

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

FOR

THE PROPOSED CONSTRUCTION OF

THE COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA
(COMESA) HEAD OFFICE

ON

FARM 4169 AIRPORT ROAD, CHONGWE DISTRICT, LUSAKA
PROVINCE, ZAMBIA

BY

THE COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA
(COMESA)



Final Report May 2026



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EXECUTIVE SUMMARY

Project Background

The Common Market for Eastern and Southern Africa (COMESA) is a regional economic community in Africa with twenty-one member states stretching from Tunisia to Eswatini. COMESA was formed in December 1994, replacing a Preferential Trade Area which had existed since 1981. Nine of the member states formed a free trade area in 2000 (Djibouti, Egypt, Kenya, Madagascar, Malawi, Mauritius, Sudan, Zambia and Zimbabwe), with Rwanda and Burundi joining the FTA in 2004, the Comoros and Libya in 2006, Seychelles in 2009, Uganda in 2012[4] and Tunisia in 2018. COMESA is one of the pillars of the African Economic Community.

Based in Lusaka, Zambia, the Secretariat is the executive Organ of COMESA. It ensures that the regulations and directives adopted by the Council of Ministers are properly implemented, and provides the Council of Ministers with strategic recommendations. It is comprised of the Executive Management- Office of the Secretary General, Assistant Secretaries General for Programs, Finance and Administration, and the Management Team. The secretariate is currently housed at COMESA center in the heart of Lusaka Central Business District.

COMESA was allocated a piece of land by the Republic of Zambia situated at farm 4169 Airport Road in Chongwe District measuring approximately 14 Hectares. COMESA intends to develop the described piece of land by building its new office

Headquarters complex, hotel, conference center and some retail facilities to cater for the organization's current and future needs whilst responding to market trends in the area surrounding the property.

It is from this background that the EIA is being conducted in line with regulatory requirements and internal organizational sustainability principles.

The COMESA Head Office project aims to align with international green building best practices and intends to pursue LEED certification. This will ensure a resource efficient, climate responsive and future ready development that meets high environmental and health standards. LEED (Leadership in Energy and Environmental Design), developed by the U.S. Green Building Council (USGBC), is the world's most widely used green building rating system for sustainable design, construction, and operation. It awards points across categories like energy, water, and materials to certify buildings as Certified (40+ points), Silver (50+), Gold (60+), or Platinum (80+).

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Objective of the Project

The objective of the project is to provide office space and conference facilities to the COMESA secretariate. Secondly the project aims to provide hotel accommodation, leasable office and retail spaces to the general public. This will be done by putting up a mixed-use development comprising the COMESA Head Office, retail spaces, a hotel and conference centre and other supporting facilities.

Project Location

The project site is located on farm 4169 along Airport Road in Chongwe District of Lusaka Province. Site access is along Airport Road, some 20km from the Lusaka CBD, and 2km from the Airport Roundabout. The GPS coordinates of the site are:

Table 1: Site GPS Coordinates

Point	Longitude	Latitude	Elevation
A	28.4135943494	-15.33764774	1165.935
B	28.4139194674	-15.33767736	1166.192
C	28.4150950373	-15.33778445	1165.136
D	28.4151812948	-15.33681067	1165.098
E	28.4152578144	-15.33681701	1164.981
F	28.4161777790	-15.33689541	1164.374
G	28.4162371436	-15.33690057	1164.117
H	28.4156679750	-15.34292023	1167.301
J	28.4135831539	-15.3412286	1168.424
K	28.4132790636	-15.34098185	1168.425

Shareholders and Directors

The Common Market for Eastern and Southern Africa (COMESA) comprises 21 African Member States that came together with the aim of promoting regional integration. As such the organisation has no shareholders but member states bound by the treaty. Zambia is host nation and signed a host agreement. The current leadership comprises;

- Current Chair: President William Ruto of Kenya assumed the Chair of the COMESA Authority at the 24th Summit in October 2025.
- Vice Chair: President Emmerson Mnangagwa of Zimbabwe holds the Vice Chair position.

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- Secretary General of the Common Market for Eastern and Southern Africa (COMESA) is H.E. Ms. Chileshe Mpundu Kapwepwe from Zambia.:

Investment Cost

The proposed project cost is estimated to be \$140, 000, 000 and the construction works will be in 3 phases to commence in October 2026

Project Description

The COMESA Head office project is a mixed-use development comprising Office space (both for developers own use and commercial leasable offices), a hotel, conference center, retail spaces and Parking. Parking is envisaged to include Basement Parking. The proposed project will have a Gross Building area of over 43,000 Square meter with the following major project components;

- Head Office Building – (Building 8231m², Basement 11,043m²) Total 19,274m²
- Hotel- 10,931m²
- Conference Center- 10,880m²
- Retail- 536m²
- Gate House- 101m²
- Other Offices- 1,890m²
- Parking- 660 Bays

The project is being developed to international standards and seeks to attain LEED certification.

The construction of all the building structures on the site will comply with the specified building line recommended by the existing legislation and the complex will be designed to comply with environmental regulations.

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Technology

The technology to be used in project implementation will make use of human and machine labor. The following equipment will be used:

- Earthmoving equipment- excavators, loaders, graders
- Construction equipment - dumpers and tippers
- Material handling equipment- cranes, forklifts and hoist
- Construction equipment - tunnelling & handling equipment, concrete mixers, road making machines, pavers and spraying & plastering machine

The proposed site for the development is not considered green field as the site is already disturbed.

Project Alternatives

Site Alternatives

The site was allocated by the government of Zambia bearing in mind its proximity to critical amenities to support the development. As such no alternative was considered. Numerous advantages are represented by the current site which includes the following factors:

Location: The proposed site is located close to the exiting mixed use developments (Garden City and Waterfalls) and Human settlements of Avondale, Ibex Hill and Meanwood ibex. This presents an opportunity to develop the site in line with exiting trends. Further, the site presents an opportunity for a green development which answers to the need for eco-friendly and sustainable construction.

Infrastructure: The necessary infrastructure to support such a development is partly available within the vicinity. This includes:

- *Road access:* The project area is served by Airport road
- *Power:* Electrical power is available nearby from the existing electrical network.

Labor: Labor for the operation of the project is already established and accommodated in the area. Local communities such as Meanwood Ndeke, Kasisi, Chelstone will offer a readily available pool of non- or semi-skilled labor for employment during the construction phase.

Ownership and Zoning: The site forms part of property already owned by COMESA.

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The No Project Alternative

Assuming the project is not undertaken, the current site would remain unutilized. However, the illegal business activities onsite pose a threat of encroachment on the site and surrounding area. As such the project provides a buffer from encroachment. Further the illegal burning of garbage on the site poses a threat to the environment and the project proposes a sustainable use of the local environment.

Technology and Material Alternatives

The developer was looking for a planning approach and design that would be founded on sound environmental principles that would optimize the land area available and also take into account the existing elephant corridors, topography, hydrology and vegetation.

The current site plan optimizes the land area available and takes into account the sites environmental attributes. The construction methodologies and materials will be that of steel, concrete and brick work similar to the numerous methods being undertaken in the project area. All construction waste products such as cement wastes and broken bricks will be as much as possible used for backfilling on site and to a lesser extent transported to offsite designated dumpsites.

Sewage Management Alternatives

Two alternatives were considered under sewer management:

1. Municipal Connection- Municipal Sewer connection is always the preferred option when a development of this magnitude is being undertaken. There is no visible sewer connection point on site. However, the area surrounding the development has existing municipal sewer network. As such the project will have to consider onsite treatment with the possibility to connect to municipal network once it is identified and connectivity assessed.
2. Onsite sewage treatment plant- The plant treats the sewage and produces clean and odour free water which is environmentally friendly. The water from the plant can be used for irrigation, discharged into a soak away system or released into the natural water systems. This system is very effective.

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The use of septic tank and soak away system was not even considered due to the size of the development and potential hazard to the environment. The installation of an onsite sewage treatment plant is the best option as there is no local service provider within the area.

Water Supply Alternatives

Two alternatives were considered for water supply as follows:

1. Municipal Water Connection- The proposed project site is located in an area that presently has no municipal water connection at site. However, there is a nearby water main and the project will consider connecting to the municipal water mains as the first option.
2. Ground water abstraction - The project area has high ground water potential. This option would involve the developer drilling boreholes on the site and managing them. These boreholes will serve as a good alternative and backup.

After analyzing the two options, the developer has opted to use water both options to ensure reliability of supply.

Power Supply

Three main alternatives exist for power supply. These are Grid connection to the nearby ZESCO infrastructure, Onsite Generators and onsite Solar backup systems. The proposed development will consider all three power sources.

Regulatory Framework

The project falls under Class IV Schedule of the Environmental Impact Assessment (EIA) Regulations of the Environmental Management Act No. 12 of 2011, and it is therefore a requirement that an Environmental Impact Assessment (EIA) study be carried out. The EIA study should also include Environmental policies and framework.

This study took into account the relevant legislations including the Environmental policies and framework. The following are the relevant legislations for the proposed project:

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1. The Environmental Management Act no. 12 of 2011
2. The Environmental Impact Assessment Regulations SI no. 3 of 2026
3. The Standards Amendment Act, no. 4 of 2017
4. The Water Resources Management Act no. 21 of 2011
5. The Public Health Act, cap 295 of 1995
6. The Occupational Health and Safety Act no. 36 of 2010
7. The National Heritage Conservation Act of 1989
8. The Lands Act no.20 of 1996
9. The Workers Compensation Act no. 10 of 1999
10. The Urban and Regional Planning Act no. 3 of 2015
11. The Employment (Amendment) Act of 2015 read as one with the Employment Act cap 268 no. 15 of 1997
12. The National Council for Construction Act of 2003
13. The Factories Act cap 441 of 1996
14. The Energy Regulation Act No. 23 of 2003
15. The Zambia Development Agency (Amendment) Act 2012 no.15 read as one with the Zambia Development Agency Act no. 11 of 2006.
16. The Land Acquisition Act Cap 184 of 1995 read as one with the Lands Amendment Act no.20 of 2015
17. The Investment Act no 11 of 2006
18. The National Pensions Scheme Act no 7 of 2015
19. Roads and Traffic Act No. 2 of 2011
20. The National Council for Construction Act no.13 of 2003
21. The National Policy on Climate Change (2016)

Identified Environmental and Social Impacts of the Project, Mitigation and Enhancement measures

The construction of the COMESA Head Office Project is expected to lead to some environmental problems and social-economic changes which may have implications for the local environment.

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Table 2 Potential Impacts, Mitigation/Enhancement Measures

IMPACTS AND MITIGATION MEASURE	
NEGATIVE IMPACT	MITIGATION MEASURE
Noise pollution during both construction and operation phases: This will be from construction machinery and from increased traffic congestion. During operation phase, this will be due to movement of vehicles to and from the development and also activities onsite.	• Regularly maintain all construction vehicles and equipment to ensure that they are mechanically sound. • Ensure that where workers are exposed to elevated sound levels, use of PPE such as ear muffs/plugs will be mandatory. • Limit construction to daytime • Maintain and properly operate construction machinery to minimize noise generation. • Ensure that the development has a clearly defined access route • Activities at the development will generally not be noise generating activities.
Air quality: During construction, excavation and backfilling involve moving huge quantities of earth. This will increase dust particles in the air. The workers will also work on exposed work sites; this will raise the amount of dust raised.	• To suppress the dust raised by construction activities, the developer will have water bowsers spraying the exposed work areas and access roads. Trees will not be unnecessarily cut. • The site will have restricted access to limit exposure of dust to members of the public.
Waste generation: The proposed project activities will result in the generation of waste. Waste from the proposed project will include sewage waste and domestic waste which will include plastics, paper waste, empty cement bags etc. The waste generated should be managed adequately to prevent it from becoming a nuisance.	The following safety measures will be undertaken to reduce waste nuisance: • During operation, the sewage generated will be managed by an onsite packet sewerage facility. • Sufficient waste bins will be placed at strategic points to ensure that there is no throwing of waste on the site or surrounding areas. • The developer will engage a licensed waste management company to collect and dispose of waste at registered and designated dumpsites. Recyclable waste, including paper, recycling and composting of waste including food

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IMPACTS AND MITIGATION MEASURE	
	waste, vegetation, paper, cardboard, plastic bottles will be collected by respective recycling companies. During operation, all runoff water from kitchens will be collected through channels into a fat-trap to ensure that all oil and fat are contained and that only water is discharged into the natural drains. Furthermore, the fat-trap will be monitored and emptied regularly to ensure that the grease and oil that collect are disposed of using appropriate methods as laid down in the relevant codes and standards.
Disturbance of the local ecosystem Loss of vegetation/habitat	COMESA Head Office seeks to attain LEED certification in its design and construction. As such the project will be implemented with a view to minimize the impact to habitat.
Hydrology, geology and soils: The risks of having a construction project in the area include; Contamination of sub soil and water features by sewage and leakages of fuel/oils from construction machinery Reduced water flow due to disruption of natural drains. Reduced water quantity in natural drains due to project activities	- There will be an effective machine maintenance system ensuring that all equipment used on site ensuring that the machinery used on site have no fuel leaks/oil spills. Sewage waste and waste water will be managed through the onsite Sewerage Treatment Plant. - The developer will ensure that the construction site has defined stockpile areas for construction material to prevent blocking natural drains. - The natural drainage features passing through the site will be preserved and where possible enhanced.
Occupational Health Concerns	- Personal protective equipment (PPE) will be provided to workers. - A well-stocked first aid box will always be available on site. - Fire-fighting equipment such as fire extinguishers will be available on site and these will be serviced from time to time. - All electrical equipment will be secured to eliminate the risk of electrical accidents. The construction site will always have personnel trained in

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IMPACTS AND MITIGATION MEASURE	
	occupational health and safety supervising the works on site.
Impact of HIV/AIDS	Education and sensitization of construction workers on the dangers of HIV/AIDS together with the promotion of self-protection e.g., by use of condoms will be the key intervention.
Impacts on Existing land Change of land use with regard to current land use. Land degradation of other sites from which the raw material is obtained.	- The site is currently not in use for any agricultural activities. - The developer will ensure that the procurement of raw material is from approved sites/suppliers
POSITIVE IMPACTS	ENHANCEMENT MEASURES
Provision of temporary and permanent employment	Workers will be employed based on merit and skills and not based on relationship with developer, race, gender or tribe. The development is expected to employ a more than 200 people during construction and operation phase of the project.
Creation of COMESA Head office as a world-class mixed-use development.	The developer will ensure that the project be of a world class standard maximizing on conferencing/tourist/office space potential of the site's prime location.
Increase in available bed spaces	The hotel will ensure that the proposed development increases the number of beds in the area
Provision of conference tourism & meetings, incentives, conferences and events	The developer will ensure that the conference facility is adequate for use for meetings, conferences and events with a large enough seating capacity.
Promotion of tourism arrivals and spend in Zambia	COMESA Head Office will develop to become a regional conference destination.
Capacity building for the local community and contribution to the growth of the construction industry	The developer will ensure that the people working on the site will have the knowledge on the technologies used on the site and the reasons why certain tasks are performed

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IMPACTS AND MITIGATION MEASURE	
	will be explained.
Increased public revenue	• The Developer will ensure that all revenues are paid to the relevant authorities including tourism, communications, licenses and personal levy.

Appropriate mitigation and enhancement measures shall be implemented to address the identified impacts. These will be addressed through the Environmental and Social Management Plan (ESMP).

There will be no people to be resettled and Environmental, Health, and Safety (EHS) awareness campaigns shall be carried out at regular intervals to mitigate potential occupational health and safety risks.

Project Lifespan

The construction period of the proposed development is over 4-year period. The life span of the project is 50 years.

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The ESIA team

The Environmental Impact Assessment study for the proposed housing project was undertaken by the Environmental Consultants' Team and other professional consultants shown in the table below:

Table 3 EIA Study Team

Name	Qualification	Signature
Gilbert Kasonde	Lead Consultant, Environmental Engineer and Water quality Specialist / EIA Specialist	
Mundia Mulozi	Social Economic Specialist	
Osbert Chanda	Civil Engineer and Traffic Specialist	
Charles Sikaona	Environmental and Air Quality Specialist	
Jacob Tembo	Flora and Fauna and Wildlife Specialist (Ecologist)	

Management Statement

We trust that the above provides a fair and accurate Executive Summary of the Environmental Impact Assessment studies for the proposed COMESA Head Office in Chongwe District of Lusaka Province Zambia, presented to the Zambia Environmental Management Agency for consideration and approval.

.....aman.....

Assistant Secretary General
(Administration and Finance)

Common Market for Eastern and Southern Africa (COMESA)



NON TECHNICAL LOCAL LANGUAGE SUMMARY

KUKOSOLA MAKANI (EXECUTIVE SUMMARY)

Mbwakatalika Mulimo (Project Background)

Kabungano ka Common Market for Eastern and Southern Africa (COMESA) nkubungano kwamasi aali mumasena aakujwe alimwi aakumusanza a Africa mwaali masi aali mwaandanyo omwe (21) kuzwa ku Tunisia kusika ku Eswatini. COMESA yakatalika mumwezi wa December 1994, kulyolola mbusena bwamisyobo yakuzambalana (Preferential Trade Area) iyakaliko kuzwa mu 1981. Masi aali lweele (9) akapanga busena bwamisyobo iitabadelile mitelo mumwaka wa 2000 (Djibouti, Egypt, Kenya, Madagascar, Malawi, Mauritius, Sudan, Zambia alimwi a Zimbabwe), eelyo Rwanda a Burundi akasangana mu 2004, Comoros a Libya mu 2006, Seychelles mu 2009, Uganda mu 2012, mpoonya Tunisia mu 2018. COMESA njemwe aamusemu iiyimikizya kabungano ka African Economic Community. Ofesi ya Secretariat, iili mu Lusaka, Zambia, njiyo njiisya milimo ya COMESA. Ibona kutyani milawo alimwi amalayilile azuminwa a Kabunga ka Minisita (Council of Ministers) iitobelwa kabotu, alimwi ipa Kabunga ka Minisita njiisyo zyamano. Secretariat ipangidwe a Beendezi Bapati—

Ofesi ya Secretary General, Assistant Secretaries General babona zya milimo, mali alimwi ambeendelezi, eelyo alimwi ambeendezi bamwi. Lino, ofesi eeyi iizingulwidwe ku COMESA Center iili mukati-kati ka Lusaka Central Business District.

COMESA yakapegwa chibanda cha nyika kuli fulumende ya Zambia iili pa Farm 4169 mumugwagwa wa Airport mu District ya Chongwe iitamba mbuli 14 Hectares. COMESA iyanda kupanga aachibanda eechi maofesi mapati mapya, hotela, busena bwakuchitila miswaangano (conference center) alimwi aazisambilo (retail) kutegwa isumpule ziyandika lino alimwi akumpasya, kwiinda mukutobela mbwaubede musika uli mumasena aazingulukide busena oobo.

Aboobo, mulimo wa EIA (Environmental Impact Assessment) uli mukuchitwa kutegwa kutobelwe milawo ya chisi alimwi amanjilo a kabungano mukubamba kabotu nyika.

Makanze aa Mulimo (Objective of the Project)

Makanze aamulimo ooyu nkupa busena bwamaofesi alimwi aabusena bwa miswaangano ku Secretariat ya COMESA. Chabili, mulimo ooyu uyanda kupa busena bwakukkala mu hotela, maofesi aakuhayila, alimwi amunsika kubantu boonse. Eechi chiyooyinda mukuyaka muyako usangene maofesi mapati a COMESA, munsika, hotela, busena bwa miswaangano alimwi aazintu zimwi ziyandika.

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Mali Ayandika (Investment Cost)

Mali alangilwa kuyandika mumulimo ooyu mbuli \$140,000,000 (miliyoni zili mwaandanyo omwe amakumi aane aamadola aaku America), alimwi milimo yakuyaka iyooba muzipandi zyotatwe (3 phases) iiyooyamba mumwezi wa October 2026.

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ABBREVIATIONS AND ACRONYMS

AMSL	Above Mean Sea Level
CBD	Central Business District
CDC	Chongwe District Council
DC	District Commissioner
DNPW	Department of National Parks and Wildlife
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMMP	Environmental Management and Monitoring Plan
EPB	Environmental Project Brief
EPPCA	Environmental Protection and Pollution Control Act
ESIA	Environmental and Social Impact Assessment
FRA	Food Reserve Agency
GPS	Global Positioning System
GIZ	Government of the Republic of Zambia
HIV/AIDS	Human Immune Virus/ Acquired Immune deficiency Syndrome
LEED	Leadership in Energy and Environmental Design
MTA	Ministry of Tourism and Arts
NHCC	National Heritage Conservation and Commission
NAPSA	National Pensions Scheme Authority

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NCS	National Conservation Strategy
NEAP	National Environmental Action Plan
NISIR	National Institute for Scientific and Industrial Research
PAYE	Pay As You Earn
PPE	Personal Protective Equipment
SI	Statutory Instrument
TOR	Terms of reference
UNCCC	United Nations Framework Convention on Climate Change
VAT	Value Added Tax
ZABS	Zambia Bureau of Standards
ZAWA	Zambia Wildlife Authority now renamed to Department of National Parks and Wildlife
ZEMA	Zambia Environmental Management Agency
ZESCO	Zambia Electricity Supply Corporation
ZTA	Zambia Tourism Agency
ZRA	Zambia Revenue Authority

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1.0 INTRODUCTION

1.1 Background of the Project

The Common Market for Eastern and Southern Africa (COMESA) is a regional economic community in Africa with twenty-one member states stretching from Tunisia to Eswatini. COMESA was formed in December 1994, replacing a Preferential Trade Area which had existed since 1981. Nine of the member states formed a free trade area in 2000 (Djibouti, Egypt, Kenya, Madagascar, Malawi, Mauritius, Sudan, Zambia and Zimbabwe), with Rwanda and Burundi joining the FTA in 2004, the Comoros and Libya in 2006, Seychelles in 2009, Uganda in 2012[4] and Tunisia in 2018. COMESA is one of the pillars of the African Economic Community.

Based in Lusaka, Zambia, the Secretariat is the executive Organ of COMESA. It ensures that the regulations and directives adopted by the Council of Ministers are properly implemented, and provides the Council of Ministers with strategic recommendations. It is comprised of the Executive Management- Office of the Secretary General, Assistant Secretaries General for Programs, Finance and Administration, and the Management Team. The secretariate is currently housed at COMESA center in the heart of Lusaka Central Business District.

COMESA was allocated a piece of land by the Republic of Zambia situated on farm 4169 along Airport Road in Chongwe District measuring approximately 14 Hectares. COMESA intends to develop the described piece of land by building its new office

Headquarters complex, hotel, conference center and some retail facilities to cater for the organization's current and future needs whilst responding to market trends in the area surrounding the property.

The COMESA Head Office project aims to align with international green building best practices and intends to pursue LEED certification. This will ensure a resource efficient, climate responsive and future ready development that meets high environmental and health standards. LEED (Leadership in Energy and Environmental Design), developed by the U.S. Green Building Council (USGBC), is the world's most widely used green building rating system for sustainable design, construction, and operation. It awards points across categories like energy, water, and materials to certify buildings as Certified (40+ points), Silver (50+), Gold (60+), or Platinum (80+).

The project will include the construction of several buildings among which will be the main COMESA Head office building, a conference center, a hotels and retail spaces. The complex will have sufficient parking including basement level parking.

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1.2 Summary Description of the Project

Project Description

The proposed COMESA Head Office is a mixed use development which entails the development of complex having several buildings which are used for different purposes as outlined below. The plot size is 14 Hectares and the proposed project will cover a GBA of over 43000m² with some of the structures being multi storey buildings. The components of the project are as follows:

- **Head Office Building** – (Building 8231m², Basement 11,043m²) Total 19,274m². The building is intended to house the COMESA secretariate taking into consideration current office space requirements and future needs.
- **Hotel**- 10,931m². It is envisioned that the hotel will be a four-star, 200 key hotel designed to international standard.
- **Conference Center**- 10,880m². The conference center will cater for the needs of COMESA as well as other institutions that may need such facilities.
- **Retail**- 536m². The retail spaces will mainly cater to the needs of the complex as there are two existing shopping malls nearby.
- **Gate House**- 101m². This is positioned at the entrance to provide security and screening for visitors.
- **Other Offices**- 1,890m². The additional office blocks will be built with a range of tenants in mind. These will be varied in design and offer flexibility of use.
- **Parking**- 660 Bays. Parking will include surface level and basement parking with each component being allocated adequate parking.

The COMESA Headquarters Masterplan presents a strong opportunity to pursue LEED Gold certification under a coordinated sustainability strategy. The proposed COMESA Secretariat masterplan is inherently suited to be developed as a LEED-certified campus (BD+C) due to its scale, diversity of uses, shared infrastructure, and long-term institutional purpose. LEED Campus certification is designed for developments where multiple buildings operate as a coordinated environment, a condition that aligns well with this masterplan. LEED BD+C certifies buildings, while LEED Campus ensures those buildings work together as a high-performance, integrated campus.

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Project Rationale

COMESA was formed in December 1994, replacing a Preferential Trade Area which had existed since 1981. Initially the organisation only had Nine of the member states. With time, the organisation has continued to grow with current member states sitting at Twenty-One. It is projected that more nations in the continent will join COMESA in the near future. Further, COMESA has a number of institutions linked to its operations across the region. As such there is need for office space which caters to the current and future needs of the organisation.

Further, COMESA requires facilities for hosting meetings and conferences. Hence the decision to include a hotel and conference facilities in the Head office project.

With the site being located away from the busy CBD but close to the Kenneth Kaunda International Airport, the development is positioned to become a preferred venue for meeting and conferences.

1.3 Objectives of the Project

The main objective of the project is to relocate the COMESA secretariat from the current building in Lusaka CBD to a larger purpose-built office block. Other objectives include to avail COMESA and the general public with a venue for meetings and conferences and to provide lettable accommodation both in office space and bed space.

The EIA study

The EIA study has been carried out following the guidelines and requirements of the Zambia Environmental Management Agency (ZEMA) and the project's Terms of Reference (ToR's) (see Annexure 1 and 2) which were reviewed by the ZEMA and approved. The final document of the EIA study comprises an Environmental Impact Statement (EIS) and an Environmental Management and Monitoring Plan (EMMP). Further the study is being undertaken as a major step in achieving LEED certification.

Geographically, the study is limited chiefly to the project site and neighboring areas although effects on issues such as traffic, sources of raw materials and socio-economic effects may have implications further afield.

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Important Matters addressed in the study include:

- Climate
- Water pollution control
- Waste generation: management of sewage, solid waste and other waste products as well as the storage and handling of petroleum products during construction and operation,
- Air quality assessment
- Road access and traffic,
- Effects on Landscape
- Land use and tenure,
- Socio-economic issues including employment and multiplier effects.
- Flora and Fauna
- Geology and hydrogeology
- Noise and Environment
- Effects on wildlife
- The suitability of the Master Plan in addressing environmental issues and to ensuring sustainable development.

The Environmental Management and Monitoring Plan (EMMP) outlines duties and responsibilities of the developer and other relevant parties to serve as a management tool in the successful implementation of recommended mitigation measures and subsequent monitoring during all project phases.

Approaches and Methodology

The study consisted of three main phases as follows:

Phase 1: Preliminary actions and scoping exercise

Phase 2: Baseline studies and data collection

Phase 3: Impact assessment (of bio-physical and socio-economic environments during construction and operational phases) and recommendations of the best measures to mitigate the negative impacts and enhance the positive impacts.

Formal review of the EIS document by the ZEMA (including public review) follows as the final stage of the EIA process. The study process, in which standard methodology was used and included basic tasks and procedures, is described in more detail below.

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Information regarding the proposed project was reviewed and a pilot survey was conducted of the study area in order for the study team to obtain an initial appraisal of the environmental issues involved. Various alternatives for development of the project were discussed with the developer and broader project team. The legal and institutional framework applicable to the project was also reviewed at this stage. From this the team made a preliminary identification of all environmental impacts that could potentially arise as a result of implementation of the project.

A scoping process was then conducted to determine potential significant issues that would form the basis of the EIA study to be included in the Terms of Reference (ToR), and to exclude issues unlikely to be of any significance. In order to ensure that public views were taken into account in the preparation of the ToR, a public consultation (scoping) meeting was conducted and was attended by relevant community representatives, government agencies, local authorities; community-based organizations and local residents as well as other interested and affected parties.

Specialist studies were then conducted, the impacts of the project were identified and feasible mitigation measures were recommended.

Terms of Reference

The Terms of Reference were drawn up by COMESA through the consultants. Further discussions within the EIA study team taking into consideration the issues contained in the Third Schedule of the EIA guidelines and results of the public consultations.

1.4 Project Location

The project site is located on farm 4169, along Airport Road in Chongwe District of Lusaka Province. Site access is along airport, some 20km from the Lusaka CBD, and 2km from the Airport Roundabout. The GPS coordinates of the site are:

Table 4 GPS Coordinates

Point	Longitude	Latitude	Elevation
A	28.4135943494	-15.33764774	1165.935
B	28.4139194674	-15.33767736	1166.192
C	28.4150950373	-15.33778445	1165.136
D	28.4151812948	-15.33681067	1165.098

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Point	Longitude	Latitude	Elevation
E	28.4152578144	-15.33681701	1164.981
F	28.4161777790	-15.33689541	1164.374
G	28.4162371436	-15.33690057	1164.117
H	28.4156679750	-15.34292023	1167.301
J	28.4135831539	-15.3412286	1168.424
K	28.4132790636	-15.34098185	1168.425

The location of the site on Airport Rod is as indicated on the map below:



Figure 1: Site location Map

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1.5 Directors and Shareholder particulars

The Common Market for Eastern and Southern Africa (COMESA) comprise 21 African Member States that came together with the aim of promoting regional integration. As such the organisation has no shareholders but member states bound by the treaty. Zambia is host nation and signed a host agreement. The current leadership comprises;

- Current Chair: President William Ruto of Kenya assumed the Chair of the COMESA Authority at the 24th Summit in October 2025.
- Vice Chair: President Emmerson Mnangagwa of Zimbabwe holds the Vice Chair position.
- Secretary General of the Common Market for Eastern and Southern Africa (COMESA) is H.E. Ms. Chileshe Mpundu Kapwepwe from Zambia.:

Developer's Contact Details

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Environmental Consultants' Details

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1.6 Track record/previous experience of enterprise elsewhere

The Common Market for Eastern and Southern Africa (COMESA) is a regional economic community in Africa with twenty-one member states stretching from Tunisia to Eswatini. COMESA was formed in December 1994, replacing a Preferential Trade Area which had existed since 1981. Nine of the member states formed a free trade area in 2000 (Djibouti, Egypt, Kenya, Madagascar, Malawi, Mauritius, Sudan, Zambia and Zimbabwe), with Rwanda and Burundi joining the FTA in 2004, the Comoros and Libya in 2006, Seychelles in 2009, Uganda in 2012[4] and Tunisia in 2018.

COMESA is one of the pillars of the African Economic Community. In 2008, COMESA agreed to an expanded free-trade zone including members of two other African trade blocs, the East African Community (EAC) and the Southern Africa Development Community (SADC). COMESA is also considering a common visa scheme to boost tourism.

Key functions and actions of COMESA include:

- **Trade Liberalization & Facilitation:** Operates a Free Trade Area (FTA) and works to eliminate non-tariff barriers, offering simplified trade regimes for small-scale traders.
- **Economic Integration:** Harmonizes monetary and fiscal policies to create a large, unified economic bloc.
- **Infrastructure Development:** Focuses on improving transport, energy, and communications infrastructure to connect member states.
- **Business Support:** Facilitates investment through institutions like the COMESA Competition Commission and the COMESA Business Council.
- **Regional Security:** Promotes peace, stability, and security as necessary conditions for economic growth.
- **Sectoral Development:** Promotes development in agriculture, industry, and gender equality.

1.7 Total project cost

The total construction cost of the COMESA Head Office is estimated to be approximately \$140, 000, 000.00.

1.8 Proposed Project Implementation Date

The construction works will be in 3 phases to commence in October 2026.

2.0 POLICY, INSTITUTIONAL AND ORGANISATIONAL FRAMEWORK

The project will be implemented in accordance with Zambian legislative requirements. The main pieces of legislation that will guide the regulatory framework include:

2.1 Policy and Institutional Framework

2.1.1 Zambia Environmental Policy

The National Conservation Strategy (NCS) was adopted as a policy document by the government in 1985 in order to harmonize environmental management in the country. The adoption of NCS led to the establishment of environmental legislation and institutions. In 1990 the Environmental Protection and Pollution Control Act (EPPCA) was passed to provide for the protection of the environment. The Act also provided for the establishment of the Environmental Council of Zambia (ECZ) to implement the provisions of the Act and to harmonize and co-ordinate all issues related to environmental management in the country.

The NCS and NEAP are the precursor of the overall policy on environment. The National Policy on Environment (NPE) which was adopted in 2007 (and officially launched in 2009) provides environment and natural resources management policies to address current and future threats to the environment and to human livelihoods and provides policy guidelines for sustainable development.

2.1.2 Zambian Environmental Legislation

2.1.2.1 Environmental Management Act, No. 12 of 2011

In April 2011, the Environmental Management Act (EMA) was signed into law. The EMA replaces and repeals the Environmental Protection and Pollution Control Act (EPPCA) Cap 204 of 1990. The EMA continues the existence of the Environmental Council of Zambia (ECZ) and renames it the Zambia Environmental Management Agency (ZEMA). Major inclusions in the EMA include provision for Integrated Environmental Management (IEM), provision for the declaration of protected areas, a general increase in penalties, and the imposition of orders for remedying pollution. Further, the production of State of Environment (SOE) Reports and the need for Strategic Environmental Assessment (SEA) is legislated.

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Relevance: One of the roles of the Zambia Environmental Management Agency is to review Environmental Impact Assessment (EIA). This report is part of the requirements for the Environmental Impact Assessment study being conducted.

Compliance: The developer will employ an Environmental consultant who will liaise with Zambia Environmental Management Agency on ensuring that the best environmental management practices are incorporated in the design and that the environmental impact assessment study is according to the set ZEMA regulations.

2.1.2.2 Environmental Regulations

Environmental Impact Assessment Regulations (SI No.3 of 2026):

As part of the implementation process the government through the EPPCA adopted a framework for environmental impact assessment for all developmental projects in Zambia and the Environmental Impact Assessment Regulations were established in 1997 and reviewed in 2026. The Environmental Impact Assessment Regulations require that:

“A developer shall not implement a project for which a project brief or environmental impact statement is required under these Regulations, unless the project brief or the environmental impact statement has been concluded in accordance with these regulations and the Environmental Council of Zambia [Zambia Environmental Management Agency] has issued a decision letter”

These regulations continue to be in force under the new act (EMA), it is mandatory that all development plans, policies and projects undergo a process of environmental impact assessment.

Relevance: As a result of previous correspondence between the Consultant and Zambia Environmental Management Agency (ZEMA), it was established that a full environmental and social impact assessment study would be required for the project. It is also the wish of the developer to conclude an ESIA for the project to keep with industry best practice.

Compliance: An ESIA report (EIS) has been prepared for the project in order to be submitted to ZEMA for consideration and approval.

In addition the EMA, through the **Environmental Management (Licensing) Regulations, SI No. 112 of 2013**, controls and regulates the following areas, relevant to the present study:

- **Air and Water Pollution: Part II**

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These regulations provide for ZEMA to regulate the treatment and discharge of sewage and other effluents into the natural aquatic environment.

Relevance: The project will involve the generation and discharge of sewage from the project activities.

Compliance: The waste water generated from site will be treated onsite preventing seepage to ground water courses

- **Waste Management: Part III**

These Regulations provide definitions of waste and sets out the licensing requirements for transporters and waste disposal sites.

Relevance: Activities of the proposed project will result in the generation of solid waste such as domestic waste that has to be disposed of at approved sites.

Compliance: All solid waste will be collected in bins at various locations on site and then disposed of by an approved licensed transporter.

- **Hazardous Waste: Part IV**

These regulations provide for the control of generation, collection, storage, transportation, pre-treatment, treatment, disposal, export, import and transboundary movement of hazardous waste as listed in Fifth Schedule or any waste specified in Sixth Schedule, if that waste exhibits characteristics found in the Seventh Schedule to these Regulations.

Relevance: During construction there will be a temporary maintenance workshop and storage of small quantities of diesel, oil and petrol. The hydrocarbon is hazardous and if not properly managed at the workshop, storage area and decanting, it may result in hazardous waste. Other hazardous waste is waste comprising mainly of materials such as empty paint and chemical containers; there is also a potential for material soiled with hazardous waste (e.g., due to oil spills/leakages from machinery).

Compliance: Hazardous waste generated (material soiled with oils, chemical containers batteries) will be collected in bins marked as hazardous waste bins. These bins will be covered to ensure that the hazardous waste is contained. The waste will then be removed from site by hazardous waste collectors and disposed of at hazardous waste disposal sites.

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2.1.3 Other Acts Reviewed

Other than the EMA which is the principal Act on environmental management, Zambia is adequately covered with legislation relating to the protection of the environment. Presently about 28 pieces of legislation are related to the environment and were considered in the environmental assessment process. Among others the relevant legislation applicable to this project are discussed below:

2.1.3.1 Lands Act, Cap 184 of 1995

This Act was enacted in 1995 following the repeal of the Land (Conversion of Titles) Act of July, 1975. It provides for the continuation of leaseholds and allows the conversion of customary tenure into leasehold tenure.

Relevance: The land falls under state land where government agencies have oversight. The use of the land has to be authorized by the statutory bodies managing the land with title deeds issued.

Compliance: The developer will ensure that all papers for use of the proposed site are in place. Appended to this document are title deeds showing compliance to this Act.

2.1.3.2 Local Government (Amendment) Act No. 17 of 2016

The Act was enacted in 1991 following the repeal of the Local Administration Act of 1981 which incorporated the One-Party State political party organs in the local government system. It provides for the functions of local authorities including the implementation of environmental protection and natural resources management functions.

Relevance: The proposed project site falls under the local government through the district council. This body ensures that developments/all other activities within the comply with provisions of the act..

Compliance: The proponent will ensure that the development is done according to the regulations set by the act..

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2.1.3.3 Public Health Act Cap 295 of 1995

The Act provides for and regulates all matters connected with public health in the country under the local authority of each district as the enforcement agency.

Relevance: The proposed development will result in the generation of sewage and other waste which if not handled properly may contaminate ground water resulting in health problems for the people depending on ground water. The proposed project will result in the increase of traffic, dust generation and noise which are all issues of public safety and health concerns.

Compliance: The developer will ensure that sewage and other waste is contained and managed in a way that prevents contamination of water resources. The developer will have a traffic management plan and all drivers and other workers have licenses and certificates for the works occupied with. The site will be restricted to members of the public.

2.1.3.4 Urban and Regional Planning Act No. 3 of 2015

An Act to provide for development, planning and administration principles, standards and requirements for urban and regional planning processes and systems; provide for a framework for administering and managing urban and regional planning for the Republic; provide for a planning framework, guidelines, systems and processes for urban and regional planning for the Republic; establish a democratic, accountable, transparent, participatory and inclusive process for urban and regional planning that allows for involvement of communities, private sector, interest groups and other stakeholders in the planning, implementation and operation of human settlement development; ensure functional efficiency and socioeconomic integration by providing for integration of activities, uses and facilities; establish procedures for integrated urban and regional planning in a devolved system of governance so as to ensure multi-sector cooperation, coordination and involvement of different levels of ministries, provincial administration, local authorities, traditional leaders and other stakeholders in urban and regional planning; ensure sustainable urban and rural development by promoting environmental, social and economic sustainability in development initiatives and controls at all levels of urban and regional planning; ensure uniformity of law and policy with respect to urban and regional planning; repeal the Town and Country Planning Act, 1962, and the Housing (Statutory and Improvement Areas) Act, 1975; and provide for matters connected with, or incidental to, the foregoing.

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Relevance: The proposed project is a development project that should be in compliance with this Act.

Compliance: The developer will ensure that the plan and layout of this project be in accordance with this Act. The plans for all structure will be approved by the Local Authorities.

2.1.3.5 Roads and Road Traffic Act No. 2 of 2011

The Roads and Traffic Control Act, provides for the control of traffic, and for the regulation of storm water disposal structures.

Relevance: The site will have a considerable amount of traffic flowing into and out of the premises.

Compliance: The developer will conduct a traffic impact study which will inform mitigation measures for traffic and traffic management. All signs and directions to control traffic movement and ensure a safe environment will be put in place.

2.1.3.6 Factories Act Cap 441 of 1996

The Factories Act provides a framework for the setting of regulations to ensure the safety, health and welfare of persons employed on construction work sites and in factories.

Relevance: The proposed project will involve the construction of buildings by use of heavy machinery and according to this Act regulations to ensure the safety, health and welfare of persons employed at the site should be in place.

Compliance: All necessary safety measures and procedures will be put in place to ensure compliance to the Act.

2.1.3.7 The Investment Act No. 11 of 2006

An Act to revise the law relating to Investment in Zambia so as to provide a comprehensive legal framework for investment in Zambia; to repeal the Investment Act, 1991; and to provide for matters connected with or incidental to the foregoing

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Relevance: The proposed development is meant to be a long-term investment by the developer.

Compliance: The developer will ensure that the development and all activities throughout the life cycle of the project meet the terms and conditions of investment stipulated in the Act.

2.1.3.8 The Water Resources Management Act No. 21 2011

This Act provides for the management of the water resource in conjunction with the Water Resources Management Authority ensuring sustainable resource use and protection of the resource.

Relevance: The project activities may result in fuel spills from machinery which may contaminate ground water resources. Excavations may disrupt ground water sources. Construction run off may cause siltation of surface waters and also the proposed project activities will result in sewage generation which has the potential to pollute ground and surface water courses.

Compliance: All project activities will be well planned to protect surface and ground water sources. The developer will ensure proper wastewater treatment and disposal to prevent contamination of the aquatic environment including ground water resources.

2.1.3.9 The Occupational Health and Safety Act No. 36 of 2010

This Act provides for the establishment of health and safety committees at workplaces and for the health, safety and welfare of persons at work, it also provides for the duties of manufacturers, importers and suppliers of articles, devices, items and substances for use at work. The Act also provide for the protection of persons, other than persons at work, against risks to health or safety arising from, or in connection with, the activities of persons at work.

Relevance: The project works will have occupational health and safety risks such as exposing workers on site to high levels of dust, lifting heavy equipment, work in confined spaces, work at heights, trip hazards, etc.

Compliance: The project activities shall be done in compliance with this Act ensuring that risk assessments are done at the beginning of any job specifications and workers provided with

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appropriate PPE. There will always be a competent supervisor on site ensuring that work is done according to the health and safety procedures.

2.1.3.10 National Pensions Scheme Act No.7 of 2015

Section 3 of the act stipulates the formation of the National Pension Scheme Authority, which is a body corporate with perpetual succession and a common seal, capable of suing and being sued in its corporate name, and with power subject to the provisions of this Act, to do all such acts and things as a body corporate may by law do or perform.

Relevance: The project will employ permanent workers who according to this Act should be making a contributing to the National Pension Scheme. The developers are partnering with NAPSA to fund the resort.

Compliance: All requirements stipulated by the Act will be complied with.

2.1.3.11 The Workers' Compensation Act No. 10 of 1999

The Act provides for the compensation of workers for disabilities suffered or diseases contracted during the course of employment. The Act provides for the merger of the functions of the Workers' Compensation Fund Control Board and the Pneumoconiosis Compensation of fund for the compensation of workers disabled by accident occurring, or diseases contracted in the course of employment.

Relevance: The proposed project's activities have potential to cause injury, illness or death to site workers and hence the relevance of the Act.

Compliance: Workers will be compensated in an event of injury, illness or death as a result of the proposed project activities.

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2.1.3.12 The Zambia Development Agency (Amendment) Act 2012 no.15 read as one with the Zambia Development Agency Act no. 11 of 2006

This is an Act to foster economic growth and development by promoting trade and investment in Zambia through an efficient, effective and coordinated private sector led economic development strategy. The Act promotes green field investments through joint ventures and partnerships between local and foreign investors and encourages education and skills training so as to increase productivity in business enterprises.

Relevance: The proposed project is a development which is meant to provide employment opportunities, provide conference facilities and promote tourism through partnership between local and foreign investors.

Compliance: The development is in compliance with the provisions of the act. Any investor requiring ZDA licenses will be directed to ZDA.

2.1.3.13 The Land Acquisition Act Cap 184 of 1995

An Act to make provision for the compulsory acquisition of land and other property; and to provide for matters incidental to or connected with the foregoing

Relevance: The proposed development will take place on state land. According to this Act, all land should be acquired in the right way and all the legal document be made available.

Compliance: The developer has in their possession a title deed which shows compliance to this Act.

2.1.3.14 National Heritage Conservation Commission Act (No. 23 of 1989) and National Heritage Conservation Commission Amendment Act (No. 13 of 1994)

This Act provides for the establishment of the National Heritage Commission responsible for the conservation, restoration, rehabilitation, reconstruction, adaptive use and good management of heritage conservation.

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Relevance: The proposed project site is not in a heritage site nor a site designated as containing national treasure. However, during project implementation care will be taken to report any finds that may be discovered and considered to have cultural/ archeological significance.

Compliance: The developer will ensure that if any such finds are observed during construction or operation, NHCC will be consulted to advise on the best practice.

2.1.3.15 Tourism and Hospitality Act No. 15 of 2015

This Act provides for the sustainable development of the tourism industry through effective tourism planning, management, promotion and coordination to ensure sustainable tourism. The Act provides for integration of tourism into national development planning, budgeting and decision-making processes related to infrastructure development, environmental management and protection and empowerment of local communities.

Relevance: The proposed project has components which fall in the hospitality industry and the part of the Act relevant to this project is the infrastructure development which in this case is a hotel and conference center that will attract clients from within and outside the project locality.

Compliance: The developer will ensure that the structures are sustainable in that it will stand for the expected lifespan and will attract clients from different walks of life. The developer will ensure operators obtain any licenses prescribed by the act.

2.1.3.16 National Council for Construction Act No. 13 of 2003

An Act to provide for the establishment of the National Council For Construction and to define its functions :to provide for the promotion and development of the construction Industry in Zambia; to provide for the registration of contractors; to provide for the affiliation to the Council of professional bodies or organizations whose members are engaged in activities related to the construction Industry; to provide for the establishment of the Construction school; to provide for the training of persons engaged in construction or in activities related to construction; and to provide for matters connected with or incidental to the fore-going.

Relevance: There will be construction works taking place on site which should be done in accordance to this Act and in conjunction with the National Council for Construction.

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Compliance: All contractors engaged on site will be registered with the National Council for Construction.

2.1.3.17 The National Policy on Climate Change (2016)

The National Policy on climate change gives guidance on how the Zambian economy can grow in a sustainable way mitigating climate change and its effects.

Relevance: The proposed project is being done in an area characterized by a number of trees which Act as carbon sinks preventing climate change. During operation the project is likely to use reagents and cleaning chemicals which are likely to contain green- house gases.

Compliance: The developer will ensure that as much as possible trees are preserved. The developer will put up a program for replacing the trees that will be cut on site. The developer will ensure that the refrigerants and cleaning chemicals do not contain greenhouse gases (CFCs and Nitrous oxide).

2.2 Organizational Framework

A number of institutions will have a regulatory and monitoring role directly or indirectly under their respective pieces of legislation. However, the following will be key institutions whose requirements will need to be complied with.

- Zambia Environmental Management Agency – The Zambia Environmental Management Agency will review the proposed project Environmental Impact Statement and make a decision on whether the proposed project should be implemented or not.
- The Ministry of Local Government and Rural Development – The The Ministry of Local Government and Rural Development (MLGRD) is charged with the responsibility of promoting a decentralized and good local governance system, facilitating delivery of quality municipal services in order to contribute to sustainable socio-economic development. The Ministry oversees the implementation of delegated functions and responsibilities by the local authorities.
- Zambia Tourism Agency – The role of the Zambia Tourism Agency on this project is to provide support of the developer's vision to make the development a promoter of tourism.
- The Ministry of Commerce & Industry – The Ministry of Commerce & Industry is Zambia's principal government body responsible for administering trade policies as well as regulating

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activities in the commercial, trade and industrial sectors in order to enhance sector performance and promote sustainable socio-economic development and growth of the economy.

- The Ministry of Transport – The Ministry of Transport is in charge of administering transport and communication networks. For this project the Ministry will ensure that the transport networks to site and communication networks on site are in compliance to the Zambian legislations.

The developer will ensure compliance with institutional provisions and guidelines issued by the above institutions in the process of implementing the project.

The traditional leader relevant to the project is Senior Chieftainess Nkomeshya Mukamambo II. Senior Chieftainess Nkomeshya Mukamambo II (Elizabeth Mullenje) is the chieftainship of the Soli people of Chongwe District in Lusaka Province. She has been a chieftainess in the area since 1976.

2.3 International and Regional Conventions

Zambia is a signatory to a number of international conventions which are related to the environment, the study referred to the conventions below to ensure that the project does not violate any international agreements on environmental protection.

The developer is committed to comply with all of the above legislations, which regulate most aspects of interaction between the project, the natural environment and interested and affected parties.

- **United Nations Framework Convention on Climate Change**

The United Nations Framework Convention on Climate Change (UNFCCC) was signed in 1992 and has a central objective 'To achieve stabilization of greenhouse gas concentrations in the atmosphere'.

Zambia recognizes that the largest source of one of the main greenhouse gases, carbon dioxide, is from the burning wood fuel and the use of coal and oil. Two-thirds of primary energy demand is from wood fuel (Firewood or charcoal). (IUCN, 1995)

Relevance: The proposed project area is characterized by trees and vegetation which act as a carbon sink.

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Compliance: The developer will ensure that as much as possible trees are preserved. The developer will ensure that the refrigerants and cleaning chemicals do not contain greenhouse gases (CFCs and Nitrous oxide).

- **The Paris Agreement**

The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change, dealing with greenhouse-gas-emissions mitigation, adaptation, and finance, starting in the year 2020.

Relevance: The proposed project is being done in a country which is a signatory to the convention.

Compliance: The developer will ensure that as much as possible trees are preserved. The developer will ensure that the refrigerants and cleaning chemicals do not contain greenhouse gases (CFCs and Nitrous oxide).

- **Convention on Biological Diversity (ratified in 1993)**

The objectives of Zambia's National Biodiversity Action Plans include ensuring the conservation of a full range of Zambia's natural ecosystems through a network of protected areas, development and implementation of strategies for conservation of biodiversity, sustainable use and management of biological resources. Biological resources of significant conservation value that will be identified during Project implementation will be conserved and protected within the project area.

- **Convention concerning the Protection of the World Cultural and National Heritage (1972):**

The Convention aims at ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage. Cultural and natural heritage sites that may be identified during the proposed project implementation will be protected and conserved in accordance with the provisions of the Convention to which Zambia is party to.

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Relevance: The proposed project site is not in a world heritage site. However, possible cultural/heritage finds of significance might be encountered.

Compliance: The developer will ensure that if finds of heritage/cultural finds are encountered, relevant authorities (NHCC) will be contacted.

- **Convention on Biological Diversity, 5 June 1992**

The Convention on Biological Diversity (CBD), known informally as the Biodiversity Convention, is a multilateral treaty. The Convention has three main goals:

- Conservation of biological diversity (or biodiversity);
- Sustainable use of its components; and
- Fair and equitable sharing of benefits arising from genetic resources

In other words, its objective is to develop national strategies for the conservation and sustainable use of biological diversity. It is often seen as the key document regarding sustainable development.

Relevance: The convention is applicable to the project in that as the developer implements its project, it needs to ensure that strategies are put in place that protects biological diversity.

Compliance: The developer will ensure compliance to the conditions set in the convention. These conditions are the strategies that are put in place to protect biological diversity.

- **LEED (Leadership in Energy and Environmental Design)**

LEED (Leadership in Energy and Environmental Design) is the world's most widely used, third-party green building certification program developed by the U.S. Green Building Council (USGBC). It provides a framework for healthy, efficient, and cost-saving sustainable buildings, certifying projects based on points earned in categories like energy, water, and materials.

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Key Aspects of LEED Certification

- **Levels:** Projects earn points to achieve different levels of certification: Certified (40-49), Silver (50-59), Gold (60-79), or Platinum (80+).
- **Scope:** Applies to almost all building types, including new construction, existing buildings, interior fit-outs, and homes.
- **Categories:** Certification evaluates sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality.
- **Process:** Project teams must meet mandatory prerequisites and earn voluntary credits to achieve certification.

Benefits of LEED

- **Sustainability:** Reduced carbon emissions and higher energy efficiency.
- **Cost Savings:** Lower operational costs and increased property value.
- **Health:** Improved indoor air quality and occupant well-being.

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3.0 PROJECT DESCRIPTION

The COMESA Head office project is proposed to be a mixed-use development accommodating the organization's secretariate while providing lettable office space, conference facilities and bed space. The project will also have retail spaces and adequate parking. The plot size is 14 Hectares. following major project components;

- Head Office Building – (Building 8231m², Basement 11,043m²) Total 19,274m²
- Hotel- 10,931m²
- Conference Center- 10,880m²
- Retail- 536m²
- Gate House- 101m²
- Other Offices- 1,890m²
- Parking- 660 Bays

3.1 Location

The project site is located on farm 4169 along Airport Road in Chongwe District of Lusaka Province. Site access is along Airport Road, some 20km from the Lusaka CBD, and 2km from the Airport Roundabout. The GPS coordinates of the site are:

Table 5 Location coordinates

Point	Longitude	Latitude	Elevation
A	28.4135943494	-15.33764774	1165.935
B	28.4139194674	-15.33767736	1166.192
C	28.4150950373	-15.33778445	1165.136
D	28.4151812948	-15.33681067	1165.098
E	28.4152578144	-15.33681701	1164.981
F	28.4161777790	-15.33689541	1164.374
G	28.4162371436	-15.33690057	1164.117
H	28.4156679750	-15.34292023	1167.301
J	28.4135831539	-15.3412286	1168.424
K	28.4132790636	-15.34098185	1168.425

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Figure 2 Google Earth Image of the site

The project area has the following developments:

- To the south and east of the site across Airport road is the united quarries site. Further east is Meanwood ibex hill and Avondale suburbs.
- To the west of the site is bare land. Further west is the National Institute of Scientific and Industrial research and Garden city and Waterfalls shopping malls.
- To the north are farms and further north in the Kenneth Kaunda International Airport.

3.2 Nature of the Project

The nature of the project is urban development being the construction of buildings to provide offices, a hotel, conference facilities and retail spaces. The facilities will be available not only to the developer but to the general public as well.

The complex will have areas reserved for natural vegetation and additional vegetation will be introduced to ensure eco-friendly building and sustainability.

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The complex will be developed by a reputable organization which will aim at attaining local and international certification through these prerequisite principles/pillars:

1. Social Impact

Investing in communities to ensure sustainable and inclusive growth for all by committing to:

- Inclusive Growth (e.g., youth, women, veterans, persons with disabilities)
- Human Rights
- Local Investment
- Disaster Relief

2. Environmental Impact

Preserve our planet for future generations by reducing our environmental footprint through:

- Energy & Carbon Management
- Water Stewardship
- Waste Reduction
- Responsible Sourcing

The complex has been designed by reputable architects taking into consideration the Environmental receptors and recommendations from various specialists. Specialized local contractor(s) will be engaged for construction work. The project aims to attain LEED certification with the following prerequisites:

3. Meet the LEED prerequisite requirements.

- Create and implement an erosion and sedimentation control plan for all construction activities associated with the project.
- Reduce irrigation use by at least 30% to baseline (preferred no irrigation at all). Reduce indoor water use by at least 20% to baseline. Install water meters and share data with USGBC (public water supply, on site well, on site potable treatment).
- Conduct a commissioning of the building envelope, MEP, process, safety, fire protection and RNE systems. Reduce energy consumption by a minimum of 5% compared to baseline. Install energy meters and share data with USGBC (electricity, natural gas, biofuels). Do not use CFC refrigerant.
- Provide a dedicated space for waste sorting (paper, food, glass, metals, plastics). Develop and implement a construction and demolition waste management plan. Identify special recycling collection system for mercury containing products.

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- Meet minimum indoor air quality requirements (mechanically and naturally ventilated spaces)- Prevent and minimize exposure to tobacco smoke

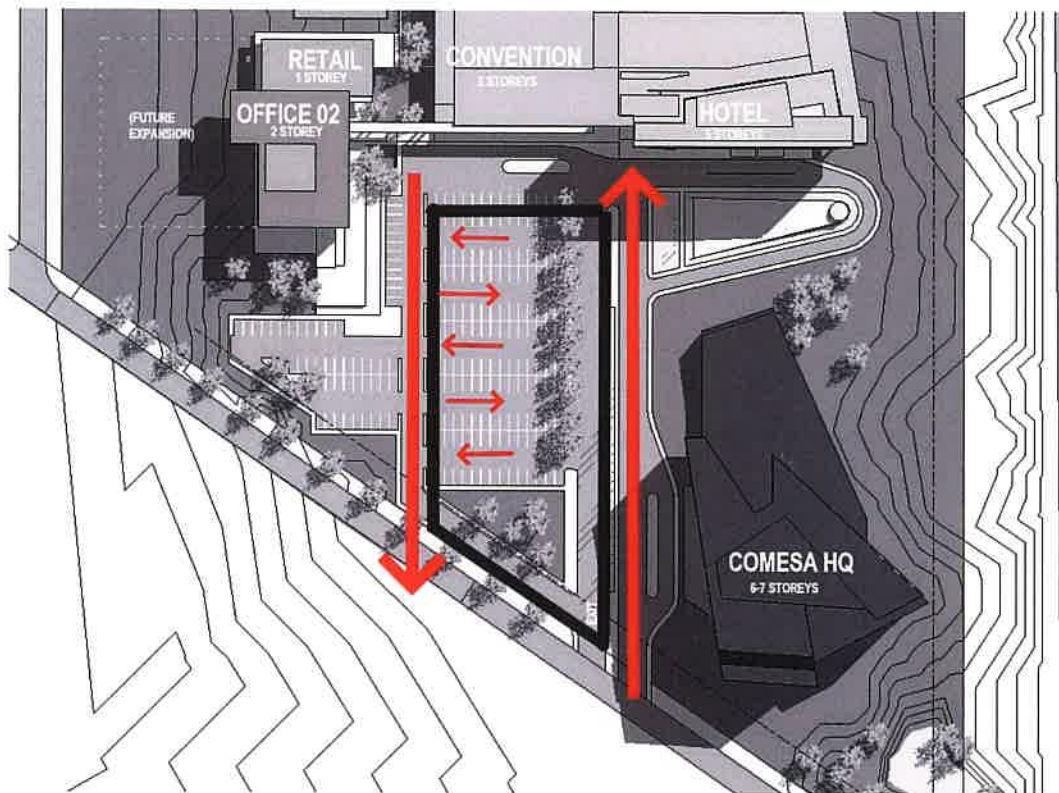


Figure 3 Site Plan

Water and Sanitation Demand:

- **Estimate of Anticipated Water Demand**

Based on IAPMO water demand estimates, the complex will consume over 20,000 liters per day though accurate figures will be determined during detailed designs. A water abstraction rate of 20l/s is envisaged from the main water line. Borehole abstraction rates will be determined on drilling but common ranges are from 2 to 5l/s.

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- **Estimate of Anticipated Sewage Flows**

The sewage flows for the project are estimated at 15l/s. actual sewer generation volumes will be determined at detailed design. It is envisioned that both onsite treatment and municipal connection will be employed to manage sewage.

Roads and Access to Site

- **Main Access Roads**

The main access road to site shall be along the Heart Hospital Road turning left from the Airport Road. A service entrance will be provided for delivery vehicles.

- **Entrance Gate and Guardhouses**

The complex will have one main entrance with a manned gate. A guard house will be constructed at the main entrance to provide security and screening of visitors.

- **Internal Road and Parking Areas**

All internal roads shall be wide enough and shall be designed for the use of light vehicles with provision for pedestrian crossing. These roads shall be made from either asphalt or concrete interlocking pavement.

- **Walkways**

All walkways shall be wide enough with paraplegic access and shall be finished in concrete interlocking pavement.

3.2.1 Project Materials

The materials to be used during the project life cycle and their sources are listed in the table below:

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Table 6 Raw Materials To Be Used

	Raw Material	Source	Mode of Delivery
CONSTRUCTION PHASE			
1	River and building sand	Local suppliers	Road truck
2	Aggregates and laterite	Local approved suppliers	Road truck
3	Cement	Local	Road truck
4	Concrete blocks, ground stone and bricks	To be manufactured off and on site and from local approved suppliers. The site will have a concrete batch mixing plant.	Road truck
5	Diesel, petrol and oil (for operation of the generator and machinery)	Local approved suppliers	Road truck. The fuel will not be stored on site.
6	Water	LWSC/ On-site borehole	Water pipe network
7	General building materials (e.g., timber for shuttering, window and door frames, polythene sheeting, uPVC Pipes, Control Valves Hydrants, Meters, Tees, Bends, Pumps, Switches PVC Pipes, Overhead Tanks Reinforcing steel etc.)	Local approved suppliers	Road truck
8	Warm wood and light glass	Local approved suppliers	Road truck
9	Finished products and equipment (e.g., roofing sheets and cladding, structural steel components, sanitary ware, glass, brass ware and finishing, piping, switches, tiles etc.	Local approved suppliers and imported ensuring compliance with Zambian standards and regulations.	Road truck
10	Gum poles Electricity cables Transformers Ceramic Insulators Connectors	Local approved suppliers	Delivery Van or Truck
OPERATION PHASE			
1	Water for domestic use and for irrigation of the landscaped areas	LWSC/ On site borehole.	Water reticulation system and Electrical pump
2	Electricity; for lighting, operation of equipment/pumps, electricity will be provided by ZESCO from	ZESCO power supply	ZESCO power reticulation

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	Raw Material	Source	Mode of Delivery
	the main existing power supply		
3	Food	Local approved suppliers	Road truck
4	Furniture	Local and international suppliers	Road truck and airfreight

3.2.2 Process and Technology

The construction process will begin with site establishment and earthworks. Earthworks will include removing topsoil, excavation for foundations and services. This will include rock breaking as the site is overlain with limestone rock. Walls and floors of the built units of the complex will be constructed from a mix of materials including steel, concrete and block work or stone masonry. The drain pipes will be plastic/cement pipes. Some drainage channels may be lined with natural materials like stone pitching or grass.

The construction machinery to be used on this site are categorised as follows:

- Earthmoving equipment- excavators, loaders, graders,
- Construction equipment - dumpers and tippers,
- Material handling equipment- cranes, forklifts and hoist, and
- Construction equipment - tunnelling & handling equipment, concrete mixers, road making machines, pavers and spraying & plastering machine.

Water Supply

Water for the office buildings and the supporting units will be supplied by municipal mains and onsite boreholes. In line with LEED certification requirements the design will adopt Low flow water fixtures as recommended and treated water reuse is suggested. Flow rates recommended (WC: 4/2L/flush or better;

Urinals: 1L/flush or water less urinal; WHB: 2L/min or less; Showers: 6L/min or less; Kitchen faucets: 5L/min or less.

Further there will be provision for water meter to be provided and monitoring of water consumption is required for Building, Landscape and RWH. The infrastructure to be provided will generally be as follows:

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- i) A ground reservoir with adequate capacity to be positioned in the vicinity of the buildings, this will provide beyond the daily use storage capacity for the development and additional storage for external and internal fire- fighting protection.
- ii) A booster pump station with to increase the pressure for distribution to between 6 and 16 Bar to the development and for external fire- fighting protection.
- iii) A network reticulation to distribute the water with diameters varying between 200 and 80 NB.
- iv) Water purification/polishing plant connected in line with the water main to improve water quality.

Due to the presence on site of a waste water treatment plant, waste water shall be used to irrigate the lawn and green spaces.

Sanitation

There is no central water and sanitation on the project site. However, a mains connection is possible nearby. The developer will connect to the mains once identified. Looking at the nature and size of the development, the developer will additionally construct an onsite a sewerage treatment plant with part of the waste water being reused and a larger portion being pumped to the municipal sewer network.

Electricity Supply

The site power supply requirement is estimated at over 2000KVA at 11kV. Actual figures will be determined at detailed design. The proposed electrical reticulation is to obtain a high voltage connection from ZESCO the supply authority. There is an existing substation about 1km west of site which will most likely be utilized to supply the site. The site would normally require a dedicated substation with adequately sized transformer. There are power lines along the road front which may need rerouting.

The proposed backup generators will be sized for the demand of each building and connected to changeover panels and distribution points via underground cables. These generators shall be located either at the energy center in a secure area or close to each point of use. Further, Silent type generators will be utilized. This way sound pollution is removed from the populated spaces

In addition to the standby diesel generators, the developer will consider installation of solar PV power systems as a way to ensure sustainable power generation.

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All electrical installations will be in accordance with Institute of Electrical Engineers regulations and ZABS standards.

Fire-fighting systems

Hotels/Conferencing

1. The buildings shall be equipped with a fixed wet type automatic sprinkler fire suppression system comprising of a combined bi-sectional Fire Water Storage Tank and a set of Fire Pumps (Diesel, Electric Duty and Jockey pumps).
2. Each building shall be equipped with independent sprinkler installation control valves located in an accessible position at street level.
3. The Sprinkler Control valves shall be equipped with by-pass valve arrangement
4. Each floor level shall be equipped with monitored Zone control valves
5. The hydrant valves and fire hose reels shall be on a separate fire main with fire booster connections and shut-off valves in strategic positions
6. Portable Fire extinguishers shall be distributed strategically throughout the buildings
7. These buildings shall be equipped with an addressable type L1 Fire Detection & Alarm System and a voice evacuation system
8. Enclosed Areas or Rooms larger than 500m² shall be equipped with smoke ventilation systems

Services and maintenance buildings are all independent buildings separate from the main buildings.

1. This shall be provided with conventional fire protection systems (fire hydrant valves, fire hose reels and portable fire extinguishers). The reticulation shall be extended from the main hydrants and hose reels reticulation.
2. Portable Fire extinguishers shall be distributed strategically throughout the buildings
3. The facility shall be equipped with a manually activated visual and audible alarm system
4. If the area of the facility under a roof is greater than 500m², this shall be equipped with mechanical or other approved smoke ventilation system.

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Means of Escape

1. The buildings shall be designed in accordance to NFPA standards and equipped with at least two means of escape at every level.
2. Each escape stair shall be protected in a 120-minute fire rated enclosure
3. Each stair shall be capable of handling at least 50% of the design population of the building and shall be a minimum width of 1120mm in accordance with NFPA 101
4. Emergency escapes shall discharge at street level
5. Final means of escape statutory signage to be illuminated.

Fire Sealing / Compartmentation

1. All hotel guest room suites shall be a 60-minute fire rated compartments
2. Doors to be 60-minute fire rated
3. Top floor bedroom suite fire rated walls to extend to underside of roof coverings

All service penetrating through fire walls to be fire sealed in accordance to fire rating requirements of NFPA standards.

Safety

All workers on site will have knowledge on occupational health and safety and on wildlife awareness i.e., what to do/not to do when an animal is in close proximity. All construction and installations will be according to the ZABS to ensure safety.

Landscaping of the site

The design approach will be fundamentally informed and led by the site's topography, its key features, and the adjacent land uses and circulation routes. These elements must underpin all principal design decisions, as any solution that fails to properly respond to them will result in a master plan that is not only visually out of context, but also inappropriate and potentially irresponsible.

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The initial approach proposes integrating the landscape into the development through the use of courtyards, green walls, and planters. The intention is to weave architecture and landscape together, creating a cohesive environment. The landscape design will seek to

- A planting palette needs to be developed for the various components. This should not be too diverse and should be largely indigenous.
- Once this has been determined, we need to look at what plant materials are available on the local market, that can be economically bought and grown on, and what needs to be propagated internally. It could well be that to meet project requirements a diverse range of different sizes of a particular plant type are procured, bagged up differently and then grown on.
- The transplanting of existing trees is to be identified where they would be in the way of new infrastructure. These trees should ideally be planted in their final positions to compliment the new design. Where this is not achievable, they would need to be placed in the holding nursery and then brought back to be planted in their final positions. Indigenous trees that cannot be transplanted due their non-compatibility to be moved, usually evergreen species, ideally should be replaced with smaller grown stock.
- Ideally a tree nursery should be located on a flat piece of ground with a good water supply. If a flat piece of ground is not available, terraces should be formed to accommodate the stock.
- At this time, it is difficult to ascertain the size of land required for the nursery. The service area should be investigated as a potential site for this.

3.2.3 Products and by-products

3.2.3.1 Products of the Project

The proposed COMESA Head Office is an urban development project which entails the construction of buildings for various uses ranging from office space to conferencing and retail. As such the products per each component of the project are as follows:

- COMESA Head Office Building: the head office building will basically be office space for the COMESA secretariate employees and related organisations.
- 200-key 4-star Hotel: The hotel will be providing lettable bed spaces to guests from within the country and from the region and beyond.
- Conference Centre: the conference centre will primarily offer meeting rooms for small groups to larger gatherings.
- Other office buildings: this will offer office space to other organisations who may need to rent office space in the area.

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- Retail Spaces: this is a relatively small area of retail shops catering mostly to the needs of the complex and guests.
- 120-key 3-star Hotel: The 3-star hotel will have one floor. The hotel will have standard rooms, dining areas, storage areas, laundry areas, male and female toilets, ball room, terrace, and generator area, plant area, meeting rooms, offices, reception/lobby and main kitchen.
- Parking: It is planned that the development will have about 660 parking bays. the parking area will include basement parking for employees and guest..

3.2.3.2 Waste products during Construction

The project will Implement a waste segregation area with 5 waste types - glass, wood, metal, corrugated cardboards, paper and monthly waste diversion and generation quantity of various materials are to be provided. Further, the contractor will be required to submit material procurement details including distance of manufacturing plant, pre-consumer and post-consumer recycled content and VOC Content along with VOC Certificate. The green building consultant will also work with the contractor to develop and implement a construction waste management plan. The waste products from the project and their disposal methods are as follows:

- Vegetative waste: The amount of vegetative waste resulting from site preparation will constitute of felled trees. The trees that can be translocated will be translocated and those that cannot be translocated will be disposed of at a municipal dump site.
- Topsoil and rock: where possible, topsoil and excavated rock will be re-used on the site for landscaping;
- General building rubble: is expected to be generated which will include rejected blocks and concrete, gravel, timber off cuts, etc. Building rubble will be used as solid hardcore for slabs or backfill for pits that may occur on the site.
- Solid waste: will include material such as scrap timber, various cut offs, refuse, packaging material (e.g., cement bags), workers garbage, domestic waste etc. Collection and disposal will be contracted out to the approved Local Council contractor for the area and disposed of in accordance with the local authority and Zambia Environmental Management Agency Regulations.
- Hazardous waste: Waste containing fuels and other hazardous waste if generated then hazardous waste clean-up kits will be used. The waste will be disposed of at approved hazardous waste disposal sites.

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- Dust: will be generated from the site due to the nature of various construction activities during the construction phase. The work site exposed areas will be watered daily to suppress dust
- Sewage waste: Pota loo's will be provided on site.
- Storm water drainage will be via purpose designed drains that will be constructed preventing construction run off into the lake.

3.2.3.3 Waste Products during Operation

Effluents and by-products/waste generated during operation and their management (in summary):

- Solid waste will be collected on site in bins and skips and disposed of by designated and approved solid waste collector.
- Fats/oils from the kitchen will be trapped by grease traps that will be located into the floor under the sink before the water goes into the water reticulation and sewerage treatment plant.
- Sewage and grey water from the development will be managed through water reticulation and sewerage treatment plant.

3.2.4 Production Capacity

The development of the complex has been largely driven by the desire for a world class work environment that will be attractive to both internal and external clients. The capacity in terms of trips generated is given for each component below:

Table 7: Trip generation

Land Use	Size (m ²)	Daily Trip Rate (per(100m ²))	Daily Total Trips	PM Peak Rate (per(100m ²))	PM Peak Trips
Head Office Building	12,000m ²	≈ 18	2,173	≈ 2.10	252
Hotel	10,000 m ²	≈ 6.60	660	≈ 0.70	70

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Land Use	Size (m ²)	Daily Trip Rate (per(100m ²))	Daily Total Trips	PM Peak Rate (per(100m ²))	PM Peak Trips
Conference Center	4,000 m ²	≈ 11.00*	440	≈ 2.00*	80
Retail	5,000 m ²	≈ 33.00	1,650	≈ 3.40	170
Other Offices: 10,000 m ²	10,000 m ²	≈ 11.00	1,100	≈ 2.10	210
Total Gross Trips	41,000	-	6,023	-	782

3.2.5 Schedule and Lifetime of the Project

The proposed project cost is estimated to be \$140, 000, 000.00 and the construction works will be in 3 phases to commence in October 2026 for the first phase. The project lifetime is estimated at over 50years with a decommissioning phase to follow.

3.3 Main Activities

3.3.1 Site Preparation Phase

The main activities envisaged during this phase are the preparation of the following designs:

- Appointment of project team
- Engineering Designs (Off-site, On-site) for Civils (Water Supply, Storage and Reticulation, Sewage Reticulation, Roads and Storm water drainage), Electrical Supply and Reticulation
- Architectural Building Plans
- Concern/commitment/approval from relevant institutions
- Environmental and Social Impact Assessment and Management Plan.

3.3.2 Activities during Construction

The main activities envisaged during construction will include:

Building construction

1. Preparation of the Site

- Clearing of vegetation on areas on which the built units will sit
- Stripping of topsoil and vegetative material for access roads and building foundations.
- Excavations for basement and foundations which will include rock breaking
- The foundation which will be constructed after basic earthworks are done.

Processes during basic earthworks include: removal of material to spoil, filling, compacting and trimming.

2. Road, Parking Area, Terraces and Drainage Construction

- The topsoil is usually stripped.
- Stumps and roots are removed and holes filled as required.
- If rock or other unsuitable material is discovered it is removed, moisture content is managed and replaced with standard fill compacted to meet the design requirements (generally 90-95% relative compaction).
- Compacting after top soil is removed.
- Stabilization of the base with the piling, spreading and compaction of gravel and aggregate.
- Spreading and compaction of aggregates and tar materials on the road and parking areas for bitumen surface and preparation, pouring and compaction of concrete for concrete surfaced areas.
- Shaping and lining of drains.
- Shaping and lining of terraces.

3. Excavation of Foundations

- Excavation of trenches for foundation strips for buildings, drainage, sewage trenching, etc.
- Compaction of underside of foundation trench.
- Mixing, pouring and compaction of concrete.

4. Sub-Structural Works and Floor Slabs and Services

- Steel work in column foundations.
- Block work.
- Mixing, pouring and compaction of concrete.

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- Backfilling and compaction of material according to specifications.
- Construction of water network, water borne sewer system connected to LWSC systems.

5. Super-Structural Works

- Construction of various buildings including fixing of any structural steel components, laying of bricks, fixing of roofing sheets / cladding, etc.
- Installation of internal water and electrical reticulation system and lighting.

3.3.3 Activities during Operation

Activities envisaged during operation:

- Provision of office space.
- Provision of meeting rooms
- Provision of conference facilities
- Provision of temporary accommodation
- Provision of restaurant facilities.
- Maintenance of facilities
- Management of waste generated on site
- Daily cleaning of the resort.

3.3.4 Decommissioning Phase

At decommissioning phase, a rehabilitation plan will be elaborated with stakeholders and local communities for future use of the area.

4.0 PROJECT ALTERNATIVES

Need for the project

The developers hope to construct a mixed-use complex to provide office space for own use whilst utilising the remaining space to generate income. Thus it is proposed to create a complex which caters to the activities and needs of COMESA and affiliated entities whilst responding to the conferencing and accommodation needs of the country and region as a whole. The demand for office space in Lusaka commercial real estate sector is undergoing a dynamic transformation, driven by a blend of macroeconomic growth and evolving business needs. As the economy expands—particularly the construction sector—investors and enterprises are increasingly seeking modern, resilient, and well-equipped office environments. Urban centers like Lusaka are witnessing heightened interest from both local and foreign businesses, spurred by infrastructure

improvements and competitive rental pricing. Moreover, shifting customer preferences toward flexible, amenity-rich workspaces reflect a broader trend in workplace modernization.

Further, the proposed project will create employment and also promote tourism arrivals and spend in Zambia. This will boost the national economy.

4.1 Identification of Alternatives

4.1.1 Site Alternatives

The site was allocated by the government of Zambia bearing in mind its proximity to critical amenities to support the development. As such no alternative was considered. Numerous advantages are represented by the current site which includes the following factors:

Location: The proposed site is located close to the exiting mixed use developments (Garden City and Waterfalls) and Human settlements of Avondale, Ibex Hill and Meanwood ibex. This presents an opportunity to develop the site in line with exiting trends. Further, the site presents an opportunity for a green development which answers to the need for eco-friendly and sustainable construction.

Infrastructure: The necessary infrastructure to support such a development is partly available within the vicinity. This includes:

- *Road access:* The project area is served by Airport Road which connects to Great East road

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- **Power:** Electrical power is available nearby from the existing ZESCO network.

Labor: Labor for the operation of the project is already established and accommodated in the area. Local communities such as Meanwood Ndeke, Chelstone will offer a readily available pool of non- or semi-skilled labor for employment during the construction phase.

Ownership and Zoning: The site forms part of property already owned by COMESA.

4.1.2 Project Alternatives

The proposed site is earmarked for development of the COMESA Head office. The land was allocated by the government of the republic of Zambia for this purpose. Consequently no other projects have been considered for this site save for this purpose.

4.1.3 Water Supply Alternatives

Two alternatives were considered for water supply as follows:

1. **Municipal Water Connection-** The proposed project site is located in an area that presently has no municipal water connection at site. However, there is a nearby water main and the project will consider connecting to the municipal water mains as the first option.
2. **Ground water abstraction -** The project area has high ground water potential. This option would involve the developer drilling boreholes on the site and managing them. These boreholes will serve as a good alternative and backup.

After analyzing the two options, the developer has opted to use water both options to ensure reliability of supply.

4.1.4 Sewage Management Alternatives

Two alternatives were considered under sewer management:

1. **Municipal Connection-** Municipal Sewer connection is always the preferred option when a development of this magnitude is being undertaken. However, the site has no visible municipal sewer connection point though the area surrounding the development has existing municipal

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sewer network nearby. As such the project will have to consider onsite treatment with the possibility to connect to municipal network once it is located.

2. Onsite sewage treatment plant- The plant treats the sewage and produces clean and odour free water which is environmentally friendly. The water from the plant can be used for irrigation, discharged into a soak away system or released into the natural water systems. This system is very effective.

Thus, both options will be utilized on this project. The use of septic tank and soak away system was not even considered due to the size of the development and potential hazard to the environment.

4.1.5 Technology Alternatives

The developer will use the construction machinery being used for construction as such no alternatives were considered. This will involve the use of human labor and use of construction machinery operated manually by humans.

The developer was looking for a planning approach and design that would be founded on sound environmental principles that would optimize the land area available and also take into account the existing elephant corridors, topography, hydrology and vegetation.

The current site plan optimizes the land area available and takes into account the sites environmental attributes. The construction methodologies and materials will be that of earth, concrete and brick work similar to the numerous methods being undertaken in the project area. All construction waste products such as cement wastes and broken bricks will be as much as possible used for backfilling on site and to a lesser extent transported to offsite designated dumpsites.

4.1.6 Material Alternatives

1. A number of material alternatives are available. Material selection and use will seek to achieve the following:
 - a. Select EPD-verified products (e.g., concrete mixes, gypsum boards, ceiling tiles, paints).
 - b. Engage with suppliers during tendering to confirm availability of product-specific or industry-wide EPDs.

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- c. Ensure at least 20 compliant products from ≥ 5 manufacturers are specified in the design package.
 - d. Specify FSC-certified wood products for joinery and partitions.
 - e. Prioritize locally available materials with recycled content to minimize transport impact.
 - f. Ensure procurement plan covers ≥ 20 products from ≥ 5 manufacturers with sustainability claims.
2. Earth, concrete and brick work – This material has been used in building construction. It is readily available on the market and therefore the building does not entail excessive costs. The material can be made to look modern or old depending on the design of the building and the construction workers used.
3. Steel Frames and reinforcement steel. These materials are considered in construction for their strength and durability resulting in long lasting and safer multi storey structures.

4.1.7 Power Supply Alternatives

Power Supply

Three main alternatives exist for power supply. These are Grid connection to the nearby ZESCO infrastructure, Onsite Generators and onsite Solar backup systems. The proposed development will consider all three power sources.

4.2 Analysis of each of the identified alternatives

4.2.1 Project Alternatives

The developer had two options which were:

- implementing the proposed project
- or leaving the site for another developer to take up.

Looking at the market study and nature of agreement the no action option was not in the developer's interest. The no- action option would not bring about the many anticipated benefits the proposed project would realize. Implementing the project meant putting up modern infrastructure and realizing the benefits the development would bring about provided that all environmental receptors are taken into consideration and adequate mitigation measure put in place.

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After considering the two alternatives, the developer opted to proceed with the project. The proposed development will be done with consideration to the local environment ensuring preservation or enhancement of habitat/ vegetation is incorporated in the design.

4.2.2 Water Supply Alternatives

Two alternatives were considered for water supply as follows:

1. Municipal Water connection. This is the preferred method especially looking at the size of the development.
2. Ground water abstraction - The project area has high ground water potential. This option would involve the developer drilling boreholes on the site and managing them.

After analysing the two options, the developer has opted to use both options to ensure reliability of supply.

4.2.3 Sewage Management Alternatives

The maximum and average sewage flows have been estimated to be over 15l/s.

Two alternatives were considered under sewer management:

1. Municipal connection- the site has no visible sewer connection point though the area reportedly has sewer mains nearby.
2. Onsite sewage treatment plant- The plant treats the sewage and produces clean and odor free water which is environmentally friendly. The water from the plant can be used for irrigation, discharged into a soak away system or released into the natural water systems. This system is very effective.

Looking at the size and nature of the development, both options will be considered to ensure effective management of sewer.

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4.2.4 Technology Alternatives

The developer will use modern technology and the selection of such will depend on the activity. All available technology will be deployed on the project. There is a possibility of outsourcing technological requirements from other countries in the region and beyond.

4.2.5 Material Alternatives

1. Material selection and alternatives will be done with the ultimate goal of ensuring compliance to local regulations and LEED certification.
2. Steel, concrete, brick work and glass – this material is affordable, readily available and can be accessed by locally. As such most buildings will be made from the above materials.

4.2.6 Power Supply Alternatives

1. ZESCO power supply – There is existing ZESCO network in the project area.
2. Generators. Onsite standby generators can be sourced locally
3. Solar power supply – Solar power for the proposed project would require that a solar power plant be installed or the panels be placed on the roof of the buildings.

All three alternatives are considered on the project to ensure reliability of supply and sustainability.

4.3 List of chosen alternatives in order of preference

4.3.1 Project Alternatives

1. Developing the project favored over
2. Do not proceed with the project and leave the site as is.

4.3.2 Water supply alternatives

The potential water sources for the buildings on site

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1. Municipal connection
2. Ground water abstraction/boreholes

4.3.3 Sewage Management Alternatives

1. Municipal connection
2. Sewage treatment Plant.

4.3.4 Technology Alternatives

The technology to be deployed on the project varies and will be selected per activity.

4.3.5 Material Alternatives

1. Material alternatives vary and will be selected per activity and need.
- 2.

4.3.6 Power Supply Alternatives

1. Grid connection (ZESCO power supply)
2. Standby generators
3. Solar power supply

5.0 ENVIRONMENTAL BASELINE STUDY

5.1 Climate

The climate of Chongwe is characterized by three distinct seasons determined by the movement across the region of the Inter – Tropical Convergence Zone and is typical of much of the Central African Plateau. The region experiences a cool dry season from mid-April to August, a hot season from September to October and a rainy season from November to April.

Mean monthly temperatures range between about 15 °C in the cold season to about 28.9 °C in the hot season when humidity is comparatively high. Minimum temperatures as low as 1 °C have been recorded for July, the coldest month of the year (the occurrence of frost is not expected) while temperatures of 30 °C and over are not uncommon for October, which is the hottest month.

The study area experiences prevailing easterly winds during the dry season with fresh winds experienced in the months of July and August with maximum wind velocities of 27 km/h. The rains experience light variable winds predominantly northerlies and north - easterlies in January and February. Mean wind speed ranges from 4.0 km/hr to 9.0 km/hr.

Highest daily standard atmospheric pressure is 912.3 mm Hg and lowest daily standard is 856.9 mm Hg.

5.1.1 Rainfall

The study area receives an annual rainfall in the region of 500mm to 1000mm with a mean annual rainfall of 787mm nearly all of which is recorded in the rainy season (December, January and February receiving over 70% of annual rainfall). Rainfall during the rainy season is erratic and long dry spells are experienced. The highest monthly average rainfall for the area is 371.0mm and lowest monthly average is 305mm while the daily maximum is 91.3mm. Mean relative humidity varies between 41% in October to 84% in February.

In recent years, there has been marked variations in the duration of the rain season, with some years recording below normal rainfall whilst others have normal to above normal.

5.1.2 Wind

Based on local weather data, the wind in Chongwe, Zambia, is generally light to moderate, with seasonal variations peaking during the dry, warmer months.

Prevailing Winds and Directions

- **Direction:** The wind direction in Chongwe is predominantly from the **east**.
- **Seasonal Shifts:** During the rainy season, winds can sometimes blow from the north and northwest.
- **Dry Season:** In the drier months (around September/October), winds are generally moderate but can occasionally be strong, bringing in cool air.

Annual Average Wind Speeds

- **Annual Trend:** The average hourly wind speed in Chongwe experiences significant seasonal variation, with a windier period from mid-July to late November.
- **Windiest Month:** October is typically the windiest month, with an average hourly wind speed of roughly **11.7 to 11.9 miles per hour (mph)**.
- **Caldest Month:** February is generally the calmest month, with average hourly wind speeds around **6.2 to 6.4 mph**.
- **Average Speed:** Throughout the year, speeds often hover around 7-9 knots (approx. 8-10 mph) in many months, with gusts occasionally reaching 23-29 knots (approx. 26-33 mph).

Summary of Seasonal Variation

- **Windy Season (July - November):** Average speeds are generally higher than 9.0 mph.
- **Calm Season (Nov - July):** Average speeds are lower, dropping to around 6-8 mph.

5.1.3 Humidity

Chongwe experiences a **humid subtropical climate** characterized by distinct wet and dry seasons. The area is generally warm year-round, with high humidity levels, particularly during the rainy season.

Prevailing Humidity and Annual Variations

- **Muggy/Humid Season (Nov – Apr):** The most humid period lasts for 5.3 months, typically from **November 10 to April 19**. During this time, the air is frequently muggy, oppressive, or uncomfortable.
- **Peak Humidity:** January is the most humid month, with average relative humidity levels reaching around 83.71%. The number of "muggy" days peaks in January at approximately 25.3 days.
- **Dry Season Humidity (May – Oct):** The driest, least humid period occurs from May to October. August is the least humid month, with 0.0 days considered "muggy" or worse.
- **Annual Relative Humidity:** Average relative humidity ranges from a low of roughly 39–40% in September/October to a high of over 85% in February.

5.1.4 Temperature

Chongwe, like the rest of Lusaka Province, experiences a **humid subtropical climate with distinct wet/dry seasons and warm temperatures year-round**. The temperature typically varies from **48°F (9°C) to 89°F (32°C)** throughout the year, rarely dropping below **44°F (7°C)** or exceeding **95°F (35°C)**.

Prevailing Annual Temperature Variations

Chongwe's climate is characterized by three main seasons, with temperature peaks occurring just before the main rains:

- **Hot Dry Season (September – November):** The hottest time of the year, with temperatures often peaking in **October** (average highs around **32°C/89°F**).
- **Warm Wet Season (December – April):** Temperatures remain warm but are moderated by cloud cover and precipitation. November is often the hottest, with an average high of **87°F (31°C)** and low of **67°F (19°C)**.
- **Cool Dry Season (May – August):** The coldest period, with **July** being the coldest month, featuring average lows of **49°F (9°C)** and highs of **74°F (23°C)**.

Key Temperature Trends

- **Hottest Month:** November/October (Max Avg: **87°F-89°F / 31°C-32°C**).
- **Coldest Month:** July (Min Avg: **49°F / 9°C**).

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- **Daily Variation:** Significant diurnal shifts occur, especially in the dry season, where sunny days are followed by cold nights.
- **Precipitation Impact:** The wettest month is January, which receives heavy rain (approx. 7.3 inches/185mm) and sees high humidity.
- **Wind Patterns:** The area is windiest in October (avg speed 11.7 mph) and calmest in February (6.4 mph), with winds predominantly from the east.

Long-Term Trends

Research indicates that temperatures in the Chongwe catchment area are increasing, while rainfall has shown a decreasing trend, with a notable reduction in mean annual rainfall between 2000 and 2021

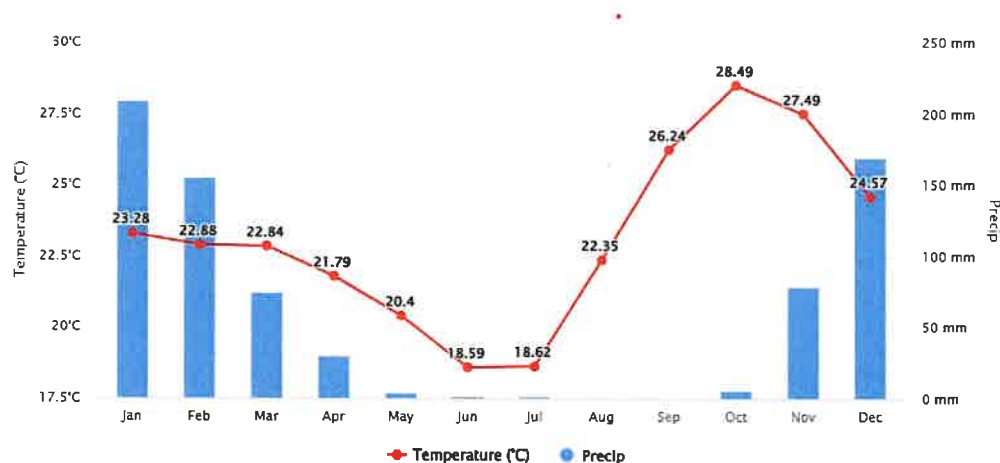


Figure 4: Chongwe Climate Graph

5.2 Air Quality

The project site is located in an area considered primarily residential. There are no industries or locations known to pose considerable threat to the quality of air onsite or in the surrounding vicinity. Based on recent data, the air quality in Chongwe, Lusaka Province, Zambia, is generally considered **good to moderate**.

- **Current Quality:** The Air Quality Index (AQI) often sits at a level where air pollution poses little or no risk to the general population.
- **Pollutant Levels:** The primary pollutant is typically PM_{2.5} (fine particulate matter).

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- **Health Impact:** While often good, it is recommended to monitor local conditions as air quality can shift to "moderate" (acceptable, but potentially sensitive for some individuals).

The proposed project site is near an international airport and as such noise from air traffic is anticipated; however, no air emissions are expected from air traffic on site due to the location of the airport. The other source of air pollution in the project area is vehicular traffic which raises dust and also releases fumes that pollute the air; the proposed project site is expected to host considerable traffic. The vehicular emission from the mentioned traffic is negligible.

The comprehensive air quality assessment conducted at the proposed project site indicated atmospheric conditions characteristic of an area with minimal industrial or commercial activity and therefore low emission intensity. All measured gases; sulphur dioxide (SO₂), oxides of nitrogen (NO_x), and carbon monoxide (CO) were within acceptable regulatory thresholds. Average PM_{2.5} concentrations ranged from 1.4 µg/m³ to 2.3 µg/m³, while PM₁₀ concentrations ranged from 2.6 µg/m³ to 7.7 µg/m³ across the three sampling locations. These values remain well below the maximum allowable limits stipulated under ZEMA ambient air quality standards.

The prevailing east-to-west wind regime and existing vegetative cover within and around the area further aid in dispersing and attenuating airborne particulate matter before it reaches the core of the project site. Overall, the baseline air quality study demonstrates that the site does not exhibit emission levels capable of causing adverse environmental or public health impacts.

Solar Radiation

Chongwe features strong solar potential with an average daily incident shortwave solar energy of 6.4 kWh per square meter. This high resource has triggered significant renewable energy development, including the Chisamba Solar Plant and the Kiyona Green Cities Initiative.

Solar Radiation Statistics

Solar radiation in Chongwe varies seasonally, with peak intensity occurring in the months leading up to the rainy season:

- **Brightest Period:** September 21 to November 13, averaging above 7.1 kWh daily.
- **Peak Month:** October, with a daily average of 7.5 kWh.
- **Darkest Period:** May 16 to July 29, with an average below 5.8 kWh.
- **Darkest Month:** June, averaging 5.5 kWh daily.

5.3 Geology

According to the geological map of Lusaka (1:250000), the project site is underlain by the Chunga formation of the broken hill group of the Katanga supergroup where quartzites and mica schists are rock types present.

Analysis of both field and laboratory test results indicate that the proposed site is predominantly underlain by Clayey Sand soil (SC Soil Classification) to a depth ranging from 0 – 3.4m with reference to current ground level and rock outcrops. Analysis of Atterberg limit test results (Average PI < 12% and Average LL <30%) obtained indicate that the site is free of expansive soils. Insitu soils have average PH, Sulphate and Chloride levels of 7.45, 51.63mg/kg and 65.8mg/kg respectively. Allowable bearing capacity of soils was observed to be increasing with increase in depth at all test locations.

The site is also covered by rock outcrops in most of the places. Laboratory test results conducted on collected rock samples indicate that bedrock has an average UCS of 30MPa giving an allowable bearing capacity of 15MPa at a factor of safety of 2. The site is located in a region of very low seismic activity as per the Seismic Hazard Map of Africa (<https://www.thoughtco.com/seismic-hazard-maps-of-the-world-1441205>). The Peak Ground Acceleration (PGA) for Lusaka falls in the range of 0.025g to 0.03g, indicating minimal seismic risk and low likelihood of ground motions/ movements that could result in foundation or structural failure. Risk of sinkhole formation is not present with reference to geophysical ground investigation report conducted on site.

5.4 Hydrology

The site lies on relatively flat terrain. Land cover around the site is mainly grassland, which promotes infiltration, but upstream built-up areas generate high runoff toward the site, increasing flood potential. Curve numbers were assigned from USDA TR-55 and NLCD 2019 tables, with the site area showing a value of 85. Although slightly lower than other surrounding areas, this still indicates a high potential for runoff during rainfall events ranging from 13-19 m3 /s. Natural drainage mapping shows multiple upstream sub-basins contributing runoff to the site, with only sub-basins 1 and 14 not feeding into it.

5.5 Hydrogeology

The hydrogeology of Chongwe District is characterized by low-yielding fissured aquifers and high vulnerability to climate change, with groundwater levels suffering from reduced recharge. Located in the Irumide Belt, it comprises Mesoproterozoic Basement complex (gneiss, schist)

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and Neoproterozoic Katanga Supergroup rocks. The region faces severe water shortages due to drying surface water, making groundwater exploitation vital. Groundwater was encountered at an average depth of 6m in all boreholes.

Key Hydrogeological Features

- **Aquifer Characteristics:** The district lies in a complex geological setting, mainly featuring fractured and schistose aquifers. These are generally classified as having lower potential (Class C, D, E) compared to the nearby Lusaka dolomite aquifers, with water levels often being quite low.
- **Groundwater Potential & Recharge:** While groundwater is used for, the area faces high groundwater vulnerability due to low protective soil cover, with some boreholes showing contamination. The recharge is highly dependent on seasonal rainfall, which has become more erratic due to climate change. A shallow groundwater table is present on site. Suitable mitigation measures should be put in place at project implementation stage.
- **Water Supply Stress:** The Chongwe River catchment faces severe water deficits between July and October, driven by population growth and increased irrigation.
- **Recent Developments:** To address chronic shortages, new boreholes have been developed, with initiatives like the SADC-GMI project working to map and develop sustainable groundwater sources in the district.
- **Water Quality:** In some areas, groundwater has shown high nitrate levels, potentially from agricultural runoff and sanitation

5.6 Topography & Landscape

The terrain around the site is generally flat and sloping down outside of the site on the west. The areas going South tend to become more gentle slopping before they become steeper in higher elevations further south in the higher elevations.

From the topography it is clear to see that the site lies in an area with major areas upstream contributing to runoff.

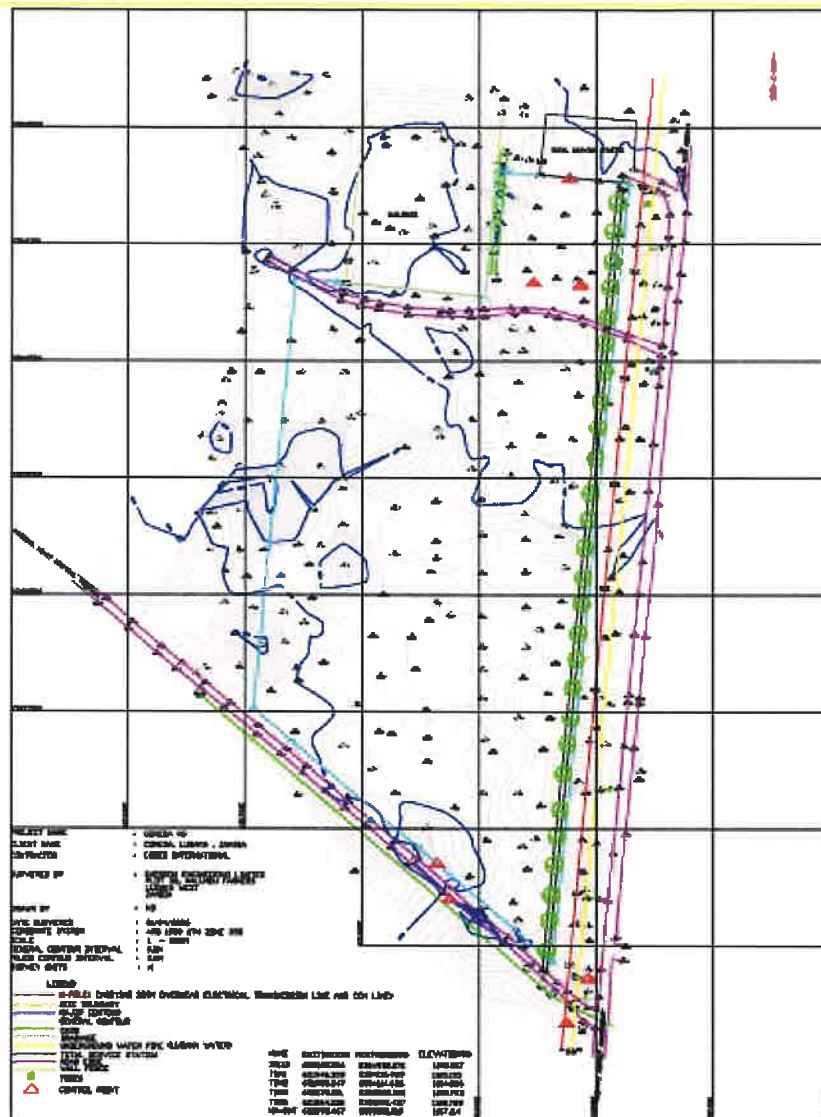


Figure 5: Topographical Map

5.7 Soils

The proposed site is predominantly underlain by alluvium deposits. These deposits are characterized by a heterogeneous sequence of alluvial sediments overlying an irregular competent layer. Geophysical works conducted in this layer highlight significant lateral and vertical changes

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in material properties, including the presence of saturated zones, localized coarse-grained deposits, and variable depth to competent material.

Analysis of both field and laboratory test results indicate that the proposed site is predominantly underlain by Sand – Clay – Silt schist (SC-CL-ML Soil Classification mixture) to a depth range of 0.2 – 6.5m with reference to current ground level.

Below 6.5m, a slightly plastic Sand – Silt schist (SM – ML) layer with random matrix of varying consistency levels was encountered to an average depth of 20m. This layer is a mixture of weak and stable ground. Below 20m, a stable layer was encountered.

Analysis of Atterberg limit test results obtained indicate that the site is free of expansive soils.

5.8 Land use and land tenure

Land Use

A. Land Tenure System

There are three categories of land tenure systems in the district: customary, public and private leasehold land.

1. Customary Land

This is land belonging to the people and which is held in trust and administration by traditional authority.

2. Public Land

Public land is that land which government set aside through appropriate legislation for specific reasons like national development, security and tourism. This type of land is designated for forest reserves, roads and building plots.

3. Private Leasehold Land

This is land formally leased from customary and private land. Land under this category, which includes private estates, must be leased for up to 99 years.

B. Land Use System

The project site is Private Land. The proposed project site is in an area that is predominantly residential and small holdings. However, the area is seeing a rapid development of commercial spaces and mixed-use development. The land for the project is owned by the developer under statutory tenure and a title deed is annexed to this document.

5.9 Built Environment

The site is not classified greenfield as it has been previously disturbed. However, there are no buildings currently on site. The built environment in the area within a 2km radius of the proposed project site includes various commercial, institutional and private spaces. Notable ones include the KKIA, Marian shrine, which is a place of worship. The two malls, Garden city and waterfalls, Mika convention center further east, the National institute of scientific research and ZESCO substation. A number of private residencies dot the area. The Airport road is a major traffic artery linking Chongwe to Lusaka and beyond.

5.10 Noise and vibration

The proposed project site is located along a major highway and near an international airport. As such noise from vehicular and air traffic is anticipated. However, such noise is intermittent in nature. The average ambient noise levels recorded at the proposed site ranged from 45.8 dB to 66.5 dB (A-weighted) over the monitoring period across the three sampling points. These values fall within the acceptable regulatory limit of 85dBA. The relatively moderate readings suggest a low-to-moderate background acoustic environment, typically influenced by natural ambient sounds and minimal vehicular and machine activity. Furthermore, no significant spikes or irregularities were observed in the data, suggesting that the site remains largely undisturbed by intense or impulsive industrial activity. Nevertheless, some of the possible noise sources to look out for which might affect worker performances both during construction and operation phases are, site clearing and earthworks operations, material handling and transportation.

5.11 Fauna

The assessment of fauna within the proposed project site is a critical component of the biodiversity evaluation, as it provides insight into the ecological integrity, conservation value, and

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potential environmental sensitivities of the landscape. Fauna contributes significantly to ecosystem functioning through roles such as pollination, seed dispersal, nutrient cycling, pest regulation, and maintaining trophic dynamics. Understanding the composition, diversity, and abundance of faunal communities is therefore essential for informing sustainable land-use planning, mitigating adverse impacts, and ensuring compliance with environmental regulations.

The fauna survey focused on both direct observation and indirect evidence, such as tracks, droppings, burrows, calls, and other signs of animal activity.

This section presents the findings of the faunal assessment conducted within the project area, organized by major faunal groups. The results are discussed in the context of existing ecological knowledge, previous literature, and conservation considerations specific to miombo woodland environments.

5.11.1 Mammals

A mammal survey was conducted and no live mammals nor indirect evidence of mammalian presence was recorded in the form of tracks, burrows, and droppings, primarily associated with small to medium-sized mammals. This shows non-occurrence of species that are typically nocturnal, elusive, or sensitive to human presence. However, it was reported some small to medium animals are occasionally sighted within the project area. The table below shows some of the mammals as reported.

Table 8: Mammals in the project area

Common Names	Scientific Name	IUCN Status
Rats	<i>Rattus rattus</i>	Least Concern
Mole Rat	<i>Fukomys amatus</i>	Not Found
Scrub Hare	<i>Lepus saxatilis</i>	List Concern
Common Shrews	<i>Sorex araneus</i>	Least Concern
Elephant shrews	<i>Rhynchocyon cirnei</i>	Least Concern
Cane rats	<i>Thryonomys swinderianus</i>	Least Concern
Squirrel	<i>Sciuridae</i> (family)	Least Concern

Trap-and-Release Survey

As part of the small mammal assessment, a trap-and-release survey was conducted using eight live traps deployed in the project area. All traps were successfully recovered; however, none of

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them captured any mammals over the entire trapping period. The low capture rate may be attributed to several interacting factors.

Locally protected and endangered species

There are no protected and endangered mammal species within the project site

5.12 Avifauna/Birds

The following table summarizes the bird species observed within the project area, along with their scientific names, conservation status, and ecological notes.

Table 9: Bird species in the project area as observed and reported

Sp. No.	Scientific Name	Common Name	Order	Reported/Observed	IUCN Status
1.	<i>Phalacrocorax lucidus</i>	White-breasted Cormorant	Suliformes	Observed (3)	Least Concern
2.	<i>Numida meleagris</i>	Helmeted Guinea fowl	Galliformes	Observed (4)	Least Concern
3.	<i>Dicrurus adsimilis</i>	Fork-tailed Drongo	Passeriformes	Reported	Least Concern
4.	<i>Tyto capensis</i>	African Grass Owl	Strigiformes	Reported	Least Concern
5.	<i>Colius striatus</i>	Speckled Mousebird	Coliiformes	Reported	Least Concern
6.	<i>Turdus pelios</i>	African Thrush	Passeriformes	Observed (1)	Least Concern
7.	<i>Crithagra striolata</i>	Streaky Seedeater	Passeriformes	Observed (1)	Least Concern
8.	<i>Passer griseus</i>	Grey-headed Sparrow	Passeriformes	Observed (3)	Least Concern

Locally Protected and Endangered Avifauna in the Project Area

There are no protected and endangered birds species within the project site.

4.2.3 Insects

The Insects are a fundamental component of terrestrial ecosystems, playing critical roles in pollination, decomposition, pest control, and serving as prey for higher trophic levels. During the field assessment conducted both direct insect sampling and local knowledge were used to document commonly occurring species.

A total of 11 insect species were either captured directly using sweep nets and pitfall traps or reported by local workers and farmers as frequently occurring in the area. These species are consistent with those found in miombo woodlands. The majority of species identified belong to orders Lepidoptera, Orthoptera, Hymenoptera, Coleoptera, Hemiptera, and Diptera.

Table 10: Insects captured and reported

Sp. No.	Scientific Name	Common Name	Order	IUCN Status	Ecological Notes
1	<i>Glossina fusca</i>	Tsetse Fly	Diptera	Not Evaluated	Vector of sleeping sickness; occurs in riverine habitats
2	<i>Eurema brigitta</i>	Grass Yellow Butterfly	Lepidoptera	Not Evaluated	Widespread in grassland and open woodland
3	<i>Spodoptera exigua</i>	Small Mottled Willow Moth	Lepidoptera	Not Evaluated	Widespread pest on crops; larvae feed on leaves
4	<i>Meranoplus bicolor</i>	Ant	Hymenoptera	Not Evaluated	Common savanna ant; nests underground and is ecologically aggressive
5	<i>Melanotus</i> spp.	Click Beetle	Coleoptera	Not Evaluated	Larvae known as wireworms; found in soils of woodland and farmland
6	<i>Riptortus pedestris</i>	Bean Bug	Hemiptera	Not Evaluated	Agricultural pest; common in legume fields, also found in open woodland
7	<i>Chrotogonus</i> spp.	Grasshopper	Orthoptera	Not Evaluated	Common in dry grassland and light woodland
8	<i>Oxyacris</i> spp. (corrected)	Short-horned Grasshopper	Orthoptera	Least Concern	Common savanna grasshopper; feeds on grasses

Locally protected and endangered Insects species

There are no protected and endangered insects species within the project site.

4.2.4 Reptiles and Amphibians

During Herpetofauna are essential components of ecosystem health and function. Reptiles serve as both predators and prey in food chains and contribute to pest regulation, while amphibians are sensitive to changes in moisture, temperature, and pollution, making them excellent bioindicators of environmental conditions. Together, they provide insight into habitat integrity, ecological connectivity, and the effects of human disturbance.

Field observations conducted during the ecological survey, confirmed the presence of few herpetofauna species in the project area. A total of 5 reptile species were recorded.

Among reptiles, commonly observed or reported species include the Flap-necked Chameleon (*Chamaeleo dilepis*), Southern Tree Agama (*Acanthocercus atricollis*).

Locally Protected and Endangered Herpetofauna

There are no protected and endangered herpes species within the project site.

4.2.5 Fish/Ichthyology

The site has no water body and as such no fish no fish species were observed onsite.

As such no local endangered aquatic species are present onsite.

5.13 Flora

General Description

The proposed project site falls within the Central Drier Miombo woodland ecological zone as classified by Chidumayo (1987a). This vegetation type is characteristically dominated by

Brachystegia spiciformis – *Julbernardia paniculata* woodlands, with *Burkea africana* commonly occurring as a canopy co-dominant and *Diplorhynchus condylocarpon* forming a frequent understorey component (Figure 5).

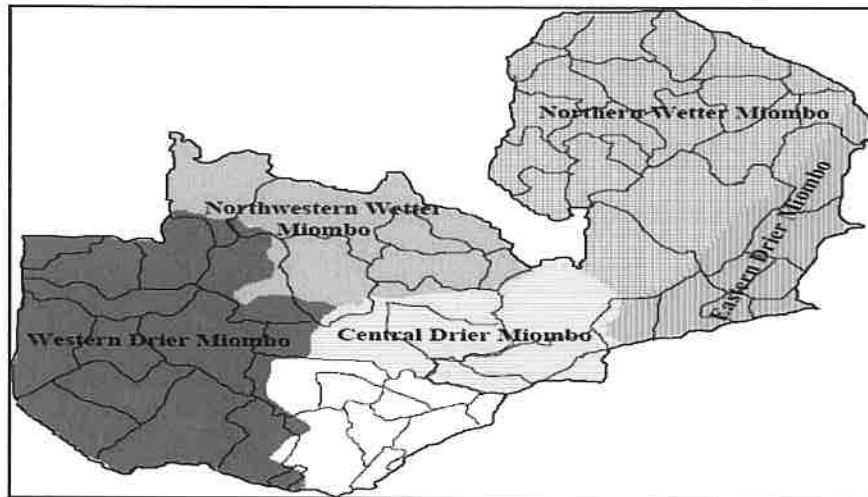


Figure 6: Ecological classification of Miombo woodlands (including Kalahari sand Miombo) in Zambia (Source: Chidumayo, 1987a).

Miombo woodland is considered a stable and resilient vegetation type, capable of recovering following disturbance from fire, logging, or cultivation. Regeneration primarily occurs through vegetative resprouting from stumps and root systems, leading to regrowth miombo following disturbance events.

5.13.1 Vegetation

The flora investigation of the proposed project site was conducted in April 2026. The assessment established that the site does not constitute a natural or pristine habitat but is instead a highly disturbed environment. This disturbance is primarily attributed to extensive anthropogenic activities, notably construction.

Vegetation within the project area is dominated by perennial grasses and scattered woody species typical of disturbed savanna ecosystems. Notable indigenous species recorded during the survey included *Vachellia karroo* (Sweet Thorn), *Senna singueana* (Scrambled Egg Tree), and several other thornveld-associated species. The grass layer was dominated by perennial savanna grasses likely including species of *Hyparrhenia*, *Hyperthelia*, *Chloris*, and *Setaria*.

The herbaceous layer included flowering species such as *Sesamum angustifolium* (Wild Sesame), which provides important nectar resources for pollinators. The survey also recorded the

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presence of invasive and naturalized species including *Lantana camara* (Lantana), *Tithonia rotundifolia* (Red Mexican Sunflower), and *Ricinus communis* (Castor Oil Plant), particularly within disturbed portions of the site.

Evidence of tree cutting, vegetation clearing, and charcoal production activities was observed throughout the project area, indicating ongoing habitat disturbance and modification of the natural vegetation structure..



Figure 7: Dominant vegetation and trees within the proposed Site



Figure 8: Some of the Species recorded within the Site

5.13.2 Tree Cover

Tree cover was the least land cover type in the proposed site covering less than 20 percent of the land. The species found are as itemized above.

5.13.3 Grassland

Grassland habitat was observed dotted in some parts of the site though the habitat. Dominant grasses include genera of *Hypparhenia*, *Eragrostis*, *Aristidia* *Setaria*, and *Digitaria*. Other species include genera of *Imperata*, *Cymbopogon*, *Chloris*, *Dactyloctenium*, and *Urochloa*.

5.13.4 Bare land and Cropland

Bare land and cropland was also observed though cropland was just in patches as the site is overlain by significant rock outcrop.

5.13.5 Species of Special Concern, Sensitive, Endemic and Protected

At the time of the assessment no threatened and endangered species was recorded; In the event that species are discovered, the developers will ensure that such species are recorded and protected.

Species of commercial importance

The study area had no exotic tree species that that could be exploited for commercial purposes.

Protected habitats

There are no protected habitats on site.

Species with potential to become nuisance, vectors or dangerous

Species with potential to become nuisance, vectors or dangerous were not registered at the time of the study, however, if such are found will be handled accordingly.

5.14 Ecology, Vegetation and Habitat Opportunity

While the presence of Miombo woodland and native vegetation within the broader landscape is acknowledged, the ecological assessment indicates that the proposed project site itself has experienced significant disturbance.

Mapping of Vegetation Types and Greenfield vs. Previously Disturbed Areas

The proposed project site cannot be classified as a **greenfield site** as substantial disturbance has occurred due to ongoing development activities. A significant portion of the land has been cultivated, resulting in the removal of most native vegetation and alteration of the natural soil structure. Field observations confirmed that the site is largely characterized by cultivated land and grass-dominated areas indicative of disturbance.

The tree layer is relatively sparse and discontinuous, consisting mainly of scattered thorn trees and small indigenous woodland species. Tree density is generally low due to previous wood harvesting and charcoal production activities. Mature trees provide important nesting and perching habitats for birds and contribute to the structural diversity of the habitat. The figure below shows the google image of the proposed site with significant agricultural activities.



Figure 9: Google Image showing the rate of disturbance

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Identification of Vegetation or Site Areas Suitable for Retention, Restoration or Enhancement

Despite the disturbance caused by agricultural use, opportunities remain to integrate ecological considerations into the site planning process through targeted retention, restoration, and enhancement measures.

A. Retention Zones

Even within heavily cultivated landscapes, certain ecological features may still possess environmental value. These areas should be prioritized for retention where feasible.

Potential retention areas include:

- Isolated mature indigenous trees
- Clusters of mature trees located along boundaries or within the project site
- Natural drainage depressions
- Areas unsuitable for cultivation such as rocky or shallow soil patches

Recommendation:

These features should be retained where possible and incorporated into the project landscaping design as ecological anchor points. Retaining mature trees will contribute to maintaining local biodiversity, improving site microclimate through shading, and enhancing the overall landscape character of the development.

B. Restoration Zones

In sites previously used for agriculture, ecological restoration is often feasible and can significantly improve biodiversity value.

Suitable restoration areas may include:

- Marginal lands with low agricultural productivity
- Compacted soils that have not been permanently sealed or built upon
- Areas adjacent to retained mature trees
- Portions of the site not required for buildings or infrastructure

Recommended restoration measures include:

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- Soil decompaction to improve infiltration and root development
- Reintroduction of indigenous Miombo-associated tree species
- Reseeding with native grass species
- Establishment of vegetated buffer strips around retained vegetation patches

These measures will help gradually restore ecological structure and improve habitat quality.

C. Enhancement Zones

Even where ecological sensitivity is relatively low, opportunities exist to enhance biodiversity within the development through ecological landscaping.

Potential enhancement areas include:

- Site boundaries
- Internal road edges
- Open landscaped courtyards
- Stormwater drainage lines

Enhancement interventions may include:

- Establishment of indigenous green corridors
- Creation of pollinator-friendly gardens
- Installation of bioswales for sustainable stormwater management
- Shade tree planting
- Development of structured urban forestry within landscaped areas

These features can contribute to improved environmental performance while enhancing the aesthetic and functional quality of the development.

D. Development Footprint Areas

Due to the extensive agricultural disturbance observed across the site, a significant portion of the project area can be classified as suitable for development footprint. These areas have relatively low ecological sensitivity and are therefore appropriate for the placement of buildings, roads, parking areas, and other infrastructure.

This condition provides several advantages, including:

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- Minimizing impacts on remaining ecological features
- Simplifying environmental management and approval processes
- Allowing built infrastructure to be concentrated in already disturbed areas

By strategically locating development within these disturbed zones while retaining and enhancing key ecological elements, the project can achieve a balanced integration of infrastructure development and environmental sustainability.

5.15 Socio-economic Set Up

5.15.1 Population and Distribution

Based on the 2022 Census, Lusaka Province is the most populated province in Zambia, with a population of 3,079,964. It is the smallest province by area (21,986) but has the highest population density, driven by rapid urbanization and economic concentration, particularly in the capital city, Lusaka.

Key population details based on the 2022 Census include:

- **Total Population:** 3,079,964 (as of 2022).
- **Population Density:** Roughly 140.7 persons per km².
- **Growth Rate:** The province has an average annual growth rate of 4.6%, higher than the national average of 2.8%.
- **District Concentration:** The majority of the population is concentrated in the Lusaka District, which had 2,204,059 people.

As of the 2022 Zambian Census, the population of Chongwe District is 313,389 people, according to Chongwe Municipal Council data and Data Commons. Some reports indicate a slightly higher figure of 315,121 from the same census. The district is located in Lusaka Province and serves as a major agricultural supplier to the capital.

Key population details for Chongwe District include:

- The population consists of 153,708 males and 161,413 females.
- **Population Density:** The population density is approximately 129.6 people per km² as of 2022.
- **Growth Trend:** Previously estimated around 207,613 in 2020 projections, the population grew significantly to over 313,000 by 2022.

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- **Administrative History:** Before 1997, the area was part of "Lusaka Rural".

The district is home to educational institutions such as University of Lusaka, Chalimbana University and Palabana University. These have been growing over the years and have been a contributor to population increase in the area around the site, particularly the University of Lusaka.

In terms of poverty levels, approximately 45% of the population in Chongwe District lives below the poverty line. The area, which is a semi-rural community near Lusaka, suffers from widespread poverty driven by limited financial service access, high unemployment among youths (20–24 years old), and reliance on unsustainable farming methods. Poverty in this region is often exacerbated by drought-related crop failures and limited land ownership.

Key Aspects of Poverty in Chongwe District:

- **Poverty Rate:** Roughly 45% of residents are considered poor, according to a 2025 report.
- **Financial Exclusion:** About 43% of the community relies on microloans, with limited access to savings accounts (13%) and microinsurance (7%), notes a 2025 study from ResearchGate.
- **Economic Drivers:** High poverty levels are compounded by climate-related factors, such as droughts drying up water sources and ruining crops, impacting the livelihoods of rural households, according to a 2025 JCTR report.
- **Vulnerable Populations:** Women, children, and people with disabilities are disproportionately affected by the lack of food security and economic opportunities.
- **Urban/Rural Context:** While close to the capital, the district faces high rural poverty levels (with national rural poverty estimated around 80% as of 2018), indicates the 2018 Global Call to Action Against Poverty report.

The district's economic situation is characterized by a need for improved financial literacy, better agricultural practices, and stronger community support systems to break the cycle of poverty, say studies published in 2023 and 2025 in ResearchGate (https://www.researchgate.net/publication/391323962_The_effect_of_microfinance_services_on_household_poverty_A_case_study_of_Chongwe_district).

5.15.2 Vulnerability/need for resettlement

According to initial field assessments, there are no households on site and within the vicinity of the proposed project site, thus eliminating the impacts of resettlement, relocation and displacement of local residents.

5.15.3 Administration System

The **Lusaka Provincial Administration (LPA)** is the regional extension of the Zambian Central Government, responsible for supervising and coordinating the implementation of government programs across Lusaka Province. It operates under the Office of the President and is headquartered on Independence Avenue in Lusaka.

Leadership & Structure

The administration is organized into political and technical wings to ensure efficient service delivery:

- **Provincial Minister:** Who is also a Member of Parliament, serves as the political head and government representative for the province.
- **Permanent Secretary:** is the administrative head, managing day-to-day operations and civil servants.
- **Deputy Permanent Secretary:** Supports the Permanent Secretary in administrative functions.

Administrative Mandate

The LPA oversees **six districts**: Chilanga, Chongwe, Kafue, Luangwa, Lusaka, and Rufunsa. Key functions include:

- **Coordination:** Aligning various government departments and NGOs to ensure policies are implemented effectively.
- **Development Planning:** Facilitating projects through the Provincial Development Coordinating Committee (PDCC).
- **Supervision:** Monitoring the performance of local councils and district administrations

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Each district is divided into constituencies which are further divided into wards. These are headed by elected Members of Parliament (MPs) and Councillors. At community level, counsellors are assisted by resident development committee chairpersons.

Traditional Governance

Traditional rulers in Lusaka Province, primarily representing the Soli people, play a key role in local governance, particularly in rural districts like Chongwe, Rufunsa, and Luangwa. Prominent leaders include Senior Chieftainess Nkhomeshya (Chongwe), Chief Bunda Bunda (Rufunsa), Chief Mphuka, and Senior Chief Mburuma (Luangwa), along with Chieftainess Chiawa and Chief Chipeco (Chirundu).

Key traditional leaders and their areas in Lusaka Province include:

- **Senior Chieftainess Nkhomeshya Mukamambo II:** Chongwe District (represents the Soli people).
- **Chief Bunda Bunda:** Rufunsa District.
- **Senior Chief Mburuma:** Luangwa District.
- **Chief Mphuka:** Luangwa District.
- **Chief Mpanshya:** Rufunsa District.
- **Chief Shikabeta:** Rufunsa District.
- **Chieftainess Chiawa:** Kafue District.
- **Chief Chipeco:** Chirundu District.

These leaders are central to traditional ceremonies such as the *Chakwela Makumbi* (Chongwe), *Mbambara* (Luangwa), and *Dantho* (Luangwa). They are active in local development, agricultural initiatives, and advocating for traditional land rights, often engaging with the national government on administrative matters

Traditional governance is and has always been an important aspect of the way of life of people especially in the developing world where chiefs administer land and is the chief custodian of the customary land. The chief is in charge of governing all the people of the area. The chief appoints tribal Leaders, the Village headmen and women who help him with the day to-day administration of the chiefdom. Village headmen head villages while the chief is responsible for the whole Chiefdom.

The headmen are in charge of handling important matters that relate to land allocation, dispute resolution, adultery and cases of witchcraft. The people, under Chiefs, have no title for their land because it is customary land. To acquire this land for settlement and development ventures, one

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needs to get authority from the chief and enjoys private land use rights, which descendants can also inherit. However, the chief through village headmen and women still retains the ownership of the land, which is the reason why this land is not held on title and cannot be bought or sold. However, land administration in Chongwe falls under two distinct authorities which are the Local Authority (i.e., under the district council), and traditional or Customary.

The site falls under the traditional leadership of **Senior Chieftainess Nkomeshya Mukamambo II** (Elizabeth Mullenje). She is the chieftainship of the Soli people of Chongwe District in Lusaka Province. She has been a chieftainess in the area since 1976. She is the second female Nkomeshya since 19th century Mukamambo I

As Chieftainess, Nkomeshya plays the role of primary rainmaker during the annual Chakwela Makumba traditional ceremony held annually in October. During the Chakwela Makumbi, literally translating to "pulling down the clouds", Chieftainess Makumbi pleads with the ancestral spirits to bless her people with rain. Among her many tasks during the event, Chieftainess Nkomeshya kicks off the farming season by being the first to plant a seed.

5.15.4 Economic Activities and Livelihoods

The area around the site presents various economic activities and means of livelihood. The key observed activities include:

Construction bulk material supply

Illegal rock breaking was observed on site. This activity has arisen out of demand for aggregate in nearby developments and the fact that the nearby quarry was closed. As a result, the area has seen the proliferation of bulk aggregate traders selling a variety of building materials.

Agriculture

The closest human habitation engages in agriculture production. The predominant crops grown are maize and seasonal vegetables. The site has no agricultural fields currently.

Commerce Trade and Industry

Other commerce and trade activities in the area include sale of stock feed, provision of mobile money services.

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With the two malls being located close to the site, a number of local residents are employed as workers in the two malls.

Makeshift Restaurants, beer and grocery shops are also present especially at the bus stop further west of site.

Financial institutions

They are formal financial institutions like ABSA bank, Stanbic bank and Zanaco. However, Financial transactions are normally carried out by Mobile money booths and cell phone transactions facilities. These are operated by local individuals representing established companies.

Tourism

There are a number lodges in the area. The closest hotels are at the airport and Cresta Golfview both which are 10km away. There is no other tourism targeted activities and accommodation onsite.

5.15.5 Health and Education

Education

According to official statistics Educational institutions in and around the nearby areas of Chongwe include primary schools such as Chongwe Primary, High Life Academy, Chongwe Young Learners Academy, and Mpemba Primary School. Higher education institutions in the wider Chongwe area include Chalimbana University and Palabana University.

Schools and Colleges in Chongwe (General Area):

- **Primary/Secondary:** Chongwe Primary School
- **Primary/Secondary:** High Life Academy
- **Primary/Secondary:** Chongwe Young Learners Academy
- **Primary/Secondary:** Mpemba Primary School
- **Higher Education:** Chalimbana University (Main Campus)
- **Higher Education:** Palabana University (formerly Palabana College)
- **Higher Education:** University of Lusaka (UNILAS) - Silver Rest Campus
- **Vocational/Nursing:** Local Government College (Chalimbana)
- **Vocational/Nursing:** Chongwe College of Education

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- **Vocational/Nursing:** Best Care Institute School of Nursing

These institutions are situated within the broader Chongwe District, a region undergoing rapid development in education, with numerous public and private, primary and secondary schools.

The area in the immediate vicinity of the site has been close to Chelstone and Avondale, particularly near the Kenneth Kaunda International Airport (KKIA) roundabout, is a major educational hub in Lusaka and Chongwe. It features a mix of long-standing government schools, prestigious private academies, and specialized tertiary colleges.

Secondary & Primary Schools

The schools in these wards offer various curricula, including the Zambian national syllabus and international options like Cambridge. These include;

- Chelston Secondary School- High School.
- Chakunkula Primary School.
- New Avondale Academy- Private school.
- Oakwood School- Private School.
- Joma School- Private School.
- Eastview School- Private School
- Great North Road Academy-Private school

Tertiary & Professional Colleges

These institutions are situated along or near the Great East Road, providing easy access to the airport roundabout.

- Natural Resources Development college
- University of Lusaka
- University of Zambia
- Chalimbana University.

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Health

Chongwe District's health status is currently defined by a heavy focus on reducing maternal mortality, combating malaria, and responding to localized cholera outbreaks. Recent efforts have centered on upgrading infrastructure and increasing community engagement to bring quality healthcare closer to its semi-rural population of approximately 137,000.

Key Health Indicators & Challenges

- **Maternal & Child Health:** This is a top priority, with a goal of ensuring zero maternal deaths during delivery. New facilities, such as the Lwiimba Ward maternal annex, have been built to provide safer delivery environments.
- **Malaria Prevalence:** Recent studies indicate an adult malaria prevalence of **14.2%** at the district hospital, which is higher than the average for the broader Lusaka district. Prevalence is notably higher among individuals with lower education levels.
- **Communicable Disease Outbreaks:**
 - **Cholera:** As of early 2026, the district is actively combating cholera outbreaks, particularly in areas like **Kwamwena Meanwood**, through community engagement and prevention education.
 - **Rabies:** Active vaccination campaigns are ongoing to prevent human rabies cases, which are 100% preventable through dog vaccination.
- **Environmental Health:** unsustainable farming practices and heavy chemical use in vegetable production—a major industry in Chongwe—pose ongoing risks to human and environmental health.

Health Infrastructure & Services

- **Chongwe District Hospital:** Serves as the primary referral point for the district.
- **Upgraded Facilities:**
 - The **Chongwe Rural Health Centre** recently saw its laboratory rehabilitated by the AIDS Healthcare Foundation (AHF) to improve diagnostic accuracy.
 - The **Kalimansenga Health Post** was commissioned to serve communities that previously had to travel 20-30 kilometers for care.
- **Sanitation Improvements:** Ongoing projects include renovating hospital incinerators and installing new water stands and ablution blocks to strengthen hospital hygiene

In Chongwe District, communicable diseases such as malaria and non-bloody diarrhea remain the most frequently reported illnesses. However, there is a rising "double burden" as non-communicable diseases (NCDs) like hypertension and diabetes increasingly contribute to morbidity.

Table 11: Prevailing Disease and Occurrence Rates in Chongwe

Disease Category	Specific Disease	Occurrence Rate / Reported Cases	Notes
Communicable	Malaria	14.2% prevalence among adults	Higher than the Lusaka district average.
	Non-Bloody Diarrhea	24,902 cases (Jan 2025–Feb 2026)	Highest rates among children under five.
	HIV/AIDS	Significant caseload	Zambia's leading cause of death nationally.
	Tuberculosis	Priority disease	Case investigations for drug-resistant TB reported in 2025.
Non-Communicable	Hypertension	33.8% (among HIV+ clients)	3,899 new cases recorded district-wide in 2018.
	Diabetes (Type II)	37.4 cases per 1000 person-years	887 new cases recorded district-wide in 2018.
Maternal & Neonatal	Maternal Mortality	156 deaths (Lusaka Province, 2025)	Province-wide rate; Chongwe-specific data often grouped here.
	Neonatal Mortality	1,226 deaths (Lusaka Province, 2025)	Improved from 1,363 in 2024.

Key Trends

- **Seasonal Peaks:** Malaria transmission is highest from **March to May** (end of rainy season), though cases persist year-round.
- **Vulnerable Populations:** Adults with lower education levels and children under five are at the highest risk for malaria and diarrheal diseases, respectively.
- **Growing NCD Burden:** Hypertension is notably high among men (64%) and those in the 18–45 age bracket (57.2%)

HIV/AIDS Prevalence

The estimated HIV prevalence in **Chongwe District** is approximately **13.5%**. While this is lower than the provincial average for **Lusaka Province** (14.4%–16.1%), Chongwe remains a high-burden area due to its growing population and high mobility as an economic center.

HIV Indicators in Chongwe (2025 Estimates)

- **Prevalence Rate:** Approximately **13.5%** of the adult population.
- **New Infections:** In 2025, Chongwe recorded **641 new HIV infections**, ranking among the top 10 districts in Zambia for new cases.
- **Treatment Reach:** The district has significantly expanded its Antiretroviral Therapy (ART) sites, with recent reports indicating a retention rate of approximately **83%** for clients on treatment.
- **Vulnerable Groups:** New infections are disproportionately high among **adolescents and young women (AGYW)** aged 15–24, who face a risk more than three times higher than their male peers.

Context within Lusaka Province

- **Provincial Prevalence:** Lusaka Province has the highest HIV prevalence in Zambia, estimated at **16.1%** overall.
- **Comparative Standing:** Chongwe is classified as a "Medium" prevalence district compared to "Severe" areas like **Namwala** (23.3%) or neighboring **Lusaka District** (16.5%).

Epidemic Control Targets (95-95-95)

As part of Zambia's broader goal to end AIDS by 2030, the National AIDS Council (NAC) reported that the country has reached the **95-95-95** targets:

- **96%** of people living with HIV know their status.
- **98%** of those diagnosed are on treatment.
- **97%** of those on treatment have achieved viral load suppression

Table 12: Chongwe HIV Prevalence & Population Profile (2025 Estimates)

Indicator	Value / Statistic	Significance
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Indicator	Value / Statistic	Significance
Total Population	182,174	Second largest district in Lusaka Province
HIV Prevalence (Adults)	13.5%	Classified as a "Medium" prevalence district in Zambia.
New HIV Infections	641	Ranked 8th highest in Zambia for new infections in 2025.
Most Affected Group	Females (15-39 years)	Women are disproportionately affected, often making up over 70% of those living with HIV.
Pediatric Prevalence	1.2%	National estimate for children (2-14 yrs) applied to local testing context.

The Government of Zambia has put up sensitization measures to ensure that everyone is aware of HIV/AIDS.

Measures include radio and TV programmes on HIV/AIDS, Voluntary counseling and testing made free and easily accessible, free HIV/AIDS talk line and availability of condoms in most retail outlets at an affordable price.

Some NGOs are also actively involved in the promotion of health in the district. Through Home Based Care, some churches are involved in the care of chronically ill patients. In the provision of social welfare services, the Department of Social Welfare under the Ministry of Community Development and Social Services in the district handles all matters relating to the helping of vulnerable and special groups in society such as women, orphans and vulnerable children, the aged and the youths in most areas of life including education and health.

5.15.6 Water and Sanitation

Water Supply Infrastructure

There is mix of water supply systems in the area close to the site. Some parts have no central water and sanitation and residents depend on onsite water supply using boreholes. Other parts of

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the district have piped. The site has a mains supply nearby running along Airport Road. Further, there is a commercial borehole and water tank in Meanwood Ndeke which is close to the site.

Sewerage System

The area around the site is reported to have both sewer mains and onsite treatment predominantly septic tanks and soakaways. The site itself has no visible sewer mains but it is reported that the mains is nearby. The closest sewer ponds are the ponds servicing the KKIA.

5.15.7 Transport/Communication

Transport

Chongwe district is connected to the rest of Zambia through the Great East Road. This is a Trunk road connecting Zambia and Malawi with a branch to Mozambique. The road and is tarmac and has a high volume of traffic. Access to the site from the CBD will be off this road turning into the Airport Road at the Airport Roundabout.

1. Vehicular Traffic

The proposed development is located along Airport road which has high vehicular traffic.

2. Aerial Traffic

The Kenneth Kaunda International Airport is the main international gateway for air travel. Located only 10km from the site this will be the main airport for guests travelling from outside the country.

Communication

Chongwe has access to some mass broadcasting and telecommunication infrastructure which includes:

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- ZNBC TV: The Zambia National Broadcasting Corporation (ZNBC) TV1, TV2 and TV3 with good television reception to most parts of Nsama. ZNBC is a state-owned broadcaster.
- Radio stations: The following stations are either based in or specifically licensed for the Chongwe district:
 - **Chongwe Radio (Chongwe Community Radio)** The district's flagship community station, broadcasting on **104.5 FM**. It focuses on local news, the revival of the **Soli language**, and community programs like the CDF Hour.
 - **Xclusive Sports FM**: A commercial station newly licensed to operate in Chongwe.
 - **Chongwe FM Radio**: Another recently licensed commercial station for the district.
 - the other national radio stations ZNBC Radio 2, Radio Christian Voice, Parliament Radio, ZNBC Radio 1.
- State-owned newspapers: Newspapers are delivered to Chongwe district by courier services.
- Internet accessibility is available within the area mostly via cell phone connectivity and fiber connection. Some residents have satellite internet connectivity though this is a recent development. There are some internet café and printing facilities near site at the shopping malls.
- Chongwe district, in general, is serviced with the three Mobile Service Providers. Namely: MTN, Airtel and Zamtel. Access to these networks is relatively stable with sporadic access in locations away from the CBD.

5.15.8 Energy Services

Chongwe district is connected to the national electricity grid ZESCO for all power supply needs. Some facilities also have backup power supply in form of generators, and solar PV systems are used in case of ZESCO power interruption.

5.15.9 Traditional and Religious practices and rites

Ethnic – Tribal Grouping

The In Chongwe, the **Soli** people are the indigenous and dominant ethnic group. The district serves as the traditional heartland of the Soli-speaking people, though it has become increasingly cosmopolitan due to its proximity to Lusaka.

Table 13: Ethnic & Tribal Profile: Chongwe District

Category	Details
Indigenous Tribe	Soli
Primary Language	Chisoli (often blended with Nyanja in urban areas)
Traditional Leader	Senior Chieftainess Nkhomeshya Mukamambo II
Traditional Ceremony	Kailala Ceremony (celebrated annually)
Key Chiefdoms	Chieftainess Nkhomeshya and Chief Bundabunda

Demographic Context

- **The Soli People:** Historically known as farmers and hunters, the Soli have maintained a strong cultural identity through the **Kailala Ceremony**, which celebrates their heritage and harvests.
- **Ethnic Diversity:** While the Soli are the primary group, you will find a significant presence of **Nyanja** and **Bemba** speakers in "commuter" areas like Silverest, Meanwood, and Chongwe Central, driven by migration from the capital.
- **Traditional Authority:** The district is governed traditionally by the **Busoili Royal Establishment**, led by Senior Chieftainess Nkhomeshya Mukamambo II, who is one of Zambia's most prominent traditional leaders

Religious Beliefs and Culture

Zambia is a Christian nation. The Christianity philosophy requires that the districts social, economic and cultural development agenda is based around Christian values and principles at every level of society and governance. These Christian values and principles include: good neighbourliness; honesty; respect for others; accountability; and service to others.

Senior Chieftainess Nkhomeshya Mukamambo II is not only a political and traditional leader but also a vital spiritual figure for the **Soli people**. Her spiritual authority is rooted in a blend of ancestral lineage and modern faith.

Core Spiritual Beliefs & Roles

- **Medium of the Ancestors:** The name "Nkhomeshya" is a dynastic title. The Chieftainess is believed to be the living link between the Soli people and their ancestors. She is the custodian of the **royal shrines** and is responsible for interceding with ancestral spirits to ensure the district receives adequate rain and fertile harvests.
- **The "Rainmaker" Tradition:** Historically, the Nkhomeshya lineage is associated with the spiritual power to "call the rain." Even today, her presence at ceremonies is viewed by many locals as a spiritual blessing for the agricultural season.
- **Kailala Ceremony:** This annual event is the spiritual peak for the Soli. It serves as a ritual of thanksgiving to the spirits for protection and harvest. During the ceremony, the Chieftainess performs traditional rites that reinforce the moral and spiritual fabric of the community.
- **Integration with Christianity:** Like many modern Zambian traditional leaders, the Chieftainess balances her traditional roles with **Christianity**. She frequently attends church services and collaborates with religious leaders, viewing traditional customs and Christian faith as complementary pillars of Soli identity.

Environmental Spirituality

The Chieftainess holds a deep spiritual conviction regarding **land and nature**. She often frames the protection of Chongwe's forests and rivers as a sacred duty to future generations and the ancestors, leading to her strong stance against land encroachment and environmental degradation.

.Archaeological Sites of Interest

While there aren't many widely commercialized archaeological sites within Chongwe, the district contains several significant areas of historical and scientific interest under the jurisdiction of the National Heritage Conservation Commission (NHCC).

Key Archaeological & Heritage Sites

- **Chongwe Iron Production Sites:** Research has identified numerous Early Iron Age smelting sites across the district. These sites provide evidence of a two-stage iron production process (smelting and smithing) dating back over two centuries. Notably, these production areas were typically secluded from human settlements for socio-cultural reasons.
- **Chongwe River Exploration:** Recent investigations near the Chongwe River Camp in the Lower Zambezi area have uncovered remains of trade and human dwelling, including pottery, iron ore, beads, and shackles.
- **Chinyunyu Hot Springs:** Located roughly 35–45 kilometers east of Chongwe town, this is a gazetted National Monument. While primarily a geological site, it holds immense heritage value for the local community and is recognized by the NHCC for its tourism and scientific potential.
- **Makuyu Royal Palace & Ancestral Shrines:** These sites serve as the spiritual heart of the Soli people. During the annual Chakwela Makumbi ceremony, rituals are performed at the foot of ancestral shrines to cleanse and bless the land, making them critical sites of intangible cultural heritage.

Nearby Historical Landmarks

Tazara Memorial Park, Museum Plot No. LN/4034/1 along Great East Road in Silverest Area of Chongwe District

Located in the Silverest area of Chongwe, this museum and cemetery commemorates the Chinese workers who died during the construction of the TAZARA Railway in the 1970s.

Chongwe Bridge Historical landmark

A historical landmark famous for its role during the liberation struggle, specifically noted for being bombed by Rhodesian forces in 1978.

Leopards Hill caves Tourist attraction

Situated just outside the district boundary, this extensive cave system has yielded Middle and Late Stone Age evidence and remains a popular site for guided archaeological tours.

5.15.10 Consultations and Public Participation

The public participation for the ESIA process included consultative (scoping) meeting with key stakeholders which took place from the on Monday 19th January 2026. Key stakeholders invited include the following: The Local Police, Chongwe District Council, Chongwe District Administration (Office of the District Commissioner- DC). Further consultations were arranged with the local traditional leadership. Further Stakeholder Engagements were held with the District Administration and the traditional leadership. Records of these meetings are annexed to the document

The key issue that came out of the scoping meetings was the need to employ local people especially in non-specialized tasks, the development should use local resources like blocks instead of bringing that all from elsewhere.

6.0 IDENTIFICATION OF IMPACTS

The biodiversity impact assessment for the proposed COMESA Head Office Mixed-Use Development on farm 4169 has been undertaken in accordance with the stated goal and objectives of the biodiversity study. The assessment is informed by the nature, scale, and components of the proposed development, which covers approximately 43,000 square meters of built infrastructure within a 14-hectare site located along Airport Road in Chongwe District.

The proposed development includes the construction of office blocks for the COMESA Head Office, a conference centre, retail spaces, a four-star hotel, parking areas, and other auxiliary facilities, supported by associated infrastructure such as internal roads, drainage systems, water supply facilities, and a dedicated on-site sewer treatment plant. Water supply will be provided through on-site boreholes with overhead storage tanks, while wastewater will be managed through a properly designed internal sewer reticulation system connected to an on-site treatment plant.

Construction activities are expected to commence in the fourth quarter of 2026 and will involve selective land clearing, earthworks, foundation excavation, trenching, access road construction, superstructure development, finishing works, and landscaping. The facility will be enclosed within a perimeter block wall fence with controlled access points to ensure safety and security.

In line with the project's vision of sustainable urban development, the development seeks to integrate environmental sustainability principles into the project design. The development aims to stimulate local economic activity, provide employment opportunities, and deliver modern office and accommodation facilities supported by integrated infrastructure. The project also adopts a regenerative environmental design approach, recognizing waste as a resource and promoting efficient water, energy, and infrastructure management systems.

The biodiversity assessment has therefore focused on identifying potential ecological impacts associated with site preparation, construction activities, and long-term operation of the mixed-use development, while also identifying opportunities for ecological enhancement within the project landscape.

Consistent with the objectives of the biodiversity study, the assessment has:

- Identified and described potential ecological impacts associated with vegetation clearing, earthworks, infrastructure development, and increased human activity within the project site;
- Assessed the ecological sensitivity of the site, including the presence of remnant vegetation and mature trees within an otherwise disturbed agricultural landscape;
- Identified appropriate mitigation measures to minimize potential biodiversity impacts and ensure compliance with national environmental management requirements;
- Evaluated residual ecological effects following the application of mitigation measures;
- Identified opportunities for biodiversity enhancement, including retention of mature trees, ecological landscaping, and integration of green infrastructure elements within the development;

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- Outlined monitoring requirements to ensure that mitigation and enhancement measures are effectively implemented during construction and operation.

Given that the site has experienced substantial disturbance from previous agricultural activities, the ecological sensitivity of the project area is considered relatively low. Nevertheless, scattered mature indigenous trees and localized vegetation patches remain and provide opportunities for selective retention and integration into the project's landscaping design. Consequently, the biodiversity impact assessment places emphasis not only on impact mitigation, but also on identifying ecological enhancement opportunities within the development footprint, consistent with sustainable urban development principles.

The following sections present the identified biodiversity impacts, significance assessment, and proposed mitigation and enhancement measures associated with the proposed development.

6.1 Biophysical Environment

6.1.1 Positive Impacts

6.1.1.1 Eliminating Illegal Garbage dumping

One of the illegal activities observed on site was the illegal dumping of garbage from nearby residences. The project will put a stop to this vice hence contribute to the well-being of the area.

6.1.1.2 Eliminating Illegal Rock breaking

With the closure of the nearby quarry, the site has over the years become susceptible to illegal rock breaking and quarrying. This is unsafe and poses a safety risk to both perpetrators and the general public. As such the project will have a positive impact by curtailing the vice.

6.1.2 Negative Biophysical Impacts

6.1.2.1 Effects on Ecology

Natural Environment

Construction Phase

The project area is characterized by vegetation and to pave way for the proposed development some mature trees on site will have to be removed. The clearing of vegetation along the project

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site and clearing of access routes is likely to affect the ecological value of the area. Some of these areas are home to a diversity of plant and animal species. The cutting of the trees will also have an impact on the climate. This is because trees act as carbon sinks and so when the trees are cut, depending on how the trees are disposed of, the carbon is released to the atmosphere and thereby contributes to global warming which leads to climate change. Climate change leads to ecological imbalance as some species are not able to adapt to the effects of climate change (floods, droughts, etc.).

Further, the site is underlain by considerable bed rock with visible outcrops predominant. This entails rock breaking for foundations and basements which will disturb the biophysical environment.

Introduction of alien species

Though insignificant, the movement of workers and construction plant and equipment, and also the re-vegetation of disturbed areas on site may result in the introduction of alien species.

Operation phase

The ecological effects during operation phase of the project area expected to be minimal as no trees are expected to be cut and new structures are expected to be put up. The local fauna may return during this phase.

Impacts on Ecologically Sensitive Areas

The tree line to the east of the site is ecologically sensitive. These sensitive areas could be impacted in several ways during construction. Physical disturbances and earthworks will cause eroded or loose soil to wash into these systems, particularly during the rehabilitation of existing culverts and construction of new ones.

Impact on Fauna

The potential impacts that the proposed development could have on animal life and birdlife in the proposed development area can be grouped as follows:

1. Habitat destruction through the construction of the project infrastructure
2. Disturbance due to the construction and operation of the project infrastructure

During the construction phase of spatial developments such as hotels, some extent of habitat destruction and alteration inevitably takes place. This happens with the construction of service roads, and the clearing of land for the building. These activities could have an impact on animals, birds breeding, foraging and roosting in or in close proximity, through destruction of habitat.

Disturbance

The noise and movement associated with construction activities and the noise of the machinery used itself can potentially be highly disturbing to wildlife. Many animals and birds are highly susceptible to disturbance, and should this disturbance take place during a critical time in the breeding cycle for the birds, for example when the eggs have not hatched or just prior to the chick fledging, it could lead to temporary or permanent abandonment of the nest or premature fledging. In both instances, the consequences are almost invariably fatal for the eggs or the chicks. Such a sequence of events can have far reaching implications for certain large, rare species that only breed once a year or once every two years.

Animals using the habitat of the proposed site could be disturbed by construction activities and subsequent vehicle traffic along the corridor. However, some animal and bird species can tolerate surprising high levels of disturbance if it is not coupled with intentional or unintentional harassment. These species may continue to forage undisturbed despite moving machinery within the site. On the other hand, some species are exceptionally sensitive to disturbance and will readily abandon an area after the slightest disturbance. Blasting and associated infrastructure rock drilling activities during the construction phase (if any), as well as the noise associated with the machines, could have a long-term impact on bird and fauna populations along certain sections of the site.

6.1.2.2 Impact on Hydrology

Construction Phase

The proposed development will cause some temporary changes in hydrology during the construction phase. Changes to be caused by this development are as follows:

Surface Water

Possible contamination of such environments may result from poor handling of fuels and lubricants resulting in oil spillages from construction vehicles and machinery during the construction phase. During the rainy season, soil from the earthworks may be washed into the natural drainage, consequently affecting the water quality negatively as there will be an increase in total dissolved and suspended solids.

Clearing of vegetation at the project site will likely cause siltation, especially during the rainy season (November – March). This is because trees hold the soil together and when the trees are

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cut from the root up, there is potential for erosion of the exposed soils and deposition into the drainage channels. If not properly handled, hydrocarbons (such as fuel and oil spills from machinery) may find their way into the water vessels as well and contaminate surface water during the construction stage.

The predicted environmental impact is contamination of surface water (increased suspended solids and oil content). The environmental receptors of this contaminated water are the local people, especially downstream users. The impact on surface water will be direct but significantly low and reversible.

The proposed development also has no potential to deplete the surface water resource in the area as this is largely non-existent. However, the developer will ensure that the plans are in place for surface water management.

Ground Water

Sources of ground water pollution during this phase are sewage waste and oil/fuel spillages from construction machinery which can seep through the soil and pollute ground water. Proper waste management protocols and effective maintenance of machinery should be put in place to ensure potential contamination is avoided.

Operation Phase

Sewage waste if not managed adequately may result in the contamination of the surface water features existing in the project area.

6.1.2.3 Impact on Soil

Construction Phase

During site preparation and construction phases, trees will be cut which will lead to loosening of the soil and there result in soil erosion in windy and rainy conditions. The scraping off of top-soil during site preparation and construction will also loosen the soil particularly along the slope sections of the site which might lead to soil erosion especially if construction work is conducted during the wet season when soils are generally loose. Improper drainage of runoff from the road can also cause erosion, and lead to sediment loading in the water courses.

It is likely that oil used for machinery on site may be carelessly stored, handled, or drained from construction vehicles, plant and equipment. This could lead to contamination of the soil and water bodies.

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Disposal of solid and liquid waste and accidental petroleum and oil spillage around the construction site are likely to contaminate the soil.

Operation Phase

During this phase solid and liquid waste if not handled properly may be a source of soil contamination as waste piles (food waste and sewage waste) may serve as bacteria breeding areas.

6.1.2.4 Air pollution

Air pollution is another key issue of concern for the project. Land clearing for construction, material handling (loading and off-loading) are dust generating activities. Material stockpiles can also be a source of air pollution under windy conditions if not properly covered.

The movement of construction equipment and vehicles along access roads may generate dust that is deposited on surrounding vegetation which may cause a small reduction in biological productivity. Apart from it being an environmental pollutant, dust is equally a nuisance and an occupational as well as a public health issue of concern. Generation of dust has potential to cause nuisance, occupational and public health concerns.

Similarly exhaust fumes from increased traffic to and from the construction site has potential to contribute to air pollution. The impact is localized and can be severe depending on how close the worker and/or human settlement is to the source of air pollution. They are no active neighboring structures and as such Air quality disturbance to others will be at a minimum.

6.1.2.5 Waste generation

Construction Phase

A number of waste streams are expected to originate from project. While the waste produced during the site preparation works will be of short duration, considerable amount of waste will continue to be produced during construction phase.

The various kinds of waste will include solid and liquid waste. Unsafe disposal of waste (for example, paper and food etc.) poses a health risk as waste piles may become a breeding site for bacteria that causes diseases like cholera and typhoid. Empty used bottles/ storage cans used by the workers on site present tripping hazards. Empty used bottles/ storage cans if not disposed of at approved disposal sites may lead to accumulation of waste on the streets. If the bottles are not properly disposed of, they may be re-used for uncertified water and other beverages by street kids and other illegal entities.

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During the construction phase, generation of rubble material or construction waste such as steel parts, scrap metal, plank pieces, etc. is unavoidable and if this waste is not properly managed may become a health and safety risk causing tetanus from metals and trip hazards from poor housekeeping practices. Therefore, rubble and construction waste should be piled in one area of site and in bins to prevent health and safety risks.

The waste that is generated will have to be managed and disposed of appropriately in accordance with its waste classification. Excess excavated material generated by the project will be disposed of within the designated area.

Operation Phase

During this phase the waste expected to be generated is organic waste (food waste, fruit, vegetable peels, and sewage and flower trimmings), liquid waste (wash water and water from mopping floors) and Solid waste (broken furniture, old newspapers, plastics, tissue paper, empty boxes, bottles etc.). This waste, if not managed properly, may result in the developer losing clients because no one wants to be in a place with poor sanitation, smelly and with waste matter all over. In appropriate management of the waste generated during this phase may also impact the health of those coming into the premises negatively by inducing respiratory illnesses and bacteriological diseases.

6.1.2.6 Noise and Vibrations

The use of heavy machinery such as graders and bulldozers is a potential source of noise. Noise and vibration may also be generated during construction by concrete mixers and transportation vehicles. Generally, construction noise exceeding a noise level of 70 decibels (dB) has significant impacts on surrounding sensitive receptors within 50m of the construction site.

Noise is a nuisance and may bring about annoyance, sleep disturbance and interference with communication.

6.2.1.7 Impact on landscape and aesthetics

Construction Phase

Activities such as clearing using heavy machinery have potential to change the natural landscape and may therefore degrade areas of scenic beauty. Areas will need to be cleared for the

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construction of roads and homes, as well as trenching where the water pipeline will subsequently be laid. These activities have the potential to destabilize the existing natural ecosystems within the respective project areas. However, the development will be a green eco-friendly development, and bush-clearing activities will be kept to a minimum. After construction of roads, road reserves will be re-vegetated with plants and shrubs.

The clearing and leveling activities that will be carried out for the establishment of the proposed structures will not have any impact on the local topography. Neither will the trench where the pipes will be laid cause any significant impact on the topography. The removed soil will be replaced and compacted.

Installation of structures and compacting using heavy machinery has the potential to change the natural landscape and may therefore have an impact on local aesthetics. This impact is, however, expected to be minimal.

Operation phase

If the buildings and structures are not built according to the approved plans, the development may not be architecturally uniform. This can be an aesthetic nuisance. In addition, heaps of unprocessed raw materials or piles of indiscriminately disposed of waste, can have a significant impact on the appearance of the local environs.

6.2 Socio-economic and Cultural

6.2.1 Positive Impacts

6.2.1.1 Increase in employment opportunities

The project will create employment opportunities for people in the project area during construction phase and operation phase. This positive impact of this development will improve the livelihoods of the affected communities. This impact is of high significance. The onsite construction opportunity will create jobs.

6.2.1.2 Public Revenue

Multiplier effects resulting from increased employment will include increased public revenues such as taxes (PAYE to ZRA, VAT) and contributions to NAPSA from formally employed persons.

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6.2.1.3 Promotion of Chongwe as a Tourist Destination

The COMESA Head Office will assist in the promotion of Chongwe as an International Tourist destination by adding the following facilities:

- 200-key 4-star Hotel: The hotel will provide bed spaces to tourists and guests.
- Conference centre: the conference centre in conjunction with the hotel will make the site ideal for international meetings which in turn will promote local tourism.

6.2.1.4 Capacity Building and Skills Development

The project will contribute to capacity building and skills development of the people who will be employed through on-the-job training and interaction with other skilled personnel from different disciplines. The developer is committed to ensure skills transfer to locals in construction skills.

6.2.1.5 Increase in Available beds

The COMESA Head Office will generate an additional 200-key/rooms, increasing the number of tourism bed space in the area.

6.2.1.9 Promotion of Tourism Arrivals and Spend in Zambia

The current complex will have a number of international guests coming for meetings and conferences. This will increase the touristic spend in the area and the country.

6.2.1.10 Branding and Promotion of Chongwe as a Conferencing/ Tourist Destination

Tourism is seen as an alternative income generation source from the age-old mining industry. The increase of touristic destination in Zambia will make this a reality. By providing bed spaces and conferencing facilities in one location, the project will add to branding Chongwe as a conferencing and tourism destination. Moreso with the international airport being only 10km away in the same district.

6.2.1.11 Sense of National Pride

This project will add to the national status of Zambia as a host of major regional and international organizations.

6.2.2 Negative Impacts

6.2.2.1 Spread of HIV/AIDS & STIs

Construction workers will have extra disposable income. This sudden acquired affluence may translate itself into social behaviour including excesses on beer and other social vices e.g., prostitution. This will undoubtedly lead to an increase in commercial sex activities and hence an increase in HIV transmission levels and the spread of STIs. This is a negative and indirect long-term impact which is relatively high in females and school going pupils regardless of sex and can be transmitted to people located faraway. This is an indirect and negative impact of high significance due to it being irreversible.

6.2.2.2 Health and Safety Risks

The implementation of the project will involve activities and procedures with potential risk to the health and safety of workers and members of the public. These will include:

- Working in area covered with vegetation (may have snakes and plants that cause allergies)
- Movement of machinery around the site,
- Work around services,
- Use of machinery to perform activities, etc. Improper usage of construction equipment can lead to human fatalities. Human life can also be lost through road accidents during the transportation of construction raw materials. This is a negative and direct impact, localized and of low significance
- Work with open flames (e.g., welding) and cutting operations,
- Work in dusty environment,
- Work at heights (during fitting of pipe works and inspection of machinery),
- Work in confined spaces,
- Work in noisy environment, etc.

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- Risk of malaria due.

6.2.2.3 Noise and vibrations

Project activities such as excavations and transportation during the project phases have potential to generate noise and vibrations. Land clearing and construction involve use of heavy equipment and these generate high levels of noise.

Apart from being a nuisance, high noise levels (above 85dB) can harm hearing ability if sustained over a long period of time. Similarly, vibrations can also cause damage to property such as cracking. Patients of hypertension can also have their situation worsened under high noise and vibration conditions. The noise is also likely to scare the animals and birds in the area.

6.2.2.4 Dust Nuisance

Apart from it being an environmental pollutant, dust is equally a nuisance and an occupational as well as a public health issue of concern. Generation of dust has potential to cause nuisance, occupational and public health concerns. The dust raised may also clog the pores of plants in the area, thereby inhibiting photosynthesis and transpiration and in the end killing vegetation.

Apart from workers, people and tourist visiting the site can also be affected by dust, resulting in coughs and other respiratory diseases as well as eye irritation. Dust nuisance is a public health issue of concern. The dust raised on site if not properly managed may be a nuisance to the wildlife in the area.

6.2.2.6 Influx of People into the Project area

The prospect of employment at the project sites is a catalyst for influx of people into the area with the consequent of increased population and the birth of unplanned settlements. Crime is also likely to increase as some of those people coming to the area may have criminal motives. The influx of people into the project area may also put a strain on the natural environment.

6.2.2.8 Impacts on Road Safety

During construction there will be some danger to road users/animals and birds due to construction traffic and the transportation of equipment. Road safety for motorists, cyclists and pedestrians may increase during the construction and operation phases.

6.3. Characterization and Assessment of Impact Significance

Characterization and assessment of impact significance was based on a criterion that took into account the *frequency* of occurrence of the source of impact, *duration* of the impact, *severity* of the impact, *spatial extent* of the impact and *Sensitivity* of the element being impacted. Table 6.1 is a detailed presentation of the criterion used in assessing impact significance while Table 6.2 is a presentation of project impact significance characterization using the above criterion.

Characterisation of impact significance involved consideration of the following factors:

- Beneficial or detrimental (Positive, Negative)
- Severity of the impact (Very High, High, Moderate, Low),
- Spatial extent of the impact (Localised, Project Area, Limited, Widespread),
- Duration of the impact (Short-term, Medium-term, Long-term),
- Timing of the impact (Construction, Operation, Post Decommissioning/Closure),
- Frequency of impact occurrence (Continuous, Frequent, Infrequent, Occasional),
- Probability of impact occurrence (Unlikely, Possible, Probable, Certain), and
- Significance of Impact (Very high, High, Moderate, Low).

Impacts were also characterized as direct or indirect in order to have a full appreciation of the impacts and facilitate effective management of the impacts. The process of impact identification and assessment involved all study team members and with each consultant presenting their findings within their specialist area of study for discussions.

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Table 14 Impact Criterion Used

Impact Criterion	Description	Criterion Classification	
		Term	Description
Positive or Negative Impact	Will the impact have a beneficial or detrimental effect on the environment?	Positive	A beneficial effect
		Negative	A detrimental effect
Intensity or amplitude of the Impact	To what degree will the effect be felt or how good or bad will the effect be	Very high	Very good or very bad effect
		High	Good or bad effect
		Moderate	Relatively good or relatively bad effect
		Low	Slightly good or slightly bad effect
Extent of Impact	What is the geographical extent of the impact?	Localised Project Area	Impact limited to Project footprint
		Limited	Impact limited to Project footprint & immediate neighbourhood
		Widespread	Impact felt beyond neighbourhood
Duration of Impact	For how long will the impact continue to manifest or be felt?	Short-Term	Impact will cease once the project activities stop
		Medium-Term	Impact will last for a limited period after project activities (eventually reversible)
		Long-Term	Impact will be permanent & irreversible
Timing of Impact	At what point in time will the impact occur or be felt?	During Preparation	Impact will occur during preparation phase
		During Construction	Impact will occur during construction phase
		During Operations	Impact will occur during operation phase
		Post decommissioning	Impact will occur after the life time of the project
Frequency of Impact	What is the likely frequency of occurrence?	Continuous	Impact will be continuous
		Frequent	Impact will occur frequently
		Infrequent	Impact will occur infrequently
		Occasional	Impact will occur occasionally
Likelihood of Impact occurring	What is the probability of Impact occurrence?	Certain	Impact is certain to occur
		Probable	Impact is likely to occur
		Possible	Impact may possibly occur
		Unlikely	Impact is unlikely to occur

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Impact Criterion	Description	Criterion Classification	
Significance of Impact	What is the Magnitude of impact (will the impact be of high, moderate or low severity?)	Very High	Very high Impact
		High	High Impact
		Moderate	Moderate
		Low	Low Impact

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Table 15 Environmental Impact Assessment Matrix

Potential Environmental Impact		Environmental Impact Characterization					Significance of Impact	
	Positive / Negative Impact	Intensity of Impact	Extent of Impact	Duration of Impact	Timing of Impact	Frequency of Impact	Likelihood of Impact Occurring	Significance of Impact
Bio-Physical Environment								
Protection of site from illegal rock breaking and garbage dumping	Positive	High	Limited	Short term	During construction	Continuous	Certain	High
Effects on ecology: - Clearing of vegetation (climate change and habitat destruction) - Loose soil washed into water courses	Negative	Low	Limited	Short term	During Construction	Occasional	Unlikely	Low
Impacts on Hydrology - Contamination of surface water and groundwater from accidental material spillages, material store areas, drainage channels and sewage waste. - Siltation	Negative	Moderate	Localized Project Area	Short medium term	-During preparation, construction and operation phase	Occasional	Probable	High

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Potential Environmental Impact		Environmental Impact Characterization						
	Drop in surface water levels due to project	Negative	Moderate	Localized project area	Short term	Construction and operation phase	Occasional	Probable
	Impacts on soil	Negative	Low	Localized Project Area	Short	During construction	Occasional	Probable
	- Soil contamination due to fuel spills from machinery and from sewage waste							
	- Soil erosion							
	Air pollution	Negative	Moderate	Local	Short	During construction	Occasional	Certain
	Impacts on fauna	Negative	Low	Local	Short	During preparation and construction	Occasional	Possible
	- Habitat destruction							
	- Disturbance							
	Waste nuisance	Negative	High	Localized Project Area	Short term	All project phases	Continuous	Certain
								High

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Potential Environmental Impact		Environmental Impact Characterization						
	Negative	Low	Localized Project Area	Short	During preparation, construction & operation phases	Frequent	Certain	Moderate
Noise & vibrations are expected mainly during construction phase with the major receptors being the construction workers. Sources of noise would be the materials delivery trucks, farm machinery as well as noise generated by the work force. During operational phase, vehicles bringing the raw material to site may bring in additional noise.								
Impacts on Landscape and aesthetics	Negative	Low	Localized Project Area	Short	During preparation and construction	Occasional	Possible	Low
Socio-economic and Cultural Environment								
Increase in employment opportunities	Positive	Very high	Widespread	Long term	All project phases	Continuous	Certain	High
Increase in Public Revenue	Positive	Very high	Widespread	Long term	All project phases	Continuous	Certain	High
Promotion of Chongwe as a tourist hub	Positive	High	Widespread	Long term	Operation phase	Continuous	Certain	High
Capacity building and skills development	Positive	Moderate	Widespread	Long term	All project phases	Continuous	Certain	Moderate
Increase in available beds	Positive	High	Local	Long term	Operation phase	Continuous	Certain	Moderate
Conference tourism and meeting, incentives, conferences & events	Positive	High	Localized project area	Long term	Operation phase	Continuous	Certain	Moderate

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Potential Environmental Impact			Environmental Impact Characterization					
Promotion of arrivals into KIKIA	Positive	High	Widespread	Long term	Operation phase	Continuous	Certain	Moderate
Promotion of tourism arrivals and spending in Zambia	Positive	High	Local	Long term	Operation phase	Continuous	Probable	High
Branding and promotion of Chongwe as a tourism destination	Positive	High	Widespread	Long term	Operation phase	Continuous	Probable	High
Sense of national pride	Positive	Moderate	Widespread	Long term	Operation phase	Continuous	Probable	Moderate
Workers will have extra disposable income which may translate itself into social behavior which may undoubtedly lead to an increase in commercial sex activities and hence an increase in HIV transmission levels and hence the spread of STIs and HIV/AIDS	Negative	High	Widespread	Long term	During preparation, construction, operation & post decommissioning phase	Occasional	Certain	High
Health & Safety risks due to work activities	Negative	High	Local	Short term	During preparation, construction, operation & post decommissioning phase	Occasional	Probable	Moderate
Influx of people into the area with the consequent of increased population and the birth of unplanned settlements. Crime is also likely to increase as some of those people coming to the area may have	Negative	Moderate	Localized Project Area	Medium term	During preparation, construction, operation & post	Frequent	Probable	Moderate

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Potential Environmental Impact		Environmental Impact Characterization						
criminal motives					decommissioning phase			
Dust nuisance	Negative	Moderate	Local	Short	During construction	Frequent	Certain	Moderate
Disturbance of areas of historical archaeological & cultural significance	Negative	Low	Unlikely	Medium term	During construction	Occasional	Unlikely	Low
Danger to road users	Negative	High	Local	Medium term	During construction and operation	Occasional	Probable	High

7.0 ENVIRONMENT AND SOCIAL MANAGEMENT PLAN

7.1 MANAGEMENT OF IDENTIFIED IMPACTS

7.1.1 Enhancement of Positive Biophysical Impacts

7.1.1.1 Protection of site from illegal rock breaking and garbage dumping.

To enhance the protection of the site from illegal rock breaking and garbage disposal, the site will be fenced off and security will be provided.

7.1.2 Mitigation of Negative Biophysical Impacts

7.1.2.1 Impacts on Ecology

Mitigating Impacts on Natural Environment

Construction Phase

Land clearing will be limited to absolutely required areas and progressive rehabilitation and re-vegetation of disturbed sites will be undertaken.

Introduction of Alien species

All construction workers should be sensitized not carry or introduce alien species (plants or otherwise) into the project area and contaminate water bodies, so as to avoid alien species invasion in the area. Inspections should also be done to ensure that no seeds or plant remnants of these invasive species are carried on equipment being transferred from other areas to be used on the project.

The developer will monitor the trees that are replanted on site ensuring that no alien species are planted on site.

Impacts on Ecologically Sensitive Areas

During construction the developer will ensure that the contractor on site manage all construction activities ensuring that aquatic environment is not disturbed or rather altered in any way such as changing of water pH or addition of any nutrients/substances. This will be so to keep the aquatic

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environment as is. If there be any disturbance to the aquatic environment, remedial actions will be taken.

Physical disturbance to sensitive areas will be controlled by the Contractor who will instruct his workforce not to cut down riverine vegetation, unless it is essential.

Sediment loads in the drainage will also be reduced by incorporating erosion control measures.

Operation phase

The developer in conjunction with the tenants will ensure that as much as possible natural vegetation is preserved. Any activities that may cause harm to the natural environment will be strictly prohibited.

Mitigating Impacts on Fauna

The measures that should be taken to reduce the negative impacts on animal life are as follows:

1. Minimize habitat disturbance as a mitigation measure

Tree replanting of selected tree species listed in the inventory should be done in identified areas adjacent to the development site with granted permission in accordance with the regulations.

2. Protection of sensitive areas as a mitigation measure

To ensure the survival of surrounding habitats and its species, following clearing of land for the development, a green buffer shall be maintained in all areas across.

3. Containment of Construction Activities and Avoiding Footprint Creep

Construction activities will be contained within a reasonable minimum area through a planning and disciplined approach that accounts for the following considerations to avoid undesirable “footprint creep”:

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- i. The reasonable minimum area required for the construction activity will be determined in advance and clearly demarcated on the ground. These areas will consider equipment laydown areas, vehicle parking and turning space.
- ii. Construction teams will be made aware of the demarcations prior to initiating construction works, and follow-up checks are to be done to ensure that the construction areas are not being exceeded.
- iii. Toilet facilities and rest areas will be provided for construction teams to avoid the need for them to venture beyond the demarcated area in search of such necessities.

4. Grouping of Linear Infrastructure

Linear infrastructure (viz. roads, Powerlines, pipelines and any near underground cables) will be grouped to follow the same route adjacent to one another wherever possible and appropriate to minimize the footprint of these disturbances. Development plans do currently reflect a grouping of linear infrastructure.

5. Installation of Culverts

Pipelines, roads and other linear infrastructure will include facilities that allow the underpass or overpass of fauna, such as culverts, so as to prevent unnecessary fragmentation of habitats.

6. Implement an Internal Biodiversity Protection Statement

A Biodiversity Protection Statement to conserve plants and animals will be developed, and made applicable to all staff, contractors and other personnel associated with the Project. The following activities will be prohibited by COMESA staff and contractors within and surrounding the Project Area, both during and outside of work hours:

- i. Any intentional killing of any animals including snakes, lizards, birds or other animals. Awareness of the Animal Rescue Plan will be promoted as a means of addressing the presence of animals at risk or presenting a risk to the implementation of activities.
- ii. Collection of any animals or animal products for consumption, medicinal or other use.
- iii. Purchase or transport of fuel wood from or for surrounding communities.
- iv. Contamination or disposal of waste into aquatic environments.

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The above information will be included within the site induction processes so that all workers are aware of these prohibitions. It will also be included in environmentally related information campaigns such as a quarterly newsletter.

7. Maintain an Inventory of Floral and Faunal Species

The IFC standards require that developments demonstrate there is no net loss of biodiversity values as a result of their activities. This can in part be achieved through maintaining a structured register of species that demonstrates the continued presence of a diversity of species in the area associated with the project and vicinity.

A detailed inventory and photo library of plant and animal species present within and around the project concessions will be kept by the Environmental Department. The species within this inventory will be classified into taxonomic groups and families, Red Data status using the IUCN Red List of Threatened Species and their perceived threat status within the area. A biennial record will be kept of as many species as possible observed within and around the Project Area, with updates to cover all seasons and include migratory species. A record of species known to occur will never be complete, but will gradually become increasingly comprehensive. Such activities can involve a broad spectrum of staff within the Environmental Department and volunteers within the other departments of the company.

Data will be formerly updated on an annual basis to assess progress, which can be measured by the growth in the number known to occur within and around the concessions, and increases in the proportion of species that in the non-risk categories.

8. Develop and Implement Awareness Programs Focused on Biodiversity

Awareness and appreciation of the local ecology among people generates tremendous support for the conservation of biodiversity. Various biodiversity-related activities will be highlighted in this document, which include the development of a register of species, the need for an animal rescue plan and offsetting and ecological monitoring programs. Awareness of these activities will be raised among staff and contractors. The following suggestions are presented, but awareness programs need not be restricted to these:

- i. Where possible, opportunities will be explored for involvement of staff, contractors and associated personnel to widen the appreciation and enthusiasm for the conservation of the biodiversity in and around the Project Area.
- ii. The Environmental Department will produce and circulate a regular newsletter and posters relating to biodiversity conservation and management associated with the Project Area.

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- iii. Staff and contractors will be encouraged to report interesting animal sightings and observations, which are to be incorporated into the species register and recognition for worthwhile animal observations will be publicized accordingly.
- iv. Additional means of generating pride will be explored.

9. Integrate Biodiversity Importance into Induction Programs

The importance of the natural environment and the local biodiversity will be incorporated into Induction programs for all of COMESA staff and contractors working in the Project Area. These components of the induction programs will be regularly updated and improved, and will include the following topics:

- i. Awareness of the biodiversity that exists in the Project Area and surrounds and the impacts caused during the construction and operational phases of the Project.
- ii. Outline the individual responsibilities to reduce impacts to the environment.
- iii. Present the company procedures on land clearance and waste disposal.
- iv. Vehicle speed limits and the reasons for them.
- v. Highlight the 'go to' (responsible) people on any biodiversity related issues that may arise, for example in the event of a problem animal needing to be rescued or removed.

10. Proactive Dissemination of Information

The developer will consolidate information that demonstrates the compatibility of their activities with conservation and present the steps taken to avoid ecological impacts and promote cultural harmony. Such information will be proactively released through appropriate channels to avoid the development of negative perceptions against project activities within a proposed conservation area.

11. Collaborate with Other Operators in the Area of Influence

The developer will plan to collaborate with other companies within the area to address regional issues that affect the conservation of the area.

7.1.2.2 Hydrology

Construction Phase

Surface and ground water contamination/depletion

The following measures will be implemented for the protection and conservation of surface water resources:

- Installation of a series of sediment and oil traps to ensure that plant washings and runoff water is cleaned of sediments and oils before discharge into the aquatic environment including regular servicing of sediment and oil traps for efficient operations;
- Bunding all open raw material storage areas to prevent washing away of stored materials;
- Localising all debris and other wastes and confining them in designated storage areas for appropriate disposal;
- Proper management of fuels to prevent spillage and the potential to contaminate ground with the possibility of wash down to surface water bodies;
- Maintenance of equipment will be done at designated workshops.
- Wastewater and sewage from the contractor's yard will be disposed of properly so as to prevent pollution of water bodies. The Contractor will have hired porta loo's that will be maintained properly ensuring that there is no contamination to the hydrological environment, also ensuring that workers and wildlife are not exposed to sewage waste.
- Vegetation will as much as possible be preserved. Exposed work areas will be watered down in the dry season to prevent the soil from being eroded by wind.

Ground Water Management

Sewage waste will be managed by the use of hired chemical toilets (Porta loos). To prevent oil/fuel leaks into ground water resources, all machinery that uses or requires oil will be checked for spillages and properly maintained before usage on this site. The fuel stored on site will be stored in small quantities; the fuel will be stored in impermeable containers and will also have readily available sawdust to mop out any fuel spills. The fuel containers will be stored in a large container having an impermeable floor. All routine maintenance of construction machinery and vehicles will be carried out off-site at workshops. Poorly maintained machinery will not be allowed to operate on site.

Operation phase

3. The developer and hotel operator will ensure that sewage management system is in place. Sewage will be managed by the use of modern flushable toilets connected to Onsite sewage treatment plant- The plant treats the sewage and produces clean and odour free water which is environmentally friendly. The water from the plant can be used for irrigation, discharged into a soak away system or released into the natural water systems.

7.1.2.3 Impact on Soil

Construction Phase

The developer will ensure that trees are not unnecessarily cut to prevent the loosening of the soil. Trees that are marked for cutting will not all be cut at once but only in areas being worked on at a time. Land disturbance will be minimized to absolutely required or designated areas. Earthworks will be done before the onset of the rains to minimize the washing away of soil by rain.

Runoff during this phase is expected to be as a result of rains washing away material. The developer will ensure that during the rainy season material and waste is managed in such a way that it cannot runoff. The developer will ensure timely rehabilitation/stabilization of disturbed areas by undertaking activities such as paving, re-vegetation and proper landscaping.

To prevent oil/fuel leaks into ground water resources, all machinery that uses or requires oil will be checked for spillages and properly maintained before usage on this site. The fuel stored on site will be stored on site in small quantities; the fuel will be stored in impermeable containers and will also have readily available sawdust to mope out any fuel spills. The fuel containers will be stored in a large container having an impermeable floor. All routine maintenance of construction machinery and vehicles will be carried out off-site at workshops. Poorly maintained machinery will not be allowed to operate on site.

Waste will be temporarily disposed of in bins provided on site and not onto the soil. Sewage waste will be managed by the use of Pota loos.

Operation Phase

4. During operation municipal waste will be disposed of in bins which will be collected by approved municipal waste collectors. Sewage waste will be managed by the use of modern flushable toilets connected to Onsite sewage treatment plant- The plant treats the sewage and produces clean and odour free water which is environmentally friendly.

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The water from the plant can be used for irrigation, discharged into a soak away system or released into the natural water systems.

7.1.2.4 Air Pollution

Appropriate interventions will be applied to limit the level of air pollution from both point source and fugitive dust/particulates emission sources as appropriate:

- Dust suppression by spraying water on exposed work sites, on active haulage routes and other areas with potential to generate dust;
- Enforcement of speed limits to 20 km/h to minimise on traffic induced dust emissions;
- Timely rehabilitation of disturbed areas by ground stabilization and profiling, placement of top soil and re-vegetation;
- The site will have designated stockpile areas and packaged material will be kept in original packaging until the time of use (e.g., cement)
- Vehicles used on site will be properly maintained ensuring that the fumes released are minimal.
- Ground areas and materials prone to blowing will be stabilized; and
- Monitoring of dust levels for corrective action will be done frequently.

7.1.2.5 Waste Generation

Construction phase

The waste that is generated will have to be managed and disposed of appropriately in accordance with its waste classification.

The solid waste generated on this site such as paper, plastic, empty tins, etc. will be temporarily disposed in drums that will be placed at various locations of the proposed sites. The bins will be emptied on a regular basis into a waste collection truck managed by the local council and then transported to an approved disposal site. The hazardous waste/ material soiled with hazardous chemicals/products will be temporarily disposed of in a drum that will be clearly marked as hazardous waste that will be covered at all times. This hazardous waste bin will then be collected by an approved hazardous waste collection agency and disposed of at ZEMA approved disposal sites.

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Excess excavated material generated by the Project will be disposed of within the designated area. Sewage will be managed by use of pota loos. Good house-keeping practices will be strictly adhered to.

Operation Phase

Bins will be introduced on site which will be used to collect waste and these will be collected by a licensed garbage collector at regular intervals. Good house-keeping practices will be strictly adhered to.

5. Sewage management will be by use of modern flushable toilets connected to Onsite sewage treatment plant- The plant treats the sewage and produces clean and odour free water which is environmentally friendly. The water from the plant can be used for irrigation, discharged into a soak away system or released into the natural water systems.

7.1.2.6 Noise and Vibration

All construction vehicles and equipment will be regularly maintained to ensure that that they are mechanically sound. Where workers are exposed to elevated sound levels, use of personal protective equipment such as ear muffs/plugs will be mandatory.

Major abatement measures include:

- a) Limiting construction to daytime only and no night-time construction using heavy machinery;
- b) Good maintenance and proper operation of construction machinery to minimize noise generation; and
- c) Installation of temporary sound barriers where necessary.

7.1.2.7 Land Degradation

Land degradation will be prevented and minimized by the restricting of cutting down trees and excavation works to be done only when necessary. There will be need for the rehabilitation of disturbed areas and localization of waste to areas of generation and designated collection points. Furthermore, the developer will consider:

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- Careful choice of service routes by selecting less vegetated areas and alignment of routes along existing passages such as roads to limit opening up of virgin land.
- That the design frameworks raise the value of the land and not degrade it. The design will incorporate existing relief features into the design as shown in the site plan attached as an annex.
- Land clearing to be limited to absolutely required areas and progressive rehabilitation and re-vegetation of disturbed sites will be undertaken;
- Construction will blend with the natural environment and landscaping will conform to scenic beauty of the project area.

7.1.3 Enhancement of Positive Socio-economic and Cultural Impacts

7.1.3.1 Employment Creation

The contractor will give preference to locals for unskilled jobs during the preparation and construction phases of the project. More importantly, the contractor will be sensitive to gender disparities in employment and will therefore discriminate in favor of female and youth employment in less arduous jobs such as traffic control, cooking food for construction workers, collecting and disposal of garbage from the project sites. The Contractor will be asked to recruit local people, of which at least 25% should be women. This will have a DIRECT impact on employment creation with a LONGTERM effect. As the targeted people are of Zambian descent, this will be a positive impact on LOCAL labor force.

7.1.3.2 Capacity Building and Skills Development

The project will contribute to capacity building and skills development of the people who will be employed through on-job training and interaction with other skilled personnel from different disciplines. This will have a DIRECT impact on capacity building with a LONGTERM effect on skills transference and retainership of personnel. As the targeted people are of Zambian descent, this will be a positive impact on LOCAL labor force.

7.1.3.3 Public Revenue

The developer will ensure that contributions for formally employed persons are made to NAPSA. The developer will also ensure that all relevant taxes are paid and all other contributions made to the relevant authorities. This will have a DIRECT impact on increased tax collection and will have LONGTERM effect on monetary collection by the relevant authorities. As the targeted people are of Zambian descent, this will be a positive impact on LOCAL labor force.

7.1.3.4 Promotion of Chongwe as a Conferencing/Tourist Destination

The COMESA Head Office will assist in the promotion of Chongwe as an International Tourist destination.

The proposed development shall contribute towards the enhancement of tourist arrivals in Chongwe by: -

- Creating bedspaces for guests. 200 keys are proposed in the hotel.
- Providing meeting rooms and conference facilities.

7.1.3.5 Increase in Available beds

The developer will ensure that the number of beds proposed is available and affordable.

7.1.3.9 Promotion of Tourism Arrivals and Spend in Zambia

The additional bedspaces and conference facilities will increase the touristic spend in the country.

7.1.3.10 Branding and Promotion of Chongwe as a Tourist Destination

Tourism is seen as an alternative income generation source from the age-old mining industry. The increase of touristic destination in Zambia will make this a reality. The site is close to critical supporting infrastructure making it a viable opportunity in the development of tourism in the country.

7.1.3.11 Sense of National Pride

This project will enhance Zambia's image as a credible host for major international organizations.

7.1.4 Mitigation of Negative Socio-economic and Cultural impacts

7.1.4.1 Increased Risk of HIV/AIDS Transmission

The Contractor will conduct HIV/AIDS awareness and prevention campaigns amongst all members of the workforce in conjunction with the local Health Centre under which the catchment area of the development falls. Such programmes are conducted under the auspices of the Ministry of Health as part of the Government's overall HIV/AIDS awareness and prevention policy. In addition:

- HIV/AIDS awareness and prevention posters and information leaflets will be displayed prominently at the construction site e.g., at the Site Office notice board.

Where practicable, and without prejudice to the Contractor's other contractual obligations, preferential employment should be given to members of local communities in the project area. This will reduce the risk of communicable diseases transmission associated with labour that originates from outside the community.

Operation Phase

The developer will ensure that the hotel has HIV/AIDS awareness brochures/posters that are easily accessible by clients and workers at the hotel's reception. The developer will also ensure that the employees are sensitized about the HIV/AIDS pandemic.

7.1.4.2 Health and Safety Risks

Mitigation measures will include the following:

- Restrict public access to operational areas by putting appropriate signage;
- Construction of alternative roads where the usual roads have been blocked;
- Provision of appropriate PPE; and

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- Proper marking of boundaries for the operational areas and associated facilities.
- All workers will be trained and reoriented in occupational health and safety and applicable protocols should be firmly enforced.
- All workers will be provided with personal protective equipment. Only well qualified and experienced workers will be tasked to drive vehicles and operate machinery.
- An emergency response plan should also be put in place to guide response and minimise effect in case of an emergency situation.
- Haulage trucks will adhere to speed limits.

7.1.4.3 Noise and Vibrations

Proposed mitigation measures must include:

- Adequate clearance between operational areas and public access areas;
- Implementing an appropriate signage system to warn both workers and the public on noise and vibration hazards;
- To the extent possible, limiting noisy operations to day time only;
- Compliance with issued noise and vibrations limits; and
- Provision and enforcement of Personal Protective Equipment (PPE).

7.1.4.4 Dust Nuisance

- COMESA will consider noise as an environmental concern in its planning and during execution of the works. The Contractor shall use plant and equipment conforming to international standards and directives on noise, vibrations and emissions.
- The Contractor will take all necessary measures to ensure that operation of all mechanical equipment and construction processes on and off the site shall not cause any unnecessary or excessive noise, taking into account all applicable environmental requirements.
- Dampening all work areas with potential to generate dust when conducting excavations and other land preparation works
- Provision of PPE such as respirators to workers in dusty areas and enforcement of PPE usage.
- Careful handling of materials to minimize on dust generation e.g., by limiting speed limits on dust roads.

7.1.4.5 Impacts on Areas of Historical, Archaeological and Cultural Significance

The proposed project development has to comply with the regulations set by NHCC in terms of any archaeological finds during construction.

7.1.4.6 Influx of People to the Project Area

- The local leaders will be made aware that the influx of people into the project area may raise security concerns; they should therefore plan to address the security situation.
- The Contractor will also be encouraged to procure supplies from local sources to the maximum extent possible in the circumstances
- The influx of people to the project areas will be discouraged by giving priority in employment to local residents. To this effect the Contractor will work with local authorities such as the Area Development Committees and the District Councils when recruiting locals.
- The district authorities and COMESA should work closely with the Zambia Police Service to address negative vices such as crime.

7.1.4.7 Impacts on Road Safety

Construction

- The Contractor will develop a traffic management plan to implement measures for ensuring safe passage of traffic around and through the construction sites at all times.
- The Contractor will establish traffic and safety barriers and signs wherever needed. This includes warning signs along access roads as well as signs to direct and divert traffic.
- Prior notice will be given to the general public through notices at district headquarters and in the local media of expected disruptions to traffic.
- The Contractor will sensitize both the workforce and the road users in terms of hazards posed by construction traffic. This will be done through placing of adequate signage.
- The site will have a speed limit sign upon entrance ensuring that all the drivers with vehicles coming to site are moving at 20km/h.

Operation phase

The proposed development will have carefully designed access roads allowing for vehicular circulation. The drivers will be obliged to obey the speed limit signs.

7.2 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

In this section, an environmental and social management plan has been prepared to cover all the phases of the project life: design, construction, operation and maintenance. The ESMP combines both the environmental and social mitigation plan and the environmental and social management plan.

The purpose of the Environmental and Social Management Plan (ESMP) is to present a structured approach for optimizing beneficial impacts on the one hand while mitigating adverse impacts on the other. It has been prepared to render practical guidance to implementation of the proposed project in an environmentally friendly and socially acceptable manner. The construction contractor will thus assist COMESA in implementing mitigation measures contained in the ESIA to ensure environmental protection. In this regard, the EMP that is based on the EMA (2011) and (EIA) Regulations of 1997/2006 together with underscores responsibilities for COMESA, the construction contractor, supervising consultant, GRZ agencies, NGOs and the affected community in safeguarding the environment in and around the project area.

The measures taken will as a matter of principle seek to:

- Reduce the harmful characteristics of impact sources by devising less harmful ways of effecting project activities
- Localise project impacts as much as possible by taking precautions in effecting project activities
- Explore ways and means of enhancing the resilience and regenerative/recovery capacity of impacted elements of the environment, and
- Streamline Better Management Practices including cleaner production as an integral part of project implementation.

Monitoring of the project's environmental performance will be carried out as a routine part of project implementation to observe changes taking place in the environment and assess the effectiveness of the interventions put in place. This would help the timely administering of corrective management interventions to avoid occurrence of serious negative effects. The plan, indicated in Table 7.1, specifies: -

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- Environmental Aspect (What needs to be managed?)
- Environmental Management Objective (Why does it need to be managed?)
- Management Action (How should it be managed?)

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Table 16 Environmental and Social Management Plan

Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Positive Impacts of the Project									
Management of the Complex	Protection of flora and Fauna	To ensure that the Project environmental commitments are upheld by protecting Flora and Fauna	The rules stipulated by ZEMA will be strictly adhered to. The developer will also make sure that activities that endanger flora/fauna are prohibited.	Project Manager/	Zero reports of intentional flora/ fauna destruction	Records onsite.	Monthly	Project Lifecycle (50+ years)	250,000
Construction works and Occupational activities at the resort	Employment Opportunities	To create employment opportunities for the communities within the project area	Offer competitive salaries, wages and contract terms to contractors and suppliers of goods and services Give preference to local people in employment	Project Manager/	Locals employed to carry out construction works. Locals employed at the hotel	Register of employees	Monthly	Project Lifecycle	150,000
Construction and operation of the complex	Contribute to public revenue	To ensure that the development makes a contribution to public revenue.	The developer will also ensure that all relevant taxes are paid and all other contributions made to the relevant authorities.	Project Manager/	Receipts/ records of all contributions, royalties and taxes paid to local employees	Review of records of payments to the relevant authorities	Monthly	Operation phase (50 years)	150,000
Use of the complex	Provision of office space and beds	To ensure that the complex provides all the services intended on the facility adequately	The developer will ensure that development has all the proposed facilities readily available and that the standards of offering are as designed	Operator/Developer	Adequate offices/ bedspaces, good condition of buildings	Observation Records of maintenance Client feedback cards coming back positive	Monthly	Operation phase (50 years)	20,000

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Construction works on site and activities at the complex			The project will contribute to capacity building and skills development of the people who will be employed through on-job training and interaction with other skilled personnel from different disciplines.	Project Manager	Skilled workers available on site	Certificates of trained personnel on site passing on the skills	Monthly	Operation phase (50 years)	100,000
Development of the complex	Improvement of the economy	To add to the promotion of Chogwe as a tourist destination To promote tourism arrivals & spend in Zambia To brand and promote Chogwe as a tourist destination To have a sense of National Pride	The design of the complex will be such that it attracts clients from local and international destinations. The offerings of the complex will encourage tourists to spend in Zambia. The complex has been designed to have adequate beds and conference facilities designed by renowned interior designers. The complex has been designed to incorporate the existing natural environment and to be sustainable.	Project Manager	Increase in the number of tourists Increase in tourist spend in Zambia as a result of the resort Complex being referred to as something the Zambian people are proud of	Complex advertised as a destination Occupancy percentage at the complex Record of tourist spend	Quarterly	Operation Phase	50,000

Negative Impacts Biophysical Environment

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Cleaning of vegetation on building areas, Earthworks, road works, excavation of foundations, sub structural and super structural works, construction of golf course, activities at the , and maintenance of resort	Ecology disturbance: Disturbance and disruption of the natural and wildlife environment	To ensure that land clearing is limited to the building areas To prevent the introduction of alien species To reduce impact on ecologically sensitive areas	The developer will ensure that for every tree cut, trees are replanted elsewhere. Trees that can be transplanted will be transplanted to keep the tree age. No alien species will be planted on site. Erosion control measures will be in place at the onset of construction Construction activities managed to ensure no disturbance to aquatic environment. Rivertine vegetation preserved	Project Manager	No construction material/waste run off into the aquatic environment No soil eroding into the Lake No vegetation removed Trees cut replanted and other trees transplanted.	Observation and analysis of surface water Observation of Rivertine vegetation Records of trees planted	Weekly	Site preparation and construction in phase	

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
		To minimize negative impacts of the development on the wildlife in the area	Minimize habitat disturbance as mitigation measure Protection of sensitive areas as mitigation measure Include Wildlife Protection as mitigation measure	Project Manager/	Zero record of human/wildlife conflicts on site	Rules for behavior displayed for construction workers and visitors to see.	Weekly	Project Lifecycle	250,000
	Ecology disturbance:		Mitigate Human Wildlife Conflicts by having no fences on site and by not developing on animal corridors; avoiding collisions with vehicles and machinery		Stable population of wildlife in the area	Inspection of site area checking for fences, culverts, and transmission line designs			
	Disturbance and disruption of the natural and wildlife environment		Aesthetics and Visual Impacts reduced		Zero cases of poaching and hunting	Reading of records			
			Containment of Construction Activities and Avoiding Footprint Creep		Complex blending in to the natural environment	Inspection of awareness records			
			Grouping of Linear Infrastructure		Service lines installed in one area				
			Installation of Culverts		Zero record of collisions with wildlife				
			Promote the use of Raptor-friendly Transmission Line Designs						
			Implement an Internal Biodiversity Protection Statement						
			124 Maintain an Inventory of Floral and Faunal Species						
			Develop and Implement Awareness Programmes Focused on Biodiversity						
			Integrate Biodiversity Importance into Induction Programmes Proactive Dissemination of Information						

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Cleaving of vegetation on building areas, Earthworks, road works, excavation of foundations, sub structural and super structural works, construction of golf course, activities at the resort, and maintenance of resort	Surface and ground water contamination and disturbance	To prevent surface and ground water contamination	1. Installation of a series of sediment and oil traps to ensure that plant washings, kitchen washings and runoff water is cleaned of sediments and oils before discharge into the aquatic environment including regular servicing of sediment and oil traps for efficient operations;	Project Manager/	Zero contamination of surface and ground water with chemicals and hydrocarbons	Observation and analysis of surface and ground water	Weekly	Project Lifecycle	150,000
			2. Bundling all open raw material storage areas to prevent washing away of stored materials;		No construction material/waste run off into the aquatic environment	Observation of Riverine vegetation			
			3. Localizing all debris and other wastes and disposing appropriately;		No soil eroding into the Lake	No Riverine vegetation removed			
			4. Fuel spillages will be prevented;		No sewage effluent in the drainages or ground water	Machine maintenance records			
			5. Maintenance of equipment will be done at designated workshops.		Zero maintenance of machinery on site	Surface water levels not reduced such that other users are negatively affected because of the project			
			6. Wastewater and sewage from the contractor's yard will be disposed of properly so as to prevent pollution of water bodies. The Contractor will have hired porta loo's that will be maintained properly ensuring that there is no contamination to the hydrological environment, also ensuring that workers and wildlife are not exposed to sewage waste.		Designated areas for stock pile				
			7. During operation sewage waste will be managed by toilets collected to NDC						
			8. Vegetation will as much as possible be preserved. Exposed work areas will be watered down in the dry season to prevent the soil from being eroded by wind.						
			9. To prevent depletion of the water resource						

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time Frame	Cost ZMW
	Surface drainage disruption	To minimize disruption to surface drainage	Temporary drains should be constructed and directed in such a manner as to reduce the risk of water logging or erosion and siltation of downstream drainage system. Permanent drains to be constructed for operation of the complex to prevent stagnant water	Project Manager/	No water-logged areas and eroded areas. Presence of temporary drains Presence of drains	Site inspection	Weekly	Project Lifecycle	350,000

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Project Implementation activities		To enhance environmental Protection through Awareness creation to Supervisory employees of the developer and his sub-developer	The Developer in collaboration with the Project Management Team and relevant authorities shall endeavor to arrange that all supervisory employees of the Developer and his sub-developers are appraised with environmental protection and management to ensure the following: A basic understanding of the key environmental features of the site and its environs. This will include sharing of Information on bio- physical and socio-economic aspects of the environment to prevent misunderstanding. Thorough familiarity with the Environmental protection requirements as they apply to the works. Awareness of archaeological artifacts. Awareness of any other environmental matters which are deemed necessary by the Project Management Team (E.g. appropriate behavior, community relations, and public health issues). Awareness of green eco-friendly principles such as building at 50m from the edge of the lake, incorporating of green spaces in the design and waste management protocols.	Project Manager/	Zero breaches of Environmental best practice guidelines per quarter	Site audit on the environmental awareness levels of employees	Monthly	Project lifecycle	150,000

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Earthworks for site preparation and leveling			All earthworks for site preparation and leveling will be carried out in the implementation phase and the permanent storm water, road and site drainage system will be constructed.						
Construction works		To prevent soil erosion	Construction of temporary drains will precede the permanent drainage system such that storm water may be directed appropriately as required. To prevent soil erosion and siltation of water sources due to soil erosion of nearby drains and culverts; the sides of the drainage systems shall be planted with grass or stone pitched and silt traps shall be put along drainage systems and the spoon drains shall have scour checks. Limit use of heavy machinery to designated areas Avoid unnecessary clearing of the vegetation Rehabilitate heavily disturbed areas	Project Manager/	Zero amount of soil erosion along roads and contours of land after each rainy season Fuel stored in impermeable containers and placed on an impermeable floor	Site inspection	Weekly	Construction phase (2 years)	1,200,000

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
	Soil Erosion and soil contamination	To prevent contamination of soils through oil and fuel spills	The use of ill maintained construction plant and equipment will not be permitted. Machinery will be regularly checked	Project Manager	Zero oil and fuel leaks on the soil. Record of machine maintenance Fuel stored in impermeable containers and placed on an impermeable floor	Site Inspection	Weekly	Project Lifecycle	Incl above
Earthworks and other construction works Handling of fine raw material	Air Pollution	To minimize dust nuisance	All work areas and access roads on site will be regularly watered by water bowser in order to reduce dust levels, molasses will be spread to bind loose particles if necessary	Project Manager	Zero levels (microns) of dust in the air.	Observation	Weekly	Construction Phase (2 years)	Incl above
		To minimize dust and exhaust nuisance	Designated access routes will be set and complied with by the Developer.	Project Manager	Presence of designated access routes Speed limits signs available on site	Observation	Weekly	Construction Phase (2 years)	
		To minimize air pollution	The burning of any kind of waste or Construction materials shall not be permitted.	Project Manager/	Zero cases of burning waste or construction material	Observation	Weekly	Construction Phase (2 years)	

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Use of machinery/tools to carry out works on site Other activities on site	Noise Pollution	To minimize noise nuisance from construction activities	The developer shall restrict any of his operations, which result in undue noise Disturbance to nearby communities and dwellings. Noisy activities will be restricted to daytime hours.	Project Manager/	Noise levels within permissible limits Zero complaints from nearby structure owners	Site audit records Observation	Weekly	Construction Phase (2 years)	1,150,000
		To minimize noise nuisance from construction traffic	Designated access routes will be set and complied		Presence of designated access routes Zero complaints from nearby structure owners zero collision with wildlife	Site audit records Site Observation	Weekly	Construction Phase (2 years)	Incld above

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Waste Generation from activities on site	Waste nuisance	To prevent waste nuisance	Designated covered areas will be provided for the storage of normal solid waste arising within the area An approved waste removal company will be used to collect un-recyclable solid waste for disposal at an approved refuse dumping site in accordance with ZEMA regulations (SI No. 71 of 1993).	Project Manager/	Availability of bins on site for the collection of waste by an approved waste collector.	Site observation	Weekly	Project Lifecycle	1,150,000

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Construction and operation activities	Change of the natural environment	To prevent Land degradation	1. Careful choice of service routes by selecting less vegetated areas and alignment of routes along existing passages such as roads to limit opening up of virgin land.	Project Manager/ r	Complex blending in to the natural environment	Site inspection	Monthly	Project Lifecycle	200,000
			2. That the design frameworks raise the value of the land and not degrade it. The design will incorporate existing relief features into the design as shown in the site plan attached as an annex.		Service lines installed in one area				
			3. Land clearing to be limited to absolutely required areas and progressive rehabilitation and re-vegetation of disturbed sites will be undertaken;		No tree cut on area that will not have project infrastructure				
			4. Construction will blend with the natural environment and landscaping will conform to scenic beauty of the project area						
Negative Socio-economic and Cultural Impacts									
Movement of construction machinery, vehicles and workers on the site and off site	To ensure safety on public access roads and to avoid loss of human and wildlife		Designated access routes shall be set and complied with by the Developer.	Project Manager/	Presence of designated access routes	Site observation	Weekly	Project Lifecycle	550,000
			Install speed warning signs on the site and outside the site before entrance into the site	Project Manager	Zero accidents recorded Adequate road signage installed	Safety reports Site observation	Weekly	Project Lifecycle	Incl above

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
			All gravel access roads and exposed work areas on site shall be watered and compacted	Project Manager	Regular watering of exposed work area	Site observation	Weekly	Construction Phase 2 years	Incl above
	Traffic and Road safety risks		The proposed development will have carefully designed access roads allowing for vehicular circulation. The drivers will be obliged to obey the speed limit signs.	Project Manager	Presence of speed limits on site	Observe signs on site and adherence to speed signs	Monthly	Project Lifecycle	Incl above
			Animals will not be blinded by spotlight during night drives.	Project Manager/	Zero accidents/ conflicts recorded due to blinding of animals	Record of accidents	Monthly	Project Lifecycle	Incl above
			Prior notice will be given to the general public through notices at district headquarters and in the local media of expected disruptions to traffic.	Project Manager/	Zero road accidents	Record of accidents	Monthly	Project Lifecycle	Incl above
			The developer shall be obliged to comply with the Health and Safety Regulations of the local regulatory authority	Project Manager/	Presence of a health and safety plan on site	Site audit on health and safety subjects	Monthly	Project Lifecycle	Incl above
		To ensure occupational health and safety on the site	The developer shall ensure that all builders/bricklayers are made aware of and comply with safety rules and measures that will apply on site.	Project Manager	Presence of a health and safety plan on site	Impromptu awareness tests given to a sample of workers	Monthly	Construction Phase 2 years	250,000

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Earthworks and other construction works and presence of construction and operation workers			The developer shall conduct risk assessment in planning of potentially hazardous tasks to be done.	Project Manager/	Risk assessment carried out at the beginning of a new task	Risk assessment records	Monthly	Project Lifecycle	
			Good house-keeping shall be strictly enforced to maintain a safe work environment. The developer shall adhere to waste management protocols	Project Manager/	Workers utilizing bins on site for waste disposal. Regular collection of bins by a council approved waste collector	Site observation	Weekly	Project Lifecycle	
			All personnel performing welding and cutting or operating crane and mobile equipment shall be trained and qualified.	Project Manager/	All personnel on site to be trained and qualified for the task occupied with	Qualification certificates and license to operate	Monthly	Construction Phase (2 years)	
			The developer must execute his obligations with due diligence and in accordance with Zambian laws and international rules for labor protection.	Project Manager/	Zero number of accidents recorded. All workers inducted in health and safety topics	Site health and safety report	Monthly	Project Lifecycle	
	Accidents/injury to workers, visitors and wildlife on site								Ind above

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
					Zero of cases of cholera and other water borne diseases amongst construction staff per quarter	Site health and safety report	Monthly	Project Lifecycle	Incl above
			All workers will be sensitized on water borne diseases and the use of sanitizing of hands after using the toilets. The developer shall provide sanitation facilities for workers.	Project Manager/	Availability of adequate temporary sanitation facilities	Site health and safety inspection	Monthly	Project Lifecycle	Incl above
			Rules of how to behave in onsite will be communicated to all workers and visitors/clients.	Project Manager/	Rules of how to behave onsite adhered to	Site health and safety inspection	Monthly	Project Lifecycle	Incl above
				Project Manager		Inspection of the ponds and Lake	Monthly	Project Lifecycle	1,200,000

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
			The developer shall ensure adequate drainage of site to prevent stagnant water that can provide a breeding habitat for mosquitoes. Maintenance of the drainage system will include routine clearing of drains of sediment and other waste and flushing of driveway culverts reduce risk of standing water that can provide a habitat in which mosquitoes do breed. The rooms of the hotel will be lined with mosquito proof mesh preventing mosquitoes and also the beds will have mosquito nets.	Project Manager/	Zero cases of malaria amongst construction staff per quarter	Reports of workers/visitors having Malaria	Monthly	Project Lifecycle	1,200,000

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Cleaning of vegetation on building areas, Earthworks, road works, excavation of foundations, sub structural and super construction of mini golf course, activities at the resort, and maintenance of resort	Air Pollution	To reduce health risk due to dust pollution	Only Certified machinery will be used on site.	Project Manager	Machines checked before use on site	Site observation and inspection Machine checklist	Monthly	Project Lifecycle	150,000
			Machine maintenance will be done to reduce emissions.		All work areas with potential to generate dust watered down to suppress dust				
			Dampening all work areas with potential to generate dust when conducting excavations and other land preparation works		All workers provided with adequate PPE				
			Providing a safe clearance area between known animal favorite spots/corridors and work areas						
Presence of workers on site and job seekers	People infected and effected by the HIV/AIDS	To reduce risk of HIV and Communicable disease transmission	Provision of PPE such as respirators to workers in dusty areas and enforcement of PPE usage	Project Manager/	Local members of the community employed	Employment register	Monthly	Project Lifecycle	500,000
			Careful handling of materials to minimize on dust generation e.g. by limiting speed limits on dust roads						
			Where practicable, and without prejudice to the developer's other contractual obligations, preferential employment should be given to members of local communities to reduce the risk of communicable diseases associated with migrant labor.						

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
	pandemic	To reduce risk of HIV and Communicable disease transmission	The developer will conduct HIV/AIDS awareness and prevention amongst all members of the workforce under which the catchment area of the Development falls (where necessary). The contractors engaged will have a workplace HIV/AIDS policy and all workers will be sensitized on HIV/AIDS, its transmission, effects, prevention and management on an on-going basis and free condoms will be placed in toilets	Project Manager/	Increased HIV/AIDS awareness levels among the members of the workforce	Impromptu asking of people on site about HIV/AIDS Signed toolbox talks on HIV/AIDS awareness	Monthly	Project Lifecycle	Incl above

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Presence of workers on site and job seekers			The local leaders will be made aware that the influx of people into the project area may raise security concerns; they should therefore plan to address the security situation. The Contractor will also be encouraged to procure supplies from local sources to the maximum extent possible in the circumstances	Project Manager	Local members of the community employed	Employment register		Project Lifecycle	150,000
	Influx of people into project area	To reduce on population boom and unemployment levels	The influx of people to the project areas will be discouraged by giving priority in employment to local residents. To this effect the Contractor will work with local authorities such as the Area Development Committees and the District Councils when recruiting locals. The District authorities and COMESA should work closely with the Zambia Police Service to address negative vices such as crime.						
							Monthly		

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Aspects	Impacts	Objective	Mitigation Measures/Enhancement Measure	Responsible Person	Performance Indicator	Means of Verification	Frequency of Monitoring	Time frame	Cost ZMW
Development of the resort	Tempering with world heritage site	To ensure that the development does not destroy or disrupt the world heritage site	The developer will ensure that the height of all the proposed buildings is below the project area tree height. The developer will also ensure that the vegetation as possible preserved and that no alien species are introduced to the site. The developer will have strict environmental mitigation measures to ensuring that the environment is protected.	Project Manager	Zero conflict between the proposed development	Observation and inspection of site adherence to UNESCO laws	Monthly	Project Lifecycle	150,000

7.2.1 Pest Management and Control Measures

To prevent the pests from increasing the developer will implement the following control measures:

7.2.1.1 Rodents

Pest monitoring and baiting programs will be instigated from the start of construction and during operation phase of the project. The developer will ensure that sewer system is monitored for rats and that the sewer system and drains are cleared of any remaining debris.

Second generation anticoagulant rodenticides will be used to kill rodents after which the rodent carcasses will be collected and the unused bait collected at the end of the treatment and disposed of as hazardous waste. The model house is designed in such a way that the pests cannot gain entry. This is how the other houses will be constructed. All building holes such as openings around augers, pipes and electrical conduits will be filled with crushed wire mesh.

The project manager will ensure that burrowing is done beneath foundations. The foundations will extend vertically to a depth of about 900mm or have an L shaped curtain wall which is about 600mm deep and a 300mm projection away from the building. There will be no breach in the foundations larger than 9mm. Cracks in the foundations will be repaired with concrete or masonry grout. The walls of each house will have concrete fill.

7.2.1.2 Insect and Termite Pests

To control the pests the developer will employ two techniques that is the biological and sanitation. Biological control is the use of natural enemies —predators, parasites, pathogens, and competitors—to control pests and their damage. These biological control (biocontrol) agents are being used successfully to manage certain insect and termites. The natural pest enemies that are on this site are lizards.

The site will have good sanitation as this helps control pests.

To control termites the standard method of controlling termites will be implemented. This is done by applying liquid termiticides to the soil between the wood structure and the termite colonies in the ground. Dry wood termites will be controlled by spot or localized treatment using either the drill and treat approach or surface spray treatments.

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Table 17 Proposed Stakeholder Engagement During Operational Phase

Responsible	Parameters To Be Monitored	Output
ZEMA	Overall environmental performance of the project	Discussions Inspections and testing Annual audits Issuing of licenses and permits
Developer	Implementation of mitigation measure Occupational health and safety Traffic and worksite accidents Environmental performance of equipment Air quality	Maintenance records Accident record/reports Mitigating actions
Traffic Police	Traffic accidents Traffic nuisance Traffic safety measures	Police reports and instructions to Developer and Project Management Team Team
Local Authorities	Negative social and environmental impacts	Complaints to Developer and Project Management Team.
Factories Inspectorate (If required)	Working conditions Condition of equipment	Discussions Inspections of installations Inspections and Certification of equipment Inspection of records Issuing of licenses and permits

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Responsible	Parameters To Be Monitored	Output
Utility Providers (e.g. ZESCO)	Routine monitoring of electrical distribution and water/sewage reticulation infrastructure	Maintenance records
Chongwe District Council Public Health and Fire Departments	Public health Hygiene Fire equipment and preparedness	Inspections, surveys and results
Traffic Police/Road Traffic	Traffic accidents Traffic nuisance Traffic safety measures	Police reports

8.0. DECOMMISSIONING AND REHABILITATION PLAN

This plan outlines the systematic dismantling of the COMESA mixed-use development. The primary objective is to return the 14hectare site to its original greenfield state or prepare it for a new land-use permit, ensuring compliance with the Environmental Management Act No. 12 of 2011. This Decommissioning Plan outlines the procedures and management measures for the safe, environmentally responsible, and compliant decommissioning of the COMESA Head Office Complex. The facility comprises multiple office blocks, a conference center, hotel accommodation, retail spaces, a basement level, and an onsite sewer treatment plant (STP).

8.1. Objectives

The objectives of this plan are firstly to ensure safe dismantling and demolition of all structures. Others include to prevent environmental contamination, protect workers, occupants, and the public. Further to comply with national environmental and occupational health regulations. The final objective is to promote reuse and recycling of materials where feasible.

8.2. Scope of Work

The scope of work includes but is not limited to; Removal of furniture, fixtures, and equipment (FF&E). Disconnection of utilities (power, water, telecom, HVAC). Decommissioning of basement systems including drainage and ventilation. Safe shutdown and decontamination of the onsite sewer treatment plant. Structural demolition of buildings and ancillary facilities. Waste segregation, recycling, and disposal.

8.3. Pre-Decommissioning Activities

- Detailed structural and environmental assessment.
- Hazardous material survey (asbestos, lead paint, chemicals).
- Utility mapping and isolation plan.
- Stakeholder notification and coordination.
- Preparation of site-specific Health & Safety Plan.

8.4. Decommissioning Procedures

Office Blocks, Conference Center, Hotel & Retail Areas

- Removal of loose furniture and fittings.
- Isolation of electrical and mechanical systems.
- Removal of HVAC equipment and ducting.
- Internal strip-out prior to structural demolition.
- Controlled mechanical demolition using approved methods.

Basement Level

- Drainage and dewatering of any accumulated water.
- Removal of sump pumps and fire suppression systems.
- Ventilation during demolition to prevent gas accumulation.
- Monitoring for confined space hazards.

Onsite Sewer Treatment Plant (STP)

- Cessation of inflow and diversion to alternative system.
- Removal and safe disposal of sludge by licensed contractor.
- Cleaning and decontamination of tanks and pipelines.
- Isolation of electrical and mechanical equipment.
- Backfilling or removal of underground tanks as required.

8.5. Waste Management Plan.

- Segregation of waste streams (metal, concrete, timber, hazardous waste).
- Recycling of steel, aluminum, and other recoverable materials.
- Crushing and reuse of concrete rubble where feasible.
- Proper disposal of hazardous waste in approved facilities.
- Documentation of waste tracking and disposal certificates.

8.6. Environmental Management.

- Dust suppression measures during demolition.
- Noise control and monitoring.
- Prevention of groundwater contamination.
- Stormwater management and erosion control.
- Environmental monitoring and reporting.

8.7. Health and Safety

- Provision of appropriate PPE.
- Site access control and perimeter fencing.
- Emergency response plan for fire, injury, or chemical exposure.
- Confined space procedures for basement and STP works.
- Regular safety audits and toolbox talks.

8.8. Post-Decommissioning Activities

- Site clearance and grading.
- Soil testing and remediation if required.
- Final environmental inspection.
- Submission of completion report and compliance certificates.

8.9 Document Control.

All decommissioning records, permits, waste manifests, inspection reports, and compliance documentation shall be maintained and archived in accordance with regulatory requirements.

Table 18: Decommissioning and Closure Plan

Item No.	Description of Activity	Responsibility	Total (USD)
1.0	Preliminary & General	Developer	
1.1	Environmental Audit & Closure Report (ZEMA)	Developer	15,000
1.2	Mobilization of Heavy Machinery (Excavators/Crushers)	Developer	45,000
2.0	Dismantling & Soft Stripping	Developer	
2.1	Stripping Hotel/Retail interiors (fittings, carpets)	Developer	120,000
2.2	Removal of HVAC & Solar Plant Components	Developer	35,000
3.0	Structural Demolition	Developer	
3.1	Demolition of Reinforced Concrete Office Blocks	Developer	630,000
3.2	Demolition of Conference Center (Steel Frame)	Developer	60,000
3.3	Break-up of Hardstandings & Internal Roads	Developer	96,000
4.0	Waste Management & Haulage	Developer	

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Item No.	Description of Activity	Responsibility	Total (USD)
4.1	Haulage of Rubble to Approved Landfill (Chunga)	Developer	72,000
4.2	E-waste & Hazardous Material Disposal	Developer	25,000
5.0	Site Restoration	Developer	
5.1	Backfilling of Foundations & Earthworks	Developer	60,000
5.2	Topsoiling and Re-seeding (Native Grasses)	Developer	120,000
6.0	Contingency	Developer	
6.1	10% Physical Contingency	Developer	127,800
TOTAL	ESTIMATED DECOMMISSIONING COST		\$1,405,800

9.0. CONCLUSION AND RECOMMENDATION

The developer COMESA proposes to put up a mixed-use development comprising Office blocks, a 4-star hotel and conference centre, parking and other supporting facilities. The project intends to target clients from the local, regional and international market.

The proposed project will be an environmentally sensitive development done with sustainability in mind throughout design, construction and operation. The construction of all the building structures on the site will have to comply with the specified building line recommended by the existing legislation/LEED requirements and the complex will be designed to comply with environmental regulations.

The proposed project is both office space and a tourist destination designed to promote tourism in Zambia by providing conferencing facilities and good quality affordable temporary accommodation. This will brand Chongwe as a tourist destination. The complex will also bring about employment opportunities during construction and operation phase of the project. The proposed project is a worthwhile investment.

The project will be undertaken in three phases. During these phases of the project; there will be negative impacts on the physical and socio-economic environment. The negative impacts anticipated include air and noise pollution, potential surface and ground water contamination, soil contamination, human/wildlife conflicts and occupational health and safety risks. The developer has proposed measures to mitigate the negative impacts that this project is likely to have on the environment.

The project also has significant positive impacts such as employment opportunities and economic revenue (i.e., taxes to the country and business to local suppliers) that the development will bring benefits to the tourism sector and provision of hospitality and business facilities.

We do however recommend that the Environmental Management and Monitoring Plan proposed be strictly adhered to, to ensure that the proposed project does not result in the depletion of natural resources, human wildlife conflicts and environmental pollution.

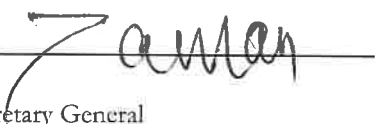
The developer will ensure that there is a system in place for close monitoring of the workers/environment, taking into account the proposed project proposal plans and environmental commitments made.

10.0 DECLARATION OF AUTHENTICITY OF REPORTS

We are of the opinion that the project proposals for the construction and operation of the COMESA Head office complex have been adequately presented.

This report has been prepared in accordance with guidelines set out by Zambian Laws and ZEMA statutory instruments.

To the best of our knowledge the contents of the document are factual and are authentic as provided by sources consulted.



Assistant Secretary General
(Administration and Finance)



COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA (COMESA)

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