

ENVIRONMENTAL CLEARANCE CERTIFICATE (ECC) APPLICATION – ENVIRONMENTAL SCOPING REPORT (ESR) FOR THE:

PROPOSED THE OPUWO FLEXIBLE LAND TENURE SCHEME (FLTS)- PROPOSED INFORMAL SETTLEMENTS UPGRADING UNDER THE FLEXIBLE LAND TENURE SYSTEM IN OPUWO, KUNENE REGION-NAMIBIA

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TOWN AND REGIONAL PLANNERS



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Definitions

| TERMS | DEFINITION |
|--------------|--|
| BID | Background Information Document |
| DEFRA | The Department for Environment, Food and Rural Affairs |
| EAP | Environmental Assessment Practitioner |
| ECC | Environmental Clearance Certificate |
| EIA | Environmental Impact Assessment |
| ESA | Environmental Scoping Assessment |
| ESIA | Environmental and Social Impact Assessment |
| EMP | Environmental Management Plan |
| FLTS | Flexible Land Tenure System |
| I&APs | Interested and Affected Parties |
| MAWLR | Ministry of Agriculture, Water and Land Reform |
| MEFT: DEAF | Ministry of Environment, Forestry and Tourism's Department of Environmental Affairs and Forestry |
| NHC | National Heritage Council |
| N(EMA) | Namibia Environmental Management Act |
| PRP | Pit Rehabilitation Plan |
| ToR | Terms of Reference |
| UNFCCC | United Nations Framework Convention on Climate Change |

EXECUTIVE SUMMARY

Plan Africa Consulting cc has been hired by the Opuwo Town Council, with support from GIZ and the Ministry of Agriculture, Water and Land Reform (MAWLR), to carry out a Feasibility Study on the implementation of the Flexible Land Tenure System (FLTS) in Opuwo Town of the Kunene Region, Namibia. The Feasibility Study will also include an Environmental Impact Assessment (EIA) Study and the development of an Environmental Management Plan (EMP) for the proposed project. The ultimate goal is to apply for an Environmental Clearance Certificate (ECC).

The FLTS project has triggered the application for an ECC as per the following listed activities:

LAND USE AND DEVELOPMENT ACTIVITIES - 5.1 (d) the rezoning of land from; zoned open space to any other land use, 8.4 Construction of canals and channels including the diversion of the normal flow of water in a riverbed and water transfer schemes between water catchments and impoundments, and 8.8 Construction and other activities in water courses within flood lines.

Public & Stakeholders' Consultation and Engagement and Feedback

The public and stakeholders, also known as Interested and Affected Parties (I&APs), were engaged during the Environmental Impact Assessment (EIA) process through various communication channels such as newspaper adverts, public notices, and face-to-face meetings held in Opuwo. As a result of this engagement, a few significant comments were received from the I&APs which have been incorporated into the EIA documents for consideration. These comments will also inform the planning and design phase of the Flexible Land Tenure System (FLTS) establishment in Opuwo.

Key Adverse Environmental Impacts and Issues identified:

- Vegetation removal (deforestation), i.e., loss of Biodiversity and Faunal habitat/grazing disturbance (for livestock grazing on the edge of the Town, Pollution (Solid waste, hazardous and wastewater),
- Flooding due to stormwater stagnation on land and water resources pollution,
- Soil Erosion and Disturbance, Health and Safety Risks, and
- Social Grievance due to property relocation/realignment of structures into surveyed ervens.

Positive Social Impacts

This study conducted various assessments, including site visits, process analysis, desk studies, and stakeholder consultations, to analyze the environmental risks associated with the establishment of the FLTS project. The DEFRA Guidelines for Environmental Risk Assessment and Management 'Green Leaves III' and international best practices were used to conduct an integrated risk analysis, which revealed that the project would have negative impacts on the biophysical and socio-economic environment. However, the significance of these impacts is rated as moderate, and the implementation of management and mitigation measures can reduce them. The project is also expected to have positive impacts on the social and economic aspects.

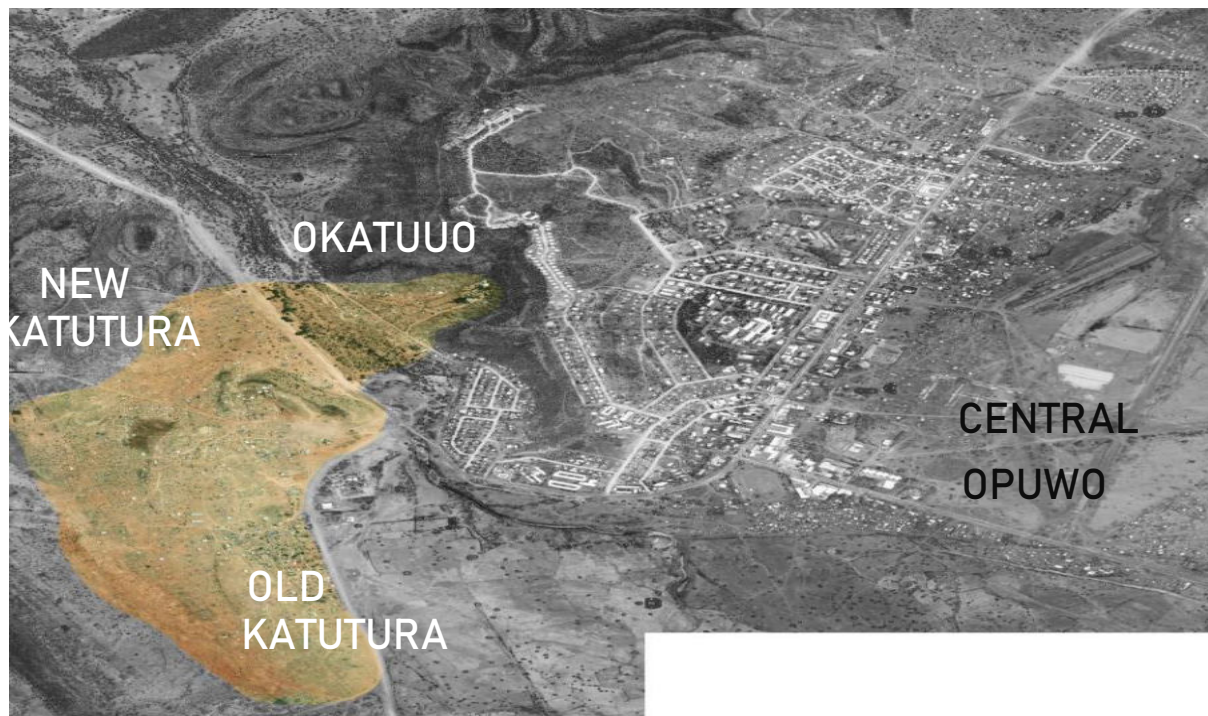


Figure 1: Opuwo - Settlement Localities

To address concerns raised by stakeholders regarding stormwater issues, a Hydrogeological Assessment Study was conducted, and measures to mitigate potential impacts on water resources were provided. No further specialist studies were deemed necessary, as the EMP contains measures to manage and mitigate potential risks and impacts. An Environmental Control Officer and Competent Authority will monitor EMP implementation during the construction or upgrading stage. The Environmental Commissioner may issue an ECC for the FLTS scheme's establishment in Opuwo if the Proponent and associated contractors adhere to the conditions outlined for both sites.

1. CHAPTER ONE: BACKGROUND

1.1 INTRODUCTION

Plan Africa Consulting cc were appointed by GIZ and the Ministry of Agriculture, Water and Land Reform (MAWLR) to conduct Feasibility and Desirability Studies for the formalization of the areas identified to establish the flexible Land Tenure Schemes within the Opuwo Local Authority area, as per section 11 (6) of the Flexible Land Tenure Act, 2012 (Act No.4 of 2012).

The FLTS establishment will focus on Portions namely, Old Katutura, New Katutura and Okatuo Settlements which are existing brownfields. The process will determine whether the proposed schemes are deemed feasible and desirable to establish the Flexible Land Tenure Schemes on these portions. This will also include coming up with layout alternatives to ensure that sustainable planning is incorporated into the proposed developments.

It is however important to note that FLTS activities cannot be undertaken without an Environmental Clearance Certificate. In this respect, the need for a project specific Environmental and Social Impact Assessment (ESIA) is required in compliance with Namibia's Environmental Assessment Policy, Environmental Management Act (No. 7 of 2007) and the Environmental Assessment Regulations of 2012.

In this respect, Plan Africa Consulting cc will conduct an independent Environmental and social Impact Assessment for the proposed Flexible Land Tenure Schemes establishment to ascertain potential environmental and social impacts both positive and negative and establish how.

1.2 PROJECT LOCALITIES AND DESCRIPTIONS

The three Portions selected for informal settlements upgrade, i.e., Okatuo Informal Settlement, Old Katutura Informal Settlement and New Katutura informal settlement and are shown on the map in Figure 1.

The descriptions of the three sites selected for the FLTS establishment has been done based on the site visits conducted on the the project areas.

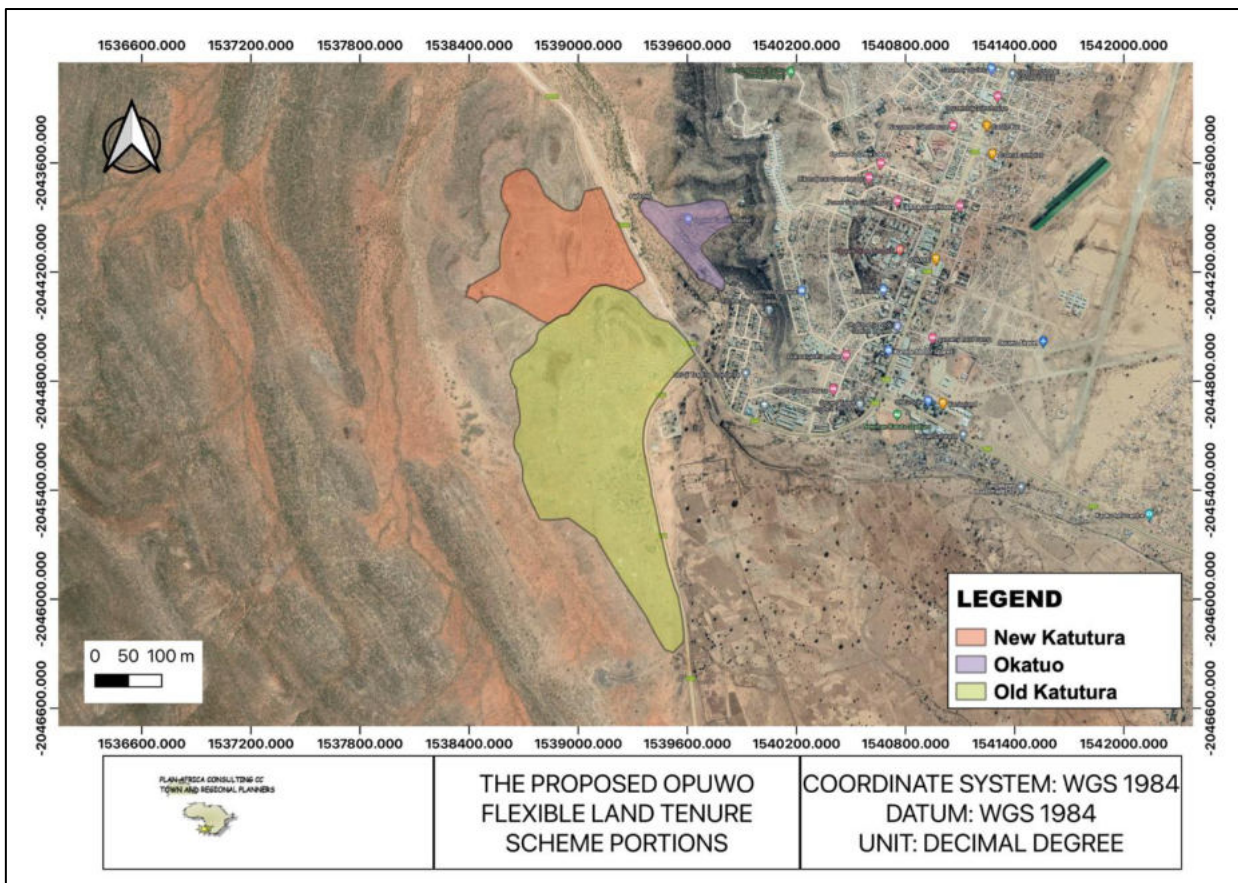


Figure 2: Project Locality in Opuwo

1.2.1 DESCRIPTION AND DESIGN OF PROJECT

The project aims to assess formalize existing informal settlements through establishing Flexible Land Tenure Schemes by assessing the development potential, socio-economic aspects, infrastructure, and services as well as environmental and geo-hydrology aspects on the proposed FLTS portions.

The Flexible Land Tenure Scheme under the Flexible Land Tenure Act, 2012 (Act No. 4 of 2012) creates new forms of secure urban land tenure:

- Starter Title, and
- Land Hold Title

The proposed project will include the establishment of FLTS System on the following project areas as illustrated in table 1 below;

Table 1: Project description

| Portion Name | Size | Status | Infrastructure |
|--------------|----------|------------|--|
| Old Katutura | 97.7 ha | Brownfield | Stormwater, Electricity, Roads, Sewer reticulation |
| New Katutura | 40 ha. | Brownfield | Stormwater, Electricity, Roads, Sewer reticulation |
| Okatuo | 10.9 ha. | Brownfield | Stormwater, Electricity, Roads, Sewer reticulation |

The informal settlements have occupied fewer desirable locations bordering the ephemeral flood zone in the south, some of the hillside on the northern side of the town, and land around the sewage settlement ponds now poorly located in the midst of Opuwo’s formal urban extensions. In many cases the informal households have set up rural style fenced homesteads containing a number of small detached dwellings accommodating different members of an extended family. Some of these internal units within the fenced area might be considered separate households in their own right. These are people who have come from a previously disadvantaged group (Ovahimba and Ovadhembra) who have a semi-nomadic lifestyle and rely on animal husbandry as a means of production and survival through trading. Some maintain both urban and rural lifestyles between which they move depending on rainfall and cattle grazing opportunities. With urban settlement immigrants from rural areas found themselves having to integrate their lifestyle, culture, and

traditional beliefs with modernization within the town. Some homes are being “regularised” by establishing clear boundaries and introducing service lines such as access corridors. The numbers of structures were counted from air-photographs and the results are tabulated below.

| Numbers of Structures in the Main Peripheral Informal Settlements | | | | | |
|---|-------------------------|-----------------------|-------------------------------|----------------------------------|---|
| A structure may be an occupied or vacant dwelling, a store, a workshop, a shop, an ablution block, or a garage. | | | | | |
| LOCATION | APPROXIMATE NUMBER 2022 | NUMBER IN FLOOD PLAIN | AVERAGE DENSITY OF STRUCTURES | APPROX. AREA OF SETTLEMENT IN HA | GIZ ESTIMATED NUMBERS OF STRUCTURES IN 2021 |
| | | | Structure per gross hectare | | |
| New Katutura | 440 | 12 | 11.0 | 40 | 272 |
| Old Katutura | 1400 | 150 | 25.0 | 56 | 942 |
| Okatuo Informal | 56 | 0 | 8.0 | 7 | 56 |
| TOTAL | 1896 | 162 | | 103 | 1270 |
| There is a scattering of structures throughout the townlands that have not been included. | | | | | |

Table 2: Numbers of Structures in the Main Peripheral Informal Settlements

There is great uncertainty as to the average household size for the informal settlement structures. Most studies discussed in the Opuwo Structure Plan use an average household size of 5.2 for the Region. These informal structures unfortunately cannot be viewed as a household as their sizes vary from one roomed structure to clusters of related households. A GIZ survey in March 2021 of Old Katutura found that household sizes vary from one person per household to a maximum of 33 people per household in a grouping of structures. The average household size is 6.11 people while the mode for household size is 1 which is the most common occurring household size. Taking this into account, an average of 2 persons per structure (not per household) might be more realistic.

The same survey of Old Katutura showed that 50% of households had lived in the settlement for 5 or more years.

1.3 NEED AND DESIRABILITY

The implementation of FLTS will lead to the establishment of land titles that are easier and more cost-effective to administer compared to the current ones. These titles will provide residents of informal settlements and low-income housing in Opuwo with a secure form of land ownership, and can be held by individuals or groups. Additionally, the FLTS will enable quicker delivery and allocation of land on undeveloped sites. Given these benefits, it is essential that the Feasibility Study recommends the establishment of FLTS in the study areas, to ensure the successful implementation of the scheme in Opuwo.

1.4 OBJECTIVE OF THIS STUDY

The current Environmental Impact Assessment is in adherence to the Environmental Management Act No.7 of 2007 and the EIA Regulations (GN 30 in GG 4878 of 6 February 2012). It is mandatory by law to conduct an Environmental Impact Assessment before undertaking any projects as specified in the EIA Regulations (GN 30 in GG 4878 of 6 February 2012). The main objectives of this study are to:

- identify and provide mitigation measures of the expected impacts of the proposed project to protect the environment,
- brief the Project Proponent of the legal and policy framework governing the proposed activity,
- identify the possible changes in bio-diversity index that might be because of Project implementation in the area,
- reflect on the various public concerns which will help the National Environmental Action Planners, economist and concerned stakeholders to make decisions,
- develop preventive and precautionary measures for the expected physical and biological environmental negative impacts associated with the proposed project activities, and
- structure an effective environmental management plan for the FLTS scheme (project) activities to minimise and prevent negative impacts while maximising the positive impacts.

1.5 TERMS OF REFERENCE

The Environmental Impact Assessment conducted by Plan Africa provides a comprehensive evaluation of the proposed project producing both EIA and EMP report documenting the following:

- A complete description of the project sites,
- Significant environmental issues of concern that were based on the baseline data compiled by the EIA Team, which took into consideration biophysical, social, cultural and heritage information,
- An assessment of the public perception on the proposed FLTS scheme establishment,
- Identification of Policies, Legislation and Regulations relevant to the project,
- Prediction of the likely short, medium and long-term impact of the project on the environment, including direct, indirect and cumulative impacts, and their relative importance to the design of the project activities/facilities,
- Identification of any mitigation action to be taken to minimize predicted adverse impacts and provide associated costs where applicable and practical;
- Development of an environmental monitoring plan which will ensure that the mitigation measures are adhered to during the implementation phase;
- A conclusion and recommendations remarks for the project Proponent on an advisory note.

2 CHAPTER TWO: POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

2.1 INTRODUCTION

A crucial aspect of the Environmental Impact Assessment (EIA) process is to investigate and analyze the administrative, policy, and legislative framework related to the proposed project. This helps the project proponent understand the legal requirements that must be fulfilled when undertaking the FLTS project activities. The section presents the legal framework that will apply to the proposed FLTS activities during the planning, construction, and operational phases. Table 2 outlines all applicable legislation, policies, and international statutes related to the project, as mandated by the Environmental Management Act, 2007 (Act No.7 of 2007) and the regulations for Environmental Impact Assessment stated in the Schedule of Government Notice No. 30 (2012).

Table 3: Applying Policies, legal and Administrative regulations governing the FLTS implementation and related activities

| Legislation / Policy / Guiding document | Provision | Project implication |
|---|---|---|
| The Constitution of the Republic of Namibia (1990) | <p>The articles 91(c) and 95(i) commits the state to actively promote and sustain environmental welfare of the nation by formulating and institutionalizing policies to accomplish the sustainable objectives which include:</p> <ul style="list-style-type: none"> - Guarding against overutilization of biological natural resources, - Limiting over-exploitation of non-renewable resources, - Ensuring ecosystem functionality, - Maintain biological diversity. | <p>Through implementation of the environmental management plan the proposed development will be in conformant to the constitution in terms of environmental management and sustainability.</p> |
| Vision 2030 and National Development Plans | <p>Namibia’s overall Development ambitions are articulated in the Nations Vision 2030. At the operational level, five-yearly national development plans (NDP’s) are prepared in extensive consultations led by the National Planning Commission in the Office of the President. Currently the Government has so far launched a 5th NDP that pursues three overarching goals for the Namibian nation: high and sustained economic growth; increased income equality; and employment creation.</p> | <p>The proposed project will increase availability of affordable serviced land as well as creating employment in construction, which will be in fulfilment to the NDP and Vision 2030.</p> |
| Environmental Assessment Policy of Namibia 1994 | <p>The Environmental Assessment Policy of Namibia requires that all projects, policies, Programmes, and plans that have detrimental effect on the environment must be accompanied by an EIA. The policy provides a definition to the term “Environment” broadly interpreted to include biophysical, social, economic, cultural, historical and political components and provides reference to the inclusion of alternatives in all projects, policies, programmes and plans.</p> | <p>The development establishment will only commence after being awarded an environmental clearance certificate, thus by abiding to the requirements of the Environmental Assessment Policy of Namibia. The EIA and EMP will cater for the sustainable management of bio-physical environment.</p> |

| Legislation / Policy / Guiding document | Provision | Project implication |
|--|---|---|
| <p>Environmental Management Act No. 7 of 2007</p> | <p>The Act aims at</p> <ul style="list-style-type: none"> ✓ Promoting the sustainable management of the environment and the use of natural resources by establishing principles for decision-making on matters affecting the environment; ✓ To provide for a process of assessment and control of projects which may have significant effects on the environment; ✓ To provide for incidental matters. <p>The Act gives legislative effect to the Environmental Impact Assessment Policy. Moreover, the act also provides procedure for adequate public participation during the environmental assessment process.</p> | <p>This document is compiled in a nature that project implementation is in line with the objectives of the EMA Act. Guiding procedures were also drawn from the act to facilitate for the carrying out of the EIA and drafting the EMP for the proposed development.</p> |
| <p>The National Solid Waste Management Strategy, 2018</p> | <p>Having identified solid waste as a hazard, the Ministry of Environment, Forestry and Tourism developed the Solid Waste Management Strategy (SWMS) to guide future directions, develop regulations. The SWMS has also been aimed at funding strategy and action plans to improve solid waste management and ensure these are properly coordinated and are consistent with national policy to facilitate cooperation among stakeholders.</p> <p>The objectives of this Strategy are:</p> <p>(a) to strengthen the institutional, organisational and legal framework for solid waste management, including capacity development;</p> | <p>In terms of the FLTS implementation, the SWMS would be enforced to ensure that the risks to the environment and public health emanating from waste disposal sites and illegal dumping in Namibia. This will include complete improvement of waste collection at all local authorities, in particular in the informal housing settlements, etc.</p> |

| Legislation / Policy / Guiding document | Provision | Project implication |
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| | <p>(b) to instil a culture of waste minimisation and expand recycling systems;</p> <p>(c) to implement formalised waste collection and management systems in all populated areas;</p> <p>(d) to enforce improvements in the municipal waste disposal standards; and</p> <p>(e) to plan and implement feasible options for hazardous waste management.</p> | |
| <p>The Regional Councils Act No. 22 of 1992</p> | <p>This Act sets out the conditions under which Regional Councils must be elected and administer each delineated region. From a land use and project planning point of view, their duties include, as described in section 28 “to undertake the planning of the development of the region for which it has been established with a view to physical, social, and economic characteristics, urbanisation patterns, natural resources, economic development potential, infrastructure, land utilisation pattern and sensitivity of the natural environment.</p> <p>The main objective of this Act is to initiate, supervise, manage, and evaluate development.</p> | <p>The relevant Regional Councils are Interested &Affected Parties and must be consulted during the Environmental Assessment (EA) process. The project sites fall under the Kunene Regional Council; therefore, they should be consulted.</p> |

| Legislation / Policy / Guiding document | Provision | Project implication |
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| Local Authorities Act No. 23 of 1992 | To provide for the determination, for purposes of local government, of local authority councils; the establishment of such local authority councils; and to define the powers, duties and functions of local authority councils; and to provide for incidental matters. | The Proponent should ensure that the FLTS scheme implementation and related activities are in compliance with the relevant requirements of the Act. |
| Public and Environmental Health Act No. 1 of 2015 | The Act serves to protect the public from nuisance and states that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health. | <p>The Proponent and their contractors should ensure that the project infrastructure, vehicles, equipment, and machinery are designed and operated in a way that is safe, or not injurious or dangerous to public health and that the noise which could be considered a nuisance remain at acceptable levels.</p> <p>The Proponent should ensure that the public as well as the environmental health is preserved and remain uncompromised.</p> |
| Public Health Act No. 36 of 1919 | Under this act, in section 119: “No person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.” | <p>The project Proponent will ensure that all legal requirements of the project in relation to protection of the health of their employees and surrounding residents is protected.</p> <p>-Personal protective equipment shall be provided for employees in construction.</p> <p>-The development shall follow requirements and specification in relation to water supply and sewerage handling so as not to threaten public health of future residents on these land portions.</p> |
| Soil Conservation Act No. 76 of 1969 | The objectives of this Act are to: ✓ Make provisions for the combating and prevention of soil erosion, | The project will have a rather localized impact on soils and on the soil through construction and access roads construction hence soil protection measures will be employed and preservation of trees as much as possible. |

| Legislation / Policy / Guiding document | Provision | Project implication |
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| | <p>✓ Promote the conservation, protection and improvement of the soil, vegetation, sources and resources of the Republic.</p> | |
| <p>Nature Conservation Ordinance 1996</p> | <p>To consolidate and amend the laws relating to the conservation of nature; the establishment of game Parks and nature reserves; the control of problem animals; and to provide for matters incidental thereto.</p> | <p>The proposed project implementation is not located in any known or demarcated conservation area, national park or unique environments. The project site was selected with this ordinance in mind to ensure that Namibian nature is conserved.</p> |
| <p>Protected Areas and Wildlife Management Bill</p> | <p>This bill, when it comes into force, will replace the Nature Conservation Ordinance 4 of 1975. The bill recognizes that biological diversity must be maintained, and where necessary, rehabilitated and that essential ecological processes and life support systems be maintained. It protects all indigenous species and control the exploitation of all plants and wildlife.</p> | <p>The project has ensured that their activities do not fall within the boundaries of any protected area and that the project will not affect heavily endangered vegetation and animals on its site.</p> |
| <p>Forest Act No. 12 of 2001</p> | <p>The Act gives provision for the protection of various plant species through the Ministry of Agriculture, Water and Forestry (MAWF), Directorate of Forestry).</p> | <p>- The Proponent will also have to ensure that there is no indiscriminate cutting down of trees. -The proposed site is sparsely vegetated with white thorn tree species, which are not threatened or protected. -The Opuwo Town is home to some protected species and notably the Baobab trees (<i>Adansonia digitata</i>). These destruction or removal of these must be avoided.</p> |
| <p>National Biodiversity Strategy and Action Plan (NBSAP2)</p> | <p>The action plan was operationalised in a bid to make aware the critical importance of biodiversity conservation in Namibia putting together management of matters to do with ecosystems protection, biosafety, biosystematics protection on both terrestrial and aquatic systems.</p> | <p>The proponent has been advised by the EIA Team and recognises the need for ecosystems protection to manage the changing climatic environment. -Through this project, there will be reforestation and fostering of green development, which will be promoting the protection and conservation of the biophysical environment, and with this EIA, it will be ensure that almost 40% of grown tree species on site will not be</p> |

| Legislation / Policy / Guiding document | Provision | Project implication |
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| | | removed but rather will be part of the development, to promote Greed development. |
| National Policy on Climate Change for Namibia, 2010 | In harmony with the findings of the IPCC over time and the Earth Summits being held annually the policy seeks to outline a coherent, transparent and inclusive framework on climate risk management in accordance with Namibia’s national development agenda, legal framework, and in recognition of environmental constraints and vulnerability. Furthermore, the policy pursues the strengthening of national capacities to reduce climate change risk and build resilience for any climate change shocks. | The proposed project will ensure that there will be limited release of greenhouse gasses such as methane, carbon dioxide, nitrous oxides. Methods such as wet surface operations to reduce dust emissions will be utilised to remove aerosols emitted into the near-surface atmosphere. |
| The National Land Policy, 1998 | <p>The National Land Policy provides for a unitary land system for Namibia in which all citizens have equal rights, opportunities and security across a range of tenure and management systems. The policy has specific gender provisions consistent with the Namibian Constitution. Women are accorded the same status as men with regards to all forms of land rights, either as individuals or as members of family land ownership trusts.</p> <p>The Policy also provides for multiple forms of land rights, including customary, leaseholds, freeholds, licences, certificates or permits and state ownership. It has provisions on the urban poor, providing that informal settlements need to be given attention through appropriate planning, land delivery, tenure, registration and finance in an environmentally sustainable manner.</p> | <p>The FLTS implementation will need to adhere to the requirements of this Policy by ensuring that the:</p> <ul style="list-style-type: none"> -establishment and proclamation of urban areas as townships and municipalities to promote decentralisation and the close involvement of communities in their own administration. -need to pay attention to the establishment of a transparent, flexible and consultative local authority planning system and development regulations. |

| Legislation / Policy / Guiding document | Provision | Project implication |
|---|---|--|
| Wetland Policy, 2004 | The policy provides a platform for the conservation and wise use of wetlands, thus promoting inter-generational equity regarding wetland resource utilization. Furthermore, it facilitates the Nation's efforts to meet its commitments as a signatory to the International Convention on Wetlands (Ramsar) and other Multinational Environmental Agreements (MEA's). | In compliance to this policy the development will ensure a standard environmental planning such that it does not affect any wetlands within its locale through recognition of wetlands to promote the conservation and wise utilization of wetlands resources. |
| Water Resources Management Act No. 11 of 2013 | This Act provides for the management, protection, development, use and conservation of water resources and the regulation and monitoring of water services and to provide for incidental matters. (Department of Water Affairs). | The protection (both quality and quantity/abstraction) of water resources should be a priority. This will include the diversion of stormwater from the structures to a designated water collection point. |
| National Heritage Act 27 of 2004 | Heritage resources to be conserved in development. (National Heritage | During the project implementation as soon as objects of cultural and heritage interests are observed such as graves, artefacts and any other object believed to be older than 50 years, all measures will be taken to protect these objects until the National Heritage Council of Namibia have been informed, and approval to proceed with the operations granted accordingly by the Council. |
| National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979 | "No person shall destroy, damage, excavate, alter, remove from its original site or export from Namibia: (a) any meteorite or fossil; or (b) any drawing or painting on stone or a petroglyph known or commonly believed to have been | The proposed site of development is not within any known monument site both movable or immovable as specified in the Act, however in such an instance that any material or sites or archeologic importance are identified, it will be the responsibility of the Proponent to take the required route and notify the relevant commission. |

| Legislation / Policy / Guiding document | Provision | Project implication |
|---|---|---|
| | <p>executed by any people who inhabited or visited Namibia before the year 1900 AD; or</p> <p>(c) any implement, ornament or structure known or commonly believed to have been used as a mace, used or erected by people referred to in paragraph (b); or</p> <p>(d) the anthropological or archaeological contents of graves, caves, rock shelters, middens, shell mounds or other sites used by such people; or</p> <p>(e) any other archaeological or palaeontological finds, material or object; except under the authority of and in accordance with a permit issued under this section.</p> | |
| <p>Pollution Control and Waste Management Bill</p> | <p>This bill has not come into force. Amongst other the bill aims to “prevent and regulate the discharge of pollutants to the air, water and land” Of particular reference to the Project is: Section 21 “(1) Subject to subsection (4) and section 22, no person shall cause or permit the discharge of pollutants or waste into any water or watercourse.”</p> <p>Section 55 “(1) No person may produce, collect, transport, sort, recover, treat, store, dispose of or otherwise manage waste in a manner that results in or creates a significant risk of harm to human health or the environment.”</p> | <p>To control air, water and land pollution as agitated by the Act the project proponent will ensure that erven will have approved drainage on site and that sanitation facilities do not threaten public health, adding on an integrated pollution management strategy following the EMP and will be operationalised on site.</p> <p>Adequate stormwater drainage systems will be designed for the project area.</p> |
| <p>Convention on Biological Diversity (CBD)</p> | <p>Namibia is a signatory of the Convention on Biological Diversity and thus is obliged to conserve its biodiversity.</p> | <p>The project will preserve tree species on as part of their plans for green and sustainable development.</p> |

| Legislation / Policy / Guiding document | Provision | Project implication |
|--|---|--|
| United Nations Convention to combat Desertification | Namibia is bound to prevent excessive land degradation that may threaten livelihoods. | It will be the responsibility of the Proponent and future land title holders at to conserve vegetation on and around the portions. |

3 CHAPTER THREE: RECEIVING ENVIRONMENT

3.1 BIOPHYSICAL CONDITIONS

3.1.1 CLIMATE

The climate for Opuwo, Kunene Region, Namibia is classified as hot desert climate (BWh) according to the Köppen-Geiger climate classification system.

- A. Rainfall and Precipitation:** The average annual rainfall in Opuwo, Kunene region, Namibia is around 466 millimeters (18.35 inches). The rainy season typically occurs between November and April, with January and February being the wettest months. The rest of the year is generally dry. However, it's worth noting that rainfall patterns can vary from year to year and can be affected by factors such as El Niño and climate change.
- B. Evaporation:** The average evaporation is between 3,500 to 4,500 mm mm per year.
- C. Temperatures:** The average annual temperature for Opuwo, Kunene Region, Namibia is around 27.5 degrees Celsius (81.5 degrees Fahrenheit). The hottest month is usually November, with an average high temperature of around 37.6 degrees Celsius (99.7 degrees Fahrenheit), while the coolest month is typically June, with an average low temperature of around 11.9 degrees Celsius (53.4 degrees Fahrenheit).

3.1.2 TOPOGRAPHY

Opuwo is located in the Kunene Region of Namibia, which is characterized by rugged and mountainous terrain. The area is situated at an elevation of approximately 1,125 meters (3,691 feet) above sea level, surrounded by hills and valleys. The topography is mainly characterized by flat-topped mountains, rocky outcrops, and hills that are dissected by dry riverbeds or ephemeral streams. The region is also known for its stunning landscapes, including the Etosha Pan, the Skeleton Coast, and the Brandberg Mountain, which is the highest peak in Namibia at 2,573 meters (8,439 feet) above sea level.

3.1.3 GEOLOGY AND SOILS

The geology of the Kunene region, where Opuwo is located, consists mainly of metamorphic rocks such as gneiss, schist, and marble, as well as granite and dolomite formations. Soils in the area are predominantly sandy, with some clayey soils found in the floodplains. The sandy soils are generally low in nutrients and have poor water-holding capacity, which can be a challenge for agriculture. However, there are pockets of more fertile soils in the region, especially in areas with higher rainfall or where alluvial deposits have accumulated.

3.1.4 HYDROLOGY

The Kunene region, including Opuwo, is characterized by arid and semi-arid conditions, resulting in low surface water resources. The region's hydrology is mainly controlled by the Kunene River, which forms the northern boundary of the region. The river, which originates in Angola, is a vital source of water for both Namibia and Angola. In the southern parts of the region, there are seasonal rivers and streams, which are usually ephemeral and only flow after rainfall events. Groundwater is also an important source of water in the region, with many rural communities relying on boreholes for their water supply. However, the groundwater resources in the region are often saline and require treatment before use.

3.1.5 HYDROGEOLOGY (GROUNDWATER)

The hydrogeology of Opuwo and the wider Kunene region is characterized by the presence of fractured hard rock aquifers and alluvial aquifers. Groundwater in the area is primarily recharged by rainfall and infiltration from ephemeral rivers and tributaries. The availability of groundwater is largely influenced by the spatial and temporal variability of rainfall in the region. The hard rock aquifers are the most important sources of groundwater, with boreholes drilled into these aquifers providing water for domestic and livestock use. The alluvial aquifers are more localized and are primarily utilized for irrigation. The quality of groundwater in the area is generally good, although some areas may have elevated levels of naturally occurring fluoride and salinity. The

hydrogeology of the area is being further investigated to better understand the sustainability of groundwater resources and to support the development of groundwater management plans.

3.1.6 TERRESTRIAL ECOLOGY: FAUNA AND FLORA

The Kunene region, including Opuwo, has a unique and diverse flora and fauna due to its desert and semi-arid environment. The area is characterized by thorn bush savannah, mopane woodland, and rocky outcrops. The most commonly found trees are the mopane and baobab trees. Wildlife in the region includes several species of antelope such as kudu, oryx, and springbok, as well as predators such as cheetah, leopard, and hyena. The area is also home to several species of smaller mammals, reptiles, and birds, including ostriches, eagles, and vultures. The Kunene River, which forms the northern border of the region, supports fish species such as tilapia and catfish.

The project areas are already developed (not pristine), hence disturbed to some extent that only few trees could be seen standing. The local occurring fauna that are expected or known to occur at the project locations (particularly at the less human interference site, Greenfield) include domestic animals such as cattle, goats, donkeys and sheep. Small animals such as ground burrowing animals, reptiles, and local bird's species are also expected within proximity of the project locations with little human movements and interferences. There are no known, recorded nor observed wildlife in or around the Opuwo Town, as this could be attributed to the human presence and intensive development of the Town over the years.

3.2 SOCIO-ECONOMIC CONDITIONS

3.2.1 SOCIAL DEMOGRAPHY

According to the 2011 Namibia Population and Housing Census, Opuwo had a population of 7,577 people. The majority of the population were Otjiherero, Oshihimba and Oshizemba. The town has a relatively young population with over 60% of the population below the age of 30. The

literacy rate in Opuwo was approximately 83%, with males having a slightly higher literacy rate than females. The primary languages spoken in the town are Otjiherero, Oshihimba and Oshizemba, and English. The main economic activities in Opuwo include small-scale agriculture, livestock farming, and informal trade.

3.2.2 ECONOMIC ACTIVITIES

Opuwo is a town located in the Kunene Region of Namibia. The Kunene Region is one of the least populated regions in Namibia, with a population of approximately 115,000 people. The economy of the Kunene Region is predominantly rural, with subsistence agriculture and livestock farming being the main economic activities.

In Opuwo, the economy is largely driven by small-scale agriculture, livestock farming, and tourism. The town serves as a hub for the surrounding rural areas, where farmers come to sell their produce and livestock. The town also has a number of shops, small businesses, and informal markets that provide goods and services to the local community.





Tourism is an increasingly important economic activity in Opuwo, with visitors coming to experience the culture and traditions of the Himba people, who are indigenous to the region. The town also serves as a gateway to the nearby Kaokoland region, which is known for its rugged landscapes and wildlife.

Overall, the economic activity in Opuwo is modest and largely centered around subsistence farming and small-scale entrepreneurship..

3.2.3 HOUSING

Housing in Opuwo, like in many rural areas in Namibia, is largely made up of traditional dwellings. The Himba people, who are indigenous to the Kunene Region, are known for their distinctive homes made of a mixture of mud, clay, and cow dung. These homes are typically circular or oval-shaped and have thatched roofs made of grass. In recent years, there has been an effort to improve housing conditions in Opuwo and throughout the Kunene Region. The Namibian

government, with the support of international organizations, has launched several programs aimed at providing affordable housing to low-income families.

| | |
|---|--|
| <p>Existing access road to Sefontein linking the informal settlements to the CBD.</p>  | <p>Observed informal settlement structures in Old Katutura</p>  |
| <p>Observed graves in proximity to the settlements, and development should not affect the graves.</p>  | <p>Observed peri-urban gardens utilising seasonal water from the nearby river. Provision for peri-urban agriculture will be considered.</p>  |

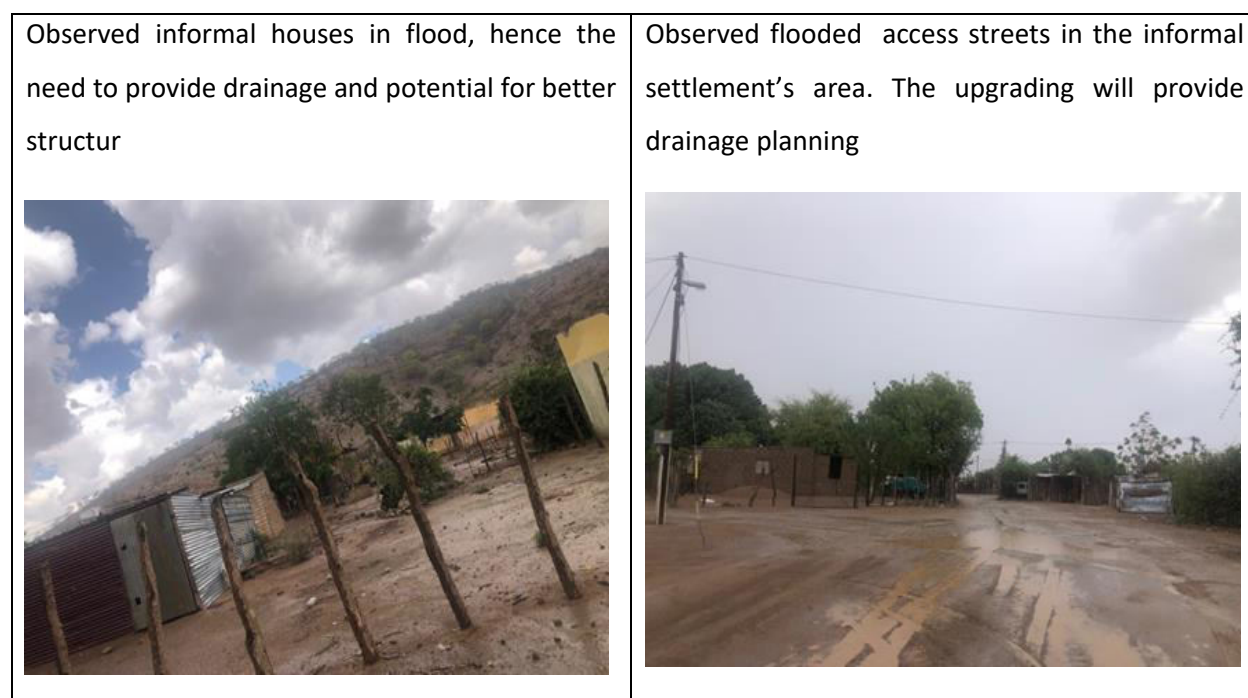


Figure 3: Current environmental and social set up

During the socio-economic survey that was carried out, the structures in all three of the settlements were counted from air-photographs and the results are tabulated below.

Table 4: Numbers of Structures in the Main Peripheral Informal Settlements

| Numbers of Structures in the Main Peripheral Informal Settlements | | | | | |
|---|-------------------------|-----------------------|-------------------------------|----------------------------------|---|
| A structure may be an occupied or vacant dwelling, a store, a workshop, a shop, an ablution block, or a garage. | | | | | |
| LOCATION | APPROXIMATE NUMBER 2022 | NUMBER IN FLOOD PLAIN | AVERAGE DENSITY OF STRUCTURES | APPROX. AREA OF SETTLEMENT IN HA | GIZ ESTIMATED NUMBERS OF STRUCTURES IN 2021 |
| | | | Structure per gross hectare | | |
| New Katutura | 440 | 12 | 11.0 | 40 | 272 |
| Old Katutura | 1400 | 150 | 25.0 | 56 | 942 |
| Okatuo Informal | 56 | 0 | 8.0 | 7 | 56 |
| TOTAL | 1896 | 162 | | 103 | 1270 |
| There is a scattering of structures throughout the townlands that have not been included. | | | | | |

There is great uncertainty as to the average household size for the informal settlement structures. Most studies discussed in the Opuwo Structure Plan use an average household size of 5.2 for the Region. These informal structures unfortunately cannot be viewed as a household as their sizes vary from one roomed structure to clusters of related households. A GIZ survey in March 2021 of Old Katutura found that household sizes vary from one person per household to a maximum of 33 people per household in a grouping of structures. The average household size is 6.11 people while the mode for household size is 1 which is the most common occurring household size. Taking this into account, an average of 2 persons per structure (not per household) might be more realistic. The same survey of Old Katutura showed that 50% of households had lived in the settlement for 5 or more years.

4. CONTEXT OF EACH INDIVIDUAL SITE

4.1.1 OLD KATUTURA

Old Katutura is characterised with both residential, institutional, business and mixed land uses. It has a total of 320 household who live in both temporal as well as permanent structures. It was discovered during the survey that took place that the area has 851 main structures with an additional of 381 totaling to 1232 structures. Figure 4. Below is indicative of the structures in the Old Katutura informal settlement.

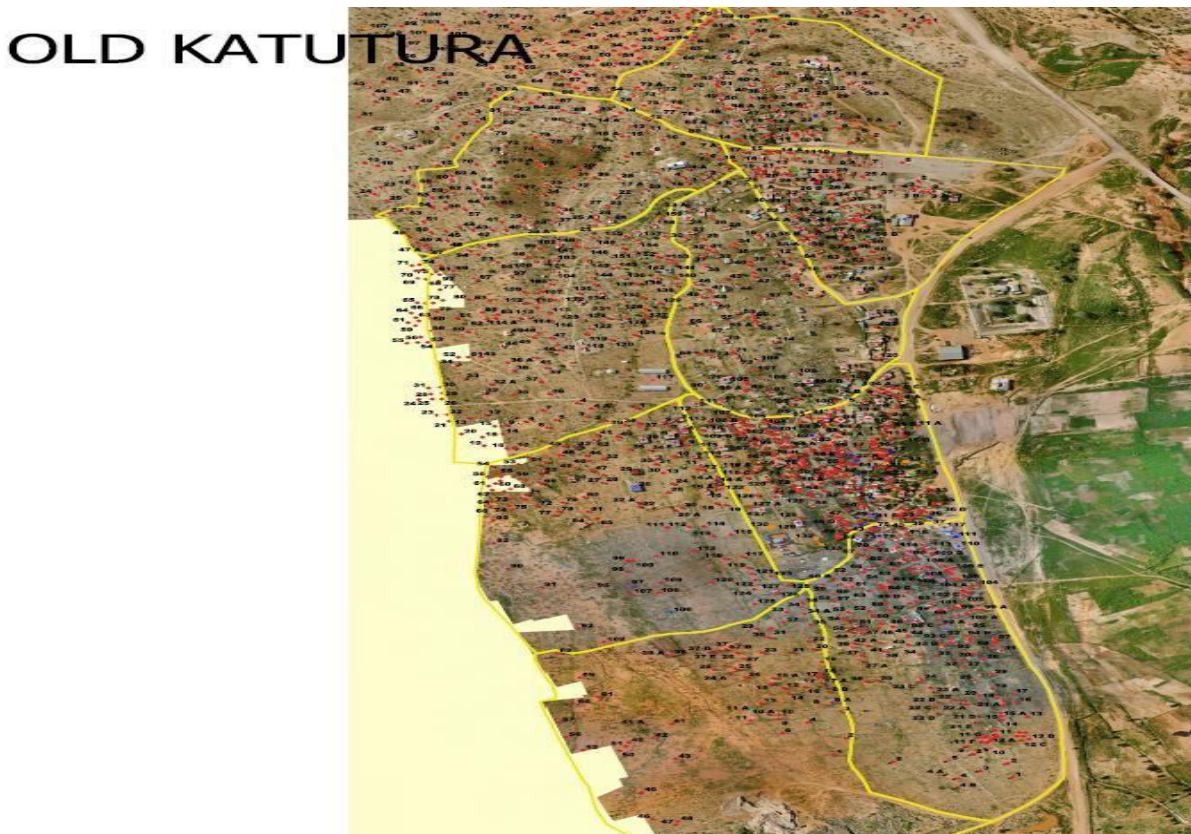


Figure 4: Old Katutura informal settlement

4.1.2 New Katutura

On the other hand, New Katutura is also characterised by both residential, institutional, business and mixed land uses. It has a total of 320 household who live in both temporal as well as permanent structures. It was discovered during the survey that took place that the area has 268 main structures with an additional of 52 totalling to 320 structures. Figure 5. Below is indicative of the structures in the Old Katutura informal settlement.



Figure 5: New Katutura informal settlement

4.1.3 Okatuuo

Okatuuo settlement occupies predominantly flat terrain, with the southern and southwestern sections falling within the 1:50 flood line, encompassing the majority of the site within the flood-prone area. Assessing impacts and identifying mitigation strategies, such as creating water retention areas, becomes crucial for managing the flood risks within this settlement.

Okatuuo like the above two settlements is equally characterised by both residential, institutional, business and mixed land uses. It has a total of 67 household who live in both temporal as well as permanent structures. This is the less populated settlement area in Opuwo based on the survey carried out. It was further discovered during the survey that took place that the area has 59 main structures with an additional of 8 totaling to 67 structures. Figure ... Below is indicative of the structures in the Okatuuo informal settlement.that the area has 59 main structures with an additional of 8 totaling to 67 structures. Figure 6 Below is indicative of the structures in the Okatuuo informal settlement

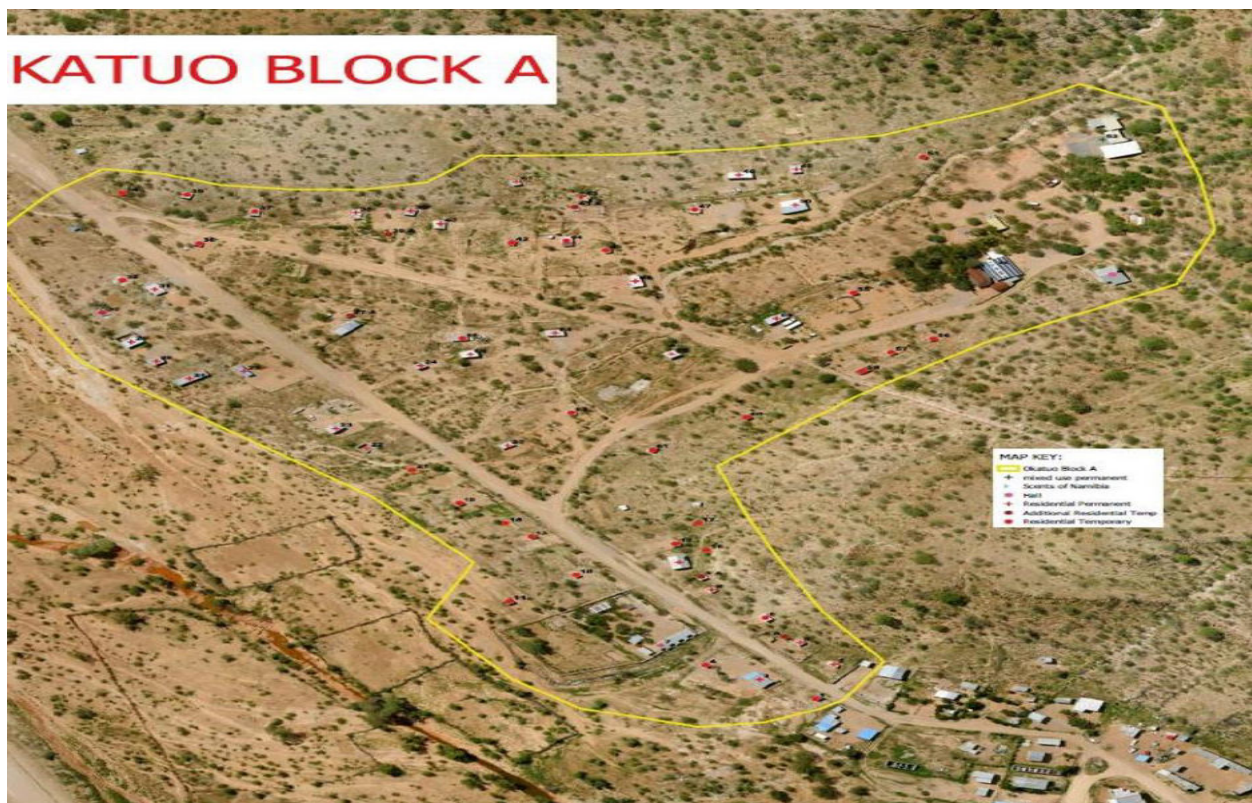


Figure 6: Okatuuo informal settlement

4.2 Impacts & Mitigations

4.2.1 Physical & Social Impacts

The prospect of re-aligning and relocating existing properties within surveyed erven poses a significant concern regarding potential property loss and subsequent conflicts between the Proponent and the landowners. Such actions may trigger unresolved tension, inadequate consultations, and misunderstandings among current residents residing in or adjacent to these portions of land. These conflicts could escalate, particularly concerning the relocation and re-alignment of properties intended for incorporation into the FLTS scheme.

To address these social grievances prior to and during the Construction Phase, the Proponent, comprising the Town Planning Department and Public Relations Officer, must adopt a proactive approach. It becomes imperative for the Proponent to timely notify potentially affected landowners or neighbors about the intended establishment or upgrade of the townships. Such early notifications serve as a crucial step in fostering transparency and trust among stakeholders.

Moreover, the Proponent should undertake thorough consultations and engagement with the landowners, aiming to find amicable solutions to mitigate conflicts. These discussions should involve a comprehensive dialogue to address concerns, explore alternatives, and reach mutually agreed-upon resolutions. This proactive engagement strategy is pivotal in preventing misunderstandings and fostering a cooperative atmosphere between the Proponent and affected parties.

In cases where compensation is warranted, the Proponent must adhere to the National Compensation Policy. Amicable and fair compensation for affected landowners should be a priority, ensuring that the compensation process aligns with established policies and regulations. This approach not only demonstrates a commitment to fairness but also upholds ethical standards in addressing the impacts of property re-alignment and relocation.

Linking these strategies together, the Proponent's proactive communication, thorough consultations, and adherence to compensation policies are interconnected steps essential for mitigating social grievances arising from property relocation or re-alignment. By embracing these measures, the Proponent can establish a framework that prioritizes transparency, inclusive decision-making, and fairness, thereby minimizing conflicts and fostering a more harmonious relationship between stakeholders during the implementation of the FLTS scheme.

4.2.2 Environmental Impacts

Storm water : Stormwater management poses a critical challenge in certain areas of Opuwo Town, notably during intense rainy seasons, as exemplified in locations like Old Katatutura. The inundation of water during heavy rains presents a substantial risk to both residents and infrastructure, potentially compromising the safety of individuals and damaging houses and other essential structures.

Addressing this environmental and social concern during the operational phases, particularly concerning the existence of the FLTS houses, necessitates coordinated efforts from entities like the ECO and Opuwo Town Council. It becomes imperative for these stakeholders to devise comprehensive stormwater management plans integrated into the FLTS scheme designs. These plans should include strategically located discharge points aimed at efficiently collecting and redirecting rainwater that inundates the town during severe rainy seasons.

By incorporating designated stormwater management points into the FLTS scheme designs, the aim is to prevent the accumulation of rainwater on-site, especially in flood-prone areas like Old Katatutura. These planned discharge points will serve as essential mechanisms for collecting excess rainwater and diverting it to specific rainwater collection areas within the town. Such measures are crucial in averting potential hazards posed by flooding, protecting infrastructure, and ensuring the safety of residents during heavy rainfall periods.

The collaboration between the ECO and Opuwo Town Council in implementing these stormwater management plans within the FLTS scheme designs stands as a proactive approach to addressing the recurring issue of flooding in specific town areas. By strategically redirecting rainwater to designated collection points, this initiative aims to mitigate the adverse impacts of heavy rainfall, safeguarding both the community and essential infrastructure from potential risks associated with inundation.

Solid waste: The impending settlement of residents in a particular area is poised to generate both domestic and industrial solid waste, emphasizing the critical need for appropriate waste management infrastructure. The accumulation of such waste not only creates an eyesore in the environment but also poses several environmental and socio-economic concerns, including unwanted nutrient disposal into the soil and potential health risks to livestock.

Considering the permanent nature of these challenges, proactive measures must be established to manage solid waste effectively. In this regard, the site manager plays a crucial role in

implementing strategies for waste management. Visual inspections and monitoring conducted by the site manager serve as essential tools in ensuring compliance with waste management protocols.

The responsibility for managing all waste falls under the purview of the Opuwo Town Council, which must ensure the availability of domestic waste handling facilities such as dust bins and skip containers across all erven. This strategic placement of waste collection containers is integral to prevent indiscriminate waste disposal and maintain cleanliness within the settlement.

Moreover, to address the multifaceted issues associated with solid waste, it becomes imperative to incorporate waste separation protocols within the waste management infrastructure. Facilitating waste separation allows for the segregation of recyclable materials, thereby enabling recycling initiatives that contribute to environmental sustainability and reduce the strain on landfill capacity.

By instituting these measures under the oversight of the site manager and coordinated by the Opuwo Town Council, the management of solid waste within the settlement becomes more systematic and comprehensive. The visual inspections, provision of waste handling facilities, and implementation of waste separation practices collectively contribute to mitigating environmental eyesores, preventing soil contamination, and safeguarding livestock health. Additionally, these measures serve as a catalyst for promoting sustainable waste management practices that align with environmental preservation and socio-economic well-being within the community.

Essential services: Installing essential services without necessitating the relocation of residents remains a persistent challenge for Opuwo's servicing initiatives, a hurdle the Council has faced since the town's inception. This difficulty is compounded by the considerable variation in the formalization status of informal settlements throughout Opuwo. Specifically, within our study area, Orutjandja South, the Okatuuo informal settlement, and the southern section of Orutjandja East lack any structured layout, remaining entirely informal.

Shifting focus to the western region, development beyond New Katutura and Okatuuo is earmarked for self-sustaining ventures, primarily emphasizing tourism and recreation as pivotal land uses. Several factors shape this perspective, notably the mountainous terrain and the presence of an ephemeral river alongside the precarious floodplain, necessitating a cautious and environmentally conscious approach.

Adding to these considerations is the scarcity of commercially viable infrastructure services. This scarcity significantly limits construction possibilities in the town's western outskirts. Compounding this limitation is the considerable distance between developable land and the town center, notably more expansive compared to the proximity of vacant land to the urban core. Contrarily, the land available to the east offers a potential alternative. Considering these constraints, one possibility worth exploring.

Also, the ongoing development initiatives focus on enhancing the informal settlement clusters encompassing Old and New Katutura, along with Okatuu. These efforts revolve around the creation of an integrated settlement plan, readjustment of settlements, and the facilitation of land rights provisions. The Council remains committed to maintaining collaborative efforts with the GIZ-ISUD project to further these objectives.

4.3 Assessment of Cumulative Impacts of the considered measures.

The evaluation of Cumulative Impacts emphasized the necessity for implementing mitigation strategies capable of managing anticipated environmental effects during the rainy season, particularly in flood-prone areas. The Environmental Impact Assessment (EIA) factored in Opuwo's natural climate cycle and aimed to ensure that construction activities accounted for natural environmental occurrences such as droughts or floods.

Natural environmental phenomena like droughts and floods significantly affect various aspects of both the environment and society in all settlements. During the rainy season, project impacts involving pollutant discharge into rivers or water harvesting for agriculture are expected to be more pronounced. To identify foreseeable projects, guidelines suggest referencing local, regional, or national development plans. In cases where these plans are unavailable, the focus should shift towards identifying other projects in the planning phase or those undergoing the informal settlements' approval process by obtaining necessary permits.

The assessment of cumulative impacts regarding the considered measures involved three phases: baseline assessment, identification of impacts and trends, and scenario analysis leading to recommendations.

5. CHAPTER FOUR: PUBLIC CONSULTATION

Public Consultation forms an important component of the Environmental Assessment process. It is agitated for in the EIA Regulations (2012), Section 21 of the Regulations details steps to be taken during a given public consultation process and these have been used in guiding the EIA process.

Formal public involvement has taken place via newspaper adverts, site notice and registering I&APs. The public consultation process has been guided by the requirements of Environmental Management Act (EMA) No. 7 of 2007 and the process has been conducted in terms of regulation 7(1) as well as in terms of the EMA Regulations of GN 30 of 6 February 2012.

5.1 PUBLIC CONSULTATION ACTIVITIES

The following tasks have been undertaken during public consultation process which started on the 20 April 2023.

Identification of Interested and Affected Parties (I&APs)

Following the scoping process, the team conducting the Environmental Impact Assessment (EIA) identified interested and affected parties (I&APs) as well as important stakeholders related to the proposed project. The activities for public participation in the EIA process were included in the background information of the EIA approach. The key stakeholders identified included the MAWLR, GIZ, and Opuwo Town Council (who are the proponents of the project). Other I&APs had the option to register with the EIA team, and their names and contact information were recorded in a special database.

Distribution of BID

A Background Information Document (BID) was distributed on request by I&A Parties and it was distributed to key stakeholders identified during the scoping process. The BID provided a

description summary of the proposed project, and the project Proponent and the whole procedure of the EIA to be followed.

Public Announcement.

A public announcement was done to make sure the public is aware of proposed FLTS. The EIA study was announced publicly through the following means presented in Table .

Table 5 : Details on the modes employed for public notifications of the EIA study

| Method / Mode | Area of Distribution | Language |
|---------------|----------------------------------|----------|
| Namibian Sun | Country Wide | English |
| Republikein | Country Wide | English |
| Site notices | Opuwo Town Council Notice Board | English |
| | At two of the project localities | English |

5.2 KEY STAKEHOLDER AND PUBLIC ENGAGEMENT (CONSULTATION) MEETING

A Stakeholders and Public Consultation meeting was scheduled and held on the **Wednesday 27 April 2022** at the **Roman Catholic Church Opuwo**. The meetings were well attended and the local I&AP group were represented. The information shared was well received and some inputs (comments and or issues) were made thereto. Some of the photos taken from the meeting in Opuwo are shown below. The meeting minutes (with the attendance register) are attached hereto as Appendix A together with other Public Consultation files.

5.1.1 IDENTIFICATION OF INTERESTED AND AFFECTED PARTIES (I&APs)

The EIA team identified and consulted the following I&APs & key stakeholders for the proposed project:

- Community members,
- Opuwo Town Council.

Other I&APs were allowed to register to the EIA team and compiled a database containing their names and correspondence details. The registration was accomplished over a period of 14 days.



Figure 7: Public engagement proceedings (Left-Opuwo town Council, Right-Community meeting)

5.1.2 KEY FINDINGS AND CONSULTATION MEETING COMMENTS

The EIA Team (Consultant) informed all affected parties about the proposed project and a public meeting was conducted on 09 April 2022. All attendees were given project information and an opportunity to comment on the project. No objections were raised by I&AP in relation to the project, however, some inputs and comments were recorded as summarized in Table below.

Table 6: Key findings and comments made from the public consultation process:

| Theme | Issue |
|---------------------------|--|
| Relocation | -The current informal occupant near and currently occupying the Portion will be given alternative land to pave way for the FLTS implementation. |
| Bush encroachment | -The encroachment into existing plots on some of the project Portions. |
| Financing of plots | -The community members (residents) were concerned on how to pay for the plots when the land some of the are residing was donated. |
| Compensation | -The compensation of pre-existing private land affected by the FLTS scheme. The national compensation policy will be applied or re-alignment will be considered. |

| Theme | Issue |
|---|--|
| Stormwater management | -The FLTS scheme establishment should prioritize the implementation of stormwater management technology or systems (rainwater diversion plan) or modify some of the areas to fit for housing development as they are currently flooded during rainy seasons. |
| Local employment preference | -Emphasis on prioritizing the locals for jobs during the upgrades or construction of new FLTS scheme structures. |
| Provision for community services | -The FLTS scheme should consider setting up public/government kindergartens in the project sites because private kindergartens are costly. -There is also a request to build a school and children's playground is needed on the Greenfield Portion |
| Open space and local business/markets | -The FLTS scheme establishment should consider creating public open spaces such as recreational parks for the residents. There is also the need to include some local business/market centres. |
| Accessibility by physically challenged residents | -The streets should be modified to enable the physically challenged people on wheelchairs to access the areas on the Portions. |

6. CHAPTER FIVE: ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

6.1 OVERVIEW

The entity responsible for the project is dedicated to ensuring sustainability and adherence to environmental regulations by devising a plan to correct all potential environmental impacts associated with the project. This is in accordance with both Namibian Environmental Management legislation and international best practices related to township establishment and related undertakings. The Proponent will execute the Environmental Management Plan (EMP) appended hereto, which aims to prevent, minimize, and alleviate adverse effects. The EMP,

formulated by Plan Africa Consultants, will address all foreseen impacts, and will be frequently reviewed and improved to ensure continual progress in managing impacts.

6.2 KEY POTENTIAL POSITIVE AND ADVERSE (NEGATIVE) IMPACTS AND ISSUES

The township establishment and associated activities are associated with certain potential (positive and negative) biophysical and social impacts. The key ones and that are relevant to and identified for the FLTS establishment in Opuwo are as follows:

Positive impacts

The project is set to improve the socio-economic environment of the Opuwo Town through the:

- Much needed affordable accommodation and improved services such as housing, and
- Temporary employment creation during the FLTS establishment (construction and upgrading).

Negative (adverse) impacts

- Faunal habitat/grazing disturbance (for livestock grazing on the edge of the Town (Greenfield Portion),
- Pollution (Solid waste, hazardous and wastewater),
- Flooding due to stormwater stagnation on land during rainy seasons,
- Water Resources pollution,
- Soil Erosion and Disturbance,
- Health and Safety Risks, and
- Social Grievance due to property relocation/realignment of structures into surveyed ervens.

6.3 IMPACT ASSESSMENT METHODOLOGY

An impact assessment matrix was used to assess all possible impacts of the project on the environment. In line with NEMA No. 7 of 2007 and the Environmental Impacts Regulations (GN

30 in GG 4878 of 6 February 2012) with the direction on impacts analysis the following impact assessment criteria was identified by the team and deemed suitable.

Table 2: Impact Screening Criteria

| Aspect | Description |
|--------------|---|
| Nature | Focuses on the type of effect that the proposed project will have on environmental components. Addresses questions related to “what will be affected and how?” |
| Extent | Spatial extend of the project and anticipated spatial extend of impacts indicating whether the impact will be within a limited area (on site where construction is to take place); local (limited to within 15km of the area); regional (limited to ~100km radius); national (extending beyond Namibia’s borders). |
| Duration | This looks at the temporal issues pertaining to time frames e.g. whether the impact will be temporary (during construction only), short term (1-5 years), medium term (5-10 years), long term (longer than 10 years, but will cease after operation) or permanent. |
| Intensity | Establishes whether the magnitude of the impact is destructive or innocuous and whether it exceeds set standards, and is described as none (no impact); low (where natural/ social environmental functions and processes are negligibly affected); medium (where the environment continues to function but in a noticeably modified manner); or high (where environmental functions and processes are altered such that they temporarily or permanently cease and/or exceed legal standards/requirements). |
| Probability | Considers the likelihood of the impact occurring and is described as uncertain, improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of prevention measures). |
| Significance | Significance is given before and after mitigation. Low if the impact will not have an influence on the decision or require to be significantly accommodated in the project design, Medium if the impact could have an influence on the environment which will require modification of the project design or alternative mitigation (the route can be used, but with deviations or mitigation) High where it could have a “no-go” implication regardless of any possible mitigation (an alternative route should be used). |

The application of the above criteria will be used to determine the significance of potential impacts using a combination of duration, extent, and intensity/magnitude, augmented by probability, cumulative effects, and confidence. Significance is described as follows:

Table 7: Impact Rating Criteria

| Significance Rating | Criteria |
|---------------------|--|
| Low | Where the impact will have a negligible influence on the environment and no modifications or mitigations are necessary for the given development description. This would be allocated to impacts of any severity/ magnitude, if at a local scale/ extent and of temporary duration/time. |
| Medium | Where the impact could have an influence on the environment, which will require modification of the development design and/or alternative mitigation. This would be allocated to impacts of moderate severity/magnitude, locally to regionally, and in the short term. |
| High | Where the impact could have a significant influence on the environment and, in the event of a negative impact the activity(ies) causing it, should not be permitted (i.e. there could be a 'no-go' implication for the development, regardless of any possible mitigation). This would be allocated to impacts of high magnitude, locally for longer than a month, and/or of high magnitude regionally and beyond. |

6.4 IMPACT ASSESSMENT OF THE GREATER OPWO AND INFORMAL SETTLEMENTS AT LARGE

By subjecting each of the potential impacts to the matrix above, the EIA team established the significance of each impact prior to implementing mitigation measures and then after mitigation measures have been implemented. Some of the mitigation measures are mentioned but detailed descriptions of management actions are contained in the accompanying EMP.

Table 8: Environmental impact Assessment Matrix

| Impact | Status/nature | Extent | Duration | Intensity | Probability | Significance | | |
|---|--|----------|----------|-----------|-------------|-------------------|---|-----------------|
| | | | | | | Before Mitigation | Mitigation applied | Post Mitigation |
| Servicing and Construction Phase | | | | | | | | |
| -Soil physical disturbance during servicing of the land and construction activities | -Erosion of tracks -Proliferation of tracks -Negative excavation methods such as blasting. | Local | Short | Medium | Definite | High | -Restrict construction activities on defined areas. -Proper management of stockpiles. Excavated material must be covered in stockpiles until reuse and backfilling. -Restrict movement to defined areas. Use existing roads until access require limited new roads. -Use surface anchored foundations with very limited rock breaking. | Low |
| Urbanization/ urban growth | Physical expansion of the Town | Regional | Long | Medium | Definite | Low | -All built structures should be constructed according to the local Authority bylaws to guarantee strength and longevity of structures built. | Low |

ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR THE PROPOSED IMPLEMENTATION OF THE FLTS SCHEME IN OPUWO TOWN, KUNENE REGION, NAMIBIA

| Impact | Status/nature | Extent | Duration | Intensity | Probability | Significance | | |
|---|--|--------|-----------|-----------|-------------|-------------------|--|-----------------|
| | | | | | | Before Mitigation | Mitigation applied | Post Mitigation |
| Noise from land servicing activities and construction vehicles and equipment | -Nuisance and disturbance. -Noise and vibrations will also have an impact on animals such as birds and reptiles. -Birds are known to abandon their nests if subjected to continuous noise. Noise to the nearby locals and to construction workers. | Local | Short | Medium | Definite | High | -All workers on site must be equipped with ear plugs to be used when the noise becomes unbearable. -Switch off machines that are not used. -All locals must be notified about the noise construction activities on time during excavations and ground preparation, servicing of the land and any constructions beyond. - All noisy construction activities must not be carried during night time, early morning and evenings, they must be done during daytime to ensure minimum disturbance of the nearby residents. | Low |
| Physical destruction of vegetation through land servicing, construction activities and the upgrading and opening of new roads | -These activities may result in the removal and destruction of few trees species on site. | Local | Long Term | High | Definite | High | -Limit activity footprint and limit movement to designated areas only. -Implement and monitor the Vegetation Management Plan if there is a significant destruction of the on-site and surrounding areas. -Protected trees must be marked (e.g. with hazard tape) and planning and pegging personnel must know that marked trees are out of bounds (to be | Medium/ Low |

ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR THE PROPOSED IMPLEMENTATION OF THE FLTS SCHEME IN OPUWO TOWN, KUNENE REGION, NAMIBIA

| Impact | Status/nature | Extent | Duration | Intensity | Probability | Significance | | |
|---|---|--------|----------------|-----------|-----------------|-------------------|--|-----------------|
| | | | | | | Before Mitigation | Mitigation applied | Post Mitigation |
| | | | | | | | left untouched for continued preservation). -No destruction or disturbance to the protected species such as Baobab trees found within the project sites. | |
| Stormwater management | -The Opuwo Town is always flooded during heavy rainy seasons, and this water could be a problem to infrastructure. | Local | Temporary | Medium | Probable | High | -Stormwater management plans (discharge points) should be designed and incorporated into the FLTS scheme designs this is to ensure that the well-known and experienced rainwater that flood the town areas during heavy rainy seasons are collected and diverted to specific rainwater collection area (point) in the town and not idle on site. | Medium / Low |
| Disturbance and killing of both reptiles, and small animals' activities | -reptiles and small animals in the locality are bound and likely to be affected. | Local | Temporary term | Low | probable | Medium | -The indiscriminate killing of animals and reptiles is prohibited. | Low |
| Disturbance, killing and snaring of domestic animals | The project site, especially Greenfield is currently a grazing area to some livestock during the rainy season. Therefore, the | Local | Permanent | Medium | Highly probable | High | -The Proponent should inform the communities through the constituency office of the intention to close off the open land. -The livestock should not be killed but instead inform the locals / owner to | Medium / Low |

ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR THE PROPOSED IMPLEMENTATION OF THE FLTS SCHEME IN OPUWO TOWN, KUNENE REGION, NAMIBIA

| Impact | Status/nature | Extent | Duration | Intensity | Probability | Significance | | |
|---|--|----------|-----------|-----------|-----------------|-------------------|--|-----------------|
| | | | | | | Before Mitigation | Mitigation applied | Post Mitigation |
| | development of the land will push the animals away. | | | | | | look after the animals and keep them away from the town. -No beating or snaring of people's animals. | |
| Disturbance through noise, movement and temporary occupation of an otherwise less disturbed habitat | -Negatively affect local animals and birds if any | Regional | Temporary | Medium | Highly probable | High | -Minimum disturbance of local environment by ensuring operations does not produce extreme noise that negatively affect nearby animals and birds. -Switch off machines that are not used. | Medium |
| Archaeological Landscape | -The Opuwo Town is home to some of the cultural and heritage sites, such as the Ombalantu Baobab Tree Heritage Centre, therefore, this area should not be disturbed. | Local | Long term | Medium | Improbable | Medium | -Demarcate, protect and avoid development near heritage sites. If removal is inevitable, a Consent Letter should be applied for from the Heritage Council via an Archaeologist. -All heritage and cultural resources should be avoided and not to be disturbed. | Low |
| Social Grievance | -The re-alignment and relocation of existing properties into surveyed erven may lead to loss of properties and | Local | Long-term | Medium | Probable | High | -The Proponent should in time notify the potentially affected landowners of the intention to establish and or upgrade the township. -Thorough consultation and engagement with landowners should | |

ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR THE PROPOSED IMPLEMENTATION OF THE FLTS SCHEME IN OPUWO TOWN, KUNENE REGION, NAMIBIA

| Impact | Status/nature | Extent | Duration | Intensity | Probability | Significance | | |
|---|---|--------|------------|-----------|-------------|-------------------|--|-----------------|
| | | | | | | Before Mitigation | Mitigation applied | Post Mitigation |
| | possible conflicts between the Proponent and the landowner(s). | | | | | | be conducted and amicable solutions found and agreed on. -Where compensation is the case, the Proponent should amicably compensate the affected landowner according to the National Compensation Policy. | |
| Change in topography/ landscape character | -Use of caterpillars for servicing (roads construction and paving of the site) | Local | Long term | Medium | Probable | High | -Refill all the excavated pits and trenches to ensure that there are no pits left open on site and creating a new paved landscape (use of cement interlocks) | Low |
| Environmental contamination by hydrocarbons release into the environment (grease, oils, fuel spills and leakages from machinery and fugitive wastes.) | There will be no storage of oils and fuel on site according to the engaged contractors, however there is risk of spillage of hydrocarbons from vehicles and machinery operations, maintenance through leakages and spillages which may result in: | local | Short Term | Medium | Probable | Medium | -Implement a maintenance programme to ensure all vehicles, machinery and equipment are and remain in proper working order -Vehicle maintenance should be Conducted in designated areas only, preferably off-site. If maintenance is to be conducted on site, these areas should be designed to contain spillages i.e. maintenance site must be bundled and paved and the use of chemicals must be controlled. -Waste oil, fuels and other chemicals from drip trays on stationery vehicles | -Low |

ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR THE PROPOSED IMPLEMENTATION OF THE FLTS SCHEME IN OPUWO TOWN, KUNENE REGION, NAMIBIA

| Impact | Status/nature | Extent | Duration | Intensity | Probability | Significance | | |
|----------------|---|--------|-----------|-----------|-------------|-------------------|--|-----------------|
| | | | | | | Before Mitigation | Mitigation applied | Post Mitigation |
| | <ul style="list-style-type: none"> -Washing away of contaminated soils by rains into nearby rivers -Pollution of soil and affecting small living organisms habituating the soil -Result in possible groundwater pollution. -Possible fire risk on and around the site | | | | | | <ul style="list-style-type: none"> and machinery will be disposed of as hazardous waste at a licensed facility by a specialist hazardous waste handler. -Oil residue will be treated with oil absorbent material such as Drizit or bio-remediation and removed to an approved waste disposal site -Spill kits will be easily accessible and workers will be trained in the use thereof. -Staff and contractors will be trained in the handling and storage of oils, fuels, chemicals and other hazardous substances -No bins containing organic solvents such as paint and thinners shall be cleaned on site, unless containers for liquid waste disposal are provided on site. | |
| Land Pollution | -Negative effect on the ecosystem when waste emanating from construction | Local | Temporary | Medium | Probable | Medium | -Ensure that all waste (stockpiles) from construction activities must be stored and contained in designated containers and transported to Opuwo | Low |

ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR THE PROPOSED IMPLEMENTATION OF THE FLTS SCHEME IN OPUWO TOWN, KUNENE REGION, NAMIBIA

| Impact | Status/nature | Extent | Duration | Intensity | Probability | Significance | | |
|--|---|----------|-----------|-----------|-----------------|-------------------|---|-----------------|
| | | | | | | Before Mitigation | Mitigation applied | Post Mitigation |
| | activities is not managed properly. | | | | | | Waste Disposal Site for proper disposal. - Adequate mobile toilets must be provided at the construction camps for the use of the workers. | |
| Dust from the general servicing of the land and construction activities | -Respiratory sicknesses can result from prolonged exposure to dust -Dust can negative affect the ecosystem in general and the nearby residents -it also causes general pollution of the air | Local | Temporary | High | Probable | Medium | -Equip all the workers exposed to dust with dust masks -Water spray all the areas that are sources of dust to minimize dust. - Minimize activities that can generate dust during windy days. - Limit the speed within the whole construction area to a maximum of 10 km/h to avoid excessive generation of dust - Dust will significantly be reduced if excavation and land clearing is carried out after it has rained and the soil is wet or dust suppression can be done | Low |
| Employment opportunities during the servicing and construction phases of the development | -The general servicing and all construction activities create job opportunities both to the locals, regional and national, this will have a positive | Regional | Temporary | Low | Highly probable | High | -The Project Manager should make it mandatory to contractors that all unskilled and semi-skilled work should be given to the locals. | high |

ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR THE PROPOSED IMPLEMENTATION OF THE FLTS SCHEME IN OPUWO TOWN, KUNENE REGION, NAMIBIA

| Impact | Status/nature | Extent | Duration | Intensity | Probability | Significance | | |
|--|---|--------|------------|-----------|-----------------|-------------------|--|-----------------|
| | | | | | | Before Mitigation | Mitigation applied | Post Mitigation |
| | economic impact on surrounding Communities and technical companies involved | | | | | | | |
| The spread of HIV/AIDS and others STDs throughout the construction phase of the project. | -The huge inflow of employees and other people into the Town can result in the spread of HIV/AIDS, other STDs | Local | Long term | Medium | Highly probable | Low | -Awareness should be raised at workplace and provision of condoms -Massive education of the employees and the general public on the importance of having protected sex | Low |
| Operational Phase | | | | | | | | |
| Pollution from solid waste and sewerage | -Failure to manage waste properly result in general pollution of the environment and this might have a detrimental impact on the people's well-being and the quality of the environment | Local | Long term | Low | Highly probable | Medium | -The Portions must be serviced and connected to the Opuwo Town Council Sewer reticulation system. -Regular collection of solid waste by the municipal (rither directly or through the appointed contractor) -Provisions of domestic solid waste collection bins to the residents | Low |
| Population influx | -Results in social tensions and an increase infections of sexually transmitted diseases particularly | -Local | -long term | Medium | Definite | High | -Educate employees on social integration and sexual behaviour. | Medium |

ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR THE PROPOSED IMPLEMENTATION OF THE FLTS SCHEME IN OPUWO TOWN, KUNENE REGION, NAMIBIA

| Impact | Status/nature | Extent | Duration | Intensity | Probability | Significance | | |
|-----------------------|--|----------|------------|-----------|-------------|-------------------|---|-----------------|
| | | | | | | Before Mitigation | Mitigation applied | Post Mitigation |
| | HIV and AIDS, and other STDs. | | | | | | | |
| Social integration | Potential for conflict between people of different backgrounds and cultural beliefs. | Local | Short Term | Medium | Probable | Medium | -Public relations should adequately address the integrated societal values and morals | Low |
| Community development | Employment creation | Regional | Long term | High | Definite | High | -Promote local businesses and employ locals | High |

6.5 RISK ANALYSIS

After conducting site visits, analyzing processes, conducting desk studies, and consulting with stakeholders, an integrated environmental risk analysis was performed using the latest edition of DEFRA Guidelines for Environmental Risk Assessment and Management 'Green Leaves III' and international best practices. The risk analysis indicates that the establishment of the FLTS and other related project activities will have negative impacts on the physical and socio-economic environment, but their significance is rated moderate and can be reduced by implementing effective management and mitigation measures. The project is also expected to bring positive impacts on the social and economic aspects. However, it is important to note that the project is being executed in an area that is already disturbed (in two of the three selected localities in Opuwo). To decrease negative impacts and increase positive impacts, a coordinated project management strategy must be implemented according to the Environmental Management Plan developed for the FLTS scheme establishment in Opuwo.

Public & Stakeholders' Consultation and Engagement and Feedback

The public and stakeholders were consulted through various means, including newspaper ads, public notices, and face-to-face meetings in Opuwo. The I&APs provided a few but significant comments that were incorporated into the EIA documents for consideration during the planning and design phase of the FLTS establishment in Opuwo.

To address the concerns raised by I&APs regarding stormwater and ensure that significant environmental components are considered, a Hydrogeological Assessment Study was conducted. The aim was to assess the impact of the proposed FLTS establishment and related activities on water resources and provide measures to mitigate any potential impact.

No further specialist studies were required for the Detailed ESA, as the potential risks and impacts can be managed and mitigated through the implementation of measures provided in the EMP. To ensure effective implementation and management, an Environmental Control Officer and Competent Authority should monitor the EMP during project implementation, specifically during the construction or upgrading stage. Based on the adherence to the conditions by the Proponent and their associated contractors, the Environmental Clearance Certificate (ECC) may be granted by the Environmental Commissioner for the establishment of the FLTS scheme in Opuwo on the three Portions.

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Appendix A: Public Consultation Documents

- 1. Newspaper adverts**
- 2. Consultation Register**
- 3. Meeting Minute**
- 4. Questionnaires**

Appendix B:

Maps and Layouts

- 1. Locality Map**
- 2. Layout**

Appendix C: Land Tenure, Approvals and Licenses

- 1. Proof of Land Ownership/
Authorisation for
development/ Consent for
Development**

Appendix D:

Specialist Studies

- 1. Hydrogeological Study**
- 2. Socio-Economic Study**

Appendix E: EIA/Feasibility Team Resumes

- 1. Mr Tendai E. Kasinganeti**
- 2. Ms Kristian Shiwayu**