriculture. For the purpose of this assessment, it is assumed that the water supply system for the mine will consist of an off-channel storage dam and that pumping from the river will only take place during periods of surplus flow. However, it must be noted that this assessment assumes that this regime will be rigorously implemented and enforced and that it will be monitored for compliance.

The impact is likely to occur to a lesser extent during **the construction phase and to a greater extent during the operation phase** of the project due to volumes of water required.

6.3.6.2 Impact Assessment

- **Severity/Magnitude**

The severity of the impact of water abstraction from the Orange River for the Haib project by way of pumping the high flows of the river and storing it in an off-river dam or reservoir is rated as **minor (1)**

because the impact causes very little change to the characteristics of the receiving environment and the alteration is less than 20%.

- **Reversibility**

The reversibility of the impact is rated as **reversible (1)** because people or communities and the farmers will be able to adapt with ease to a regime where the high flow is pumped and lower flows left alone to satisfy an under pressure agricultural demand.

- **Duration**

The duration of the impact is assessed as to be **short term (2)** and only during the high flow events when water is available in abundance.

- **Spatial Extent**

In terms of spatial extent, the impact may be **international (5)** as the river is an international river and border between Namibia and South Africa.

- **Probability**

The probability that the impact will occur is **definite (5)** since the project cannot proceed without ensured and low risk water supply to the mine.

- **Consequence**

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
1 – Minor	1 – Reversible	2 – Short term	3 – International	5 – Definite

The overall consequence of the impact is calculated to be 45 $\{(1+1+2+5) \times 5\}$ which is a **negative impact of moderate significance**

6.3.6.3 Mitigation Measures

The Water Resources and Water Demand Impact Study already considered many alternative scenarios and selected the one that would have the least impact on the resource and resource allocations while still ensuring adequate supply to the mine. There are no realistic other alternatives that can be used to reduce or mitigate the impact of water abstraction from the Orange River. However, it is imperative that the pumping is monitored and managed to ensure compliance, even when the mine ownership may change. Constructing the pump intake works in such a way that it will make it impossible to pump during low flow periods will add substantial confidence that the water abstraction can be accommodated without impacting on the minimum flow requirements needed to satisfy the demand from irrigation, domestic/industrial, mining, the Ecological Water Requirements (EWR) and water losses.

In addition, the Hiab Mine must become part of any water users forum and partake in discussions and feedback about the water abstraction regimes and issues related to water abstraction and quality.

6.3.6.4 Residual Impact Consequence

The residual impact remains the same as the above consequence.

6.3.7 Impact of Mine Closure and Decommissioning on Income and Livelihoods

6.3.7.1 Impact Description

It is estimated that the project will create at least 10 465 direct, indirect and induced jobs during construction and 4 485 jobs during its operational phase. This positive impact was assessed in Section

6.3.1. However, once the project reaches end of construction and end of life, these jobs will be lost, and this can cause great hardship and difficulty among these families who became used to stable and well-paying jobs.

On the other hand, it would be possible for such employees to move on to other projects, other industries or start their own businesses to provide services to the mining or even other sectors. Their experience and skill will endure and will in all likelihood help them to secure alternative employment.

While it is not realistic to assume that all employees will be seamlessly accommodated in similar projects or jobs or will find jobs at all, under normal circumstances the decommissioning of a mine is highly foreseeable and will not come suddenly or as a surprise. This should enable direct employees to prepare for the end of the project and transition to other jobs or retirement.

Companies and contractors who secured contracts during the production phase and make up the bulk of indirect employment will see their activity associated with the project decline, as supplier agreements end and business activities reduce. Smaller suppliers, who may rely on the mine as their key or only client, will be particularly vulnerable. Closure and decommissioning will also impact induced jobs created through the economic multiplier effect of the income derived from the project.

Both the operator and its contractors will be bound by the Namibia Labour Act which regulates employment and retrenchment matters in such cases.

6.3.7.2 Impact Assessment

- **Severity/Magnitude**

The **severity** of the potential impact is rated as **high (4)** because it will in all likelihood reduce their incomes and livelihoods substantially (by more than 60 – 80%), even with retrenchment payments and access to pension contributions.

- **Reversibility**

The reversibility of the impact is rated as **recoverable (3)** because people will probably be able to adapt with some difficulty to maintain pre-impact livelihoods through securing alternative employment or going into retirement.

- **Duration**

The impact will probably endure for a period of 1 to 5 years and be reversible over time as people find new employment. The duration of the impact is therefore rated as **short term (2)**.

- **Spatial Extent**

The impacts are likely to be **regional (3)** in extent since the mine closure will not only affect direct employees but will also affect workers in the key supply centres whose contracts will end / not be renewed.

- **Probability**

The probability that the impact will occur is **definite (5)** since the life of the mine will come to an end despite the possibility that it may be extended over time.

- **Significance**

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
4 – High	3 – Recoverable	2 – Short term	3 – Regional	5 – Definite

The overall consequence of the impact after mitigation is assessed to be 60 $\{(4+3+2+3) \times 5\}$ which is a **negative impact of high significance**.

6.3.7.3 Mitigation Measures

The following mitigation measures are recommended:

- Prepare a decommissioning and closure plan for the project that addresses potential end of work or service contracts.
- Share the decommissioning plan with employees from the onset so that they have advance warning of the planned shut down and are in a position to start searching for alternative employment.
- Comply with labour law requirements and compensate employees for their retrenchment as a result of the closure of the project.
- Provide employment certificates and testimonials for retrenched staff to facilitate alternative employment. The skills and experience that were acquired during the employment as well as the potential of other similar employment opportunities will also contribute to improved ability to find alternative employment.
- Provide opportunities for capacity-building and training for employees to enable them to find alternative employment after decommissioning.

6.3.7.4 Residual Impact Significance

These mitigation measures may enable workers to find alternative employment within a shorter period of time and reduce the severity to **moderate (3)** but is unlikely to change the assessment of the other criteria.

• Severity / magnitude	Reversibility	Duration	Spatial extent	Probability
3 – Moderate	3 – Recoverable	2– Short term	3 – Regional	5 – Definite

The overall consequence of the impact after mitigation is assessed to be 55 $\{(3+3+2+3) \times 5\}$ which is a **negative impact of moderate significance**.

7 FINDINGS AND CONCLUSIONS

7.1 THE SOCIO-ECONOMIC RECEIVING ENVIRONMENT

The baseline is characterised by the following key aspects:

The population in the //Kharas Region grew at a rate of about 3% between 2011 and 2023 but the population in the two constituencies that have the most direct relationship with the project grew much faster over the same period at a rate of 5.5% per annum.

The Age and Sex distribution of the Karasburg West Constituency is vastly different from the other constituencies and points toward working age migratory labour making up a large part of the population. The mean household size is also the lowest of all constituencies at 2.4 persons per household.

Social service provision is under pressure and will become more so when it is necessary to accommodate the direct and indirect workers in Noordoewer. Basic infrastructure in the town is also under pressure and will need to be attended to accommodate the anticipated population growth that will result from the development of the mine.

Unemployment, particularly amongst the youth, is severe and local economic development across the region is a desired outcome, something towards which the mine could make a substantial contribution.

Housing and living conditions in Noordoewer is already under pressure as a result of seasonal agricultural workers. The development of the mine is likely to exacerbate this and it is necessary for the authorities to commence with planning to be able to accommodate the influx that will in all likelihood result from the development of the mine.

7.2 THE ANTICIPATED IMPACTS.

7.2.1 Macro-Economic Impacts

With regard to **macro-economic impacts**, the development of the Haib Copper mine could substantially increase Namibian GDP, contribute to government income and increase exports with the resultant improvement in the balance of payments, merchandise exports and government revenue. These identified macro-economic impacts are highly positive, especially if one considers the general economic and employment environment in Namibia in general and the //Kharas Region in particular.

The report does not recommend specific measures to enhance potential macro-economic impacts and benefits because government has management authority over the effective use of the macro-economic impacts derived from the project. The government's use of the significant revenues it will derive from the project over time will determine the extent to which the benefits of the project will filter through national development objectives to make a difference in the lives of people in the region and the country.

7.2.2 Social and Micro Economic Impacts

Local employment and income from procurement linked with education, training and skills development are likely to have strong positive impacts on the people in the host constituencies and the region in general. Careful and purposeful planning can further enhance these impacts to get the maximum benefit for both the project and its stakeholders.

However, there are risks that must be managed effectively to prevent serious negative impacts as a result of the project. These are related to population influx that has the potential to overwhelm Noordoewer in terms of the provision of services and infrastructure, shortages of land for housing and other land uses, increased pressure on social services and facilities and the potential increase in social pathologies as a result of uncontrolled influx.

The proposed closure of the access road to Haibmund along the Haib River will impact the agricultural activities at Haibmund and farmers will lose access and therefore the benefit of the use of the land. This will require resettlement and compensation unless alternative access can be provided. This is unlikely to be feasible. The fencing of the mine area will also preclude farmers who are currently using some of the land for grazing from doing so. However, there are no formal land rights allocated to these farmers.

The water requirement for mining operations is of concern to farmers who are dependent on the availability of water for their farming operations and they require re-assurance that the water abstraction for the mine will not negatively affect their water allocations and that they will not be negatively affected during times of drought. The current proposals for water abstraction is based on the principle that water will be abstracted during period of surplus flow and stored on site to ensure adequate water supply to the operations.

Mine closure will impact livelihoods when it happens but affords adequate time to plan for it and work with employees to soften the blow as much as possible.

Overall, it is assessed that the proposed project is in line with the broad economic objectives and policy statements of the Namibian Government and that the benefits expected from the development of the mine are highly significant and respond to the country's needs and desires as expressed in the national policy frameworks. Although there are risks and potential negative impacts associated with the project, these can be planned for and mitigated to tolerable levels.

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