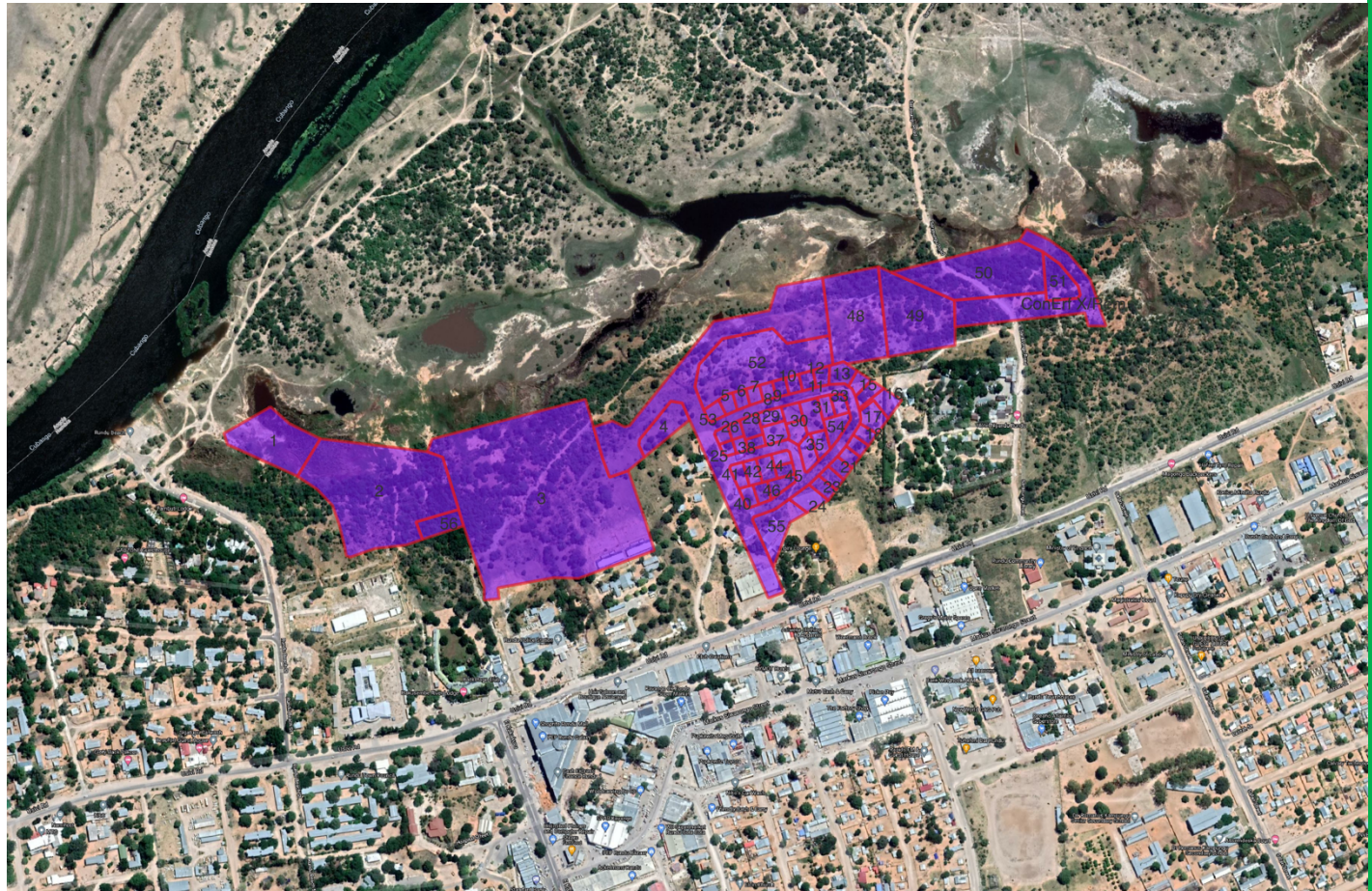


ENVIRONMENTAL IMPACT ASSESSMENT: SUBDIVISION OF CONSOLIDATED ERF X (INCORPORATED ERF X; ERVEN 1220/REM AND 1229) INTO 57 ERVEN AND REMAINDER, RUNDU EXTENSION 3 IN RUNDU, KAVANGO EAST REGION-NAMIBIA.



ENVIRONMENTAL SCOPING REPORT (ESR)

DATE: JULY 2021



The Subdivision of Consolidated Erf X (Incorporated Erf X; Erven 1220/Rem And 1229) Into 57 Erven and Remainder, Rundu Extension 3 In Rundu, Kavango East Region-Namibia.

Environmental Scoping Report (ESR)

Environmental Scoping Report Prepared for Rundu Town council

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Definitions

TERMS	DEFINITION
BID	Background Information Document
EAP	Environmental Assessment Practitioners
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA (R)	Environmental Impact Assessment (Report)
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
EMPr	Environmental Management Plan Report
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&APs	Interested and Affected Parties
MEFT: DEA	Ministry of Environment, Forestry and Tourism's Directorate of Environmental Affairs
NHC	National Heritage Council
NEMA	Namibia Environmental Management Act
ToR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change

i. Purpose of This Environmental Impact Assessment Report

This Environmental Scoping Report (ESR) follows on the Scope of Work delineated by Rundu Town council for the proposed Subdivision of Consolidated Erf X (Incorporated Erf X; Erven 1220/Rem And 1229) Into 57 Erven and Remainder, Rundu Extension 3 In Rundu, Kavango East Region-Namibia. Existing information and input from commenting authorities, Interested and Affected Parties (I&APs) was used to identify and evaluate potential environmental impacts (both social and biophysical) associated with the proposed project.

Environmental flaws associated with the proposed project were identified through this ESR. A conscious decision was made based on the recommendations and guidelines by the Directorate of Environmental Affairs EIA guidelines in order to assess both significant and less significant environmental impacts proposed by the development. The developed Environmental Management Plan (EMP) for this proposed activity will have to be effectively implemented by the client, to ensure that adverse environmental impacts are not considered.

The detailed assessment of the anticipated impacts was undertaken with the purpose of highlighting any areas of concern regarding to the proposed project during its construction, and operation. In addition, an independent sensitivity mapping analysis was undertaken. This analysis characterised the development site on the significant environmental aspects in order to reflect the sites suitable and unsuitable (no-go) development footprint areas. This action guided the final footprint of the proposed project development.

This report will also be used to motivate and define the previously identified, project alternatives (i.e. site, technology and layout) based on the findings of the environmental baseline study and the suitability of the site to the type of development. This EIAR has been compiled in accordance with the regulatory requirements stipulated in the EIA Regulations (2012), promulgated in terms of the Namibian environmental legislation (Environmental Management Act (No. 7 of 2007))

The ESR was commissioned because the proposed establishment triggered the application for an environmental clearance certificate as the following listed activity will be triggered by the proposed energy generation activities.

LAND USE AND DEVELOPMENT ACTIVITIES 5.1 The rezoning of land from –

- (a) residential use to industrial or commercial use;
- (b) light industrial use to heavy industrial use;
- (c) agricultural use to industrial use; and
- (d) use for nature conservation or zoned open space to any other land use.

Anticipated Environmental Impacts

- Low potential environmental impacts because the proposed site is already disturbed from human encroachment.
- Adding on a management plan has been developed to mitigate any anticipated possible impacts of the project to the environment.
- Relative or moderate social impact (positive)

Social Impact

The project is generally expected to improve the socio-economic environment of Rundu through a major boost in business through integrations, employment and improved transport system on the long term. Interested and Affected Parties were notified of the project through Site notices and newspaper adverts and all relevant information on consultation is covered in this document and Appendix A of the document.

Recommendation

It is concluded that most of the impacts identified during this Environmental Assessment can be addressed through the recommended mitigation and management actions for both the construction and operation phases of the land development project. Should the recommendations included in this report and the EMP be implemented the significance of the impacts can be reduced to reasonably acceptable standards and durations. All developments could proceed provided that general mitigation measures as set out are implemented as a minimum.

It is therefore recommended that the proposed development is authorised for implementation to ensure that economic development is realised in Rundu town on condition that the Environmental Management Plan developed for this project is implemented and complied to;

NB: The EAP does not accept any responsibility in the event that additional information comes to light at a later stage of the process. All data from unpublished research utilised for the purposed of this project is valid and accurate. The scope of this investigation is limited to assessing the potential biophysical, social and cultural impacts associated with the proposed project.

1. CHAPTER ONE: BACKGROUND

1.1. Introduction

Rundu Town Council (RTC) herein referred to as the proponent has been planning on the utilisation of the area to the north of the Kavango Regional Council to the Ngandu Lodge as well as creating additional River front properties on this area and extending the Rundu Beach.

In terms of the Namibian environmental legislation (Environmental Management Act (No. 7 of 2007)) and the Environmental Assessment Regulations of 2012; an EIA is required to obtain an Environmental Clearance Certificate from the Ministry of Environment and Tourism (MET) before the area can be developed.

Furthermore, as per the requirements of the Environmental Management Act No. 7 of 2007, Rundu Town Council has appointed D&P Engineers and Environmental Consultants (DPE) to conduct an Environmental Assessment (EA) and develop an Environmental Management Plan (EMP) for the development. This has been followed by an application for Environmental Clearance Certificate (ECC) to the Ministry of Environment and Tourism (MET): Directorate of Environmental Affairs (DEA).

In this respect, this document forms part of the application to be made to the DEA's office for an Environmental Clearance certificate for the proposed subdivision of incorporated ERF X, Erven 1220/REM and 1229 in accordance with the guidelines and statutes of the Environmental Management Act No.7 of 2007 and the environmental impacts regulations (GN 30 in GG 4878 of 6 February 2012)

1.2. Project Location

The proposed area is located east of the Rundu Beach area and north of the Kavango Regional Council up to Ngandu Lodge to the east.

The area is situated on vacant townlands and is zoned "Undetermined" according to the Rundu Town Planning Scheme. Ownership of the Remainder of the Farm Rundu Townlands No. 1329 vests with the Rundu Town Council as indicated on Certificate of registered Title No. T4396/1999

Figure 1 gives the locality of the proposed project.

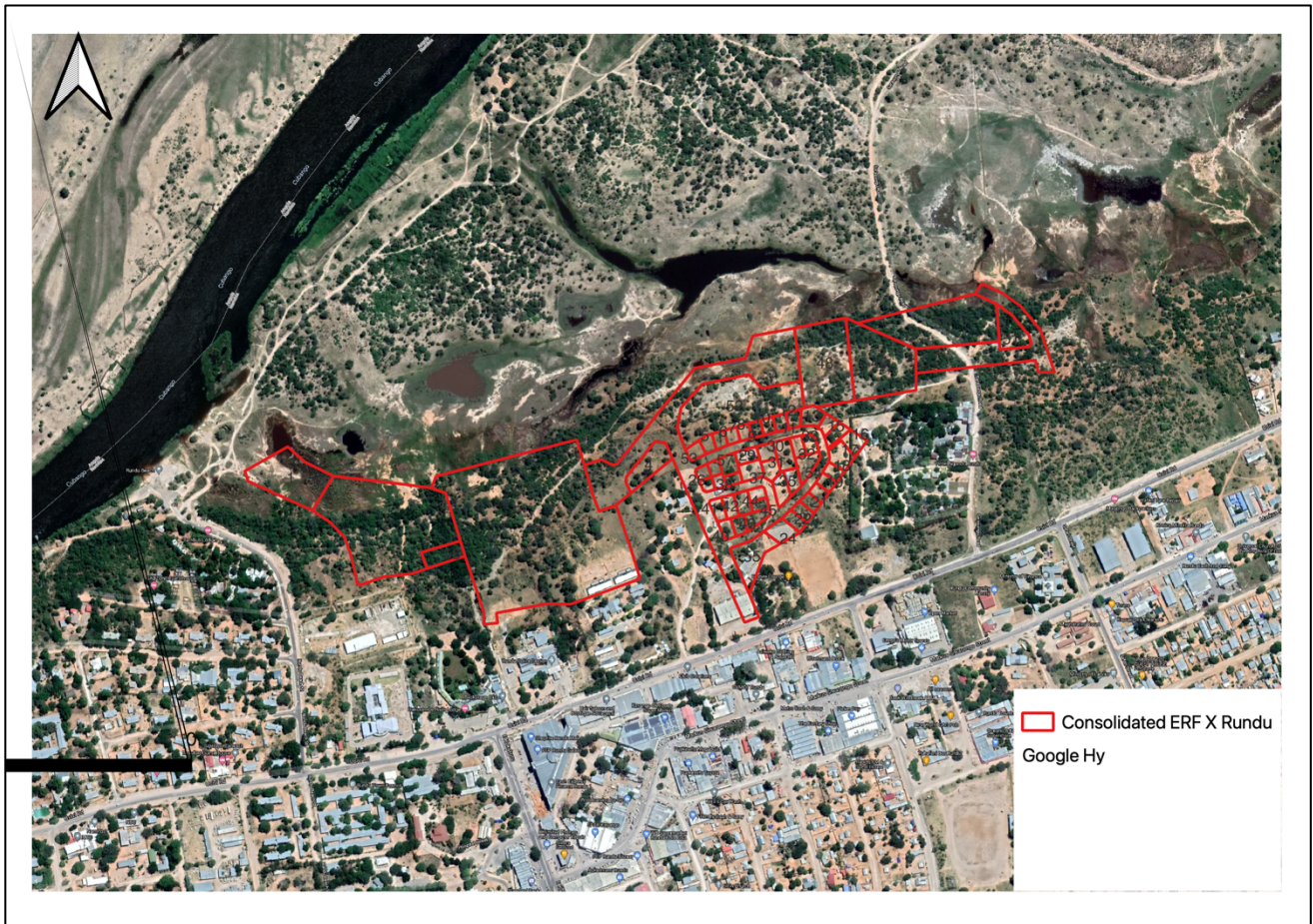


Figure 1: Project Locality

1.3. Development Proposal for the Extension of Rundu Beach up to Ngandu Lodge

The Remainder of the Farm Rundu Townlands No. 1329 has been subdivided into Portion 129 and Remainder. The newly created Portion 129 will be rezoned from “Undetermined” to “Civic Reserve”. The process of advertising was advertised and approved by Council. It will be included into a new Rundu Town Planning Amendment Scheme.

Furthermore the Portion A will be incorporated as an erf into Rundu Extension 3 and consolidated with Erven 1220/Rem and 1229 into Consolidated Erf “X”, Rundu Extension 3 that measures 234 788m² in extent. Both Erven Re/1220 and 1229 Rundu extension 3 are owned by the Rundu Town Council.

The newly incorporated and Consolidated Erf “X”, Rundu Extension 3 is to be used for the creation of the Rundu Beach Development which will be further subdivided into 58 erven and Remainder (figure 1).

The subdivision of Consolidated Erf X will consist of the following erven:

Table 1: Number of land uses and sizes

Erf No	± Sizes m²	Proposed Zonings
Erf 1	7830	Hospitality
Erf 2	26772	Hospitality
Erf 3	17504	Hospitality
Erf 4	2809	Hospitality
Erf 5	561	Residential
Erf 6	534	Residential
Erf 7	514	Residential
Erf 8	484	Residential
Erf 9	492	Residential
Erf 10	531	Residential
Erf 11	556	Residential
Erf 12	604	Residential
Erf 13	1084	Residential
Erf 14	632	Residential
Erf 15	790	Residential
Erf 16	1100	Residential
Erf 17	1275	Residential
Erf 18	609	Residential
Erf 19	568	Residential
Erf 20	564	Residential
Erf 21	603	Residential
Erf 22	633	Residential
Erf 23	708	Residential
Erf 24	1242	Residential
Erf 25	405	Residential
Erf 26	466	Residential
Erf 27	454	Residential
Erf 28	875	Residential
Erf 29	800	Residential
Erf 30	734	Residential
Erf 31	1385	Residential
Erf 32	660	Residential
Erf 33	644	Residential
Erf 34	824	Residential
Erf 35	1044	Residential
Erf 36	826	Residential
Erf 37	1044	Residential

Erf 38	465	Residential
Erf 39	416	Residential
Erf 40	636	Residential
Erf 41	717	Residential
Erf 42	746	Residential
Erf 43	864	Residential
Erf 44	527	Residential
Erf 45	498	Residential
Erf 46	849	Institutional
Erf 47	627	Residential
Erf 48	11254	Hospitality
Erf 49	10713	Hospitality
Erf 50	12854	Hospitality
Erf 51	2465	Government Reserve
Erf 52	14733	Private Open Space
Erf 53	623	Public Open Space
Erf 54	1185	Public Open Space
Erf 55	4339	Public Open Space
Erf 56	44069	Public Open Space
Erf 57	1759	Street
Erf 58	37626	Street
Rem	11470	Street
Total	238594	

1.3.1. Residential

There are 41 erven set aside for Residential purposes ranging from 405 m² to 1385 m² in size. In accordance to the Rundu Town Planning Scheme Residential building refers to a building for the human habitation, together with such outbuildings as are normally used therewith and includes a boarding-house, residential rooms, an old age home, a children's home and a hostel, but does not include buildings mentioned whether by means of inclusion or exclusion, in the definitions of "place of instruction" or "institution". The 41 Residential erven will be used to cater for the high income group.

1.3.2. Hospitality

There are 7 erven reserved for Hospitality ranging from 2 809 m² to 26 772 m² in size. In accordance with the Rundu Town Planning Scheme Hospitality refers to the zoning on which a licensed hotel/ motel/ holiday accommodation, tourist facilities and accommodation establishments, as defined in the scheme is permitted. The idea with the creation of these erven is to provide for more Hospitality erven which can be sold to private investors for establishment of lodges and Hotels for accommodation purposes.

1.3.3. Public Open Space

There are 4 erven reserved as Public Open Spaces ranging from 623 m² to 44 069 m² in size. In accordance with Rundu Town Planning Scheme a Public Open Space is land which is under or will be under the ownership of a local authority, which is not leased nor will be leased on a long – term basis, and which is utilised or will be utilised as an open space or parking, garden picnic area, playground or square and includes a public place. These Public Open Spaces have been created in order to cater as public parks that will be accessible.

1.3.4. Private Open Space

One Erf is reserved for a Private Open Space and measures 13 760m² in size. In accordance with the Rundu Town Planning Scheme Private Open Space is any land which has been set aside for play, rest or recreational facilities or as an ornamental garden. Such an erf can be sold to sport clubs or similar activities.

1.3.5. Government Reserve

One erf is reserved for Government Reserve and measures 2 465 m² in size. Government Reserve is land that is set aside for Government use only and this particular erf has been created for the relocation of the border post during the flood season.

1.3.6. Street Network

An internal streets network of 25 and 15 meters wide street reserve is to be created to foster smooth movement of traffic within the new development. The streets have also been created in such a way as to ensure pedestrian movement through the development and to provide the public access to the development through strategically placed parking areas.

1.4. Accessibility

Access to the proposed development will be obtained from the existing street network.

1.5. Infrastructure and Services

- Water: There is clean water supply from Rundu Town Council
- Ablution: The new development will be connected to sewer reticulation system.
- Communication: The site is connected with MTC, TN Mobile and satellite phones.

2. CHAPTER TWO: POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

2.1. Introduction

An important part of the EIA is identifying and reviewing the administrative, policy and legislative frameworks concerning the proposed activity, to inform the proponent about the requirements to be fulfilled in undertaking the proposed project. This section looks at the legislative framework within which the proposed development will conform to; the focus is on the compliance with the legislation during the planning, construction and operational phases. All relevant legislations, policies and international statutes applying to the project are highlighted in the table below as specified in the Environmental Management Act, 2007 (Act No.7 of 2007) and the regulations for Environmental Impact Assessment as set out in the Schedule of Government Notice No. 30 (2012).

Table 2:Policies, legal and administrative regulations

The pursuit of sustainability is guided by a sound legislative framework. In this section, relevant legal instruments as well as their relevant provisions have been surveyed. An explanation is provided regarding how these provisions apply to this project

Aspect	Legislation	Relevant Provisions	Relevance to the Project
The Constitution	Namibian Constitution First Amendment Act 34 of 1998	<ul style="list-style-type: none"> – Article 16(1) guarantees all persons the right to property. It therefore provides everyone a right to acquire, own and dispose of property, alone or in association with others and to bequeath such property. – “The State shall actively promote and maintain the welfare of the people by adopting policies that are aimed at maintaining ecosystems, essential ecological processes and the biological diversity of Namibia. It further promotes the sustainable utilisation of living natural resources basis for the benefit of all Namibians, both present and future.” (Article 95(l)). 	<ul style="list-style-type: none"> – The project will enable the full execution of right to practice any profession, or carry on any occupation, trade or business by availing necessary provisions such as practising any profession, or carry on any occupation, trade or business in the country. – Through implementation of the environmental management plan, the proponent will ensure conformity to the constitution in terms of environmental management and sustainability.
National Development Plans		<ul style="list-style-type: none"> – Namibia’s overall Development ambitions are articulated in the National 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. The Government has so far launched a 4th NDP focusing on high and sustained economic growth, increased income equality Employment creation. 	<ul style="list-style-type: none"> – The proposed project will create employment which will work towards the NDP and Vision 2030.
Archaeology	National Heritage Act 27 of 2004	<ul style="list-style-type: none"> – Section 48(1) states that “A person may apply to the Namibian Heritage Council (NHC) for a permit to carry out works or activities in relation to a protected place or protected object” 	<ul style="list-style-type: none"> – Any heritage resources discovered would require a permit from the NHC for relocation.

	National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979	<ul style="list-style-type: none"> - "No person shall destroy, damage, excavate, alter, remove from its original site or export from Namibia: - Meteorites, fossils, petroglyphs, ornamental infrastructure graves, caves, rock shelters, middens, shells that came into existence before the year 1900 AD; or - any other archaeological or palaeontological finds 	<ul style="list-style-type: none"> - The proposed site of development is not within any known monument sites, both movable and immovable as specified in the Act, however in finding any materials specified in the Act, contractors on site will take the required route and notify the relevant commission.
Environmental	Environmental Management Act 7 of 2007	<ul style="list-style-type: none"> - Requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). - Requires for adequate public participation during the environmental assessment process for interested and affected parties to voice their opinions about a project (Section 2(b-c)). - According to Section 5(4) a person may not discard waste as defined in Section 5(1)(b) in any way other than at a disposal site declared by the Minister of Environment and Tourism or in a manner prescribed by the Minister. - Details principles which are to guide all EIAs 	<ul style="list-style-type: none"> - This Act and its regulations should inform and guide this EIA process. - Any other specific project activities on the development that will require Environmental Clearance Certificate, will still have to undergoes the process as this report is for the consolidation and subdivision of the greater land parcel.
	EIA Regulations GN 57/2007 (GG 3812)	<ul style="list-style-type: none"> - Details requirements for public consultation within a given environmental assessment process (GN No 30 S21). - Details the requirements for what should be included in a Scoping Report (GN No 30 S8) an EIA report (GN No 30 S15). 	<ul style="list-style-type: none"> - This Act and its regulations should inform and guide this EIA process.
	Pollution and Waste Management Bill (draft)	<ul style="list-style-type: none"> - This bill defines pollution and the different types of pollution. It also points out how the Government intends to regulate the different types of pollution to maintain a clean and safe environment. - The bill also describes how waste should be managed to reduce environmental pollution. Failure to comply with the requirements considered an offence and is punishable. 	<ul style="list-style-type: none"> - The project should be executed in harmony with the requirements of the act to reduce negative impacts on the surrounding environs from waste during construction or operation. - Rundu waste management by-laws will be abided to during land servicing.

	Soil Conservation Act 76 of 1969	<ul style="list-style-type: none"> - This Act makes provision for combating and for the prevention of soil erosion, it promotes the conservation, protection and improvement of the soil, vegetation, sources and resources of the Republic of Namibia. 	<ul style="list-style-type: none"> - The Project impact on soil will rather be localised, however the Act should provide for guidelines of operation during construction to prevent soil erosion and contamination during operation.
	National Biodiversity Strategy and Action Plan (NBSAP2)	<ul style="list-style-type: none"> - 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, and biosystematics protection on both terrestrial and aquatic systems. 	<ul style="list-style-type: none"> - Forming part of the EIA of and EMP for this Project, the proponent will consider all associated impacts, both acute and long term, and will propose methods and ways to sustain the local biodiversity.
Forestry	Forest Act 12 of 2001	<ul style="list-style-type: none"> - Tree species and any vegetation within 100m from a watercourse may not be removed without a permit (S22(1)) - Provision for the protection of various plant species. 	<ul style="list-style-type: none"> - The clearing of vegetation is prohibited (subject to a permit) 100m either side of a river. Certain tree species occurring in the area are protected under this Act. Permits must be obtained from MAWF in accordance with the Act. - The development is at least 100m from the riverine ecosystem, hence no riverine vegetation will be affected.
Water	Water Act 54 of 1956	<ul style="list-style-type: none"> - The Water Resources Management Act 24 of 2004 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force: - A permit application in terms of Sections 21(1) and 21(2) of the Water Act is required for the disposal of industrial or domestic wastewater and effluent. 	<ul style="list-style-type: none"> - The protection of ground and surface water resources should guide development's layout plans. - ERF X is in proximity to the Kavango River because of some of the erven that are proposed to cater for Rundu beach waterfront development.

		<ul style="list-style-type: none"> - Prohibits the pollution of underground and surface water bodies (S23(1)). - Liability of clean-up costs after closure/ abandonment of an activity (S23(2)). - Protection from surface and underground water pollution 	<ul style="list-style-type: none"> - All developments will be 200m from the Kavango River bank.
Health and Safety	Labour Act (No 11 of 2007) in conjunction with Regulation 156, 'Regulations Relating to the Health and Safety of Employees at work'.	<ul style="list-style-type: none"> - 135 (f): "the steps to be taken by the owners of premises used or intended for use as factories or places where machinery is used, or by occupiers of such premises or by users of machinery about the structure of such buildings of otherwise to prevent or extinguish fires, and to ensure the safety in the event of fire, of persons in such building;" (Ministry of Labour and Social Welfare). - This act emphasizes and regulates basic terms and conditions of employment, it guarantees prospective health, safety and welfare of employees and protects employees from unfair labour practices. 	<ul style="list-style-type: none"> - The proponent will employ several people from the local and shall ensure securing a safe environment and preserving the health and welfare of employees at work. This will include applying appropriate hazard management plans and enforcing Occupational Health and Safety (OHS) enforcement by contractors.
	Public Health and Environmental Act, 2015	<ul style="list-style-type: none"> - 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." 	<ul style="list-style-type: none"> - The proposed institutional and businesses that will occupy the erven should ensure compliance to the act through provision of adequate health and sanitation.
Services and Infrastructure	Road Ordinance 1972 (Ordinance 17 Of 1972)	<ul style="list-style-type: none"> - Width of proclaimed roads and road reserve boundaries (S3.1) - Control of traffic during construction activities on trunk and main roads (S27.1) - Infringements and obstructions on and interference with proclaimed roads. (S37.1) - Distance from proclaimed roads at which fences are erected (S38) 	<ul style="list-style-type: none"> - Although the project is a major boost for the suburb and the commodities market, the proponent needs to ensure that the development do not affect the major roads within their vicinity during construction and operation phases.
	Townships and Division of Land Amendment Act, 1992 (Act 28 of 1992)	<ul style="list-style-type: none"> - "(l) Whenever any area of land constitutes, by reason of its situation, a portion of an approved township, or adjoins an approved township, the Executive Committee may, by proclamation notice in the Gazette and after consultation with the 	<ul style="list-style-type: none"> - Through conducting this EIA and preparation of The townships board already approved this project, however the construction and operation will need to be regulated accordingly.

		<p>Board, extend the boundaries of that township to include such area". (Minister of Regional and Local Government)</p> <ul style="list-style-type: none">- A new township needs to be created for approval by the Namibian Planning Advisory Board and the Township Board.	
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3. CHAPTER THREE: RECEIVING ENVIRONMENT

3.1. Socio-economic

The proposed development located in Rundu, is under Rundu Urban Electoral Constituency with a population of about 63,431 inhabitants (2011 Census). The entire Kavango regions (including Rundu Town) ranked among the poor regions in the country with a prevailing high unemployment rate despite some agricultural activities happen in the regions.

Rundu is the capital of the Kavango East region and links to the Capital City of Namibia-Windhoek by tarred B series national road network. This infrastructure serves as the main supply line for the region. All the other population centres in the region are linked with Rundu by road. The major economic activities sustaining Rundu is the existence and operation of both communal and commercial farming specialising in cultivation of different crops. Main agriculture activities are small scale crop farming (53%)-growing Mahangu, livestock (23%) –farming goats, donkeys and cattle, and poultry farming (8%) (Enviro Dynamic 2014). These farming systems provide a degree of food self-sufficiency with a few provisions of economic development of the region. Within the project site they are only two mahangu fields in the south side which is the same side that have a nearby river.

However, most of the crop-growing activities in the region generate little income because fields are small, soils have limited fertility, yields are low, surplus harvests are rare and markets are small (Mendelsohn and El Obeid 2003: 92ff Brown 2010: 25).

3.2. Climate

Classification of climate: Rundu is subjected to a humid subtropical climate, with hot summers and mild winters. During the austral winter, the days are warm and nights cool to cold.

Average rainfall: The annual rainfall ranges between 500 and 550mm with June normally reporting the lowest and January the highest (Mendelsohn et al., 2002)

Temperature: Daytime temperatures exceed 30°C throughout the year, except during May, June and July. Average maximum temperatures fluctuate between 32°C and 34°C and average minimum temperatures between 8°C and 10°C.

Humidity: The average level of humidity ranges from 10 to 20% during winter with the highest humidity normally recorded in March (70-80%).

3.3. Fauna

3.3.1. Reptiles, Amphibians and Invertebrates

The region has a high occurrence of reptiles, snakes. This includes cobras, puff adders (inhabit grasslands and bush ecosystems) and the black and green mamba (inhabiting the riverine ecosystems).

The region generally is a habitat of a wide number of lizard species and tortoises. However, on the baseline study conducted on site shows that none of the above reptiles and snakes are prevalent on site, the baseline revealed existence of snails, centipedes, spiders and scorpions. However, the proposed project site is currently affected by human activities occurring in the area as well as illegal dumping of waste in its vicinity. It is as such that the area is not pristine and it does not pose a great threat to the environment.

3.3.2. Mammals

The following list is of the mammals that are noticeable in the region however the disappearance of these mammals on the project site could be due to the driven by developmental activities happen in existing Sauyemwa suburb and other nearby areas. The list below was obtained from existing literature and some personal experience with the region. The list of mammals in the table below was then recognised as occurring in the area (MET, 2008).

Table 3: List of mammals occurring in and endemic to the region

Species	Conservation Status
African Buffalo	
Hippopotamus	Endangered
Tsessebe	
<i>Blue Wildebeest</i>	
<i>Sitatunga</i>	
<i>Common Reedbuck</i>	
<i>Elephant</i>	Endangered
<i>Giraffe</i>	
<i>Spotted Hyena</i>	Endangered
<i>Kudu</i>	
<i>Sable Antelope</i>	
<i>Roan Antelope</i>	
<i>Red Lechwe</i>	
<i>Chapman`s Zebra</i>	Endangered
<i>African Leopard</i>	Endangered
<i>South African Cheetah</i>	Endangered

3.3.3. BIRDS

Some environs near the Okavango River in western Bwabwata of the region are listed as an internationally recognized bird's area hosting bird species that are threatened at global level and range as avian diversity hotspots. However, the project site is not part of the demarcated areas bird's area hosting bird species since it is right in townlands. The list below is for bird species occurring in the region.

Table 4: Bird Species common in the area

Specie	Common Name	Conservation Status
<i>Rhychope Flavirostris</i>	African Skimmer	Endangered
<i>Glareola nordmanni</i>	Black-winged Pratincole	Endangered
<i>Egretta vinaceigula</i>	Slaty Egret	Endangered
<i>Bugeranus carunculatus</i>	Wattled Crane	Endangered
<i>Nettapus auritus</i>	African Pygmy Goose	Endangered
<i>Centropus cupreicaudus</i>	Coppery-tailed coucal	Endangered
<i>Gorsachius leuconotus</i>	White Banked Night Heron	Endangered
<i>Ardeola rufiventris</i>	Rufous-bellied Heron	Endangered
<i>Porphyrio alleni</i>	Allen`s Gallinule	Endangered
<i>Falco dickisoni</i>	Dicksino`s Kestrel	Endangered
<i>Turdoides melanops</i>	Black-faced Babbler	Endangered
<i>Laniarius bicolor</i>	Swamp Boubou	Endangered
<i>Cichladusa arquata</i>	Collared Palm Thrush	Endangered
<i>Lamprotornis mevesii</i>	Meves`s Glossy Starling	Endangered
<i>Burcorvus leadbeateri</i>	Southern Ground Hornbill	Endangered
<i>Glaucidium cuculoides</i>	Asian Barred Owlet	Endangered
<i>Campethera bennettii</i>	Bennett`s Woodpecker	Endangered
<i>Phylloscopus sibilatrix</i>	Wood Warbler	Endangered
<i>Phyllocuspus bonelli</i>	Leaf Warbler	Endangered
<i>Cisticolidae juncidis</i>	Cisticola	Endangered

3.4. Flora

Trees / Shrubs and Grasses

Areas near the Okavango River prevails a high to very high vegetation density of considerable diversity. However, because of Rundu town development in the area it has been reduced considerably. The further inland is more densely vegetated and is prone to bush fires. Plant species in the area form part of the extensive Kalahari sand basin which is characterized by grassland and encompassing plant species such as Vossia Cuspidata, Cynodon Dactylon and Setaria Sphacelata (Burke, 2002). The project site has minimal vegetation cover because the area is already inhabited or affected by nearby land uses such as sand mining along the Rundu flood plains, tourism activities at rundu beach as well as other lodge facilities in proximity.

The site illustrated on figure 2-5 is largely composed of bare patches of land and shrubs. The area has pre-existing government houses that were not planned as they were not formalised. Additionally, there are some illegal occupants that are in the area and they will be given opportunity to purchase the land they are occupying, hence this planning on top of existing residential units.



Figure 2: The existing residential erven on Erf X



Figure 3: Surrounding informal housing units and informal roads



Figure 4: Illegal vegetation occurring on the project area, mostly for firewood and possible illegal occupation.



Figure 5: Dense grass and shrub cover on the project area extending from the Kavango River bank

3.5. Existing residential houses

ERF X and the surrounding land uses are mixed of formal and informal. The formalisation and planning of this area is a step ahead towards formalisation and implementation of the flexible Land tenure System.

3.6. Hydrology

A reconnaissance level field assessment was conducted to confirm the current hydrologic conditions at the proposed area and to identify potential hydrologic risks associated with establishment of the subdivision development. The site is relatively flat however, due to westerly gradient the site can have minor drainage issues but this will be compensated by adequate and proper drainage systems in the layout designs/plans.

3.7. Geology and Soils

The area is underlain by the Kalahari and Namib sands, which are dominated by cambic arenosols, albic arenosols and calcic xerosols (Mendelsohn & el Obeid, 2003). This indicates the completely weathering of the existed rocks long time back to give that Kalahari sand soils as shown on the images below. According to the Agro-Ecological Zoning Programme (AEZ) of the Ministry of Agriculture, Water and Forestry and the World Reference Base for Soil Resources (FAO, 1998), the arenosols contain sandy soil with poor retained nutrient capacity. The sand further is slightly acidic which also results in nutrient deficiency. Generally, soils are deep and purely sandy with average soil fertility. Images below shows the sandy soils at the site.

4. CHAPTER FOUR: PUBLIC CONSULTATION

Public and Stakeholder involvement, is a key component of the EA process. The public consultation process, as set out in Section 21 of Regulation No 30 of EMA, has been followed during this assessment and the details thereof documented below.

4.1. Printed Media

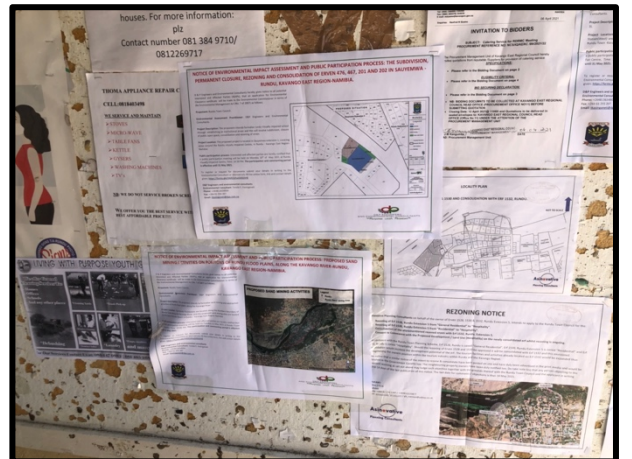
4.1.1. Background Information Document

A Background Information Document (BID) was drafted at the onset of the EA process to act as a useful information handout about the proposed project development. In addition, the BID provided details on the public consultation process with contact details for further information. This document was advertised for availability through various means of newspaper articles, public meeting and electronic mail; see Appendix A of this document.



4.1.2. Newspaper Advertisements & Articles

Newspaper notices about the proposed project and related Environmental Assessment processes was circulated in two newspapers for two weeks. These notices appeared in the “Confidante” and “New Era” newspapers, shown in Appendix A.



4.1.3. Site Notices

A site notice was placed at the project site. These provided information about the project and related EA while providing contact details of the project team.

Figure 6(top): Site Notice at ERF X (Ministry of Works and Transport houses).

Figure 7(middle) Notice at Rundu Town Council notice board.

Figure 8: Notice at Ok Foods Community Care Corner Rundu



4.1.4. Building a Stakeholder Database

A stakeholder database for the project collected through a variety of means. During the advertisement of the project (through public notices in local newspapers and site-notices) the list was augmented as Interested & Affected Parties (I&AP) registered and contact information of stakeholders updated, Please refer to Appendix A.

4.1.5. Stakeholder Meetings & Key Conversations

A public meeting was scheduled on Tuesday 11 May 2021 at Rundu Trade Fair Centre, Time: 14:30 PM. The public meeting was well attended and concerns were recorded. The consultant administered a consultation register and minute taking since the meeting was mostly attended by visually impaired living near the project site as well as a few property owners in proximity.



Figure 9: Proceedings of the public consultation meeting.

COVID 19 Regulations were observed, hence a public meeting did not involve unregulated number of attendees.

4.1.6. Comments and review period

From the onset of the public consultation process and the initial information sharing through the BID, newspaper and site notices, various stakeholders have registered and provided comments. All of the immediate neighbours are in support of the project. The Scoping Report and Environmental Management Plan was made available to the public and stakeholders for comment and review. Questionnaires and proof of stakeholder's engagement are attached in appendix B of this EAR.

5. CHAPTER FIVE: ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

5.1. Overview

Rundu Town Council has committed to sustainability and environmental compliance through coming up with a corrective action plan for all anticipated environmental impacts associated with the project. This is also in line with the Namibian Environmental Management legislation and International best practices on town planning development processes. The proponent will implement an Environmental Management Plan (EMP) in order to prevent, minimise and mitigate negative impacts. The environmental management plan is being developed to address all the identified expected impacts, the plan will be monitored and updated on a continuous basis with aim for continuous improvement to addressing impacts.

5.2. Assessment Of Impacts

This section sets out the overall approach that was adopted to assess the potential environmental and social impacts associated with the project. To fully understand the significance of each of the potential impacts each impact must be evaluated and assessed. The definitions and explanations for each criterion are set out below in Table 5: Assessment Criteria and

Table 5: Assessment Criteria

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

Cumulative	Combined effects of the project with other existing / planned activities
Probability	
Low	<25%
Medium	25-75%
High	>75%

(Adopted from ECC-Namibia, 2017)

Table 6: Impact Significance

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

(Adopted from ECC-Namibia, 2017)

Table 7: Environmental Impacts and Aspects Assessment

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
TOPOGRAPHY	Landscape Scenery	Visual aesthetic impact	Construction	Moderate	Moderate	Local	Direct	Medium 25 - 75%	Minor
	Clearing of a large portion of land	Visual aesthetic impact	Construction	Moderate	Moderate	Local	Direct	Medium 25 - 75%	Minor
SOIL	Soil	Contamination to soil from waste disposal	Construction	Moderate	Small	Local	Direct	Low <25%	Minor
	Soil	Spillages of fuel, oil and lubricants.	Construction	Short	Small	Local	Direct	Low <25%	Minor
	Soil	Erosion from road opening and trenching	Construction	Moderate	Small	Local	Direct	Low <25%	Minor
LAND CAPABILITY	Terrestrial ecology and aquatic ecosystems	Change in land use	Construction	Permanent	Great	Local	Direct	Low <25%	Moderate
WATER	Surface water quality	Water pollution from oils and lubricants from vehicles and machinery.	Construction	Moderate	Moderate	Local	Direct	Medium 25 - 75%	Moderate
	Groundwater quality	Water pollution from oils and lubricants	Operation	Moderate	Small	Local	Direct	Low <25%	Moderate
AIR QUALITY	Noise Pollution	-Noise During Construction and operation	Construction	Moderate	Moderate	Local	Direct	Medium 25 - 75%	Moderate
	Dust Pollution	-Construction dust	Construction	Moderate	Moderate	Local	Direct	High >75%	High
WASTE	Groundwater quality	Hazardous waste such as waste oil and lubricants.	Construction	Short	Small	Local	Direct	Low <25%	Minor

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
	Topography and Landscape	Visual impacts due to infrastructure and unsustainable handling and disposal of waste.	Construction	Short	Small	Local	Direct	Low <25%	Minor
FAUNA	Aquatic life	Antifouling paints, eutrophication and sedimentation of streams.	Construction,	Moderate	Small	local	Direct	Low <25%	Minor
	Terrestrial ecology and biodiversity	Destruction of vertebrate fauna (e.g. road kills; fence and construction /land clearing mortalities)	Construction	Long	Moderate	Local	Direct	Low <25%	Minor
FLORA	Terrestrial ecology and biodiversity	Proliferation of invasive species inland	Construction	Long	Moderate	Local	Direct	High >75%	Moderate
	Terrestrial ecology and biodiversity	Loss of unique flora and special habitats in the local environment because of general nuisance and animal migrate.	Construction	None	Moderate	Regional	Direct	Low <25%	Moderate
SOCIAL	Noise Pollution	Increased noise levels	Construction	Moderate	Small	Local	Direct	Low <25%	Minor
	Socio Economic Activities	Temporary and permanent employment prospects.	Construction	Long	Moderate	Regional	Direct	Medium 25 – 75%	Positive

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
	Contribution to National Economy	Employment, local procurement, duties and taxes.	Construction	Short	None	Regional / National	Direct	Low <25%	Positive
HERITAGE/ARCHAEOLOGY	Artefacts, archaeological high value components	Destruction or affecting paleontological and archaeological artefacts	Construction	Moderate	Moderate	Local	Direct	Medium 25 – 75%	Moderate
HEALTH AND SAFETY	Health Sanitation	Poor ablution and waste management facilities may be detrimental to human health.	Construction	Moderate	Moderate	Local	Direct	Medium 25 – 75%	Moderate
	Property and human life	Electrical hazards and fires may result in fatalities, damage to properties and power surges.	Construction	Moderate	Great	Local	Direct	Medium 25 – 75%	Major

6. CONCLUSION

Based on the impacts identified by this study during site visit, process analysis, desk study and stakeholder consultations conducted, an integrated environmental risk analysis was carried out using the DEFRA Guidelines for Environmental Risk Assessment and Management 'Green Leaves III' (latest edition) as well as the international Procedures for best practices. The risk analysis shows that the project will have some negative impacts on the environment (Biophysical, economic, social and political), it has been also noted that the project will deliver some positive impacts on the receiving environment, as well as on social and economic aspects.

However, it is imperative to note that the project is being undertaken within an already disturbed locale. In order to prevent or mitigate negative impacts and to increase positive impacts a coordinated project management strategy according to an Environmental Management Plan, developed specific to this development.

References

- Enviro Dynamic.2014. Environmental Assessment Keetmanshoop Signal transmission, Namibia
- FAO, 1998. World reference base for soil resources. World Soil Resources Report, vol. 84. FAO, Rome.
- FAO, 1998.World reference base for soil resources.World Soil Resources Report, vol. 84. FAO, Rome.
- Government of Namibia. 2008, Government Gazette of the Republic of Namibia. Government notice No.1: Regulations for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA)-Windhoek
- Government of Namibia.2008, Government Gazette of the Republic of Namibia. Government notice No.1: Regulations for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA)-Windhoek
- IFC.2007. Stakeholder Engagement: A good practice handbook for companies doing business in emerging markets. IFC, Washington D.C
- IFC.2007. Stakeholder Engagement: A good practice handbook for companies doing business in emerging markets. IFC, Washington D.C
- Mendelsohn,J., el Obeid, S.2003.A digest of information on key aspects of Namibia's geography and sustainable development prospects. Research and Information Services of Namibia
- MET (Ministry of Environment and Tourism). 2012. *Environmental Management Act no. 7 of 2007*. Windhoek: Directorate of Environmental Affairs, Ministry of Environment and Tourism