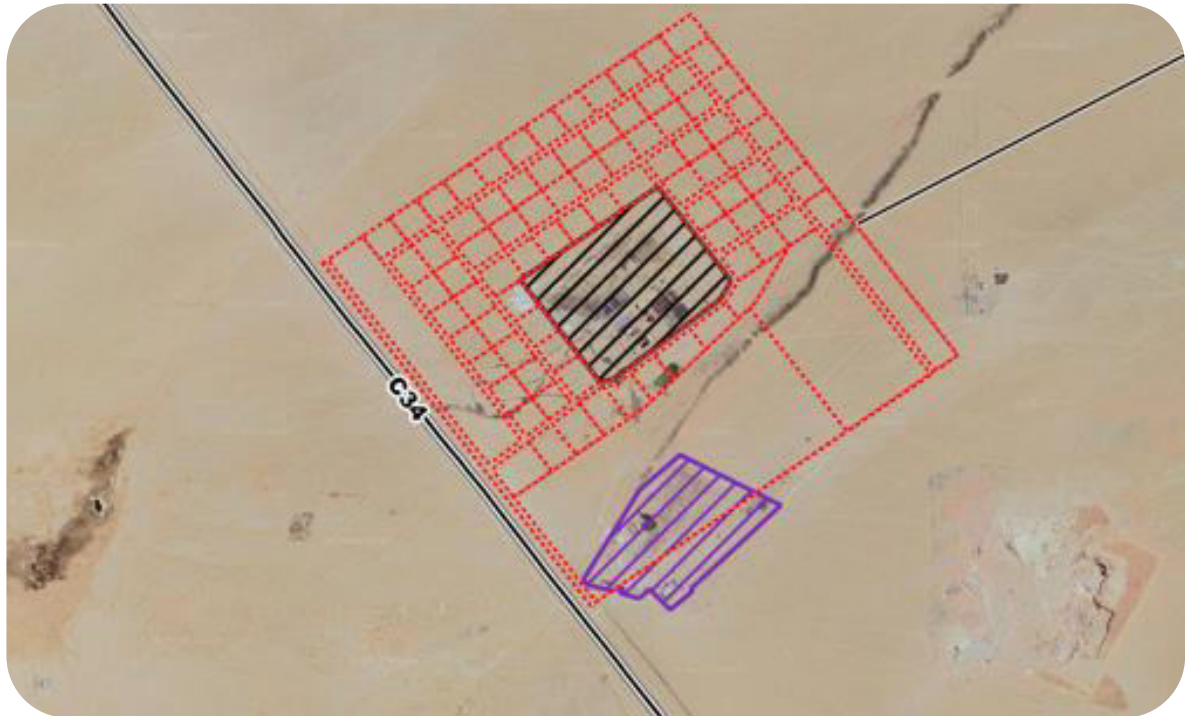


Environmental Impact Assessment (EIA) for the proposed Agricultural Plots and Associated infrastructure on the Remainder of Portion B of Swakopmund Town and Townlands No.41



Prepared for
Municipality of Swakopmund
P. O. Box 53
Swakopmund



Prepared by



+264 81 142 2927
info@greegain.com.na
<https://www.greengain.com.na>

MARCH 2024

DOCUMENT INFORMATION

Project: Establishment of the proposed Agricultural Plots and Associated infrastructure on the Remainder of Portion B of Swakopmund town and townlands No.41

Location: Swakopmund, Erongo Region

Client: Municipality of Swakopmund
P. O. Box 53, Swakopmund,
Corner of Rakutoka & Daniel Kamho Street

EAP: Green Gain Environmental Consultants cc
Joseph Kondja Amushila

Report Type: Environmental Scoping Report

ECC Application: APP03103

Period: February to March 2024

TABLE OF CONTENTS

1.	INTRODUCTION AND BACKGROUND	7
1.1	Introduction.....	7
1.2	Purpose of the report	7
2.	TERMS OF REFERENCE.....	8
2.1	Scope of the study	8
2.2	EIA objectives.....	8
3.	APPROACH AND METHODOLOGY	9
3.1	The EIA processes.....	9
3.2	Collection of baseline information.....	10
3.2.1	Site visits	10
3.2.2	Review of existing information	10
3.3	Public participation process	10
3.3.1	I&APs invitation and consultation	10
3.3.2	Stakeholders' consultation	10
3.3.3	Consultative meeting.....	11
3.3.4	Review of draft scoping report	11
3.3.5	Summary of issues from I&APs and stakeholders	12
4.	LEGAL FRAMEWORK AND REQUIREMENTS	13
4.1	Environmental management requirements.....	13
4.2	Applicable legislations.....	14
5.	DESCRIPTION OF THE PROPOSED ACTIVITIES	25
5.1	Locality	25
5.2	Land development process.....	26
5.3	Farm Planning: Site infrastructure	27
5.3.1	Infrastructure by Municipality	27
5.3.2	Infrastructure by farmers	28
5.4	Management Terms and conditions	29
5.5	Operation costs and charges	29
5.6	The need and desirability of the proposed activities	30
5.6.1	The need	30
5.6.2	Desirability.....	30
6.	DESCRIPTION OF THE RECEIVING ENVIRONMENT.....	31
6.1	Social Environment	31
6.1.1	About the town	31
6.1.2	Municipal Bulk Services	32
6.1.3	Social development.....	32

6.1.4	Economic development.....	33
6.1.5	Economic opportunities.....	33
6.2	Biophysical Environment.....	34
6.2.1	Climate	34
6.2.2	Topography and Landscapes	36
6.2.3	Soils and geology	37
6.2.4	Hydrology and geohydrology	38
6.2.5	Local occurring flora and fauna.....	39
6.2.6	Water supply to Swakopmund	40
6.2.7	Surrounding Land use context.....	41
7.	ANTICIPATED ENVIRONMENTAL IMPACTS	45
7.1	Impacts rating scales.	45
7.2	Anticipated impacts: planning and design phase.	47
7.3	Anticipated negative impacts: construction phase.	50
7.4	Anticipated negative impacts: operation and maintenance phase.....	54
7.5	Anticipated positive impacts.....	59
7.6	Decommissioning phase.....	63
8.	CONCLUSION AND RECOMMENDATIONS	64
8.1	Conclusion.....	64
8.2	EAP recommendations	66
9.	REFERENCES	67
10.	APPENDICES.....	68
10.1	Appendix A: Copy of Council Approval.....	68
10.2	Appendix B: Proof of Consultations	68
10.3	Appendix C: EMP	68

LIST OF TABLES

Table 1: The listed project activities	13
Table 2: Applicable legislation	14
Table 3: Impact rating scales.....	45
Table 4: Description of the significance of impacts	46
Table 5 Potential Impacts to be considered during Planning and Design Phase.....	48
Table 6: Potential Impacts and mitigation measures during Construction phase	51

LIST OF FIGURES

Figure 1: Namibia's EIA process	9
Figure 2: Copy of the Newspaper Advert (Namib Times)	10
Figure 3: View of the public meeting.	11
Figure 4: Locality Map	25
Figure 5: Proposed demarcated area layout.....	26
Figure 6: Proposed service layout for the demarcated Area.	27
Figure 7: Typical example of Urban Agriculture structures.....	28
Figure 8: Overview of the existing Swakopmund Urban Agriculture Project.....	30
Figure 9: Average Evaporation rate (Mendelsohn, <i>et al</i> 2002).....	34
Figure 10: Average annual in Namibia	35
Figure 11: Elevation of Swakopmund town and surrounding	36
Figure 12: Geological map of Namibia (Source: Miller, R. McG, 2008)	37
Figure 13: Hydrography map of Namibia (Rivers, basins, pans, and lakes) (Source: Chivell EH & Crerar SE. 1992)	38
Figure 14: Local occurring flora.	39
Figure 15: Swakopmund water supply scheme (NamWater, 2024)	40
Figure 16: Surrounding land uses	41
Figure 17 Risk of overflow from the existing STP.	42
Figure 18: Overview of the existing Swakopmund dumpsite	43
Figure 19: Nearby Stone Quarry	44

LIST OF ACRONYMS

BID:	Background Information Document
CBD:	Central Business District
DEA:	Directorate of Environmental Affairs
EAP:	Environmental Assessment Practitioner
ECC:	Environmental Clearance Certificate
EIA:	Environmental Impact Assessments
EMA:	Environmental Management Act
EMP:	Environmental Management Plan
ERC:	Erongo Regional Council
GN:	Government Notice
SWSS:	Swakopmund Water Supply Scheme
I&APs:	Interested and Affected Parties
MAWLR:	Ministry of Agriculture, Water, and Land Reform
MEFT:	Ministry of Environment, Forestry, and Tourism
MoHSS:	Ministry of Health and Social Services
MSDS:	Material Safety Data Sheet
NHC:	National Heritage Council
PPE:	Personal Protective Equipment
RA:	Roads Authority
UNAM	University of Namibia
Erongo RED:	Erongo Regional Electricity Distributor
STP:	Sewage Treatment Plant
BBB	Build Back Better

EXECUTIVE SUMMARY

The Municipality of Swakopmund has demarcated an area within its townlands for the establishment of urban agricultural allotments. The universal definition of “Urban agriculture” encompasses a broad range of activities. The nature of these activities will vary according to that of the urban environment in which they are practiced. Each community, therefore, will develop its own interpretation of urban agriculture.

According to the Municipality of Swakopmund, the agricultural activities to be permitted on these plots are primarily gardening (vegetables, fruits, and ornamental etc.) and limited animal farming such as poultry and rabbits. Livestock farming such as cattle, sheep, and goats will not be allowed. The proposed development site undeveloped, hence the Municipality has planned for the servicing of the demarcated area by providing infrastructure such as water, access roads, sewerage lines.

The intended activities will trigger activities listed under 7 (7.1 & 7.5) and No.8 (8.7) of the Environmental Management Act (EMA), 07 of 2007, and its Regulations of February 2012, that cannot be undertaken without Environmental Impact Assessment study being carried out. Green Gain Consultants cc has been appointed as an independent Environmental Assessment Practitioner (EAP) by the Municipality of Swakopmund to conduct an Environmental Impact Assessment (EIA) for the proposed construction, operation, and maintenance of the intended agricultural allotments.

The main objective of this EIA is to determine the potential environmental impacts emanating from the construction, operation, maintenance, and decommissioning of the proposed activities. The other objective is to ensure the establishment of a more environmentally friendly urban agriculture in line with Good Agricultural Practices (GAP) adapted to an urban context of Swakopmund.

The EIA was conducted in a multidisciplinary approach and followed Namibia’s Environmental Assessment process. Relevant environmental data have been sourced from primary and secondary sources such as personal observations during site visits as well as inputs from Municipality officials, stakeholders, and interested and affected parties (I&APs) as well as a review of relevant literature and legal instruments.

This report constitutes an Environmental Scoping report which provides information to enable the Directorate of Environmental Affairs (DEA) to make informed decisions about the project. Moreover, an Environmental Management Plan (EMP) has been prepared and it should be read in conjunction with this Scoping report. The EMP will be used as a mitigation tool and an onsite reference document during all phases of the proposed project (planning, construction, operations, and decommissioning).

1. INTRODUCTION AND BACKGROUND

1.1 Introduction

The Municipality of Swakopmund has demarcated an area on the Remainder of Portion B of Swakopmund Town and Townland No.41 for urban agricultural activities. The demarcated area is located about 2km northeast of the town central business district (CBD). The demarcated area measures approximately 22.5ha and it will be divided into 90 plots of which 86 plots are for agricultural activities and the remaining to accommodate the existing land use activities.

The agricultural allotments will be leased out to interested and qualified local farmers of which preferences will be given to woman, youth, and persons with disabilities. The agricultural activities to be permitted on these plots are primarily gardening (vegetables, fruits, and ornamental etc.) and limited animal farming such as poultry and rabbits. Livestock farming such as cattle, sheep, and goats will not be allowed.

The early identification of possible impacts promotes environmental sustainability as anthropogenic factors are balanced with natural environmental needs. The Environmental Assessment Practitioner (EAP) takes cognizance of the fact that the Environmental Scoping Report and EMP are reviewed by IAPs and will be independently reviewed by the relevant competent authority and by the Ministry of Environment, Forestry and Tourism (MEFT). In this way, practical and realistic solutions to potential problems can be identified in a consultative manner where all stakeholders are involved.

1.2 Purpose of the report

This report provides details of the assessment process that was followed to address the key environmental issues and impacts associated with the development and to document issues and concerns of stakeholders and interested and affected parties (I&APs). Furthermore, it provides background motivation, details of the proposed project, describes the public participation process undertaken and provides a list of the applicable legislation.

The objective of this report, therefore, is to provide the competent authority and the regulatory authority with a comprehensive account of the process, findings, and input from I&APs, stakeholders, and commenting authorities who have participated in this EIA. Another objective is to provide details of the applicable legislative framework to ensure that the proposed work is undertaken in an environmentally responsible manner.

2. TERMS OF REFERENCE

The Terms of Reference (ToR) provided by the proponent requires the Environmental Assessment Practitioner (EAP) to carry out an EIA, prepare an EMP, and apply for an ECC for the establishment of the proposed Agricultural allotments and associated infrastructure on the remainder of Portion B of Swakopmund Town and Townlands No.41.

2.1 Scope of the study

The scope of the EIA is to determine the potential environmental impacts emanating from the construction, operation, and decommissioning of the proposed project. This EIA will ensure the establishment of a more environmentally friendly urban agriculture in line with Good Agricultural Practices (GAP) adapted to an urban context of Swakopmund and that decision-making is improved through the appropriate analysis of actions and their likely environmental impacts; and that stakeholders/potentially affected people are properly consulted. The study was undertaken in two linked phases:

- ❖ Phase 1: Scoping study
- ❖ Phase 2: Environmental Management Plan

The proponent and the EAP have agreed that the information provided at the Scoping level is sufficient and no specialist studies are required after completion of the Scoping process. The EAP will then submit the Scoping report and the EMP to the DEA. The EAP will provide sufficient information to allow the DEA/MEFT to issue an ECC for the project in the absence of a fatal flaw.

2.2 EIA objectives

The aim of the study was to produce a Scoping Report and EMP report, which will provide sufficient information to enable the DEA at MEFT to make an informed decision about the project. The information submitted to the DEA should be sufficient to enable the DEA to issue ECC if no fatal flaw was identified. Thus, the specific objectives of this EIA are to:

- Identify potential impacts associated with the proposed activities.
- Consult potential I&APs and relevant stakeholders to solicit inputs.
- Produce a Scoping Report and EMP report, which will provide sufficient information to enable the DEA to make an informed decision about the project.

3. APPROACH AND METHODOLOGY

3.1 The EIA processes.

This EIA study was conducted in line with the EIA Regulations (No. 30, February 2012). This is a draft Scoping report which will be shared with the registered I&APs and relevant stakeholders, after which it will be submitted to the competent authority, and DEA/MET for record of decision.

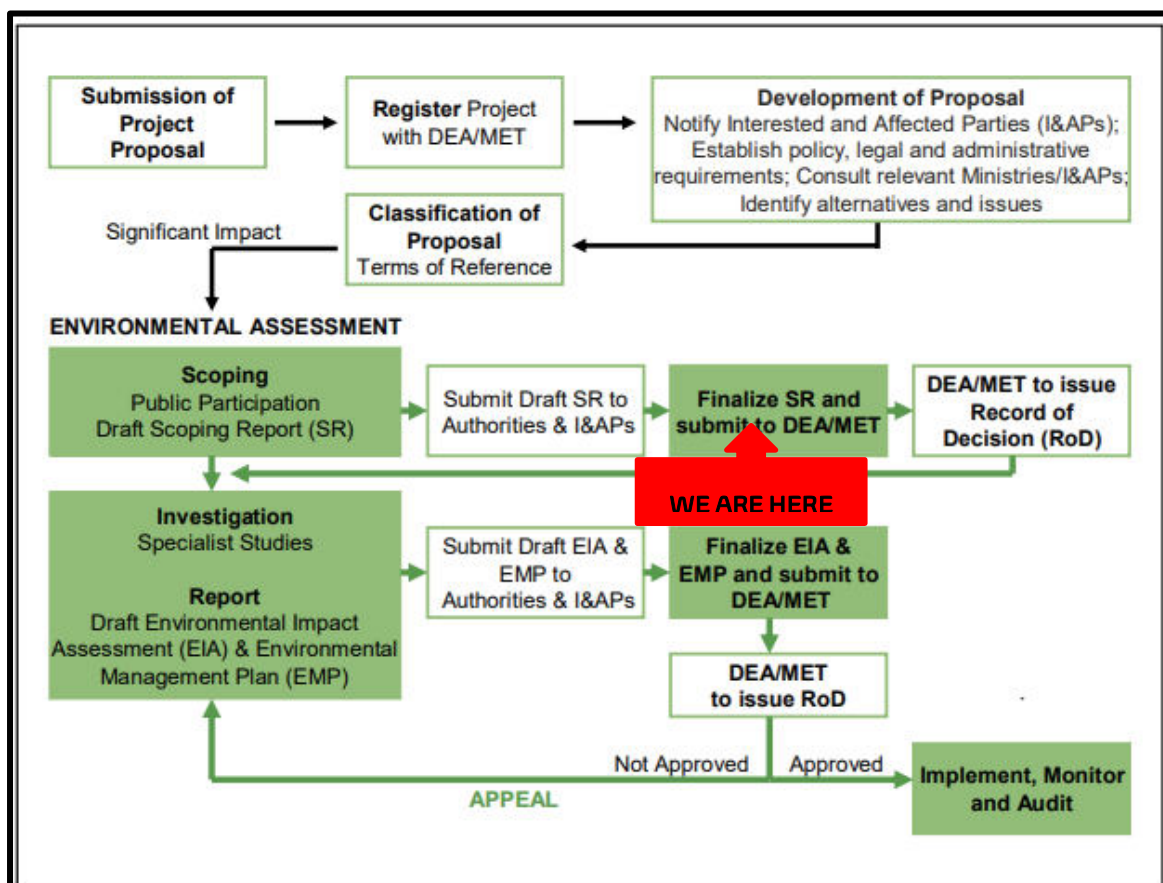


Figure 1: Namibia's EIA process

3.2 Collection of baseline information

Baseline information about the proposed development site, the receiving environment, and the proposed activities was obtained from personal observation, focus group discussion with the Municipality officials, reviewing of existing secondary information, and contributions from stakeholders, and I&APs. The process that was followed is explained in detail here below.

3.2.1 Site visits

The EAP conducted a number of site visits between February and March 2024 to familiarise of the site and its surrounding. The EAP also collected baseline information on the biophysical settings of the site in terms of local occurring flora, fauna as well as adjacent land uses as outlined in Section 7 (7.2.6) of this report.

3.2.2 Review of existing information

The Scoping process also benefited a great deal from existing relevant information. The following documents were reviewed during the scoping process.

- EMP for the existing Swakopmund Landfill site, 202
- EMP for Swakopmund, 2014
- EMP for the existing Swakopmund Sewerage Treatment Plant
- Municipality of Swakopmund Structure Plan, 2020
- In addition, several relevant legislations were reviewed, and their applicability to the proposed project is outlined in Section 5 of this document.

3.3 Public participation process

The study was subjected to a public participation process as defined in the Environmental Management Act 7 of 2007 and EIA Regulations of February 2012, this is summarized below:

3.3.1 I&APs invitation and consultation

The scoping process of the project was advertised in two local newspapers namely, Namib Times and Windhoek Observer for 16 & 23 February 2024. Several public notices were also displayed at several public places around town such as the Municipality head office, Food Lovers Market, and the Mondesa Community Hall. See Appendix B for the proof of consultations. The public advertisements provided brief information about the proposed project and an invitation to the public meeting.

3.3.2 Stakeholders' consultation

The project was also introduced to relevant stakeholders such as the University of Namibia, Henties Bay Campus, Ministry of Agriculture, Water and Land Reform (MAWLR), Ministry of Health and Social Services (MoHSS), Erongo Regional Council (ERC) and Namibia Water Corporation (NamWater). These consultations were aimed to solicit their inputs for incorporation in the study.

3.3.3 Consultative meeting

The consultant also facilitated a public meeting which was held on 21 February 2024 at the Mondesa Community Hall from 18:00 to 19:00. During the meeting, the EAP introduced the project to the attendees and allowed them to ask questions and make comments. The meeting was attended by residents, mostly the interested gardens from Swakopmund, officials from the Municipality of Swakopmund and representatives from the local NGOs and from the University of Namibia (UNAM)-Henties Bay campus.



Figure 3: View of the public meeting.

The proof of the above consultations is contained in Appendix B of this report. These include.

- Copies of newspaper advertisements x 4
- Stakeholder database.
- Attendance registers for the public meeting.
- List of registered I&APs and stakeholders consulted.
- Issue Response report.

3.3.4 Review of draft scoping report

This draft Scoping report will be submitted to registered I&APs as well as to relevant stakeholders for comments. Upon review by I&APs and stakeholders, the final Scoping report will be submitted to the competent authority and then, to the regulatory authority for record of decision.

3.3.5 Summary of issues from I&APs and stakeholders

The issues that were raised during the public consultation process are summarised below.

Public interests

I&APs have shown interest in.

- Vegetable & fruit production, poultry & rabbit farming, or a mixture.
- Ornamental (lawn, flowers), medicinal plants and related
- Compost making, mushroom.
- Some have also shown interest in aquaponics.

Public concerns

I&APs are interested to know?

- The application procedures and requirements for to be considered for allotment?
- Security measures during the operation phase and whether the Municipality will take the responsibility, or the famers should take own responsibility?
- The cost of lease and of water supply?

4. LEGAL FRAMEWORK AND REQUIREMENTS

4.1 Environmental management requirements

Table 1: The listed project activities

Proposed project activities	Activities triggered	
	Category	Specific activity
<ul style="list-style-type: none"> Construction of supply pipeline, sewerage lines and Purified Effluent supply lines to the plots 	10. Infrastructure No.8 Water resource development	10.1 The construction of a). Bulk supply pipelines 8.7 Irrigation schemes for agricultural excluding domestic irrigation
<ul style="list-style-type: none"> Various urban agricultural activities <p><u>Allowable</u></p> <ul style="list-style-type: none"> -Vegetable production -Ornamental -Orchards, -Poultry and Rabbit farming 	No.7 Agriculture and Aquaculture activities	7.6 Pest control
	No.8 Water resource development	8.7 Irrigation schemes for agricultural excluding domestic irrigation

4.2 Applicable legislations

To protect the environment and ensure that the development is undertaken in an environmentally responsible manner, several environmental legislations need to be considered.

Table 2: Applicable legislation

LEGISLATION	PROVISION	PROJECT IMPLICATIONS
<p>Constitution of the Republic of Namibia (1990)</p>	<p>Articles 91 (c) commands the state to actively promote and sustain the 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, • Protecting Namibia’s sense of place and character. • Maintain biological diversity. • Pursuing sustainable natural resource use. <p>Article 95 (l) recites: “The State shall actively promote... maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future”.</p> <p>Furthermore, Artic 95 (l) ensures that workers are paid a living wage adequate for the maintenance of a decent standard of living and the enjoyment of social and cultural opportunities.</p>	<p>Through the implementation of the environmental management plan, the proponent shall be advocating for sound environmental management as set out in the constitution.</p>

<p>Environmental Management Act 7 of 2007</p>	<p>The purpose of this Act is to promote 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, and to provide for incidental matters. The Act gives legislative effect to the Environmental Impact Assessment Policy. Moreover, the act also provides procedures for adequate public participation during the environmental assessment process for the interested and affected parties to voice and register their opinions and concern about the proposed project.</p> <p>The Environmental Impact Assessment Regulations Government Notice No. 30, promulgated on 6 February 2012.</p>	<p>Application for the Environmental Clearance Certificate for the activities will be submitted to the competent and regulatory authority.</p>

	<p>The regulations listed certain activities that require an ECC from MEFT: DEA before commencing.</p>	
<p>Water Act 54 of 1956 (SA)</p>	<p>The Water Act 54 of 1956 and its requirements in Terms of Water Supplies for drinking water and Wastewater Treatment and Discharge.</p> <p>The Guidelines for the Evaluation of drinking-water quality for human consumption with regards to chemical, physical, and bacteriological quality requires that; water supplied for human consumption must comply with the officially approved guidelines for drinking-water quality. For practical reasons, the approved guidelines have been divided into three basic groups of determinants, namely:</p> <ul style="list-style-type: none"> • Determinants with aesthetic implications: TABLE 1. • Inorganic determinants: TABLE 2. • Bacteriological determinants: TABLE 3. <p>The water quality for human consumption is classified into three groups. The concentration of and limits for the aesthetic, physical and inorganic determinants define the group into which water will be classified.</p> <ul style="list-style-type: none"> • Group A: Water with an excellent quality • Group B: Water with acceptable quality • Group C: Water with low health risk • Group D: Water with a high health risk, or water unsuitable for human consumption <p>Water should ideally be of excellent quality (Group A) or acceptable quality (Group B), however, in practice, many of the</p>	<p>The Department: Applied Scientific Services is responsible for conducting microbiological analysis while the physical/ aesthetic and chlorine analyses are done at HWSS on different frequency as follow.</p> <ul style="list-style-type: none"> • Physical/aesthetic quality: every two hours, daily • Chlorine suspension: every two hours, daily • microbiological quality: monthly <p>The Water Act 54 of 1956 has been replaced with a new Water Resource Management Act (WRMA) 11 of 2013 along with new water quality standards. The Municipality of Swakopmund should start enforcing the water quality standards of 2013.</p>

	<p>determinants may fall outside the limits for these groups. If water is classified as having a low health risk (Group C), attention should be given to this problem, although the situation is not critical yet.</p> <p>If water is classified as having a higher health risk (Group D), urgent and immediate attention should be given to this matter. Since the limits are defined based on average lifelong consumption, short-term exposure to determinants exceeding their limits is not necessarily critical, but in the case of extremely toxic substances, such as cyanide, remedial measures should immediately be taken.</p> <p>The overall quality group into which water is classified is determined by the determinant that complies the least with the guidelines for the quality of drinking water. Moreover, the recommended frequency for bacteriological analysis of drinking water is as follows.</p> <p>All applications in terms of Section 21(5) and 22(2), for compliance with the requirements of Section 21(1) and 21(2) of the Water Act (Act 54 of 1956) that purified water shall comply with General Standard as laid out in Government Gazette Regulation R553 of 5 April 1962.</p>	
<p>Water Resources Management Act 11 of 2013.</p>	<p>To provide for the management, protection, development, use, and conservation of water resources; to provide for the regulation and monitoring of water services and to provide for incidental matters.</p> <p>The Regulations of the WRMA also outlined the water quality guidelines and standards for potable water specified in Table</p>	<p>The Municipality of Swakopmund should start enforcing the water quality standards of 2013.</p>

1 to Table 3.

SIZE OF POPULATION SERVED	Turbidity 95%	MINIMUM FREQUENCY OF SAMPLING
>250 000	< 0.5 NTU	Thrice weekly ***
100 001 – 250 000	< 1.0 NTU	Twice weekly
50 001 – 100 000	< 1.0 NTU	Once weekly
10 001 – 50 000	< 1.0 NTU	Three times every month
< 10 000 reticulated	< 1.0 NTU	Once very month*
< 10 000 non-reticulated	1 - 2 NTU	Once every month*

The Regulations also specified the frequency of microbiological monitoring for bulk water supply: Table 4.

Soil conservation Act 76 of 1969

The objectives of the Soil Conservation Act 76, 1969 are to make provision for the combating and prevention of soil erosion, and the conservation, protection, and improvement of the soil, the vegetation, and the sources and resources of the

Prevent soil contamination and promote soil conservation agricultural practices

	<p>water supplies.</p> <p>Part II deals with soil conservation works and it further states that in section 4(1). The Minister may by means of a direct order the owner of land to construct the soil conservation works referred to in such direction either on land belonging to such owner or on land belonging to another person, in such manner and within such period as may be mentioned in such direction, if the Minister is of the opinion that the construction of such soil conservation works is necessary to achieve any object of this Act in respect of the land belonging to such owner.</p>	
Hazardous Substance Ordinance 14 of 1974	<p>This Ordinance provides for the control of toxic substances and is thus also relevant for pollution control. It covers the manufacturing, sale, use, disposal, dumping, importing, and exporting of hazardous waste.</p> <p>Of relevance to the proposed project is the use of Chlorine and asbestos which may be classified as dangerous goods.</p>	All chemicals must be handled by the respective Material Safety Data Sheet (MSDS) from suppliers.
National Labour Act 11 of 2007	<p>The objectives of the National Labour Act are.</p> <ul style="list-style-type: none"> • To establish a comprehensive labour law for all employers and employees; to entrench fundamental labour rights and protections. • Regulate basic terms and conditions of employment. • Ensure the health, safety, and welfare of employees and protect employees from unfair labour practices. • To regulate the registration of trade unions and employers' organization and regulate collective labour relations. 	<p>The Proponent, Contractors, Sub-contractor shall all be guided by this Act when recruiting or handling employment-related issues.</p> <p>Contractors must adhere to the minimum workplace safety standards such as all employees must be provided with appropriate Personal Protective Equipment (PPE).</p>

- To provide systematic prevention and resolution of labour disputes.

Some of the notable Sections under this Act are.

Health and Safety Procedures Section 17 (1) The employer shall prepare any health and safety procedure referred to in sub-regulation (1) in consultation with the workplace safety committee concerned.

Section 21. (1) Any person who intends to commence any mining operation shall give 30 da notice of such intention to the Minister.

Section 22. (1) In the event of an accident or dangerous occurrence in or in connection with a workplace, including a mine, or if an employee dies, or suffers a serious injury because of such an accident or dangerous occurrence, the employer shall notify and report such accident to the Chief Inspector of Labour of the area.

Notification of Occupational Diseases (OD), Section 23. If a medical practitioner finds that any person is suffering from an occupational disease listed in Annexure A. 2(1), or of any other disease that he or she believes was caused by that person's current or past employment, he or she shall immediately and in the form of Form OD. 1, report this fact to the Chief Medical Officer of Occupational Health and Safety.

It shall be an unfair dismissal, or unfair disciplinary action, in terms of section 45 by an employer if such employer terminates the services of, or takes disciplinary action against, such employee if such employee has contracted an occupational disease listed in Annexure A. 2 (1), or any other

	<p>disease, because of his or her past or present employment with such employer.</p> <p>Section 210, states that an employer shall ensure that an employee wears or uses, to the satisfaction of an inspector, suitable and adequate personal protective equipment.</p> <p>To comply with governmental requirements and minimize employee exposure, controls are necessary wherever there is a potential for exposure to airborne fibers.</p>	
<p>Public Health and Environmental Act of 2015</p>	<p>Section 119 of this Act prohibits the existence of a nuisance on any land owned or occupied by the proponent. The term nuisance is important for this EIA, as it is specified, where relevant in Section 122 as follows:</p> <ul style="list-style-type: none"> a) any dwelling or premises which is or are of such construction as to be injurious or dangerous to health or which is or are liable to favour the spread of any infectious disease. b) any dung pit, slop tank, ash pit, or manure heap so foul or in such a state or so constructed as to be offensive or to be injurious or dangerous to health. c) any area of land kept or permitted to remain in such a state as to be offensive, or liable to cause any infectious, communicable, or preventable disease or injury or danger to health; or 	<p>Nuisance such as dust, noise, bad odors, etc. should be controlled during all project phases.</p>

	<p>d) Any other condition that is offensive, injurious, or dangerous to health.</p> <p>Furthermore, in terms of Section 8 of the Public Health Proclamation 16 of 1936, where a local authority is of the opinion that a nuisance is seriously offensive or a serious menace to the health, it may serve a notice on the owner or occupant of the nuisance to immediately remove the nuisance. Failure to abide by this provision is an offense.</p>	
<p>Atmospheric Pollution Prevention Ordinance No. 11 of 1976</p>	<p>This Ordinance generally provides for the prevention of the pollution of the atmosphere and matters incidental thereto. The Ordinance deals with administrative appointments and their functions; the control of noxious or offensive gases; atmospheric pollution by smoke, dust control, motor vehicle emissions; and general provisions.</p> <p>Part IV of this ordinance deals with dust control. The Ordinance is clear in requiring that any person carrying out an industrial process which is liable to cause a nuisance to persons residing in the vicinity or to cause dust pollution to the atmosphere, shall take the prescribed steps or, where no steps have been prescribed, to adopt the best practicable means for preventing such dust from becoming dispersed and causing a nuisance.</p> <p>Of applicability to the envisaged project, is dust generated by vehicles or equipment as well as dust generated during constructions. The risk of dust generation is high at the envisaged site. This deals with air pollution as it affects occupational health and safety, and no consideration is given to the natural environment.</p>	<p>Air pollution during operation could occur during the construction phase. It is the responsibility of contractors to control excessive air pollution and comply with the ordinance.</p>

Pollution Control and Waste Management Policy, 2003	The bill provides a framework for a multitude of administrations on pollution control and waste management in the country. Each authority identified by the bill shall play its respective role.	All waste management activities generated by the construction and the intended agricultural activities should be handled properly to avoid pollution to the environment
Stockholm Convention on Persistent Organic Pollutants	Emphasizes the restriction and elimination of persistent organic pollutants especially the disposal of industrial and medical chemicals. It also provides information for future establishments to re-use, reduce and recycle waste with environmentally friendly technologies e.g., autoclaving. It was adopted in 2001 and entered into force on May 17, 2004.	All products which are labelled as POP should be registered with the Solid Waste Management Unit of the MEFT.
Nature Conservation Ordinance 14 of 1975 and its amendments	The Nature Conservation Ordinance Section 14 protects and preserves wild animal life, fisheries, wild plant life and objects of geological, archaeological, historical, and other scientific interest and for the benefit and enjoyment of the inhabitants of Namibia.	Ensure protection and preservation of natural resources in line with the Ordinance.
MEFT Policy on HIV/AIDS	MEFT has recently developed a policy on HIV/AIDS. In addition, it has also initiated a programme aimed at mainstreaming HIV/AIDS and gender issues into environmental impact assessments.	The proponent and its contractor must adhere to the guidelines provided to manage the aspects of HIV/AIDS. Experience with construction projects has shown that a significant risk is created when migrant construction workers interact with local communities.
Local Authorities Act No. 23 of 1992	The Local Authorities Act prescribes how a town or municipality should be managed by the Municipal Council.	The development must comply with provisions of the Local Authorities Act.

Agricultural Pests Act 3 of 1973	To provide for the registration of nurseries and the control and destruction of plants, insects and plant diseases at nurseries; the control and destruction in certain proclaimed areas of exotic animals and plants infected with insects or plant diseases; the control of the importation into the Republic of plants, insects, plant diseases, honey bees, honey and exotic animals; the payment of compensation in respect of the destruction of plants, honey bees and exotic animals and the eradication of plant diseases and insects; and the eradication of locusts; to define the powers of inspectors; and to provide for incidental matters.	The Municipality should liaise with the local extension office of the MAWLR with regards to the compliance of this Act
Swakopmund Town Planning Scheme	Identifies different land use categories, zoning, uses, and consent use.	The area has been reserved for agricultural activities under the Swakopmund Town Planning Scheme

5. DESCRIPTION OF THE PROPOSED ACTIVITIES

5.1 Locality

The demarcated area for the agricultural plots is located about 2.5 km northeast of town CBD on the following coordinates -22.6091188° S; 14.5588287° E. The site is part of the Remainder of Portion B of Swakopmund Town and Townlands No.41 which is currently zoned “undetermined” as per the Swakopmund Zoning Scheme.

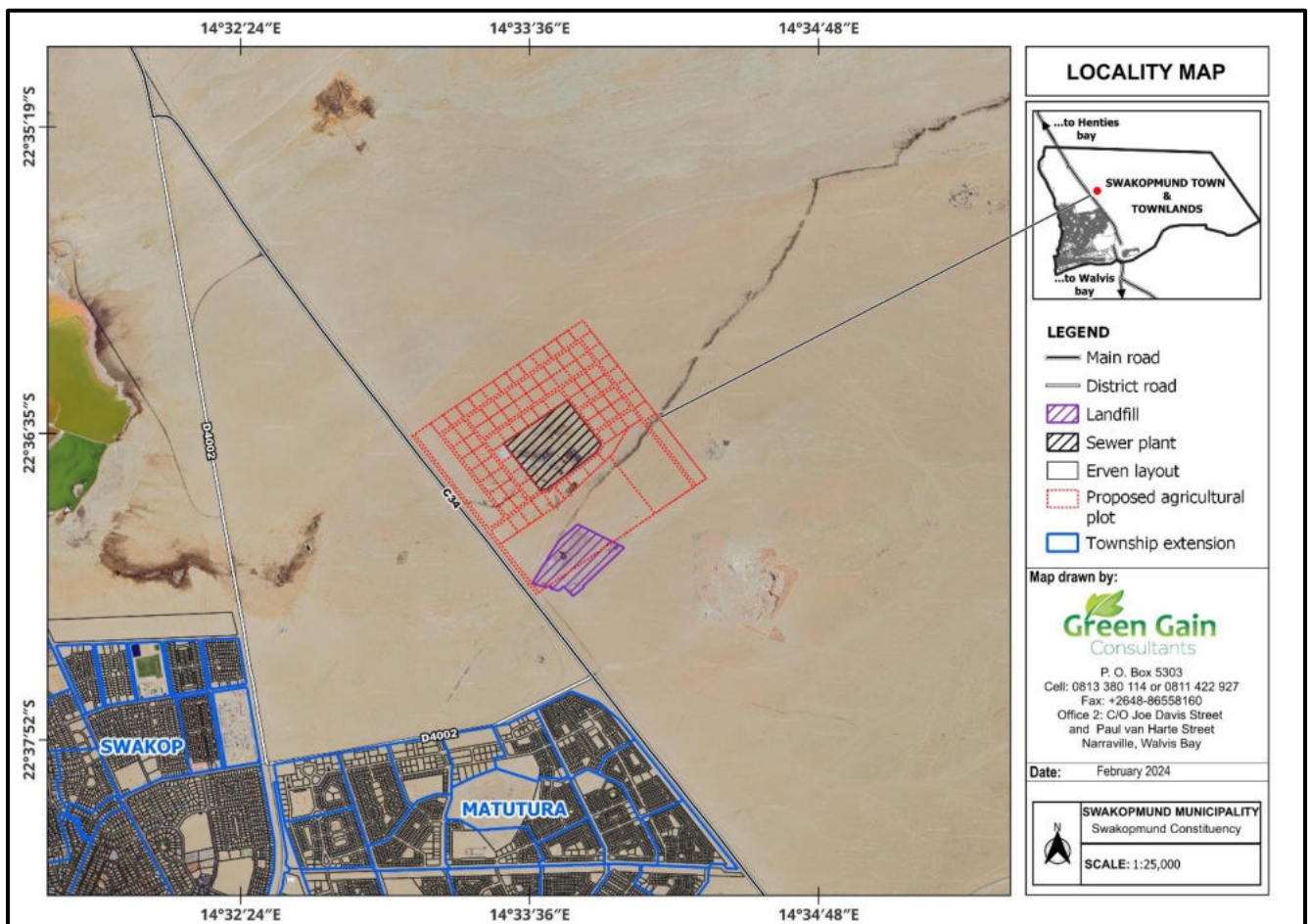


Figure 4: Locality Map

5.2 Land development process.

The demarcated area measures approximately 22.5ha in extent and it will be subdivided into 90 plots of which 86 are for agricultural purposes, 2 for Local Authority (accommodating the existing STP) and 2 will remain undetermined.



Figure 5: Proposed demarcated area layout

The intention is to lease out the agricultural plots to local people with experience and interests in urban farming. Preferences will be given to woman, youth, and persons with disabilities. The agricultural activities to be permitted on these plots are primarily gardening (vegetables, fruits, and ornamental etc.) and limited animal farming such as poultry and rabbits. Livestock farming such as cattle, sheep, and goats will not be allowed.

5.3 Farm Planning: Site infrastructure

5.3.1 Infrastructure by Municipality

The site is still undeveloped and has no municipal services. As such, the Municipality of has already appointed a contractor to conduct the installation of municipal services such as freshwater and sewerage reticulations. The freshwater will be sourced from the existing NamWater pipeline located a few distance from the site. Each plot will be served with an individual water meter. Additionally, a supply line for semi-purified effluent sourced from the existing Treatment Plant will be provided.

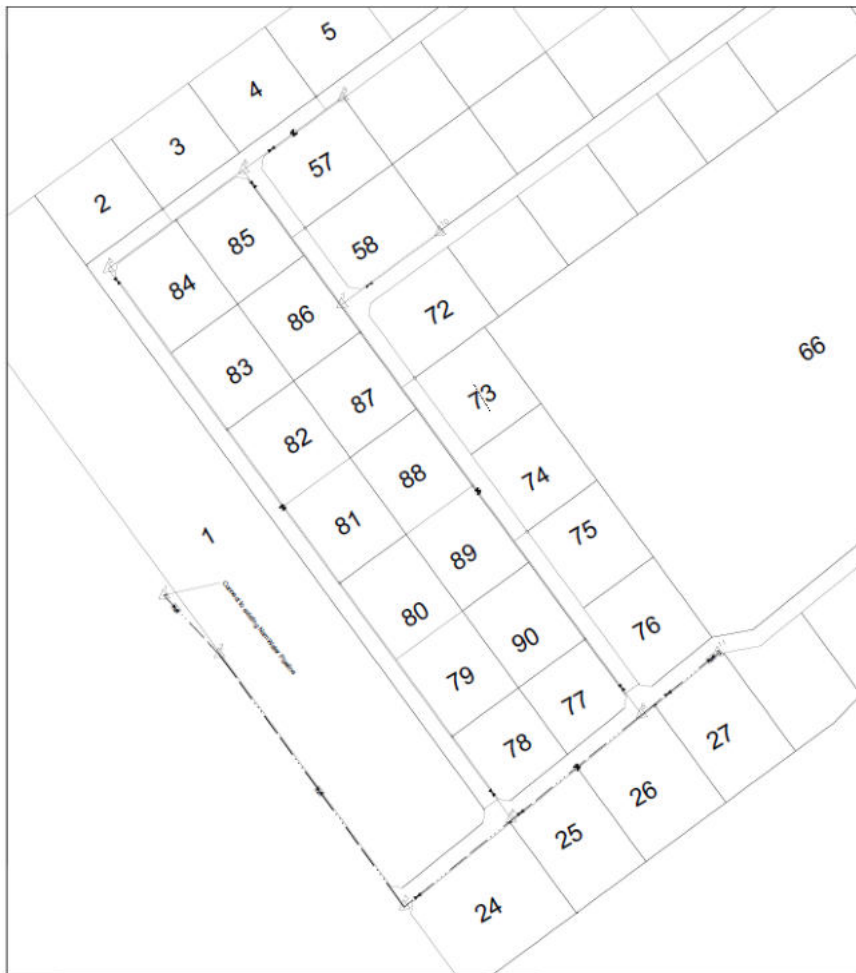


Figure 6: Proposed service layout for the demarcated Area.

Proposed infrastructure by Municipality

- Levelling of site
- Internal road network (gravel)
- Freshwater pipeline and water meters
- Purified (PE) Effluent Line
- Fencing

5.3.2 Infrastructure by farmers

The tenants will be allowed to erect a few temporary structures and storage sheds to complement their farm set-ups. Each tenant will make their own arrangement for temporary sanitary facilities. Overnight stay at the allotments will not be permitted, thus construction of accommodation facilities will not be necessary.



Figure 7: Typical example of Urban Agriculture structures.

Famers will be allowed to establish complimentary structures such as

- Storage areas
- Sanitary facilities
- Security rooms
- Irrigation systems
- Animal coups/houses and associated facilities
- Water storage tanks /containers

5.4 Management Terms and conditions

The allocation of the allotments will be subject to strict Council Terms and Conditions to be stipulated in the Lease Agreement with the farmers. Council will conduct regular inspections to ensure compliance, good housekeeping, and sustainable farming practices. Only certain activities will be allowed on the farms while certain activities will not be permitted as stipulated in the table below.

Permissible Activities	Activities Not Permitted
<ul style="list-style-type: none"> • Growing vegetables, fruit, herbs, and other produce for commercial/personal use. • Ornamental (growing flowers, lawn) • Permitted animals are poultry, chickens etc.) and Rabbits. • Other activities allowed. <ul style="list-style-type: none"> ○ Mushroom ○ Compost making 	Farming with <ul style="list-style-type: none"> • Pigs, • Sheep, • Goats • Beekeeping • Aquaculture

5.5 Operation costs and charges

The allotments will be subjected to certain charges as follows.

a). *Lease fees.*

All plots are subjected to the cost of lease which amount will be determined by Council in due course.

b). *Cost of Water*

The Municipality of Swakopmund has different charges and fees in respect of the water supply and purified effluent tariffs. Each plot will be allocated with a water meter and each farmer will be responsible to pay the monthly usage fee of water to Municipality as determined by the Municipality.

c). *Other costs*

The Municipality has the right to charge all additional maintenance fees which include cost of security and refuse removal.

5.6 The need and desirability of the proposed activities

5.6.1 The need

Urban agriculture is regarded as one of the solutions to reduce hunger and achieve food & nutrition security in urban areas and the town of Swakopmund is not an exemption. Swakopmund town is home to a number of avid gardeners and farming enthusiasts who are capable of farming at large scale.

Moreover, the Municipality of Swakopmund in collaboration with the Government of Japan recently established a Build Back Better (BBB) Urban Agriculture Project where vegetables such as spinach, cucumbers, carrots, onions etc., are successfully produced under a greenhouse tunnel and raised beds. The Municipality of Swakopmund intends to upscale the successful gardening experience of local backyard gardeners and the BBB project to a fully operational urban agriculture scheme.



Figure 8: Overview of the existing Swakopmund Urban Agriculture Project

5.6.2 Desirability

The proposed development site has already been earmarked for agricultural activities in the Urban Structure Plan. Given the rocky surface granite outcrops and underlying bedrock as well as the proximity of the demarcated area to the Swakopmund Landfill site, the EIA study will investigate the agricultural activities suitable for these local environmental conditions. Water supply is one of the decisive factors for the intended irrigated agricultural activities, hence, the adjacent Wastewater Treatment Plant can be an alternative source of water for certain agricultural activities i.e. ornamentals or orchards, provided the quality of the purified effluent meets the legal requirements.

6. DESCRIPTION OF THE RECEIVING ENVIRONMENT

This chapter presents the environmental baseline of the receiving environment. It entails a description of various environmental receptors that are likely to be affected by the proposed project. This includes both the socio-economic and biophysical aspects.

The impacts on socio-economic aspects will affect a greater geographical area e.g., constituency, regional and national. Hence, the description of the socio-cultural-economic baseline provided for the study area corresponds to the extent of the community in which the project is taking place. On the other hand, the baseline study area chosen for physical and ecological data collection is mainly the area that is in the direct zone of influence of the proposed activities.

6.1 Social Environment

6.1.1 About the town

Swakopmund is a town on the coast of western Namibia, 352 km west of the Namibian capital Windhoek via the B2 main road. The town has 44,725 inhabitants and covers 196 square kilometers of land. The town is situated in the Namib Desert and is the fourth largest population center in Namibia. Swakopmund is an important holiday destination and an example of German colonial architecture.

It was founded in 1892 as the main harbor for German Southwest Africa, and a small part of its population is still German speaking. Buildings in the city include the Altes Gefängnis prison, designed by Heinrich Bause in 1909. The Woermannhaus, built-in 1906 with a prominent tower, is now a public library. The Erongo desalination plant has been the region's highest achievement thus far in terms of economic growth. The mining development in the region has also resulted in an increased in-migration to the coastal towns.

The town of Swakopmund is more of a tourist destination than a commercial town, with no fishing industry or local port. Many view the coastal towns such as Swakopmund and Henties Bay as holiday towns, which see an influx of tourists during the holidays. The National Marine Aquarium, Snake Park, the Rossmund Desert Golf Course, Swakopmund Museum, the crystal gallery, and the Jetty are some of the major tourist attraction sites in the town. As the tourism industry is expanding so are employment rates in the accommodation and catering industry.

6.1.2 Municipal Bulk Services

Swakopmund is served with modern infrastructure and bulk services such as:

- **Water Supply:** Freshwater supply to the town is provided by NamWater.
- **Road network:** There is existing roadwork connecting to the proposed development areas. Most of the roads especially in the town's CBD are well-tarred except at some parts of suburbs like Mondesa and in the informal settlements of DRC.
- **Sewerage & Drainage:** The existing system serves most of the existing developed areas except for the DRC informal settlement. It is expected that the sewer reticulation network, pump stations will be provided and connected to the sewer treatment plant. The informal settlements are not connected to the sewer network; as such, some residents make use of septic tanks, pit latrines, etc.
- **Electricity & Communication network:** Most of the town's electricity is served via Erongo RED, although some areas within the existing informal settlements are not connected. The town has access to various network coverage providers such Mobile Telecommunication (MTC), Telecom, Paratus.

6.1.3 Social development

Swakopmund has 6 primary schools, 2 combined primary and secondary schools and 3 secondary schools. Due to the current population increase 3 of the primary schools have had to increase their learner intake by an average 36%, whilst also running a second session in the afternoon to accommodate all the learners.

The main healthcare provider in the town is the Cottage Medi-Clinic hospital with 70 beds and a government hospital, with a full range of medical services and a 24hr Emergency and Casualty centre, which supports all state-funded patients. There are about 66 schools in Swakopmund of which 49 are state-owned while 17 are privately owned. Institutions of high learning i.e., NUST and various training centres (CODEC) are readily available. The Namibian Uranium Institute has recently built a new medical facility which will have specialized equipment and personnel to cater to the expected growth of the uranium mining industry. Swakopmund has several public amenities, including several sports fields, tennis courts and a go-kart track. The swimming pool has recently been renovated and the Municipality, in an effort to make the pool self-supportive, now outsources the Swimming Pool complex.

Due to the sudden migration of people to the region, supplying adequate housing has been a problem for all the town councils in the region. Approximately 27% of Swakopmund residents live in informal settlements. Swakopmund boasts a full range of services, from banking and telecommunications to an airport and car rental services.

6.1.4 Economic development

The town of Swakopmund is well developed and offers various services such as shopping centers, banking institutions, government offices, etc. It is served by the Swakopmund Airport and Railway Station.

6.1.5 Economic opportunities

Currently, the mining industry is the most prominent revenue earner in Swakopmund. The most significant contributors are Rössing Uranium and Langer Heinrich Uranium, with several smaller exploration and mining companies contributing to the uranium rush. Other smaller mining companies within the region quarry for marble, granite, semi-precious stones, sand and hydrocarbons (exploration). Swakopmund produces approximately 120,000 tons of edible salt annually, contributing to Namibia's claim as the largest salt producer in sub-Saharan Africa. Tourism is important to the Namibian economy, generating a significant amount of foreign exchange. Swakopmund is a prime holiday destination for its close proximity to the ocean and desert, easy access to rare flora and fauna (see chapter 5), as well as its rich cultural heritage and historical landmarks. Running parallel to the tourism industry is the accommodation and catering industries, which expand to accommodate the influx of tourists during holiday seasons. There are however large-scale retailers, ranging from grocery stores to white-goods retailers. The town hopes to expand its retail market to sufficiently cope with the large influx of tourists in the peak holiday season.

6.2 Biophysical Environment

6.2.1 Climate

- **Temperature, humidity, and evaporation rate**

The average temperature for Swakopmund ranges between 15 C to 25 C. The influence of sea air and fog keeps the relative humidity quite high throughout the year, above 80% most of the time and on average dropping only to about 70% at midday. Surrounded by the Namib Desert on three sides and the cold Atlantic waters to the west, Swakopmund enjoys a mild desert climate with an average evaporation rate area is less than 1 680 mm annually.

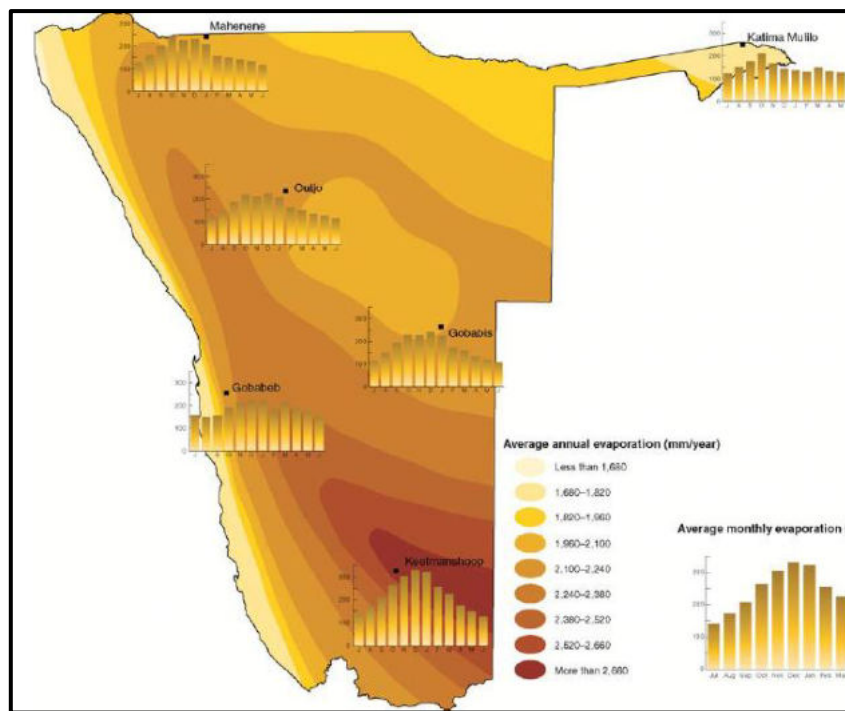


Figure 9: Average Evaporation rate (Mendelsohn, *et al* 2002)

- **Precipitation**

Along with the coast, rainfall is much less than further inland. The average annual rainfall for Swakopmund is less than 50 mm per year. The cold Benguela current supplies moisture for the area in the form of fog that can reach as deep as 140 km inland. Fog occurs at Swakopmund about 125 days each year (Raison in prep), usually during the mornings and evenings, with its highest frequency between September and December. The fog that originates offshore from the collision of the cold Benguela Current and warm air from the Hadley Cell create a fog belt that frequently envelops parts of the Namib Desert. While this has proved a major hazard to ships, it is a vital source of moisture for desert life. The fauna and flora of the area have adapted to this phenomenon and now rely upon the fog as a source of moisture (Mendelsohn, et al 2002).

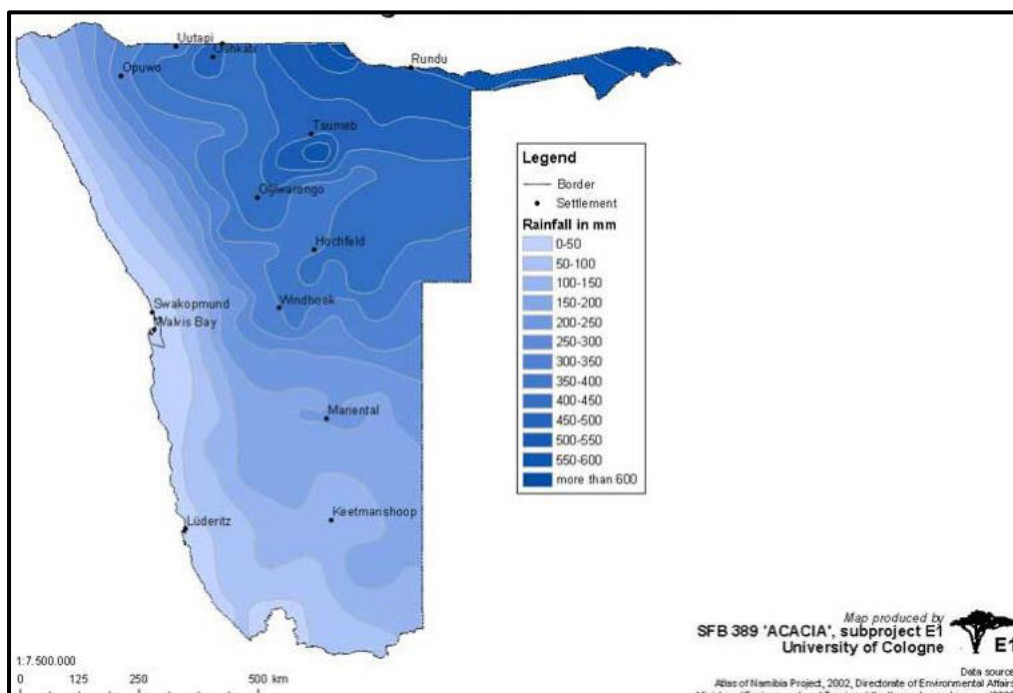


Figure 10: Average annual in Namibia

- **Wind conditions.**

The wind in Swakopmund is predominately from the southwest with easterly winds occurring infrequently during the winter months. East wind conditions normally occur in winter when the interior experience cold fronts, causing strong, hot winds and sandstorms coming from the desert. East winds with sandstorms are the strongest during the morning, normally calming down in the afternoon with glorious late afternoons and evenings.

6.2.2 Topography and Landscapes

The topography of project area ranges from 47-40 m.a.s.l and is gradually decreasing from east to west towards the ocean.

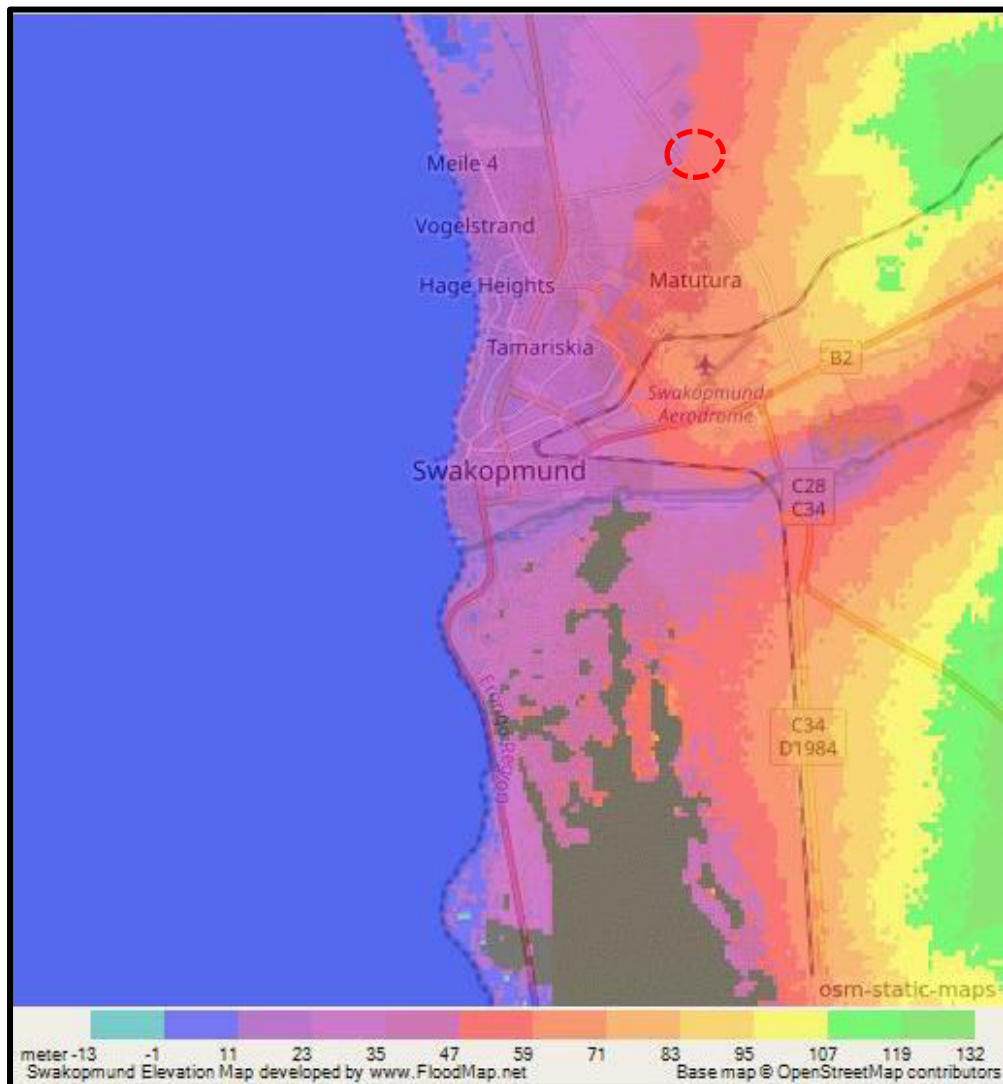


Figure 11: Elevation of Swakopmund town and surrounding

The proposed development site falls within the Central–Western Plain Landscapes which stretched from the coast and extend inland for about 450 km. The plains were largely formed by erosion cutting back into higher ground and carving out the catchment areas of several major rivers. The Khan, Omaruru, Swakop, and Ugab rivers are the most prominent in this area. The geology mainly consists of the “Swakop Group” with Damara Granites intrusions.

6.2.3 Soils and geology

The surface geology in the area is underlain by granite and marble bedrock that occurs on or near the surface and located close to a ridge. The soils range from soft and un-compacted in areas where seasonal tributaries flow to being very compacted but have sufficient structure that is easily penetrated by burrowing animals. The soil type of the site is Petric Gypsisols, which is gypsum-rich with the surface being covered with small stones and grit to larger rocks and boulders.

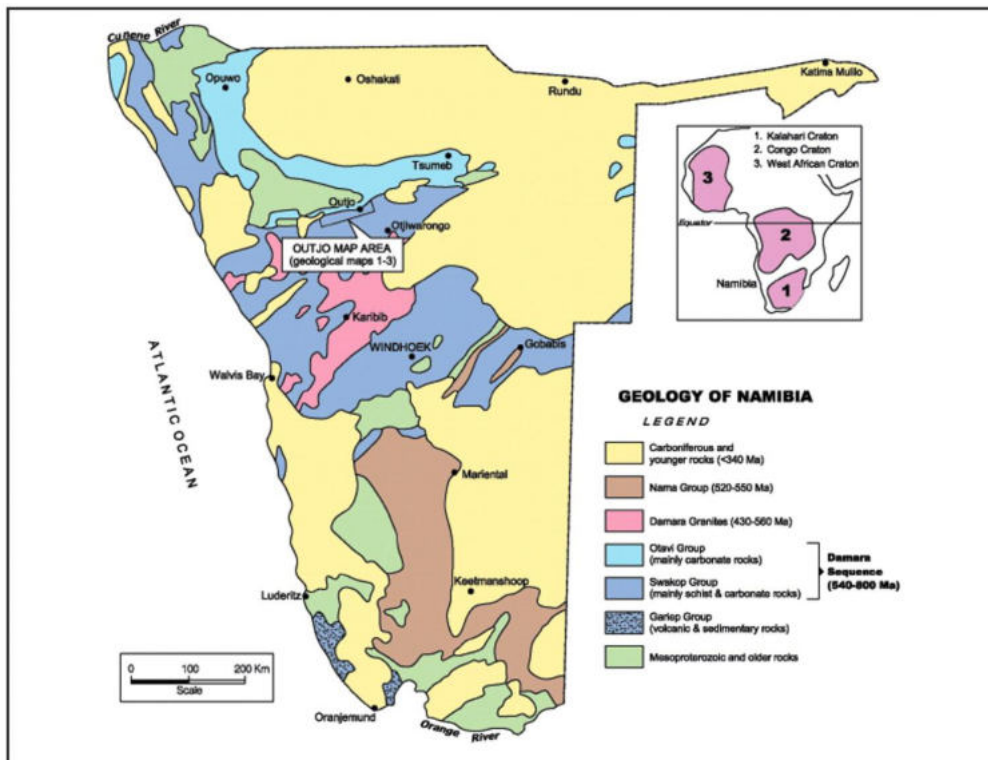


Figure 12: Geological map of Namibia (Source: Miller, R. McG, 2008)

Accumulations of calcium sulfate are characteristics of gypsisols, which are restricted to the very dry areas of central Namib. The calcium sulfate is dissolved out of the rock and soil and then carried by percolating water beneath the surface, where it remains in a variety of forms: powder, pebbles, stone, or gypsum crystals. The crystals may also form a compact layer or crust just below the surface. Gypsisols generally have very low levels of fertility, so only the hardiest of plants will grow in them. The geology of Swakopmund area is made up of Damara sequence rocks of the quaternary age which dates back 137-132 million years ago as shown in Figure 17 below. The Damara sequence belongs to the Swakop Group which is made up of the Khomas and Ugab sub-groups which are classified as hard rock formations.

6.2.4 Hydrology and geohydrology

One of the prominent hydrological features of the Swakopmund area is the Swakop River is located about 1.5 km south of the site which is non-perennial and is dry for most parts of the year. The is also a small river, a tributary to the Swakop River which runs between the demarcated agriculture site and the dumpsite. similarly to the main river (Swakop river), the tributary river is dry most of the year and the possibility of flooding occurring is very uncommon.

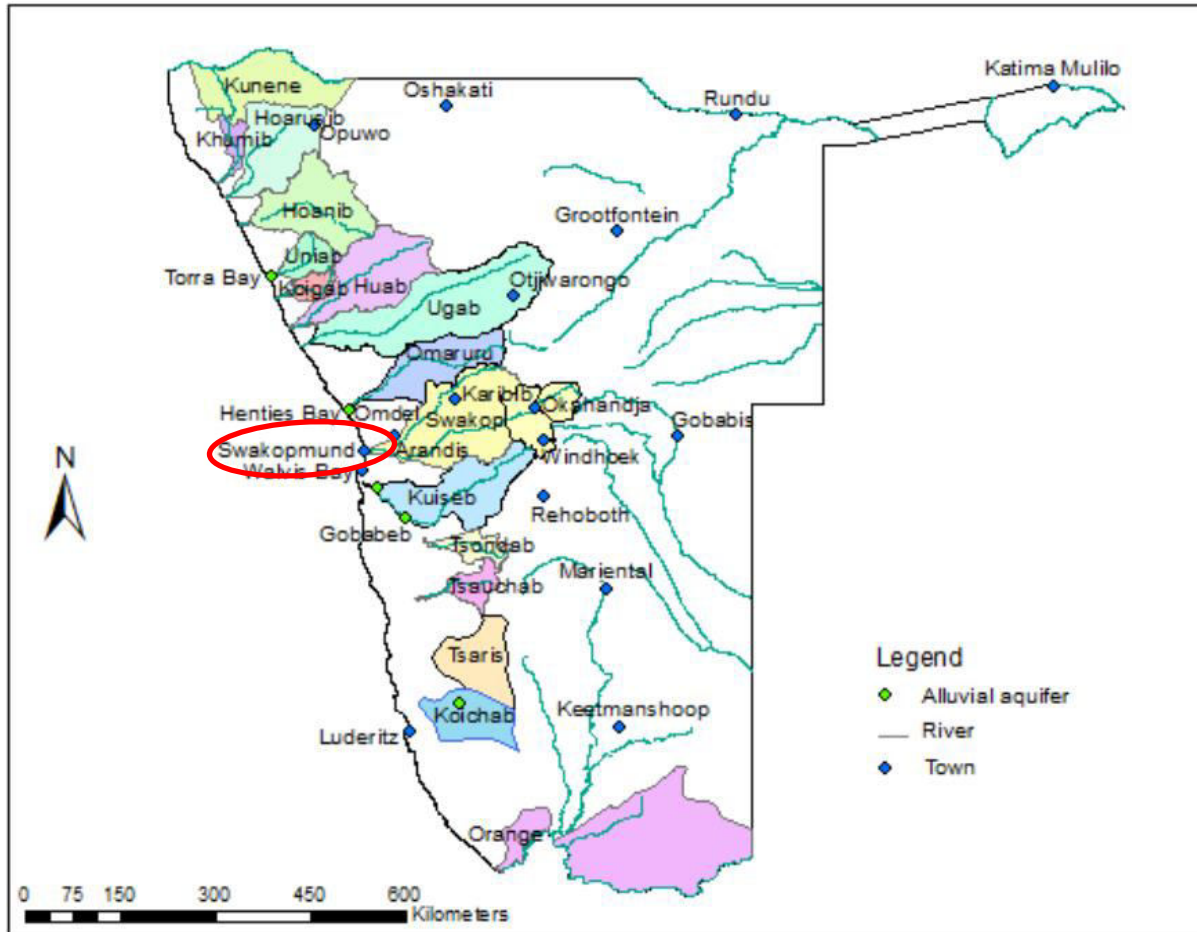


Figure 13: Hydrography map of Namibia (Rivers, basins, pans, and lakes) (Source: Chivell EH & Crerar SE. 1992)

Groundwater reserves in Swakopmund are limited to the Kuisieb and Omaruru alluvial bed aquifers, which supply Henties Bay, Swakopmund, Walvis Bay, Arandis, Rössing and Langer Heinrich Mines. These aquifers are situated within the alluvial beds of the Kuisieb and Omaruru rivers. Previous groundwater studies in the area have detected no freshwater table while seawater penetrated inland to at least 500m from the high-water mark at a depth of 1.5m.

6.2.5 Local occurring flora and fauna.

The vegetation type in the area falls within the Southern Desert of the Namib Desert Biome which is dominated by sparse dwarf shrubs. The observed shrub on site is commonly known as Pencil-bush (*Arthroa Leibnitzian*), which is endemic to Namibia. The vegetation of the area is highly disturbed due to the frequent movement of people.



Figure 14: Local occurring flora.

The local occurring fauna is mainly ground-living insects, scorpions, snakes, desert mice, and lizards. The avifauna is made of local urban birds such as *Southern Masked Weaver*, *Common Waxbill*, *Cape Sparrow*, *Laughing Dove*, and the most common colloquially *Seagull*. The presence of the local fauna around the demarcated area is exacerbated by the proximity of the riverbed, dumpsite and STP which provide suitable habitat and hunting grounds.

6.2.6 Water supply to Swakopmund

Water supply to Swakopmund town through the Swakopmund water supply scheme (SWSS). The water to the SWSS is abstracted from the Omdel aquifer situated in the ephemeral Omaruru River, inland of Henties Bay (see Figure 14). These aquifers are recharged by runoff from the central highlands in central Namibia where rainfall is more reliable and more significant than at the coast.

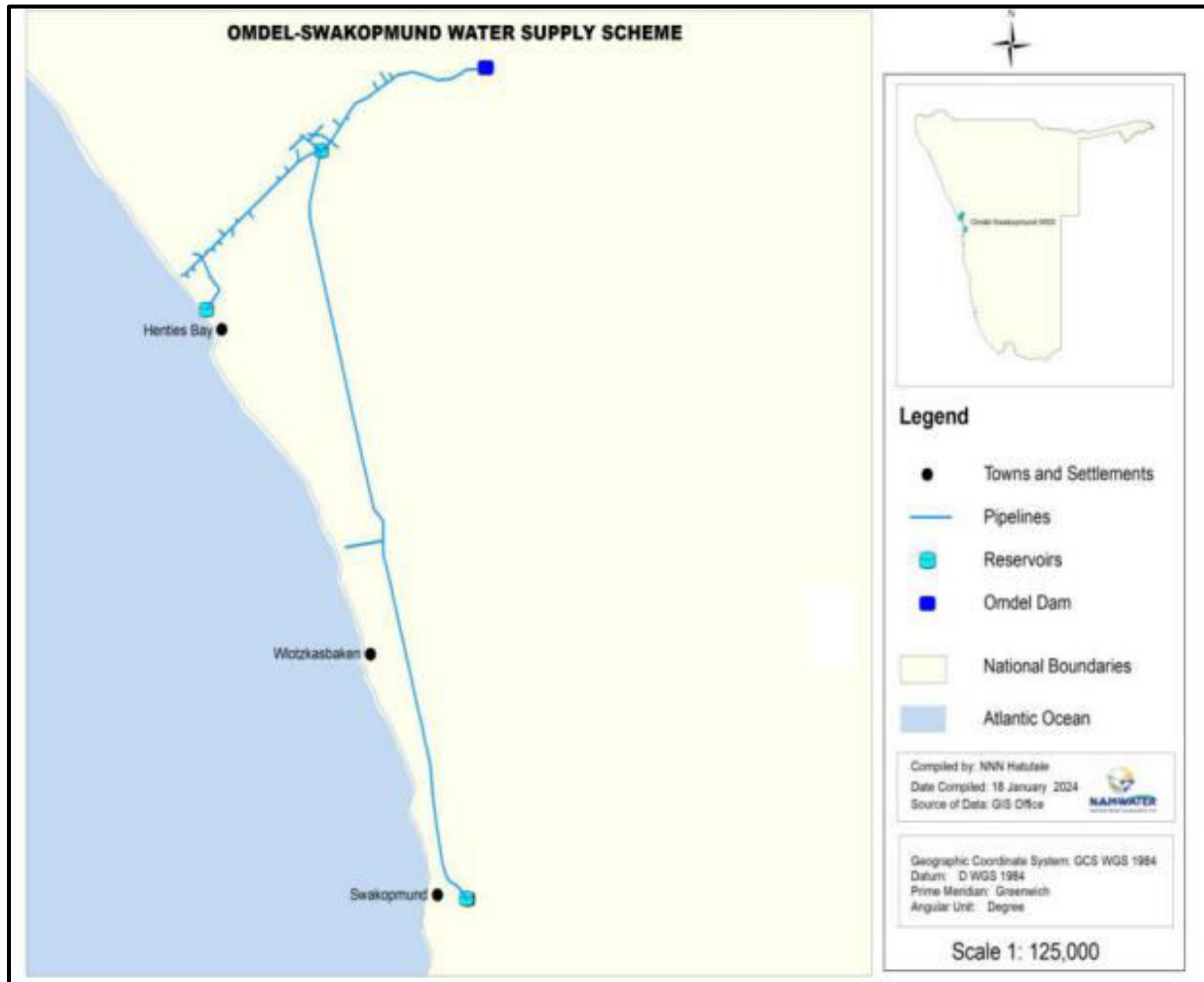


Figure 15: Swakopmund water supply scheme (NamWater, 2024)

The source (Omdel Aquifer) is situated along the lower Omaruru riverbed and is one of the major water sources of the Central Namib Area (CNA). Water is abstracted from the aquifer by boreholes situated downstream of the dam and conveyed to a reservoir from where it gravitates to various coastal clients. The safe yield of the aquifer was estimated at 8.9 Mm^3 /a. Water is stored in the Omdel Dam which has a capacity of 41.3 Mm^3 with an assumed dead storage volume of 2.0 Mm^3 .

The quality of water supplied by the SWSS complied with the national water standards and the water can be classified as Class B: Suitable for human consumption. The water is chlorinated at the terminal reservoirs in Henties Bay and Swakopmund, before the water is distributed to various clients.

6.2.7 Surrounding Land use context

The demarcated agricultural area shown in red, is located within the proximity of the existing Sewerage Treatment Plant (STP), the Swakopmund dumpsite, the stone quarry and the busy C34 road to Henties Bay.



Figure 16: Surrounding land uses

Due to the proximity of the demarcated area to the existing land use activities as outlined in Figure 15 above, the proposed agricultural activities are at risks emanating from the operation of the existing land use activities as explained below.

a). Risk of flooding from the existing STP

Figure 15 below depict a recent occurrence of the overflow from the STP. Once this occurs, the agricultural activities on the downstream of the STP are at risk of being contaminated, submerged, and washed away due to the overflow of untreated sewage or semi-purified effluent from the existing STP, especially for the plots on the downstream of the STP and those crossed by the stream.



Figure 17 Risk of overflow from the existing STP.

b). Contamination from the existing dumpsite

The existing Swakopmund dumpsite was established in and the site measures about 14.4192 hectare in size and about 75% of municipal waste is disposed of at the dumpsite. About 27% of the municipal waste is reclaimed for recycling. The waste disposed of at the dumpsite includes domestic waste, commercial waste, demolition waste, garden waste and non-toxic industrial waste. Hazardous and toxic wastes are not permitted to be dumped at the Swakopmund Dumpsite.



Figure 18: Overview of the existing Swakopmund dumpsite

d). Dust pollution from the existing quarry.

There is an existing stone quarry located less than 1km south-east of the demarcated area. The quarry is still operational and generates an enormous amount of fugitive dust into the surrounding area. If this dust settles on the vegetables and fruits, it will leave suspended solid contaminants on the surface of the produce which can result in human health issue if consumed. The dust emission can also cause health problems to animals (poultry and rabbit).



Figure 19: Nearby Stone Quarry

7. ANTICIPATED ENVIRONMENTAL IMPACTS

This section provides anticipated environmental impacts (short-term and long-term) associated with the proposed activities. According to the EIA Regulations, the term “environment” is referred to the complex of natural and anthropogenic factors and elements which include both the natural environment and the human environment. Hence, the assessment considered the potential impacts on the existing socio-economic and biophysical settings of the receiving environment as well as the future township developments in the area.

7.1 Impacts rating scales.

In assessing the impact of the proposed development, four rating scales were considered. Each issue identified was evaluated in terms of the most important parameter applicable to environmental management. These include the **extent, intensity, probability, and significance** of the possible impact on the environment and whether such effects are positive (beneficial) or negative (detrimental). The rating scales used are as follows.

Table 3: Impact rating scales

CRITERIA	DESCRIPTION			
EXTENT	National (4) The whole country	Regional (3) Erongo Region and neighbouring regions	Local (2) Within a radius of 2 km of the development site.	Site (1) Within the development site
DURATION	Permanent (4) Mitigation either by man or natural process will not occur in such a way or such a period that the impact can be considered transient	Long-term (3) The impact will continue/last for the entire operational life of the development but will be mitigated by direct human action or by natural processes thereafter.	Medium-term (2) The impact will last for the period of the project phase, whereafter it will be entirely negated	Short-term (1) The impact will either disappear with mitigation or will be mitigated through a natural process in a span shorter than the construction phase
INTENSITY	Very High (4) Natural, cultural, and social functions and processes are altered to extent that they permanently cease	High (3) Natural, cultural, and social functions and processes are altered to extent that they temporarily cease	Moderate (2) The affected environment is altered, but natural, cultural, and social functions and processes continue albeit in a modified way	Low (1) The impact affects the environment in such a way that natural, cultural, and social functions and processes are not affected
PROBABILITY	Definite (4) The impact will certainly occur	Highly Probable (3) Most likely that the impact will occur	Possible (2) The impact may occur	Improbable (1) The likelihood of the impact materializing is very low
SIGNIFICANCE	Is determined through a synthesis of impact characteristics. Significance is also an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.			

Table 4: Description of the significance of impacts

Low impact	A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction, or operating procedure.
Medium impact	Mitigation is possible with additional design and construction inputs.
High impact	The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.
Very high impact	Permanent and important impacts. The design of the site may be affected. Intensive remediation is needed during construction and/or operational phases. Any activity which results in a “very high impact” is likely to be a fatal flaw.
Status	Denotes the perceived effect of the impact on the affected area.
Positive (+)	Beneficial impact
Negative (-)	Deleterious or adverse impact.
Neutral (/)	The impact is neither beneficial nor adverse
It is important to note that the status of an impact is assigned based on the status quo. Therefore, not all negative impacts are equally significant.	
Significance Rating Scale	
Points 1-4	Insignificant/low
Points 5-8	Significant /Moderate
Points 9-12	Very significant/High.
Points 13-16	Highly significant /Very high

The significance of each impact has been rated before and after mitigations measures. The implementation of mitigations is expected to reduce the significance of impacts using at least two (2) scales.

7.2 Anticipated impacts: planning and design phase.

The first step in avoiding and preventing any possible negative impacts during the construction, operation, maintenance, and decommissioning phase, should start with the planning and designing phase. Issues to be considered at the planning and design phase are as follows.

- Farm planning (Positioning of farming activities)
- Provision of site Infrastructure
- Sustainable farming practices
- Provision for Security measures.

Table 5 Potential Impacts to be considered during Planning and Design Phase.

ASPECT	POTENTIAL IMPACTS	SIGNIFICANCE RATING (BEFORE MITIGATION)				SIGNIFICANCE (WITHOUT MEASURES)	MEASURES
		Extent	Duration	Intensity	Probability		
1. BIOPHYSICAL	<p>Farm planning</p> <p>Given the locality of the demarcated area and its proximity to the Landfill site, Quarry and SWTP, consideration should be given to the placement of different farming activities so as avoid contamination of farm produce.</p>	2	3	2	2	9	<ul style="list-style-type: none"> ✓ It is recommended that a Farm Plan depicting different farming zone be developed. - There should be buffer zone in the form of Greenbelt between the plots and the landfill site. ✓ Vegetable production should be under structures (Greenhouse, tunnels, shade etc, to avoid possible contamination ✓ There have been few incidents of overflows from the STP, hence, there should be extra protection measures, in the form of flow channels to arrest/control the overflows of sewage and PE from the STP
	Provision for Site infrastructure.	1	1	1	1	4	<ul style="list-style-type: none"> ✓ Provision should be made for the following infrastructure.

	The smooth operation of farming activities will depend on the provision of certain supporting infrastructure						<ul style="list-style-type: none"> ○ Water Supply 'pipeline ○ PE pipeline ○ Power supply ○ Sewerage system
	<p>Sustainable farming practice</p> <p>The Desirable farming activities to be allowed on the Demarcated areas should be Gazetted by means of a Council Resolution.</p>	2	1	1	1	4	<ul style="list-style-type: none"> ✓ There shall be a Lease Agreement between Council and the farmer which should specify all legal obligations and terms and conditions of the lease i.e. lease period, size of allotment, allowed activities, lease fee, applicable tariffs etc..
	<p>Provision for Security measures.</p> <p>The planning and design phase should consider the security issue during operation phase</p>	2	1	1	1	5	<ul style="list-style-type: none"> ✓ There should an outer security fence around the demarcated areas. ✓ Otherwise, provision should be made for sewerage system for Security personnel to be stationed onsite collected separately

7.3 Anticipated negative impacts: construction phase.

The anticipated potential negative impacts during the construction phase of the proposed agricultural plots will affect both the biophysical and socio-economic environments as follows.

- Land use effects.
- Soil disturbance from bulk earthworks and civil works
- Dust and air pollution.
- Waste generation.
- Risks of fuel spills or leaks
- Disturbances from traffic movement
- Safety, security, and health hazards
- Impacts of temporary construction camps and workshops
- Landscape and visual impacts.

Table 6: Potential Impacts and mitigation measures during Construction phase

Potential Impacts	Ratings (before mitigation/measures)				Significance		Mitigation measures
	Extent	Duration	Intensity	Probability	Without measures	With measures	
<p>Land-use effects.</p> <p>Construction activities such as driving, excavations, trenching, vegetation clearance etc will have negative impacts to the environment</p>	2	1	2	2	7	5	<ul style="list-style-type: none"> - Comply with the instructions of signposts, signboards, pamphlets or communicated in any other manner. - Obey any legal order or instruction given by a Law-Enforcement Officer.
<p>Soil disturbances and contamination from bulk earthworks and civil works</p>	2	1	2	2	7	5	<ul style="list-style-type: none"> - Topsoil must be carefully extracted and kept separate from construction waste for use as backfill materials. - Limit the movement of vehicles to the construction working site and make use of existing access routes. - Vehicle movement should be restricted to within the width of the “working zone” - Vehicles should be equipped with drip trays to prevent oil and fuel spillages. - Ensure proper maintenance of the construction vehicles and machinery. - In the event of spillages, they should be reported to the ECO immediately and cleaned as soon as possible.
<p>Dust and Noise</p> <p>To be generated from excavation and blasting activities.</p>	1	1	1	1	4	4	<ul style="list-style-type: none"> - Work should be limited to daytime hours. - Provide measures to control dust, noise.
<p>Waste generation.</p>	2	1	1	1	5	3	<ul style="list-style-type: none"> - All general waste and construction waste should be disposed of at the

							Municipal dumpsite and should NOT be left onsite.
Disturbances from traffic movement Construction of the proposed pipeline and servicing of the demarcated area will require a large-scale transport operation due to the delivery of materials and construction activities	2	1	1	1	5	3	<ul style="list-style-type: none"> - The contractor must erect construction signage at the construction site. - Construction vehicles must be driven by authorized drivers only and stick to the authorized speed limits in urban areas. - Heavy-duty vehicles and machinery must be tagged with reflective signs or tapes to maximize visibility and avoid accidents. - Revolving lights should be switched on when driving.
Safety and health hazards The safety of the community living in proximity of the site and the employees could be compromised by workplace hazards.	2	1	1	1	6	4	<ul style="list-style-type: none"> - Erect warning signs at the construction work site. - The site should be fenced off and out of bound. - All employees should be equipped with appropriate PPE. - Prohibition and access restricted signs should be displaced at the site.
Impacts of temporary construction camps and workshops The establishment of temporary construction camps will result in the generation of different types of waste.	2	1	1	1	6	4	<ul style="list-style-type: none"> - Construction camps must be established on a site with impervious surfaces in line with Section 183 of the General Health Regulations (GN. 121 1969) and must be approved by the Municipality.
Landscape and visual impacts.	2	1	1	1	6	4	<ul style="list-style-type: none"> - Only prepare trenches in short sections sufficient to be worked for a

<p>Visual impacts associated with the construction activities will occur because of the uncollected waste stockpile, unpacked construction materials, open trenches, and other facilities which makes the view of the site unappealing.</p>						<p>short period i.e. a week and avoid leaving empty trenches for far too long</p> <ul style="list-style-type: none"> - The stripped topsoil must be backfilled carefully in position after the completion of the pipe laying. - Waste generated should be collected and disposed of weekly. Excess sand from trenches should be regarded as waste. - Construction materials should be properly stacked in one place. - The construction area and construction camps and workshops should be kept neat as far as possible.
<p>Pollution of the environment Pollution and contamination of the environment may occur as a result of improper handling of cement.</p>						<ul style="list-style-type: none"> - The concrete batching works shall be always kept neat and clean. No batching activities shall occur on an unprotected substratum of any kind. - Contaminated water from batching areas shall not be allowed to overflow but shall be collected, stored, and disposed of at a site approved by the PC and ECO. - Unused cement bags shall be stored in weatherproof containers to prevent windblown cement dust and water contamination during rainfall or runoff events. - Used cement bags shall be disposed of regularly via the solid waste management system and shall not be used for any other purpose. <p>✓</p>

7.4 Anticipated negative impacts: operation and maintenance phase.

The operation and maintenance phase of the proposed agricultural activities will equally result in several negative impacts to the biophysical and socio-economic environment. These impacts are not expected to be of high significance provided that the proposed mitigation measures are implemented during the planning & design and construction phase.

ASPECT	POTENTIAL IMPACTS	SIGNIFICANCE RATING (BEFORE MITIGATION)				SIGNIFICANCE (WITH MEASURES)	MEASURES
		Extent	Duration	Intensity	Probability		
1. BIOPHYSICAL	Impact to local flora and fauna	1	1	1	1	4	<ul style="list-style-type: none"> ✓ The demarcated area contains few vegetation and is reserved for the intended development as outlined in the Spatial plan, therefore the impact on flora and fauna will be negligible. ✓ The intended agricultural activities will increase plant, animal, and insect biodiversity and improves pollinator habitats that support fruit and vegetable production and soil health.

	<ul style="list-style-type: none"> • Increase local water demand. <p>The proposed agricultural activities will increase in water consumption.</p>	2	2	2	2	8	<ul style="list-style-type: none"> ✓ Develop a Water Demand Management Plan for the project. All activities approval should be in line with the WDMP. ✓ Each plot should be provided with a water meter. ✓ Ensure regular monitor and control of water consumption. ✓ Encourage water conservation farming techniques i.e. hydroponic, vertical farming systems etc. ✓ Enforce water saving techniques. ✓ Encourage alternative water supply for ornamental production and non-essential activities
	<p>Soil impacts</p> <p>Organic production and composting will promote carbon sequestration in the soil and increases soil health.</p> <p>However, soil disturbances may occur as a result of exposure and contamination from overutilization of fertilizers, chemicals and spills and leaks of lubricants.</p>	1	1	1	1	4	<ul style="list-style-type: none"> ✓ Encourage use raised beds for irrigated agriculture to prevent soil erosion. ✓ Erect erosion work and provide soil covers to prevent soil erosion by wind or water. ✓ Encourage organic production and discourage the use of chemical fertilizers and pesticides.

(Farmers are more interested in organic production methods)						
Impact to Air Air pollution may occur as result of dust emissions, odor, bed smell etc.	2	1	1	1	4	<ul style="list-style-type: none"> ✓ Avoid dust generating activities during windy days. ✓ Ensure good housekeeping to avoid smell, bad odors and avoid open fire on the area.
Waste generation. The proposed agricultural activities will generate different types of waste such as; -General waste i.e. paper, plastic, tins, can etc from daily operations -Garden refuse (leaf, cuttings, manure etc.) -Hazardous waste i.e. disinfectant containers, used oil, paints, unused chemicals, etc etc	2	1	1	1	5	<ul style="list-style-type: none"> ✓ General household waste should be disposed of in the municipal refuse bins for disposal. ✓ Garden refuse i.e. manure, plant waste should be composted and used as fertilizers. ✓ Worn-out parts should be collected and sent to the local scrap yards in Swakopmund. ✓ All empty disinfectants containers should be sent to the local recycling companies or properly cleaned before re-use. ✓ Hazardous waste should be collected separately and sent to the Walvis Bay landfill site.

	Disturbance to the local hydrology and to the coastal zone resulting from the overflows from the demarcated area	1	1	1	1	4	<ul style="list-style-type: none"> ✓ Prevent any overflows of water from the plot into the nearby riverbed. ✓ Wastewater from the plots should not be discharged into the open environment. ✓ Animal activities should not be placed within the existing riverbed
	Groundwater contamination from spillages, leaks, and overutilization of fertilizers	1	1	1	1	4	<ul style="list-style-type: none"> ✓ Encourage planting in raised beds instead of direct planting in the soil. ✓ All wastewaters must be contained and channelled into the Municipal sewerage system. ✓ Contaminated soil must be removed and sent to the Walvis Bay landfill site.
2. SOCIO-ECONOMIC	Land-use effects. i.e., disturbances to adjacent land uses	1	1	1	1	4	<ul style="list-style-type: none"> ✓ Farmers should remain within the area of operations. ✓ Adhere to the Lease agreement
	Food safety Producing food or selling contaminated food to the community will result in serious food safety.						<ul style="list-style-type: none"> ✓ Liaise with MWLR on the control measures in cases of outbreak of pest and diseases. ✓ The quality of PE from the existing STP does not meet the standard to be used for watering

	It is expected that there will be certain outbreak of pest and diseases which will affects the quality of food produced.						vegetables meant for human consumption.
	Public Safety, security, and health hazards.	1	1	1	1	4	<ul style="list-style-type: none"> ✓ Employees should be equipped with appropriate PPE. ✓ Treated areas/gardens should be marked and out of bound for visitors
	Visual impacts There will be Change to the visual landscape and impact on sense of place related to all proposed new surface infrastructure. Specifically, the solar arrays and infrastructure (i.e. powerlines, bulk pipelines and associated infrastructure) would extend long distances, causing visual disturbance to road users, amongst other tourists, travelling on the Swakopmund Henties Bay road.	1	1	1	1	4	<ul style="list-style-type: none"> ✓ Structures should be established at the satisfactory of the Municipality of Swakopmund. ✓ Ensure regular litter picking and practice good housekeeping by all farmers.

7.5 Anticipated positive impacts.

The proposed development will also result in several positive impacts during the construction and operation phases. However, certain enhancement measures must be implemented to fully realize such positive impacts. These impacts are as follows.

ASPECT	POTENTIAL IMPACTS	SIGNIFICANCE RATING (BEFORE MITIGATION)				SIGNIFICANCE (WITH MEASURES)	ENHANCEMENT MEASURES
		Extent	Duration	Intensity	Probability		
1. Health and Social Benefits	<p>Job opportunities</p> <p>The construction phase will provide employment and business opportunities.</p> <p>The operation phase of the intended urban agriculture can attract diverse populations with an array of skill sets for employment. These varied skill sets can be put to practical use in seasonal farm jobs, food marketing and retail, nonprofit organizations, local government, public health nutrition, education, and commercial businesses.</p>	1	1	1	1	4	<ul style="list-style-type: none"> ✓ As part of the tender requirements, contractors must be encouraged to give priority to locally qualified people. ✓ Priority for farm allotments and farm employment should be given to local qualified people.
	<ul style="list-style-type: none"> - The project will increase opportunity to access healthy food for low-income people. - Heightened sense of community - Improved health from eating locally grown produce. 	1	1	1	1	4	<ul style="list-style-type: none"> ✓ Building materials must be sourced from local businesses as far as possible. Qualified Namibian construction companies should be given a fair chance to compete in the bidding process.

	<ul style="list-style-type: none"> - One of the significant positive impacts that will result from the proposed project is the increase food production in Swakopmund 	1	1	1	1	4	✓
	<ul style="list-style-type: none"> - Urban agriculture sites such as school gardens offer an outdoor living laboratory to support youth education in agriculture, culinary skills, nutrition, and biological and environmental science. - Urban agriculture youth programs contribute to youth development by offering children, adolescents, and young adults' opportunities to make positive contributions to their community and the environment, access adult mentorship, and practice leadership and life skills - Integrating gardens into elementary, middle, and/or high school curricula, students benefit by engaging in outdoor learning while also learning practical life skills 	1	1	1	1	4	✓
2. Socio-economic benefits	<p>Economic prosperity</p> <ul style="list-style-type: none"> - During operation phase, the proposed agricultural activities will be a source of income for many residents. - The proposed agricultural scheme will result in local food 	1	1	1	1	4	<ul style="list-style-type: none"> ✓ Ensure the production of healthy and affordable food. ✓ Farmer should be encouraged to compost garden waste generated from own farms.

	<ul style="list-style-type: none"> supply, resulting in reduced costs of transporting food. - Utilization of garden wastes (Sourced from agricultural plots and landscaping in town) as compost by urban farms and gardens reduces waste volume directed towards landfills by as much as 40%. - The intended agricultural demarcated area within the Swakopmund Municipality will result into multiplier effects, i.e., attracting new businesses such as agricultural equipment industries, processing facilities, restaurants, shops, and markets. - Entrepreneurial urban agriculture activities may attract community development and capital investment that create business opportunities for food production, distribution, and retail sales 						<ul style="list-style-type: none"> ✓ Local people interested in commercial compost making business should be permitted on the agricultural area
3. Environmental benefits	<ul style="list-style-type: none"> - The proposed demarcated agricultural area will increase the town's ecological footprint in many ways i.e., opportunities for green waste reuse (composting) - Organic agricultural and landscaping practices minimize introduction of harmful chemicals into city soil and water. 	1	1	1	1	4	<ul style="list-style-type: none"> ✓ Only activities listed on the Allowable category should be permitted. Encourage organic food production and discourage the use chemical fertilizers. ✓ Farmers must be sensitised to use water sparingly.

	<ul style="list-style-type: none"> - Planting tree crops and diverse plant species in urban areas naturally filters air and water, promotes carbon sequestration in soils, provides shade, and can help moderate high temperatures. 						
4. Cultural Benefits	<ul style="list-style-type: none"> - The practice of farming, gardening, and preparing food encourages social interaction and cultural preservation. - Community-based urban agriculture operations such as community gardens, market gardens, school gardens, and nonprofit urban farms promote social connections and community cohesion among participating residents. - Urban agriculture events, markets, and volunteer opportunities encourage a public exchange and a sense of community by engaging residents directly in intercultural and intergenerational interactions. 	1	1	1	1	4	<ul style="list-style-type: none"> ✓ Create opportunities for community engagement such as community gardening, mentoring programs, shopping at farmer's markets, and harvest festivals etc

7.6 Decommissioning phase

Once a certain agricultural plot/allotment has become unprofitable or for some reasons considered not viable it must be properly decommissioned. To avoid farmers from abandoning their respective allotments without proper decommissioning, the Municipality of Swakopmund may consider charging for rehabilitation fees at the start of the lease period. Such cost can then be used to carryout the decommissioning and rehabilitation of the obsolete farm/allotment. The decommissioning and rehabilitation process will differ from the different agricultural activities. The decommissioning of agricultural activities should entail the following.

- Payment of the outstanding water balance with Municipality and disconnection of the water meter
- Closure of water supply network and emptying and removal of wate containers
- Demolishing of structures and removal of all support structures
- Removal of plant residues and unwanted plants
- Removal of planting beds and unused composts
- Clean-up of contaminated sand and dispose it to the Municipal dumpsite.
- Levelling of uneven terrain and disturbed areas

8. CONCLUSION AND RECOMMENDATIONS

8.1 Conclusion

The objective of the Scoping phase of the EIA study was to define the range of the environmental impact assessment and to determine the need to conduct any specialist study. It is believed that this objective has been achieved and the study can be concluded at the Scoping level. The following conclusions have been made from this study:

a). The proposed development site.

- The site is currently undeveloped or un-serviced, thus there is a need to install municipal services such as water, sewerage, electricity etc.
- The site is surrounded by different land use activities that could pose potential risks to the intended agricultural activities. The most notable adjacent land uses are the STP, dumpsite, stone quarry and the C34 road. The presence of these existing activities will influence the placement of different farm units as well as the choice of farming methods to ensure the production of healthy food.
- The site is underlain by hard rock that made it impossible or difficult to penetrate, thus not suitable for direct soil planting, especially for vegetables and fruit trees.
- There is a concern from the interested farmers with regards to the security of the place during the operation phase. Hence, provision for long term security measures should be made at the planning phase.

b). The proposed agricultural activities

- All interested farmers will be given a fair opportunity to apply for the allotments of which preferences will be given to Swakopmund residents, youth, women and people with disabilities.
- Only certain agricultural activities, primarily vegetable production and limited animal farming such as poultry and rabbit farming will be permitted. Such activities will be legalized in terms of Council Resolutions.
- No abattoirs, slaughtering or animals will be considered, and no accommodation will be allowed on the allotments.
- Climate smart, organic agriculture and water saving farming techniques will be encouraged.
- Aquaculture and related activities should ONLY be allowed upon completion of an EIA study and after an ECC has been obtained from MEFT as per Schedule 8.1 of the EIA Regulation.

c). Sensitive Environmental settings

The following environmental parameters are of outmost importance and will play a major role on the successful operation of the intended agricultural activities.

- Precipitation: The average annual rainfall for Swakopmund is less than 50 mm per year while the fog occurs about 125 days annually, making it is a vital source of moisture for dese.
- Wind, determining the extent and shape of the dune field and shaping the sandy substrate into individual dunes. The wind also drives the northward Benguela Current and upwelling system in the sea.
- Long shore drift in the Atlantic Ocean, driving sand sediments northwards along the shore. This is a highly dynamic system. The process of longshore drift and near shore currents directly affects scour and deposition regimes along the shore, such as in the Swakopmund Mole, rocky points established by the Municipality, and the proposed Marina.
- The water supply to the town is sourced from the Omdel aquifer and the quality thereof is classified as Class B for human consumption. The aquifer (source) is under immense pressure due to population growth of urban populations of Swakopmund and Henties Bay as well as increase in mining activities in the region.

All possible environmental aspects associated with the proposed activities have been adequately assessed and documented in the Scoping Report. Hence, there is no need for a specialist study. It is assumed that the proposed project is well received by all, hence there were no objection received during the public consultation. All necessary control, mitigation and monitoring measures have been formulated to meet statutory requirements and are contained in this Scoping report and the EMP (Annexure C).

8.2 EAP recommendations

a) Recommendations to the proponent (Swakopmund Municipality)

- Establish a Project Management Committee to oversee the development, operation, and management of the envisaged agricultural activities.
- Designate a Project Coordinator (PC) and Environmental Control Officer (ECO) to oversee the implementation of the proposed mitigation and the enhancement measures contained in this report and in the EMP.
- Develop a Lease Agreement with clear criteria for allotments and bidding principles as well terms and conditions.
- Establish synergies of collaboration with other stakeholders in the urban agriculture development such as the University of Namibia, Henties Bay Campus, Ministry of Agriculture, Water and Land Reform.
- Oversee the implementation of the generic EMP, hereto attached during the establishment, operation and decommissioning of the listed farming activities in line with the principle of Good Agriculture Practice (GAP) as outlined in the EMP.
- The Municipality should consider the proposed security measures as outlined in the EMP or any other possible measure to ensure the securitization of the intended farming activities.

b) Recommendation to DEA

- Approve the findings of the Scoping process and mitigation measures contained in the Scoping (this report).
- When deemed necessary, attach any condition/s to ensure environmental compliance and for the proposed project to meet statutory requirements.
- Authorize the issuance of the ECC to the Swakopmund Municipality for the Establishment of the proposed Agricultural Plots/Allotments and Associated infrastructure on the Remainder of Portion B of Swakopmund town and townlands No.41

9. REFERENCES

- Barnard P. 1998. Biological Diversity in Namibia, a countrywide study. Namibian National Biodiversity Task Force. Windhoek.
- Chivell, E. H & Crerar, S. E. 1992. Unit runoff map for Namibia. Unpublished DWA report, Windhoek.
- Department of Water Affairs., Ministry of Agriculture, Water and Rural Development, 1999.
- Digital Atlas of Namibia Unpublished Report. Ministry of Environment & Tourism.
- Directorate of Environmental Affairs, 2008. Procedures and Guidelines for Environmental Impact Assessment (EIA) and Environmental Management Plans (EMP), Directorate of Environmental Affairs, Ministry of Environment and Tourism, Windhoek.
- Mendelsohn, J., Jarvis, A., Roberts, C., & Robertson, T. 2002. Atlas of Namibia. New Africa Books (Pty) Ltd: Cape Town.
- Miller, R. McG. 2008. The Geology of Namibia, 3 Vols. Geol. Survey of Namibia, Windhoek.
- Namibia Statistic Agency, 2001, Population and Housing Census [Report]. Windhoek. 2003.
- Namibia Statistic Agency, 2016. Namibia Inter-censal Demographic Survey.
- Environmental Management Plan for the Swakopmund Landfill site, 2020, Swakopmund Municipality
- Swakopmund Spatial Urban Structure Plan, 2014. Swakopmund Municipality

10. APPENDICES

- 10.1 Appendix A: Copy of Council Approval**
- 10.2 Appendix B: Proof of Consultations**
- 10.3 Appendix C: EMP**