SCOPING ENVIRONMENTAL IMPACT ASSESSMSNT REPORT FOR PROPOSED INLAND TRUCKPORT DEVELOPEMNT IN LISELO COMMUNAL AREA OF ZAMBEZI REGION

Assessed by:
NYEPEZ CONSULTANCY CC

Assessed for:

Vinsina Investment cc
PO Box 6058
Ausspanplatz
Windhoek

November 2024

CLIENT NAME:	**Vinsina Investment cc**, PO Box 6058- Ausspanplatz, Windhoek Namibia
ASSIGNMENT:	Conduct a Scoping Environmental Assessment and Prepare an Environmental Management Plan for the proposed Truck port at Liselo Communal Area in Zambezi Region, Namibia
REPORT TITLE:	Scoping Environmental Assessment study for the proposed Inland Truck Port at Liselo Communal Area in Zambezi Region, Namibia

EXPERT CERTIFICATION

Nyepez consultancy cc a registered EIA Lead firm of expert experienced EIA/EA expert, has prepared this EIA project report. The project report was prepared in accordance with Environmental Management Act, 2007 and the Environmental (Impact Assessment and Audit) Regulations, 2012 for submission to Ministry of Environment, Forestry and Tourism through the directorate of Environmental Affairs.

I certify that the report contains fair disclosure from the proponent, views of neighbours and recommendations to be undertaken by the proponent.

LEAD EXPERT

Name of Lead Expert: Nyepez Consultancy cc

Company Registration No.

Address: P.O. Box 61, Henties Bay

Contact: +264 814554221: email gsinyepe@yahoo.co.uk

Signature ……...……

Date ……

PROPONENT CERTIFICATION

I, …….. on behalf of **Vinsina Investment cc** submit this Environmental Scoping study report proposed Inland Truck port in Liselo area of Zambezi region. To my knowledge all information contained in this report is accurate and truthful representation of all findings as relating to the project.

Signature …….

Date ……

Designation ……

Project Name	Proposed Inland Truck port at Liselo Area
Client	**Vinsina Investment cc** PO Box 6058 Ausspanplatz Windhoek v.siambiso@gmail.com
Lead Consultant	NYEPEZ Consultancy cc (**Reg CC/2016/07561**) P.O Box 2325 Ngweze Namibia
Date of release	November 2024
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SITE ASSESSEMENT
INLAND TRUCKPORT DEVELOPMENT AT LISELO COMMUNAL AREA

Proposed Land Use: Inland Truck port

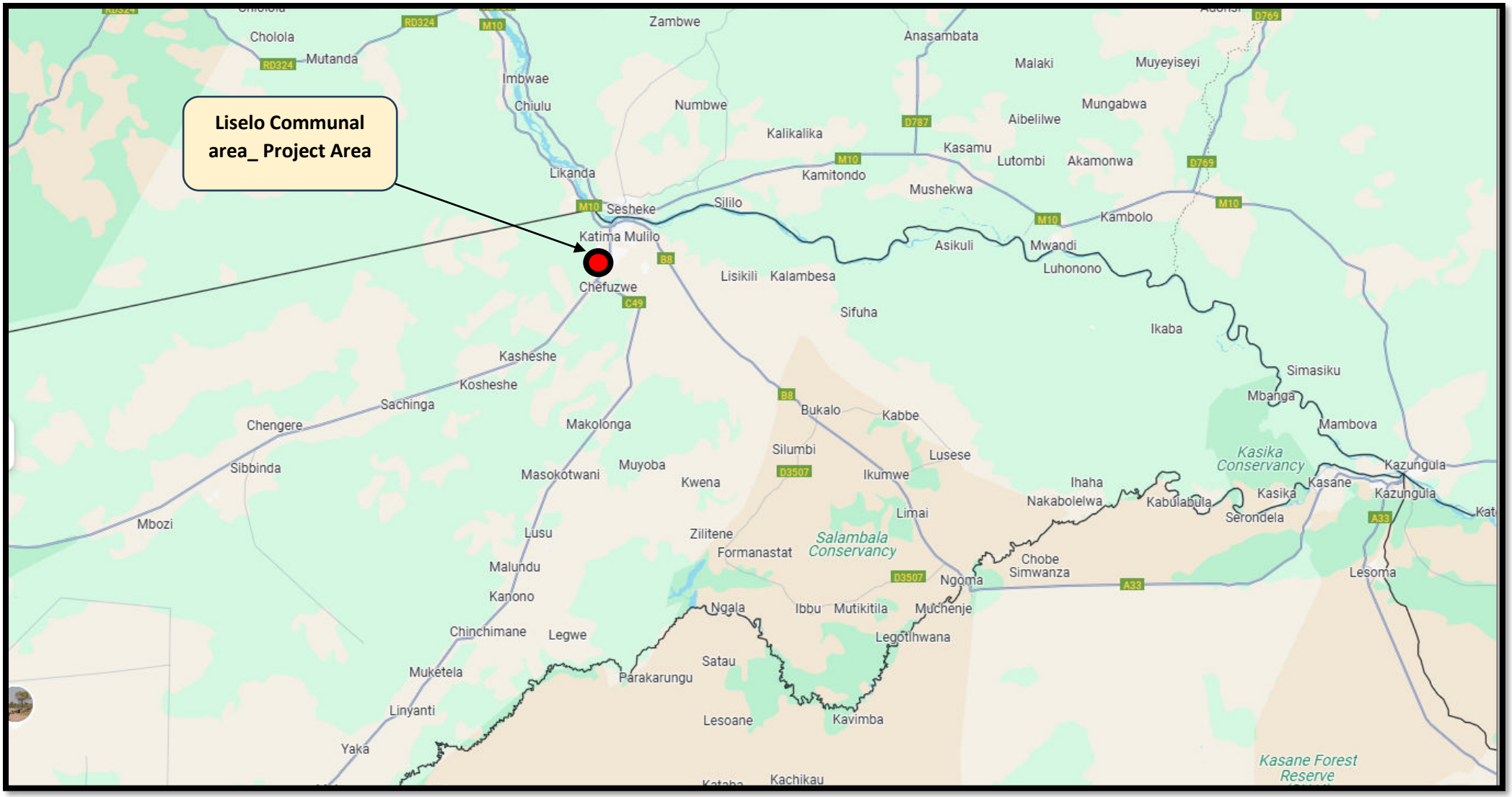
Total Site Area: 6.8 Hectares, Liselo Communal Area

Brief project Description

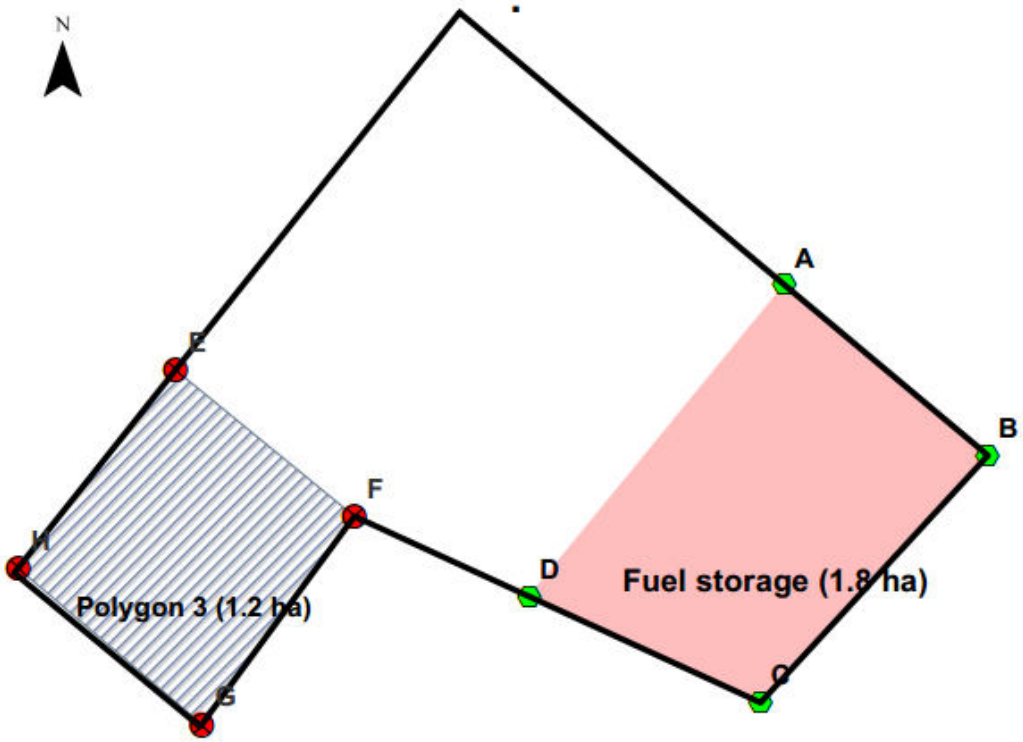
The Project site is located in the Katima Rural Constituency, about 13 Kilometres South of the Town of Katima Mulilo, trans-Caprivi highway. The site is located on the outskirts of the town of Katima Mulilo of Liselo the communal land. The project is on a 6.8 Hectares of Land and is nonexistence and not operational. The land/project area is divided into different sections of development. Whereas 1.8 hectares will be used for oil storage and the remainder of the land shall be used for other development components of the truck port owned by the proponent.

The project site is vacant, with a registered customary land right over it. However, the proponent has applied to change the land use from customary to Leasehold (Business) land right and an application for leasehold was applied to the Ministry of Land reform for registration of a leasehold or business land right. The project locality site is situated in the Liselo communal area, where the proponent previously used the area for grazing, fruit gathering and subsistence farming purposes but as a result of natural unforeseen circumstances, the land was left unutilized for few years due to impacts of climate change.

Consequently however, few years later the Liselo area saw a paradigm shift in terms of population growth, socio-economic development, physical changes and infrastructural development which triggered the proponent to change the model of land use from customary to socio-economic project development of a truck port. The site is situated or located about 100 Meters from the other business and residential settlement development, hence the application for an Environmental Scoping assessment.


Liselo Communal area_ Project Area
Zambwe
Anasambata
Malaki
Muyeyiseyi
Cholola
Mutanda
Imbwae
Chiulu
Numbwe
Mungabwa
Aibelilwe
Kalikalika
Kasamu
Lutombi
Akamonwa
Likanda
Kamitondo
Mushekwa
Sesheke
Sililo
Kambolo
Katima Mulilo
Asikuli
Mwandi
Luhonono
Lisikili
Kalambesa
Chefuzwe
Sifuha
Ikaba
Kasheshe
Simasiku
Kosheshe
Mbanga
Sachinga
Bukalo
Kabbe
Mambova
Chengere
Makolonga
Silumbi
Lusese
Kasika Conservancy
Sibbinda
Masokotwani
Muyoba
Kwena
Ikumwe
Ihaha
Kazungula
Nakabolelwa
Kasika
Kasane
Kazungula
Mbozi
Limai
Kabulabula
Serondela
Lusu
Zilitene
Salambala Conservancy
Formanastat
Chobe
Simwanza
Malundu
Ngoma
Lesoma
Kanono
Ngala
Ibbu
Mutikitila
Muchenje
Chinchimane
Legwe
Legotlhwana
Satau
Muketela
Parakarungu
Linyanti
Lesoane
Kavimba
Yaka
Kachikau
Kasane Forest Reserve

LISELO PLOT (SIZE 6.8 HA)



Legend

- Entire Polygon
- Fuel storage
- Polygon 3

Map Designed by: Lincoln Muyalapabbi
Tel: 0818046535
Date: May 2023
Datum: WGS84
Map Units: Meters
Projection: New Namibia Transverse Marcator

	X	Y
E	-17.5918	24.22226
F	-17.5924	24.22299
G	-17.5932	24.22237
H	-17.5926	24.22162

	X	Y
A	-17.5914	24.22475
B	-17.5921	24.22558
C	-17.5932	24.22465
D	-17.5927	24.22371

1. INTRODUCTION

1.1 Background

Vinsina Investment cc is the proponent and developer that has proposed to establish and develop the Inland truck port project. The project is on a 6.8 Hectares of Land and is non-existence and not operational. The project site area is situated at Liselo Communal area, situated about +- 13 kilometres South of the town of Katima Mulilo. The project site is vacant, partly cleared and an application for leasehold was applied to the Ministry of Land reform for registration of a leasehold or business land right.

Its proposed business activities include *long distance truck parking spaces, oil storage, Convenient shop, x 2 storage warehouses, overnighting or self-catered accommodation rooms, ablution facilities and a reception stamp duty clearance office.* Other basic services such as water are available onsite, electricity will be provided and established by NORED on the facility once the clearance is acquired. Other safety and truck port compliance measures like consent from relevant stakeholder such as Katima Town Council and Roads Authority shall be acquired as required. The site is associated with savannah woodland and forest with no surface watercourse and no wildlife conservation area.

The proposed inland truck-port is aimed at providing reception area for long distance trucks, parking station for truckers that is more secure and conducive resting place which will in turn will help to decongest the border areas and the town CBD that Is often congested with trucks that park is parking at undesignated and unauthorized spots in town and on highway. The project will also provide bulk storage spaces in the form of warehouses. It will also provide vehicle clearing certification, accommodation and parking for trucks in transit to either Zambia, Botswana another trading countries. This will relieve the pressure of parking spaces on roadside reserves for trucks in town of Katima Mulilo.

Vinsina Investment cc saw an urgent need to undertake this project having observed the high influx of trucks transporting goods and materials in the trans-Caprivi highway which forms part of the Walvis Bay SADC transportation corridor and have positive impact on the national, regional and local communities thereby contributing to the economic welfare of the town and the nation at large. The proposed project will also have positive impact on local communities through employment creation and efficient service delivery.

This site falls under the jurisdiction of the Zambezi Communal Land Board (ZCLB) and an application for right of Customary land right was firstly approved and registered over the land. However, the applicant has thus decided to change the land use from Customary land right to Leasehold (Business) land right. This leasehold application was lodged with the ZCLB who have requested for a ECC to be acquired by the applicant in order for the Land board to approved the Leasehold land right. A joint venture agreement shall be signed upon approval of the Leasehold between the proponent of the inland Truck port and (Liselo sub-khuta) and other benefits that will be directed to the community. The project has already received endorsement from the land owners, the Chief of Mafwe Traditional Authority, Honourable Induna of Liselo Communal Area.

According to the Zambezi Integrated Environmental Management plan, the site falls within the settlement and forest in which the following activities are permitted: Business, grazing and residential activity and there is no conservancy that exists in the area

The intention for applying for the clearance certificate is therefore to ensure the continuous operation and existence of the project to run it in a profitable, eco-friendly and sustainable way. The aim is to follow the Principles of Eco-development and offer clients the attraction that conserves the environment and improves the well-being of local people. Eco-project development is about uniting conservation, communities, and sustainable environmentally friendly project by minimizing impact on the environment

The developer **Vinsina Investment cc** of the proposed truck port development project appointed NYEPEZ Consultancy cc to conduct the Environmental Assessments and develop a Scoping Environmental and social Management Plan (ESMP) report for the proposed development. An Environmental Scoping Study will be undertaken to identify key biophysical and social concerns related to the project. During October 2024, the consultant conducted site visit and communicated with a range of stakeholders to determine these issues or concerns and this report contains such findings.

1.2 Terms and reference

The terms of reference for this Environmental Assessment are to determine the potential bio-physical and social impact emanating from the construction and operation of the proposed truck port project. The aims and objectives of the assessment are:

- To establish and describe the known ecological baseline conditions for environmental, health and social conditions existing in the project area from secondary information and a reconnaissance site visit
- To conduct an environmental impact identification and assessment and to provide a description of the likely environmental impacts of the proposed project during the construction and operation phases
- To also demonstrate that the Environmental Assessment complies with the current and/or expected Namibian legislation requirements for environmental, social performance and health.
- To identify and draft actions for environmental and social management plan of the proposed farming project
- To identify and document mitigation measures to minimise identified adverse environmental impacts

Based on the above the ESMP lists those management actions that are needed to ensure that undue or reasonably avoidable adverse impacts of the planning, construction and operations of the project are prevented and that the positive benefits of the project are enhanced or increased. It also gives responsibilities and will be used as a checklist to monitor compliance at the site.

2. CURRENT LAND USE

In terms of the communal land reform Act, Act No. 5 of 2002, the proposed site is under the jurisdiction of the Mafwe traditional authority and a leasehold (permission to occupy) was recommended by the traditional authority as aper the consent provided. There is currently no development onsite, but the area is fenced and partly cleared but not developed. *The applicant currently utilises about 1 hectares of the land for There residential purpose and crop subsistence small stock farming (chicken, and goats). The applicant intends to change the current land uses to business but setting up of a inland truck port to serve different segment of markets around Southern Africa.*

REPUBLIC OF NAMIBIA

MINISTRY OF AGRICULTURE, WATER AND LAND REFORM

CERTIFICATE OF REGISTRATION OF RECOGNITION OF EXISTING CUSTOMARY LAND RIGHT

As in the Communal Land Reform Act, 2002 (Section 28, Regulation 8)

Certificate No: ***ZAMCLB-CLR-006191***

It is hereby certified that a Customary Land Right has been granted to:

Right holder: ***Vincent Bafeze SINALUMBU***

National ID 64050502674

Residential address: Sachona Village

Postal address: P O Box 6058 Ausspannplatz, Windhoek

Nature of right holder: Individual

Description of portion of land in respect of which land right has been granted:

UPI:	LISELO100012	Constituency:	Katima Mulilo Rural
Area:	Liselo	Traditional Authority:	Mafwe
Parcel size:	6.8 ha	Traditional Administrative Area:	Liselo
Region:	Zambezi		

Description of land right which has been granted:

Approved land use: Residential — approval date: 08.03.2017

Other right on parcel: — approval date:

Signature of CLB Chairperson/ Secretary

Date

The figure above represents parcel:

UPI: LISELO100012
Size: 6.8 ha

0 100 200 m

1 centimeter = 50 meters
scale: 1:5 000

Corner points and map display:
Projection: Geographic
Datum: WGS84
Units: Decimal Degree

N

Corner points:

Point	Latitude	Longitude	Point	Latitude	Longitude	Point	Latitude	Longitude	Point	Latitude	Longitude
1	-17.59214	24.22558	2	-17.59033	24.22342	3	-17.59262	24.2216	4	-17.59325	24.22236
5	-17.59239	24.22299	6	-17.59315	24.22465						

3. ACCESSIBILITY TO SERVICES & COMMUNITY FACILITIES

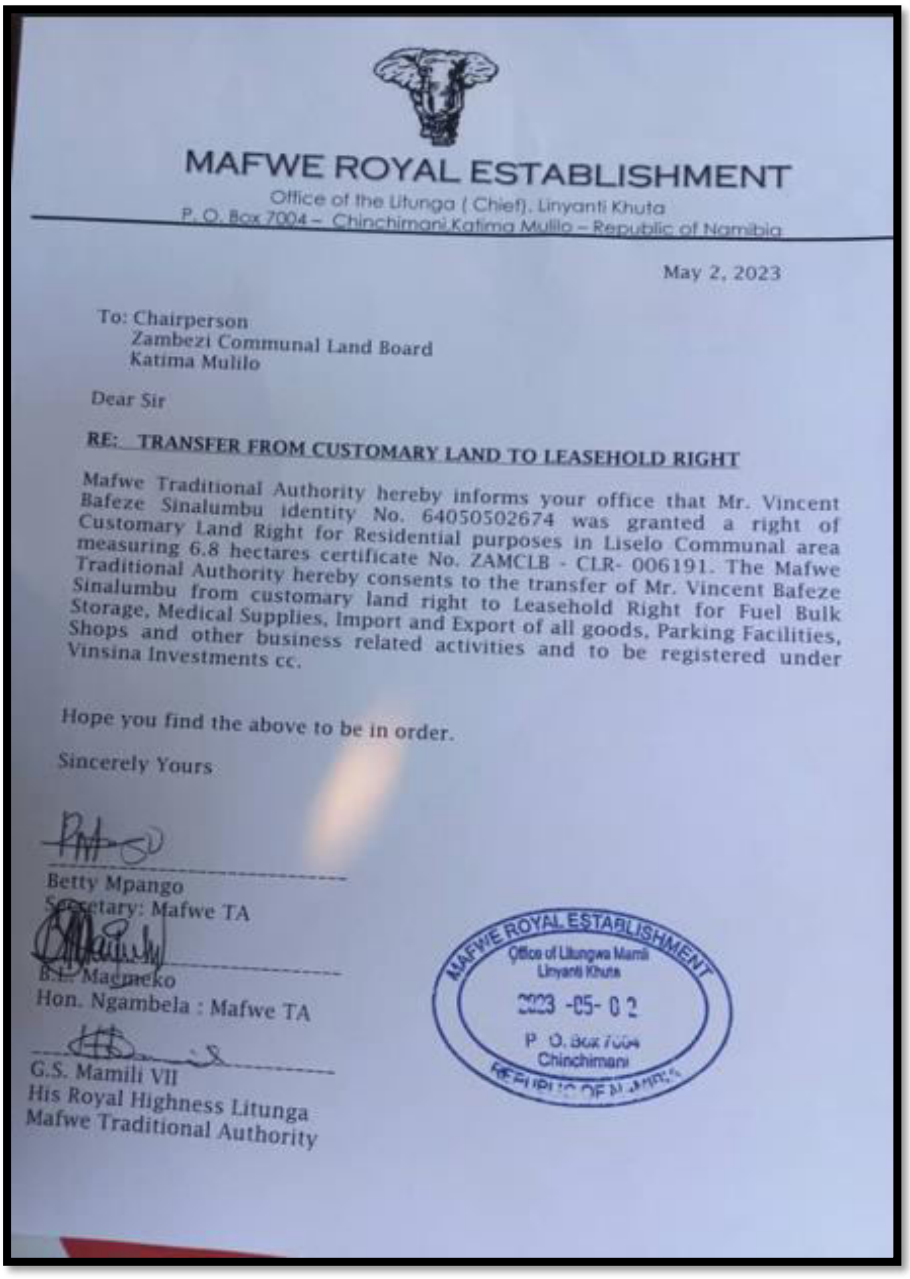
The site is accessible and is accessed through the Namibian tarred road called Trans-Caprivi highway going to Congo, Zambia and Botswana, and this road connects the Walvis Bay port and the above listed Southern African Business trading countries. Basic services such as water are available onsite, electricity will be provided and established by NORED on the facility once the clearance is acquired. Other safety and truck port compliance measures like consent from relevant stakeholder such as Katima Town Council and Roads Authority shall be acquired as required. The site is associated with savannah woodland, grass and forest, with no surface watercourse and no wildlife conservation area.

The proposed inland truck-port is aimed at providing reception area for long distance trucks, parking station for truckers that is more secure and conducive resting place which will in turn will help to decongest the border areas and the town CBD that Is often congested with trucks that park is parking at undesignated and unauthorized spots in town and on highway. The project will also provide bulk storage spaces in the form of warehouses. It will also provide vehicle clearing certification, accommodation and parking for trucks in transit to either Zambia, Botswana another trading countries. This will relieve the pressure of parking spaces on roadside reserves for trucks in town of Katima Multilettered is no existing land use activity on the site. However, there are numerous businesses economic establishment (such as guest houses, residential properties, General business retailers) situated close by the proposed site.

4. OWNERSHIP

In terms of the Communal Land Reform Act 5 of 2002, the proposed site is under the jurisdiction of the Mafwe Traditional Authority and a leasehold (Permission to occupy) was recommended by the Mafwe Traditional Authority

- The application for Leasehold was made to the Ministry of Land Reform (Zambezi Communal Land Board)
- The site is not developed but the site area is already cleared due to growing demand and influence of neighbouring business developments in the liselo area
- The site has the Total size of about 6.8 hectares



MAFWE ROYAL ESTABLISHMENT

Office of the Litunga (Chief), Linyanti Khuta
P. O. Box 7004 – Chinchimani,Katima Mulilo – Republic of Namibia

May 2, 2023

To: Chairperson
Zambezi Communal Land Board
Katima Mulilo

Dear Sir

RE: TRANSFER FROM CUSTOMARY LAND TO LEASEHOLD RIGHT

Mafwe Traditional Authority hereby informs your office that Mr. Vincent Bafeze Sinalumbu identity No. 64050502674 was granted a right of Customary Land Right for Residential purposes in Liselo Communal area measuring 6.8 hectares certificate No. ZAMCLB - CLR- 006191. The Mafwe Traditional Authority hereby consents to the transfer of Mr. Vincent Bafeze Sinalumbu from customary land right to Leasehold Right for Fuel Bulk Storage, Medical Supplies, Import and Export of all goods, Parking Facilities, Shops and other business related activities and to be registered under Vinsina Investments cc.

Hope you find the above to be in order.

Sincerely Yours

Betty Mpango
Secretary: Mafwe TA

B.L. Magweko
Hon. Ngambela : Mafwe TA

G.S. Mamili VII
His Royal Highness Litunga
Mafwe Traditional Authority

MAFWE ROYAL ESTABLISHMENT
Office of Litungwa Mamili
Linyanti Khuta
2023 -05- 02
P. O. Box 7004
Chinchimani

5. PROPOSED LAND USE ON THE PROJECT

During the construction and operation phase, the proposed development will consist building infrastructures and operational activities on-the site.

Its proposed business Activities include;

- *long distance truck parking spaces,*
- *oil storage, Convenient shop,*
- *x 2 warehouses,*
- *overnighting or self-catered accommodation rooms,*
- *ablution facilities and*
- *a reception stamp duty clearance office and Security guard room*
- *Small convenience shop*
- *Fenced area, entrance and exist gates*

6. POLICY AND LEGAL FRAMEWORK

Table 1: describes the environmental framework of the project.

LEGISLATION/GUIDELINE/POLICY	**APPLICABLE CLAUSE/POLICY**	**COMMENTS**
Namibia 's Environmental Assessment policy (1995)	List of activities that require EA.	Tourism facilities need to be assessed in terms of the impact on the natural and social environmental and resources.
Communal Land Reform Act	List of activities that may not be undertaken without a clearance certificate: 6. tourism development activities	Conduct a EA in terms of the tourism development and submit to MET in order for a clearance certificate to be issued.
1994 White paper on tourism (MET 1994)	Tourism must provide direct benefits to local people and aid conservation.	Emphasis should be on local benefits from tourism.
1995 policy on wildlife, management, utilisation and tourism in communal area (MET 1995a)	To allow rural communities on state land to undertake tourism ventures and to enter into cooperative agreements with commercial tourism	JV agreements with benefits to local communities should be negotiated between developers and local conservancies.

	organisations to develop tourism activities on state land.	
Inland fisheries resources act,2003 and regulations	Promotion, sustainable utilisation and protection of inland fisheries resources. Restrictions by limiting number of nets, mesh, sizes, net length and damaging fishing methods.	A fishing licence need to be obtained from the regional office to engage in recreational fishing in any inland waters by means of any regulated fishing gear.
Communal land reform act (act no 5 of 2002)	Allocation of rights in respect of communal land – part 2-right of leasehold. A right to leasehold	Application for the right of leasehold in respect of communal land must be made in the prescribed manner to the CCLB. Right of leasehold granted for
Namibia transport Act 22 of 1999	Guides and control the use of road by heavy and light vehicles on Namibian public roads	

Once Operational – the proponent would source permits from the relevant authorities for the following items includes;

a) The premises will be operated under the bylaws of the Ministry of works and Transport, Liselo Traditional Authority, and Mafwe Traditional Authority and permits will be sourced in this regard.

b) The Local Authority Act no. 23 of 1992

Table 2: Other relevant legal frameworks related to waste management in Namibia

Framework	**Emphasis**
Atmospheric Pollution Prevention Act No. 45 of 1965	*Prevention of pollution of the atmosphere.*
Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal, 1992	*Environmental sound management of hazardous waste and other wastes through the reduction of their movements, for the purpose of reducing their impacts on human health and environment*
Hazardous Substances Ordinance No. 14 of 1974	*Control of toxic substances (including manufacture, use, disposal, import and export).*
Pollution Control and Waste	*Prevention and regulation of air, water and land*

Management Bill of 1999	*pollutants; establishment of an appropriate framework for integrated pollution prevention and control, regulation of noise, dust and odour, as well as an establishment of a system of waste planning and management.*
Pollution Prevention Ordinance No. 11 of 1976	*Prevention of air pollution.*
Prevention and Combating of Pollution of Sea by Oil Act No. 6 of 1981	*Prohibits the discharge of oil from ships, tanker or off-shore installation and gives the state certain powers to prevent such pollution and deal with removal of oil spills.*
Prevention and combating of pollution of the sea by oil Act 24 of 1991	*Prevention of sea pollution by oil.*
UN Convention on the Law of the sea, 1982	*Protection and preservation of the marine environment including the seabed, ocean floor, subsoil and the resources in the environment.*
Water Resources Management Act No. 24 of 2004	*Prevention of water pollution.*

6.1 Environmental Assessment Practitioner (EAP)

Nyepez Consultancy cc is the EAP that conducted this Environmental Assessment ***(see attached CV).*** The following sectional details of the project which need to be considered as the input to the EIA process in the subsequent sections of the report.

7. DESCRIPTION OF THE PROPOSED PROJECT

7.1 Locality

The proposed inland truck port development project is on a 6.8 Hectares of Land and is a not functional and non-operational project based at Liselo communal area, situated about +- 13 kilometres from the town of Katima Mulilo. The area is within the Katima

Rural Constituency, in the Liselo communal area in the Zambezi Region (formerly known as (Caprivi Region).

Figure 3: Locality plan, project site area

Figure 4: Coordinates for project area

a. Project Rationale

The proposed Inland truck port and associated infrastructures are aimed at providing parking station for the truckers that will be more secure and conducive that in turn will help to decongest the border area and the town square that is currently congested with trucks in transit that park almost everywhere at undesignated and unauthorized spots along the streets of Katima Mulilo. The project will also provide vehicle clearing certification and parking for trucks in transit to either Zambia, Congo and Botswana, which will relieve the pressure of truck traffic alongside road reserves in town of Katima Mulilo.

Vinsina Investment cc saw an urgent need to undertake this project having observed the high influx of trucks transporting goods and materials in the trans-caprivi highway which forms part of the SADC transportation corridor and have positive impact on the national, regional and local communities thereby contributing to the economic welfare of the town and the nation at large. The proposed project will also have positive impact on local communities through employment creation and service delivery.

This site falls under the jurisdiction of the Zambezi Communal Land Board (ZCLB) and an application for right of Leasehold was lodged with the ZCLB who verified and measured the piece of land. A joint venture agreement shall be signed upon approval of the Leasehold between the proponent of the Truckport and (Liselo sub-khuta) and other benefits shall be directed to the community. The project has already received endorsement from the land owners, the Chief of Mafwe Traditional Authority, Honourable Induna of Liselo Communal Area.

According to the Zambezi Integrated Environmental Management plan, the site falls within the settlement and forest in which the following activities are permitted: Business, grazing and residential activity and there is no conservancy that exists in the area

The intention to apply for the clearance certificate is to assess the environmental impacts of project's construction and operational activities by ensuring that the existence of the project is profitable, eco-friendly and sustainable way. The aim is to follow the Principles of Eco-development and offer clients the business operations that conserves the environment and improves the well-being of local people. Eco-project development is about uniting conservation, communities and sustainable environmentally friendly development by minimizing impact on the environment. An Inland truck port is an intermodal terminal directly

connected to boarder, river and/or seaport(s) by road or rail where customers can leave/pick up their units directly at a boarder. This definition, is vital as it implies a certain level of integration with boarder as well as availability of services that may be found at a port, such as storage, maintenance of containers, customs clearance, etc.

Therefore, Inland truck ports are used much more consciously than conventional inland terminals, with the aim of improving the situation resulting from increased container flows, a focus on security and control by the use of information and communication systems. Scheduled and reliable high-capacity transportation to and from the sea or river boarder is essential and determines the truck port's performance and its environmental role. Based on their function and their location, truck ports may be categorised as distant, mid-range and close.

INLAND TRUCK PORT BENEFITS

The report shows that an inland truck port terminal in the entire region of Namibia and Zambezi Region in particular, could achieve traffic, economic, social, and environmental benefits.

1. **Traffic Benefits**

Focus on cargo flow, modelling assumptions, and traffic impacts to help determine the traffic benefits of an inland port like the Liselo proposed truck port. This will reduce and decrease illegal stop overs of trucks in transit to other countries in southern Africa

a. Controlled safe parking for trucks

The implementation of this project in Zambezi region will guarantee and assist in ensuring security for long distance truckdrivers and the trucks. The project plans to offer different services at one stop area where all paper work will be completed before departing to different territorial boarders.

b. Effective and Efficient service delivery

The proposed truck port ensures fast service delivery such as the clearing of consignments or good transported to other countries. This will reduce the workload of migration officers and will reduce the long hours and queues taken by drivers in conducting this activity at the boarders.

c employment creation and contribution to GDP

the establishment of the truck port will creation employment opportunities to residents of Liselo community and to residents of Zambezi region at large. It shall also add value to the country's GDP as truck drivers are required to pay service some of money for using these services through VAT charge. This will contribute to the regional revenues collected through transport services. – the development of the inland port would attract investment to the area and generate much-needed jobs and economic development opportunities for the region.

D. Adherence to transportation Standard

The establishment of an Inland truck port will certainly meet the transport standards as the Zambezi region is considered the gate way to most southern African countries in Namibia. Having two internationally recognised borders linking other African countries make is necessary for Zambezi region as a central and connecting region or have a truck port which shall serve and meet the demands of long-distance trucks in transit to neighbouring countries.

e. Improved Service to Shippers at a Potentially Reduced Cost

Shippers would benefit from being able to drop off export cargo closer to their location, and terminal operators would benefit from the ability to schedule loads of this export cargo for arrival at the truck port during non-peak terminal hours. The truck port operator could also plan for the cargo load list associated with the transportation.

c. Reduced Carbon Emissions

The reduction in truck trips and mileage driven means lower fuel consumption and reduced carbon emissions of approximately 10,000 tonnes a year with the conservative scenario. The primary environmental benefit is from a reduction in greenhouse gas emissions.

Secondary benefits include reduced vehicle idling from less traffic congestion and lower air pollution. The fewer truck kilometres driven in the trucks and the elimination of truck trips in the Lower Mainland results in significantly less diesel fuel consumed and, therefore, a sizeable reduction in carbon emissions.

1 Facility Overview

The proposed inland facility would have the following capabilities:

a) "Hook and haul" service to mainline truck drivers. This means that the facility will not delay the trucks, and therefore will be able to exchange car strings from full-length intermodal trucks

in less than one hour. The facility's design, equipment, and staffing must enable this level of service.

b) Supporting design - the facility will be secured with fencing and have on-site security enabling storage of international cargo. The facility will have a cargo transfer warehouse that allows trans-loading from trucks, and shipping containers.

Figure 4: Example concept of layout plan of the truck port

c) Inventory - the facility must and will effectively manage a range of empty containers and operate in close coordination with the customers, terminals, and the rest of the supply chain. This implies investment in technology, management staff, and nearly 24-7 operations.

d. Construction Approach

The proposed Liselo truck port construction will be carried out in an environment friendly manner following the principles of balance cut and fill. Excess excavated materials will be disposed of in the preidentified approved disposal sites. Climate change adaptation (CCA) measures of improved adequate drainage constructions will be carried out.

e. Project Cost and Implementation Schedule

The estimated cost for Truck port is N$ 3 million including design and supervision costs and the construction of Inland truck port is scheduled to start by June 2025 and expected to be completed by December 2025 within 7 months. The construction will be done in phases.

7. ENVIRONMENTAL AND SOCIAL OVERVIEW OF THE AFFECTED ENVIRONMENT

7.1 Introduction

In the following sections the current biological, physical and socio-economic conditions of the study area are discussed and their sensitivities to change are considered

7.2 Climate

The climate of the area is fundamental in determining the availability of water and also reveals much about its ecological sensitivity and resilience to change.

The climate of the area is fundamental; in determining the availability of water and also reveals its ecological sensitivity and resilience to change. The climate data below (table 3 below) is typical for north western Zambezi and is expected to occur at the truck port site.

According to the National Agriculture Policy (1995), scarce productive land and fragile soils, coupled with limited water resources and an erratic rainfall regime are the principal features of Namibia's agriculture. The country can be divided into four ecological zones:

• The desert region, comprising 22 per cent of the land area, where mean annual rainfall is less than 100 mm;

• The arid region, comprising 33 per cent of the land is, where mean annual rainfall varies between 100 and 300mm;

• The semi-arid region, comprising 37 per cent of the land area, where mean annual rainfall lies between 301 and 500 mm; and

• The semi-humid and sub-tropical region, comprising 8per cent of the land area, where mean annual rainfall is between 501 and 700mm

Table 3: sensitivities and potential impact related to climate

Environmental feature	Description	Sensitivities	Potential impact of the project
Rainfall	• Highly variable thunderstorms • Two distinct seasons – a dry season April to November and shorter wet season from end of November to April –Rain peak in January & February • 550-600 mm per year • Tropical climate with less evaporation • Evaporation highest in September and October (Mendelsohn *et al* 1997)	• Flooding (April – July) • Risk of flooding very high	• The lodge will cause an increase in water demand
Temperature	• Average daily temperature vary between 20 in summer and 5ºc in winter • Highest temp between Sept and Nov, with maximums between 32 and 40 ºc • Frost is unusual • Coldest temperatures .measured in July with an average daily maximum of 6ºc (Mendelsohn et al 2009)	• High temperatures in summer • Contributes to high evaporation rate	Health and safety of the workforce
Wind direction	Prevailing wind direction is South easterly but north easterly winds are also experienced	• Dust generation during dry seasons due to soil texture	• Increased dust

7.3 Topography and soils

The major feature of the Zambezi landscape is extensive forest, savannah sands with associated flood plains, channels and deposits which have resulted in producing six major landscapes. The truck port site area represents two of these landscapes:

- Savannah forest associated with dry grass
- Sandy soil

7.4 Surface and Ground Water Hydrology

The site is dominated by sandy, dry savannah grassland and trees, there is no availability of surface water in the area. Further, the site is not prone to flood, hence the underground water levels is uncertain and could only be predicted and/or estimated by the hydrological expertise for water sources.

The sensitivities associated with surface and groundwater features as well as the potential impacts the project may have on these features are contained in Table 4.

Table 4: Sensitivities and potential impacts related to surface and underground water

Environmental features	**Description**	**Sensitivities**	**Potential Impacts of Project on feature**
Zambezi river system	• Relatively large river that holds water permanently	• The Zambezi River has real catchment area and is fed from outlows from the Angola river which drains a large area of Zambia. • Slow flowing river • Can change direction east or west depending on inflow from Kwando – Linyanti • Shared water resource	• No Surface water pollution • No water abstraction from Zambezi • No Pollution as their river is situated kilometres away • No Impact on wet land system
Groundwater hydrology	• Underground water fairly abundant and flows in a south-	• Pollution	• Any affluent resulting from the development is

	easterly direction in a productive porous aquifer • Water reserves fairlyclose to surface, between 25-65 m • Water quality excellent (Mendelsohn et al 2002)		likely to affect the resources in the long term • No pressure on sustainability of water resources

7.5 Landscape characteristics

7.5.1 Vegetation

The Zambezi region is considered a semi-arid tropical savannah ecosystem with very distinct wet and dry seasons. Vegetation types in the Zambezi region is characterised by soils, flooding and fire. The site lies in the savanna and woodland vegetation (Kalahari woodland) Mendelsohn *et al.* (2002), where vegetation is dominated by tall tree species. The site has distinct communities of Burkea-Terminalia woodland (Hines, 1997). However, according to Lushetile (2009) this vegetation class has reduced species richness in comparison to other vegetation classes. Figure 5: captures the site structure and vegetation on the project site surrounding.

Figure 5: Terminalia sericea vegetation at the project area and the truck port construction worker

The site comprises of a cleared vegetation site; hence vegetation is in a disturbed state. The site does not have a fully functional ecosystem due to the disturbance by the surrounding business development activities and road which has fragmented the landscape. Therefore, destruction of vegetation will be not on a pristine landscape. The landscape can be enhanced with re-afforestation with desired species after construction to create micro-habitats. A nested plot design was used to capture species occurring at the site. The results are captured below:

Table 5: Vegetation species prevalent in the project area surrounding

Tree species	**Protection status**
Tree layer	
***3 Burkea africana* Hook.**	Protected
11 Terminalia sericea Burch. ex DC.	None
***1 Strychnos spinosa* Lam.**	Protected
1 Philenoptera violacea (Schinz) Schrire Rhus	Protected
1 Piliostigma thonningii (Schumach.) Milne	Protected
1 Vachellia erioloba	Protected
Shrub layer	
***Ochna pulchra* Hook.**	Namibian Near-endemic
Vachelia erioloba E.Mey.	Protected
Bauhinia petersiana	Protected
Ximenia caffra Sond. var. caffra Zehneria marlothii (Cogn.) R.& A.Fern	None
Terminalia sericea Burch. ex DC.	None
Opuntia ficus-indica	None - Invasive species
Herbs	
Annona stenophylla Engl. & Diels ssp.	N/A
Acrotome inflata Benth.	
Bauhinia petersiana Bolle ssp. petersiana	
Combretum collinum Fresen. ssp. collinum	
Grass	
Aristida adscensionis L.	N/A
Aristida stipitata Hack. ssp. Stipitata ssp. minuta	
Aristida meridionalis Henrard	
Cenchrus ciliaris L.	
Digitaria seriata Stapf	
Eragrostis rotifer Rendle	
Eragrostis porosa Nees	
Grewia flavescens Juss. var. flavescens	
Hermannia eenii Baker f.	
Heteropogon contortus (L.) Roem. & Schult.	
Hermbstaedtia fleckii (Schinz) Baker & C.B.Clarke	

Indigofera flavicans Baker
Kyllinga alba Nees
Lonchocarpus nelsii (Schinz) Heering
Piliostigma thonningii (Schumach.) Milne-Redh
Urochloa brachyura (Hack.) Stapf

Terminalia sericea was observed to be the dominant species at site. T. sericea can be invasive and its distribution is widespread. There is no protection for this species under current legulations. Wood from this species may be used as firewood after destructive activities on site. *Strychnos spinose* bears edible fruit and *Ochna Pulchra* makes beautiful ornamental trees. These can be uprooted and transplanted to a desirable position. *Opunti species* is a threat native vegetation and therefore should be destroyed immediately to avoid infestation of this alien species. The *Burkea africana* is a timber species. Trees of this species observed on the plot were all of less than 45cm in diameter, should a need arise for such trees to be removed the Directorate of Forestry should be informed. B. africana wood can be used for household items such as stool and pestles.

7.5.2 Birds

As a result of the unavailability of surface water on the site, the area or the proposed site does not have abundance of bird species and wildlife. Birds are mostly confined by the river side of the mighty Zambezi River located some 15kilometer from the site area.

7.5.3 Wildlife

The project area is situated meters from the main road of trans-caprivi highway, a busy and high-level developing node area which is situated about +-12 km from the town of Katima Mulilo, because of high number of prevailing socio-economic development, the area does not have any wildlife species and /or no conservation areas of interest.

There is only availability of small livestock's that grazes in other undisturbed parts of the liselo area. These small livestock engage in grazing near settlements during the wet seasons when the grazing land or pasture is good. Domestic livestock animals such as chickens, dogs and goats are some of the animals that could be observed in the area. Wild animals are mostly found in the wetlands of the East Zambezi region, areas which possess great value to the wetland grazing pastures and waterbodies, which also forms

part of tourism attraction in such wetland's areas. Furthermore, due to the fact that the Liselo area is situated close to a highly populated town, the area where the proposed project is to be established is a developable area due to high socio-economic activities, which does not possess any status of wildlife conservancy as there are nor bird or wildlife corridors in the area.

7.5.4 Agriculture

There is no existing and/or any commercial or subsistence agriculture taking place on-site or surrounding areas of the proposed project. This is because the Liselo communal area is slowly being transformed into an area of high business activities for both commercial, general business and other infrastructure economic activities.

7.6 Socio Economic Profile

The area of Liselo have a population of close to 2500 people, with a very high economic potential due to its locality and the surrounding economic activities in the area.

7.6.1 Benefits and project economic activities at Liselo area

In the nutshell and on the national level, the overall objectives for entrepreneurial businesses in the country, in line with the National NDP and vision 2030 objectives, among other are to help attain the national objectives, the overall goal of the National Economic growth & empowerment is to increase economic growth, reduction & eradication of poverty and sustain and increase food security, within the context of Namibia's fragile ecosystem. The proposed Inland Truck Port on the other hand have the following

- Gives opportunities for a faster and more effective container handling at the port.
- Reduces capacity problems on access roads to and from the port.
- Clusters companies and bodies dealing with goods transportation.
- Supports the truck port users with added value services, job creation, etc.
- Gives extra space for development of other activities in urban harbour areas such as residential and commercial areas, etc.
- Increases the catchment area of the port.

- Contributes to a modal shift from road to combined rail and sea.
- Reduces environmental conflicts by segregating different functions.

A monthly payment of N$ 4800.00 will be paid by the developer (Vinsina Investment cc) to annually to the Mafwe Traditional Authority as a monthly negotiated agreement to be activated once the completion of the development project finalized. This will be a separate agreement between the traditional authority and the proponent. The proponent and/or developer has agreed to pay a monthly amount of N$ 5,000.00 to the Liselo sub-khuta community as part of the social responsibility to the Liselo community. Furthermore, a leasehold rental fee will also be paid to the Zambezi Communal Land Board as per the communal Land Reform Act No.5 of 2002. This lease fee to be paid to the land board will be paid in the account opened by the ZCLB through the Ministry of Land Reform. A long-term mutual relationship between the truck port developers (Vinsina Investment cc) and Liselo community will be developed. Significant community empowerment such as employment creation and assistance for social donations will also be offered to the community.

8. DESCRIPTION OF THE PROJECT

8.1 Construction and Operational Phases

The 6.8 hectares of land allocated for this envisaged truck port project is at the moment partly cleared due to ongoing socio-economic developments being established in the area and because there are no sensitive or endangered plant species on the site. It is a forest savannah area characterised by dry grass and few trees. Based on the proposal, the developer plan to start with the construction as soon as the Zambezi Land Board approves the Leasehold application which will be accompanied by an Environmental Clearance Certificate from the Ministry of Environment, Forestry & Tourism.

NB: Priority will be made that some local materials such as the poles, local made bricks and local made corrugated iron sheets, which will be used to build the truck port (the poles will be obtained from the surrounding timer traders in local shops in the town of Katima mulilo.

8.2 Construction Phase Activities

- ✓ Upon completion of the preparation of the site, plans to connect a water pipeline connecting from existing Nam-water line (Katima to Sibbinda waterline) will be installed. The Nam-water pipeline runs alongside the road from Katima Mulilo going to the Sibbinda settlement (see pictures on page 30).
- ✓ In addition to that a power supply will also be installed during the construction phase, where power will be installed through connection to the existing rural electrification transformer from NORED. Trans-Zambezi Truckport & Investment cc is expected to spend close to N$ 60 000.00 for connecting from the existing transformer to the project area.
- ✓ The construction of the proposed truckport development and/or the construction of the building will have other associated infrastructures that are essential for operation of the truckport. These will include 20 self-catered sleeping rooms for truck drivers or clients and a total of 25 workers (skilled and unskilled) will be employed during the construction and operation phase of the project.
- ✓ One (1) 100 000 Litre septic tank will be installed to absorb the liquid waste produced from the project activity building

8.4 Operational activities

- ✓ During the operation phase of the truck port development project a total of 25 skilled and semi-skilled workers will be employed at the project.
- ✓ The liquid wastes generated from the operations of the project will be channelled to 1x 100 000 Litre water tank, where applied chemicals will be installed to reduce the increase in the level of the wastes in the container

Figure 6. (x1) 100 000 Litre septic tank to be installed

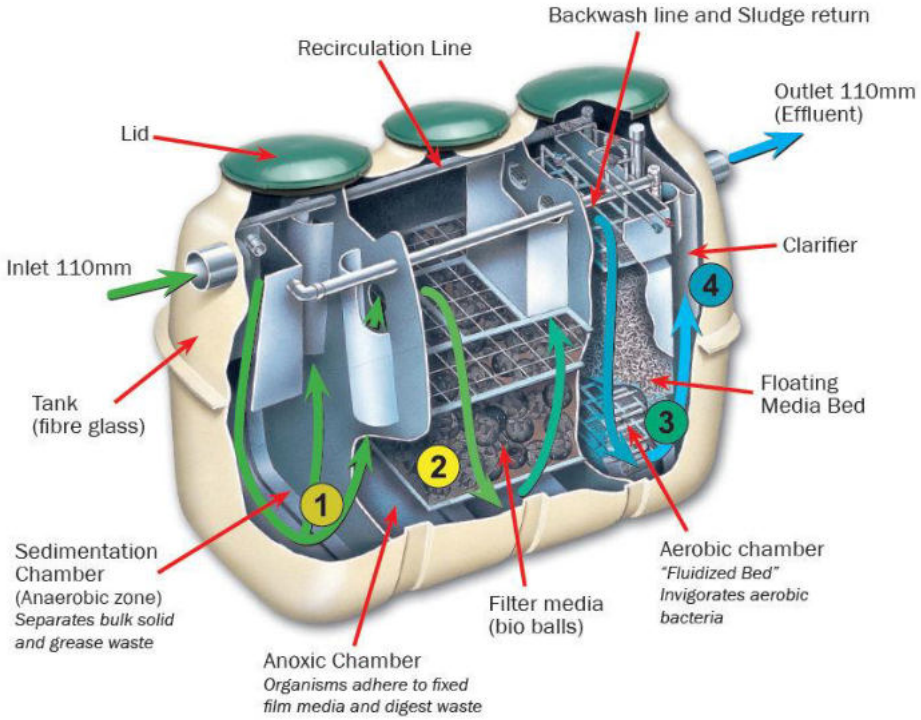


Figure 7: Layout connection design

- ✓ The solid wastes that will be generated from the operations of the truck port will be drained, transported and disposed to the nearest and designated dumping site of Katima Mulilo designated dumping site, which is situated in Liselo Communal Area some +-10 kilometres from the project site. The investor (Trans-Zambezi Truckport & Investment cc) will take responsibility to transport the solid wastes to the dumping site as the dumping site to serve costs.
- ✓ Continuous socio-economic services and assistance will be offered by the investor to the community of Liselo, the sub-khuta and the Mafwe traditional Authority depending on the necessity that arise.

9. ASSOCIATED INFRASTRUCTURE

9.1 Water

Water supply will be connected through Nam-water sibbinda pipeline which is already functional and is under the auspices of the Ministry for Agriculture, water and Land Reform. The pipeline runs alongside the trans-caprivi highway, whereas the pipe is located about -+20 meters from the envisaged proposed project area. The water is suitable for human consumption. This existing water pipeline supplies clean water to the communities of Liselo area.

Figure 8: installed and existing rural water supply pipeline katima sibbinda along the project area

9.2 Electrical Services

Since the proposed development is located close to other existing business infrastructure developments such as General businesses, Guesthouses, residential properties community and health facility, power supply will be connected through the same power line which is under the ownership of Nampower and Nored, hence the investor plans to obtain his power supply by connecting an extension to existing power supply which is situated about 80 meters to the proposed site area. The source of this power connection is connected from the main town of Katima Mulilo.

9.3 Sewage Treatment and Disposal

The Truckport development building will contain a large (x1) 100 000 Litre septic tank which will be installed about 4 meters underground, it is estimated that the capacity of the septic tank can last for many years and can take about to 30 years for it to reach its fullest capacity. A liquid chemical reduction medicine will be constantly stored poured inside the septic tank to help compress the wastes by preventing the overflow of the septic tank.

9.4 Solid Waste Disposal

The solid wastes will be transported and disposed to the Katima Mulilo designated dumping site *(see page 40-43 for mitigations)*. The investor Trans-Zambezi Truckport & Investment cc will take the full responsibility to ensure the management & maintenance of transporting all solid wastes to the nearly located Katima Mulilo dumping site. The dumping site is located some 10 kilometres from the project site area.

Figure 9: Designated Katima Mulilo dumping site

Within the dryland truckport or premises there will be sufficient portable 240 Litre wheel bins that will be placed within the premises where waste material such as plastics and cane will be disposed. Once the wheel bins are full, the truckport operate will ensure the disposition of the waste material to the katima dumping site. There will be two (2) skip containers on the premises where heavy building rubbles will be disposed. It will be the truckport operator's responsibility to ensure that when the skip container is full such material are disposed at the dumping site.

Figure 10: *Skip container for refuse rubbles & 240 L, Wheel bins to be placed on the premises*

10. STAKEHOLDER AND COMMUNITY CONSULTATIONS

Public participation forms an important component of the environmental Assessment process. It is defined by the Environmental Management Act (2007), as a '*process in which potential interested and affected parties area given an opportunity to comment on, or raise issues relevant to specific matters'*.The objectives of the stakeholder consultation process were to disseminate information on the project and its expected impact, long-term as well as short-term, among primary and secondary stakeholders and to gather information on relevant issues so that the feedback received could be used to address these issues at early stages of project design.

Another important objective was to determine the extent of the concerns amongst the community, to address these in the project implementation and to suggest appropriate mitigation measures. The feedback received has been used to address these issues at early stages of project design

Identification of Stakeholders

The stakeholders consulted for the Project included local affected persons/residents, local authorities, educational institutions, local community and other groups with an interest in the Project. Government agencies were also consulted. Individuals representing persons from the local community and around the Liselo area and representatives of the Zambezi regional council were informed about the Project and invited to the meeting. Consultations took place between 01 to 03rd November 2024.

Notices and public advertisement

Due to the extent of size of the proposed development, public participation notices were advertised in local notice board around Liselo area, Mafwe Traditional Authority and in the newspapers circulating nationwide. The advert was in the New Era newspaper on 20th November 2024 and 28th November 2024 respectively, which called to inform the Affected and Interested parties of the project. Communication with stakeholders about the proposed truck port development was facilitated through the stated means above: The stakeholders were identified in terms of relevance to the project and who could serve as a source of information. The minutes and results of the public consultations are hereby attached.

Figure 11. Public notices and adverts

NYEPEZ

PUBLIC MEETING ATTENDANCE REGISTER
VINSINA INVESTMENT CC, INLAND TRUCKPORT DEVELOPMENT, LISELO COMMUNAL AREA
DATE 16 DECEMBER 2024
VENUE: LISELO SUB-KHUTA
TIME: 10H00-12H00

LISELO SUB KHUTA
16 -12- 2024
KATIMA MULILO

	NAME	ORGANISATION	TEL/CELL	EMAIL ADDRESS	SIGNATURE
1	O'Briano Singkolela	Secretary – Liselo Khuta	0813701133		
2	Simyaia Stanly	Community	–		SM.
3	Kingsley Joy	Community Member	–		
4	Mushaba Manifka	Community Member	–		Musihimba B
5	Andreas Kabuzya	Induna – Headman	–		Kabuza A
6	Charles Muyambuluka	Community Member	0813418876		M.
7	Mpulule Luleans	Induna – Headman			
8	Progress Muyambuluka	Induna – Headman	0816988204		A
9	Simyaia Muhunda	Community Member	–		A
10	Alifeli Alex	Community Member	–		
11	MR GIFT SINYEPE	Consultant	0814554221	gsinyepe@yahoo.co.uk	
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

Figure 12: Attendance register

The public consultative meeting was scheduled to take place on the 16 December 2024 where different vital entities such as the proponent, Liselo subkhuta, Traditional Authority and other stakeholders and members of the Liselo community at were invited to discuss issues and concerns regarding the proposed truck port development, as well as to raise concerns and proposals for mitigating the problems. Sadly, the meeting took place but only a few members (mostly members of the traditional authority) attended the meeting. A total of Eleven (11) stakeholders attended this meeting (see attached attendance list).

Figure 13: Participatory consultative meeting the Liselo community at (Liselo Sub-khuta): Date: 16. 12.24

A summary of the issues and concerns that were raised by the interested and affected parties is listed below. The purpose of presenting the issues raised by participants in this section is simply to:

- Ensure transparency regarding the concerns that have been expressed;
- Ensure that all issues raised are properly addressed in the EIA, ESMP and mitigation measures proposed.

Issues dominated the discussions range from:

- Employment Creation
- Noise pollution
- Grazing

11. MAJOR IMPACTS IDENTIFIED

11.1 Deforestation and ecosystem impacts

Due to the close proximity of the Liselo communal area to the Katima Mulilo town (13 km), the area does not have dense forest, as it is a developing area associated with dry savannah forest. Forested areas are therefore limited in this part of the area. Limited information about Namibian forests is available, but according to a World Bank report

of 2012, the area of forested land in Namibia in January 2010 was 72,900 km². This roughly translates into a 1% rate of deforestation per year

11.2 Grazing for Livestock

Having the Inland truck port development project in the Liselo area is believed to not affect any grazing land for livestock, as there are no good pastures within the project area for livestock and animal grazing. Most sites situated close to the project site are already utilized by other land uses such as the general businesses and residential land uses. As a result, no grazing land is available in the area.

According to the community of Liselo, through consultative meeting conducted, communities usually take their livestock to distant places such as the Katima quarantine where productive grassland is available for their cattle grazing. The proposed development therefore will have No negative impact on the Liselo community grazing land "the area is varsity". Through or with the application made to the Zambezi Communal Land Board, the application will allow the investor **Vinsina Investment cc** to enclose his business in a fence, which will prevent animals and for security reasons for the project.

11.3 Groundwater Surface Water and Soil contamination

In terms of vulnerability of the soil and groundwater there are two main features of importance. The Liselo Communal area have (1) the heavy sandy soils and is a semi-dry area, and the area is not prone to flooding or leaching and (2) a very low water level in the area. Observing the activities of the proposed development, there are no factors that may impact on underground water and soil.

11.4 Noise pollution

The proposed truckport development will have a slight possibility of noise pollution emanating from the transportation trucks that will be arriving and boarding from this service project. The slight noise pollution will not have any detrimental effect to any land use around the area as the closest land use is the General Businesses and light industrial operational projects. The proposed truck port development is intended to provide potential clients with quality, viable and best clearing and accommodation

services, where potential hindering nuisance activities such as noise pollution will be minimised. The inland truck port will operate in line with the truck port development Policies and regulation of Namibia.

Table 7: Sustainability / Potential Appraisal

11.5 Sustainability / Potential Appraisal			
Impact on Ecological & Socio Economic	**Level of Impact**		**Comments**
	Positive	**Negative**	
Creation of Employment	High	None	20 unskilled local workers during the construction phase of the project and an estimate of ± 25 skilled & semi-skilled local workers during the operational phase of the project
Grazing& cattle corridors	N/A	None	An alternative nearby commonage suitable for grazing which is located few kilometres from the project site.
Abstraction of water	High	None	The water will be extracted from the Nam water pipeline situated about 10 meters from the proposed site.
Water Pollution	N/A	None	There will be no chemical and/or hazardous substances that will be produced from the proposed Dry truck port development that will contaminate or pollute surface and underground water. The area does not have sufficient surface water and it has sandy and is a dry savannah land. Based on this the level of underground water is presumed to be very low and far from the surface.
Tenure insecurity & land use disputes	Limited	N/A	Area is to be registered under a leasehold for a period of time for leasing to the investors, there are currently no land use activities in the proposed project area

Key Consideration Area

- Contribute to local economy & National economy
- Employment Creation
- Local level economic empowerment

12. IMPACT ASSESSMENT AND MITIGATION

12.1 Environmental Impact Associated with the Project

This section discusses the potential environmental impacts of the proposed Project and identifies mitigation measures to minimize the impacts in the design, construction and operational phases. Environmental analysis covered potential direct, indirect, cumulative, and induced impacts but primarily focusing on the physical impacts within and around the truck port operational areas.

Physical Impacts. The main physical issues relate to impacts such as new construction within the Truck port area, reconstruction of the drains and associated earthworks to upgrade the drainage and access, construction of new access to the truck port area roadways, obtaining rock based construction materials, supply and installation of pavement surfacing, casting of concrete components for septic tanks and drains, noise, dust, clearing waste and sediment from drains, disposal of residual hazardous goods, disposal of other general waste, and water quality. The construction for the civil works will create some unavoidable dust and noise and all the above require to be addressed. There are also about removal of a large proportion of some old mature trees on site but some of these can be retained at the perimeter for aesthetic purposes and to provide visual mitigation by shielding the site.

Management Issues. The main management issues relate to impacts such as waste management and waste disposal, prevention of flooding, repair and re-provisioning drainage, materials supply, planning temporary traffic management measures, controlling noise and dust and managing workers and public safety.

Biological Impacts. The only biological issues relate to probable removal of the trees in the north section of the truck port Project area. The trees to be removed are natural grown trees in the 1970s, however some of these trees can be easily avoided. There is no issue of interference

with sites protected for their biodiversity as the Project is very far from the nearest protected area. There will be no interference with protected forests as the works will be in the urban area

Social Impacts. In the short-term the proposed project will potentially have positive impacts on local employment in Zambezi by creating a demand for unskilled construction workers for the development of infrastructure in the project site area. This will result in improvement of the operational environment in the transshipment yards, which potentially would contribute to improve the working environment and facilitate better health and safety provisions if other management practices are introduced.

The proposed capacity building for increased efficiency and modernization of transshipment should result in safer and healthier working practices overall but introduction of less labour-intensive transshipment practices in the future may result in a reduction of the requirements for day labourers and temporary increase unemployment. However, there may be other opportunities to reemploy day labouring staff such as in waste management and support of sanitary provisions and non-skilled health and safety activities

The social and human impacts are minimal as the improvements will be mostly within the Liselo truck port area. Adverse impacts outside are difficult to identify at this time but may be to adjacent employer's businesses adjacent that may be affected by drainage works.

Design / Pre-Construction Phase

1. Detailed Design

Inland Truck Port development will follow design and built modality. The contractor hired will be responsible for detailed design and subsequent construction of the Inland Port (DP) facilities. Detail design will refer and comply with Namibian Transport Rules for structural analysis and design of DP.

Further, the contractor will hire Environmental Specialist (ES) who will carry out the review and update the existing EMP during detail design. The project design will incorporate the IEE study recommendations. EMP will be made integral part of the bidding and contract document. Environmental Mitigation measures will be itemized and put in the Bill of Quantities (BOQ).

2. Tree Felling

Part of the Inland Truck Port development site falls on the forest vegetated area. Approximately about 5 trees will need to be removed to make way for truck port development. Tree felling

will be done with approval from Department of Forest. The application for tree felling process will be initiated upon approval of the Clearance certificate. Upon approval from the department of Forestry (DoF), Vinsina Investment cc will carry out tree felling in accordance with procedure set forth in Forest and Nature Conservation Rules. Only necessary trees that marked by the DoF will be felled. The economically valuable trees will be handed to the Natural Resource Development and Vinsina Investment cc in consultation with DoF who will carry out compensatory plantation. Depending on the availability vacant or barren state land, compensatory ratio of minimum of 1:1 will be followed if area designated is small and for large area a ration 1:4 to be applied.

3. Environmental capacity development

Environment Division under Regional council is involved in management and operation of region's solid waste collection and disposal; sewerage treatment; water treatment and supply; and maintenance of drainage and footpaths. However, it is not involved in monitoring and supervision of any new projects; since it is the responsibility of the Engineering Division. Both the Divisions lack expertise and experiences in carrying out the environmental compliance monitoring of the projects.

Moreover, as part of the overall capacity development, The Zambezi regional Council will provide environmental baseline (air and noise) monitoring equipment and the required training on data collection and assessment. During the construction period, equipment will be placed with the respective PCU/CSC; and after the completion of project, it will be handed over to the Engineering Division.

C. Construction Phase

The source of the construction impacts from the truck port will include (i) excavation of building foundations; (ii) construction dry truck port buildings, (iii) construction of the internal roads and parking areas; (iv) construction of perimeter walls and security fencing (v) construction of internal road side drainage (viii) installing landscaping road signage and accessories (viii) construction of the buildings and security apparatus throughout the site. The waste disposal issues for the works should be manageable as there will be no major excavation necessary.

D. Occupational Health and Safety

Worker occupational health and safety is generally governed Employment and Labour Act. Construction works will generally result in accidents and injuries or even demise of the workers if no health and safety measures are followed. General Rules and Regulations on Occupational Health and Safety will be applied for occupation safety.

Mitigation measures to be implemented by contractors to ensure health and safety of workers are as follows:

a) The contractor will conduct of training (assisted by PIU) for all workers on safety and environmental hygiene at no cost to the employees. The contractor will instruct workers in health and safety matters as required by law and by good engineering practice and provide first aid facilities.

b) The contractors will instruct and induct all workers in health and safety matters (induction course) including construction camp rules and site agents/foremen will follow up with toolbox talks on a weekly basis. Workforce training for all workers starting on site will include safety and environmental hygiene.

c) Fencing on all areas of excavation greater than 1m deep and sides of temporary works shall be observed.

d) Workers shall be provided with appropriate personnel safety equipment such as safety boots, helmets, gloves, protective clothes, dust mask, goggles, and ear protection at no cost to the workers.

e) Reversing signals (visual and audible) shall be installed on all construction vehicles and plant.

f) Contractor will at all-time keep the first aid kit at the construction sites.

g) Contractor will be responsible for evacuation injured person to the nearest medical centre and bear all the medical expenses

2. Community Health and Safety

Public safety, particularly of pedestrians and children can be threatened by the excavation of the trenches for side drain construction. Since construction site is alongside the trans-caprivi highway, it will be guarded on all sides by security personnel. Construction activities will be timed and provision for safe passage of school children and elderlies will be made. excavated trenches/ditches and freshly cut steep side slopes will be clearly marked and fenced for the

safety of passers-by and workers alike. Project or construction vehicles will be briefed on speed limit within sensitive areas such as schools, commercial and residential areas. In event of accidents, the contractor will be responsible for immediate evacuation of injured person to the nearest medical centre. The contractor shall bear medical and other expenses of the injured person.

3. General Construction Waste Management

Uncontrolled waste disposal will contaminate soil and water bodies, thereby harming the environment. Mitigation measures will seek to reduce, recycle and reuse waste as far as practicable. The contractors will ensure implementation of following measures.

a) In principle, the waste generation will be minimized at source.

b) Waste products will be segregated, recycled and reused whenever possible.

c) Recyclable waste will be sold to the scrap dealers.

d) Organic waste such as plant materials will be composted

e) Residual non-hazardous waste will be disposed off in the municipal landfill.

f) Construction/workers' camps will be provided with sufficient refuse bins.

g) Burning of construction and domestic wastes will be prohibited

h) Disposal of solid wastes into flood ways, wetland, rivers, other watercourses, farmland, forest and associated places of worship or other culturally sensitive areas or areas where a livelihood is derived canals, agricultural fields and public areas will be prohibited.

4. Hazardous materials and hazardous waste disposal

Use of hazardous substances including oils and lubricants can cause significant impacts if uncontrolled or if waste is not disposed correctly. Hazardous waste disposed directly into drainage system can poison water body and affect downstream aquatic life. Mitigation measures will seek to control access to and the use of hazardous substances including chemicals, oils and lubricants and control waste disposal. Contractor will carry out following measures to minimize the impacts:

i) Hazardous chemicals, oil and lubricants waste will be safely stored. Secondary containment around fuel storage area will be ensured.

ii) Hydrocarbon, toxic material and explosives (if required) will be stored in adequately protected sites as per the Explosive and Hazardous Rules of RGOB to prevent soil and water contamination.

iii) Equipment/vehicle maintenance and refuelling areas will be confined to areas in construction sites designed to contain spilled lubricants and fuels. Such areas will be provided with drainage leading to an oil-water separator that will be regularly skimmed of oil and maintained to ensure efficiency.

iv) Fuel and other hazardous substances will be stored in areas provided with roof, impervious flooring and bund/containment wall to protect these from the elements and to readily contain spilled fuel/lubricant.

v) Hazardous wastes (oil, used batteries, fuel drums) will be segregated, labelled and safely stored. The spent oil and batteries will be sold to recycling dealers.

vi) Hazardous materials will be stored away from water bodies and above flood level.

vii) Cleanup operation using readily available absorbent such as sawdust will be carried out immediately during accidental spillage of hazardous waste

viii) All areas intended for storage of hazardous materials will be quarantined and provided with adequate facilities to combat emergency situations complying with all the applicable statutory stipulation.

5. Drainage and hydrology

There are no river streams in the project area thus no rivers will not be directly affected by proposed Inland truckport construction activities. However, there will be an induced impact on the aquatic life, since the storm water carrying silt and other waste will ultimately join the ground. During construction, the contractor will ensure the proper disposal of spoil and other waste. Hazardous waste such as oil and lubricants will be properly stored and sent for recycling. Solid municipal waste will be disposed of in a municipal landfill.

6. Traffic Management

Construction activities are likely to cause hindrance in local traffic flow if not properly planned and executed. Contractor in consultation with PIU; local authorities (such as the regional council and local communities will come up with traffic management during construction. Work hours and traffic windows will be decided and implemented accordingly. Traffic flow during the rush hours (school and office opening and closing time) will be kept open.

7. Sanitation and Disease Vectors

Potential sanitation and impacts from disease need to be controlled by maintaining hygienic conditions in the Truckport area throughout the operational phase as well during construction by implementing appropriate social and health programs for the Project. Truck Port will ensure that improvements are made to site sanitation and will implement the mitigation measure below for all operational activities and also that the contractor ensures that:

a) Measures to prevent malaria shall be implemented by installation of proper drainage to avoid formation of stagnant water, etc.

b) Standing water will not be allowed to accumulate in the drainage facilities or along the warehouse sides to prevent proliferation of mosquitoes.

c) Temporary and permanent drainage facilities will be designed to facilitate the rapid removal of surface water from all areas and prevent the accumulation of surface water ponds.

d) Malaria controls will be implemented in line with social plans for the Project.

8. Noise and Dust

Earthworks and rock crushing activities will be the main sources of dust and noise. There will be significant dust and noise impacts on surrounding environment if no proper mitigation measures are followed. Therefore, to minimize the dust pollution impacts, contractor will implement following measures:

a) Water sprinkling or spraying using tanker will be done twice a day to reduce dust generation. Water can be sourced from the nearby boreholes

b) Construction work will be carried out only during day time (from 8.00am to 6 pm). c) If works have given rise to complaints over dust, the contractor shall investigate the cause, report it in the monthly progress reports and review and propose alternative mitigation measures before works recommence.

d) Suitable construction noise barrier will be designed and constructed

e) Fuel-efficient and well-maintained haulage trucks will be employed to minimize exhaust emissions. Regular maintenance will be carried out.

f) Vehicles transporting soil, sand and other construction materials will be covered with tarpaulin sheets to reduce the release of dust and avoid impacts from dust. Speed limits of such

vehicles within the works site and on unpaved edge areas of the Project Road will be established and agreed.

11. Water Resource and Water Quality

During construction, the contractor will ensure the proper disposal of spoil and other waste. Hazardous waste such as oil and lubricants will be properly stored and sent for recycling. Solid municipal waste will be disposed of in a municipal landfill.

13. Impact Flora and Fauna

The project area is located in a semi-forested area a distance of approximately 8 kilometres from the Liselo clinic and the school. Except for removal of five (5) trees (from the project area), there will be no other impact on flora and fauna. For removed trees, project will carry out compensatory plantation with locally available native tree species. Depending on the availability of space, compensatory ration would be either 1:1 (in small area) or 1:4 (if larger vacant area is available).

14. Archaeological and cultural artifacts

There are no known archaeological and cultural sites within Project area. And hence no impact is expected.

15. Compensatory Plantation

Project in consultation with local government; Divisional Forest Office and community will locate the government or even community barren for compensatory plantation. Compensatory plant using local or native tree species will be carried out to replace the trees felled during the construction. Ratio for compensation will be 1:1 if the area of plantation is small. However, the project can go up to 1:4 if the larger areas available.

D. Operational Phase

During the operational phase of the Project, Department of Trade will operate and maintain the Mini Inland truck Port. The investor will be responsible for occupational health and safety of the workers and other occupants of the project. It will also take fully responsibility of handling and management of all hazardous materials shipped through the truck port. No hazardous waste will be discharge directly into the local drainage system. All hazardous waste will be collected and stored in a safe place until it is disposed of or recycled.

1. Noise and Dust

Noise standard permissible for industrial or commercial establishment are Daytime of and Night-time. And this applies for truck port operational area. However, immediately outside (within 10m), there are mixed used area and the permissible noise standard of daytime. So, the operational noise reaching will be limited to mixed used standard. Noise will be monitored within truck port compound and as well as for sensitive areas (residential places) during construction and operational stages. Based on noise quality assessment, detailed design will design noise barrier of high concrete compound wall and constructed it all around truck port compound to limit direct noise impact. Further during detailed and pre-construction stage, the hired contractor will ensure that tree felling strictly limited to required level. Design will consider wherever possible leaving those trees that are immediately in and outside the proposed concrete boundary wall (noise barrier) to further act as noise barriers.

Dust pollution will be of problem particularly during dry winter season, it will be reduced by having concrete/asphalt surfacing of parking and trucks plying area. Further, if required, the water will be sprayed at least twice daily to dampen the dust. With regard to toxic fumes emissions, the trucks entering the truck port compound will be checked of emission standards as per the current practice of Road Safety standards. Routine checking and penalizing the defaulters is expected to bring level of toxic fume emission to acceptable limits.

2. Dangerous Goods and Hazardous Waste

During operations, truck port may handle dangerous and hazardous goods which will pose risk to safety of workers and the surrounding inhabitants. Import and handling of hazardous chemicals and explosives may result in accidents and injuries or even death to people working and living in and around the truck port. If the hazardous substances are disposed of in an open area it will affect surrounding vegetation and even pose health and safety risk to local population. Therefore, Truck port operator, will implement following measures to avoid accidents or poisoning local environment involving hazardous substances:

i) Hazardous chemicals, oil and lubricants waste will be safely stored. Secondary containment around fuel storage area will be ensured.
ii) Explosive material or substances will be prohibited into truck port area
iii) Equipment/vehicle maintenance and refuelling areas will be confined to designated areas. And it will be provided with drainage leading to an oil-water separator that will be regularly skimmed of oil and maintained to ensure efficiency.

iv) Fuel and other hazardous substances will be stored in areas provided with roof, impervious flooring and bund/containment wall to protect these from the elements and to readily contain spilled fuel/lubricant.

v) Hazardous wastes (oil, used batteries, fuel drums) will be segregated, labelled and safely stored. The spent oil and batteries will be sold to recycling dealers.

vi) Hazardous materials will be stored away from water bodies and above flood level. vii) cleanup operation using readily available absorbent such as sawdust will be carried out immediately during accidental spillage of hazardous waste

vii) All areas intended for storage of hazardous materials will be quarantined and provided with adequate facilities to combat emergency situations complying with all the applicable statutory stipulation

3. Sewerage and Wastewater Management

Truck port operation will generate sewage and wastewater. If untreated sewage and wastewater from port is released directly surrounding into environment or into the local drainage system, it will lead to pollution of land and water bodies. In order to avoid impacts of sewage and wastewater, DOT will implement following measures:

i) Truck port sewage system will be connected septic tank system and Sewage Treatment Plan through sewage network in the area.

ii) Based on the resulting wastewater from the truck port operation, **Vinsina Investment cc** will install wastewater treatment plant. Treated wastewater could be used for spraying to dampen dust during operation.

E. Cumulative Environmental Impact

More than adverse cumulative impacts, the cumulative beneficial impacts would be higher for the entire region as well as for Liselo communal area, if truck port development along with the internal Access Road is carried out. Currently, all heavy transport carriers pass through the narrow Liselo area going straight to the town of Katima mulilo and the ngoma or winella border and customs and transshipment activities are carried out at various locations without centralized processes. This results in huge delays which increases the vehicle operating cost and causes congestion within the town. Therefore, development of dry truck port would have following cumulative beneficial impacts:

i) Easing of traffic congestion inside Katima Mulilo town (currently all vehicles to and from Walvis bay passes through only border crossing at winella and Ngoma);
ii) Reduction of travel distance for heavy trucks (traveling through Trans-caprivi highway)
iii) Reduction of overall transportation cost
iv) Reduction of fuel consumption and thereby lower greenhouse gas emissions
v) Reduction of vehicular noise and exhaust pollution within Katima Mulilo town
vi) Allowing of smooth and faster trading between Bhutan and regional countries; leading to better economic output of the country.

F. Trans-boundary Issues and Impacts

The proposed inland truckport project is located a far distance from the Mapacha airport about 10 kilometres from the project area. The southern boundary of port is particularly close to some residential units, who also consented to the project. at some point distance between project boundary and border is only around 5 km. The noise and dust pollution would be the minor issues. Noise and dust during construction and operation might impact neighbouring settlement. However, impact will not be severe as there will be 2-metre-high border separation wall which will act as noise and dust barrier. Further the mitigation measures such as Port's temporary noise barrier and the permanent concrete noise barrier will further reduce and dust from reaching Indian neighbourhoods.

13. ENVIRONMENTAL MANAGEMENT PLAN

13.1 Objectives of the Environmental Management Plan (EMP)

An Environmental Management Plan (EMP) is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measure needed. The Environmental Management Plan (EMP) provides management options to ensure impacts of the proposed Truck Port development project and operations are minimised. The EMP acts as a stand-alone document, which can be used drying the various phases (operational and decommissioning) of the Inland Truck Port project. All personnel taking part in the operation of the truck Port project should be made aware of the contents of the EMP, so as to plan the relevant activities accordingly in an environmental suitable way.

As a result, the objectives of an Environmental Management Plan are to ensure the following:

- To include all components of the Inland truck Port project operations
- To prescribe the best and practicable control methods to lessen the environmental impacts associated with the operations of the Truck port
- To monitor and audit the performance and of operational personnel to supply such control
- Lastly is to ensure that appropriate environmental training is provided to all operational personnel.

The investor (Vinsina Investment cc) implements an Environmental Management System (EMS) similar to the ISO 14001 system. An environmental Management System is an internationally recognised and certified management system that will ensure ongoing incorporation of environmental constraints. At the heart of an ISO 14001 EMS is the concept of continental improvement of environmental performance with resulting increases in operational efficiency, financial savings and reduction in environmental, health and safety risks. An effective EMS would need to include the following factors:

- A stated environmental policy which sets the desired level of environmental performance
- An environmental legal register
- An institutional structure which sets out the responsibility, authority, line of communications and the resources needed to implement the EMS
- Identification of environmental, safety and health training needs
- An environmental program, stipulating environmental objectives and target to be met and work instructions and control to be applied in order to achieve compliance with the environmental policy
- Periodic internal and external audits and reviews of environmental performance and the effectiveness of the EMS.

Accordingly, commitment of the Developer to effective environmental management provides the channel whereby strategies are transformed from the documented form

and implemented. For the truck port project, the developer is committed to implementing a comprehensive environmental management programme. The project manager/developer and Operations Manager have ultimate responsibility for the achievement of environmental targets during the construction and operational phases, respectively. The environmental programme commits the Owner to allocation of sufficient resources, continuous improvement of environmental management practices in order to fulfil social and ethical responsibility and compliance with national and international standards.

The developer is responsible for the:

- Allocation of Resources
- Risk Assessment
- ensuring that the environmental policy is in place and communicated to all workers
- Designating role of staff members in EMP
- Appointment and monitoring of environmental management team

14. THE IMPLEMENTATION OF THE ENVIRONMENTAL MANAGEMENT PLAN (EMP)

A. Implementation Arrangements

The environmental regulations in Namibia are derived from the Environmental Assessment Act (2007). The environmental assessment rules are set out in the Regulation for Environmental Clearance of Projects (2012). For this project the requirement for statutory environmental assessment will be determined by Ministry of Environment and Tourism.

Liselo Truck port development will follow the principle of design and built modality. Vinsina Investment cc will hire construction contractor who will be responsible for design as well as carry out the subsequent construction. Vinsina Investment cc will also assist in capacity building in environmental monitoring and reporting. Environmental Clearance will be issued by the Ministry of Environment, Forestry and Tourism (Directorate of Environmental Affairs) upon submission of the report and related comments with no objection certificates from the affected persons/community and other stakeholder.

The table 6: Defines the responsibilities for EMP implementation.

Agency	**Responsibilities**
Project Coordination Unit (Vinsina Investment cc)	• Executing agency with overall responsibility for project construction and operation • Ensure that sufficient funds are available to properly implement the EMP • Provide sufficient funding and human resources for proper and timely implementation of required mitigation measures in the EMP • Ensure that Construction Supervision Consultant is recruited. • Ensure that Project implementation complies with Namibia's environmental policies and regulations
	• Ensure that environmental protection and mitigation measures in the EMP are incorporated in the detailed designs • Establish and implement an environmental grievance redress mechanism, as described in the Act, to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the Project's environmental performance • Confirm that bidding and contract documents include the EMP. Submit semi-annual monitoring reports on EMP implementation to DEA (Directorate of Environmental Affairs) and identify environmental corrective actions and prepare a corrective action plan, as necessary, for submission. • Consult or hire an Environmental Specialist to ensure proper implementation of EMP provisions. Through this specialist shall: (i) ensure proper and timely implementation of tasks specified in the EMP, (ii) conduct environmental training as specified in the EMP, (iii) conduct contractors workers' orientation on EMP provisions, (iv) undertake regular monitoring of the contractor's environmental performance, as scheduled in the EMP (v) conduct field measurements for dust and noise as if complaints arise, and (v) prepare environmental baseline report and semi-annual

	environmental monitoring reports, as specified in the EMP, for submission to DEA.
Project implementation Unit	• Liaise with the Environmental Officer in Zambezi region or Katima Mulilo to ensure that Project implementation complies with environmental standards, principles and requirements; • Ensure that bidding and contract documents include the EMP; • Ensure that the Contractor provide sufficient funding and human resources for proper and timely implementation of required mitigation measures in the EMP and the contractor(s) identify these sums separately in the bidding documents; • Submit quarterly reports on EMP implementation DEA and Trans-Vinsina Investment cc directors; • Ensure that EMP provisions are strictly implemented during various project phases (design/pre-construction, construction and operation) to mitigate environmental impacts to acceptable levels; • Check that environmental protection and mitigation measures in the EMP are incorporated in the detailed designs; • Check those necessary environmental clearances and approval(s) from DEA prior to award of civil works contracts; • Participate in an environmental grievance redress mechanism, as described in the Act, to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the Project's environmental performance; • Ensure monitoring of the implementation of the EMP (mitigation and monitoring measures); • Prior to bidding ensure that the contractors agree to implement environmental and safety requirements as required in draft contracts to ensure compliance with environmental statutory and contractual obligations and proper implementation of the EMP; • Conduct environmental management awareness training sessions for Contractor as described in the EMP
Construction Supervision Consultant	• Attend environmental management and capacity building training sessions on the EMP;

	• Ensure implementation of mitigation and monitoring measures for various project phases in the EMP by contractors; • Undertake day to day environmental management and make observations and keep written record of environmental management activities for Truck port as described in the EMP. • Participate in an environmental grievance redress mechanism, to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the Project's environmental performance
Contractor	• Prior to start of bidding agree in writing to implement (if selected) environmental and safety requirements to ensure compliance with environmental statutory and contractual obligations and proper implementation of the EMP. • Provide sufficient funding and human resources for proper and timely implementation of required mitigation measures in the EMP and identify these sums separately in the bidding documents. • Implement environmental and safety requirements to ensure compliance with environmental statutory and contractual obligations and proper implementation of the EMP • Attend environmental management awareness training sessions for Contractor as described in the EMP. • Implement additional environmental mitigation measures for unexpected impacts, as necessary • Participate in an environmental grievance redress mechanism, as described in the EMP, to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the Project's environmental performance.
Vinsina Investment cc (Investors for truck port)	• Responsible for operation and maintenance of Project. • Implement EMP monitoring during operations
DEA (Environmental Commission)	• Review and approve environmental assessment reports required by the Government. • Undertake monitoring of the project’s environmental performance based on their mandate

To facilitate effective EMP implementation during construction, the contractors will be oriented on the environmental terms and conditions of the project. The contractor's compliance with the environmental conditions is directly linked with the work progress payments. Clearances for payments will include certification from the Project Manager as to the effective implementation of the EMP and all other mitigation measures specified in the EMP. The completion of implementation of mitigation measures will therefore be linked to payment milestones.

B. Environmental Mitigation

The anticipated environmental impacts and mitigation measures discussed in the previous section is presented in Table below. The table also shows responsibilities and timeframe/schedule for implementation of mitigation measures and monitoring.

Table below shows that most mitigation activities during pre-construction are to be implemented by the Project coordinator, (assisted by Construction Supervision Consultant). During construction mitigation measures shall be primarily implemented by the contractor and monitored by Construction Supervision Consultant on behalf of Vinsina Investment cc. During operation stage, Vinsina Investment cc and DEA will undertake environmental mitigation and monitoring requirements specified in the EMP. To ensure implementation of mitigation measures during construction, the EMP will be included in the bidding and contract documents for civil works. Contractors' conformity with environmental contract procedures and specifications will be regularly monitored by Project Coordination Unit and results shall be reported semi-annually to Directorate of Environmental Affairs

14.1 Mitigation Measures during Constructions Phase & Operation Phases of the Inland Truck Port Development (table 7)

Table 7: Environmental Mitigation and Environmental Performance Monitoring Plan for Inland Truck Port at Liselo Communal area.

		Impact mitigation		Performance and Impact monitoring
Environmental Concern	**Objective**	**Proposed mitigation measures**	**Responsible for Implementation**	**Responsible to monitor**
DESIGN & PRE-CONSTRUCTION				
1. Detailed Design	Incorporate design measures in the project design to minimize environmental impacts	1. The Inland Truck Port development will follow design and built modality. The contractor hired will be responsible for detailed design and subsequent construction of the MDP facilities. 2. The contractor will hire Environmental Specialist (ES) who will carry out the review and update the existing EMP during detail design and the project design will incorporate the environmental study recommendations. 3. EMP will be made integral part of the bidding and contract document. Environmental Mitigation measures will be itemized and put	Contractor	Project Coordination Unit

		in the Bill of Quantities (BOQ). 4. Grievance Redress Committee will be formed prior to the start of civil works		
2. Environmental capacity development	Develop environmental management capacity	1. Vinsina Investment cc will provide environmental baseline (air and noise) monitoring equipment and the required training on data collection and assessment. **2.** Project Management Unit shall conduct awareness training for the contractors and the site agents and workers on implementation of construction mitigation measures in the Project EMP and any additional mitigation measures that may be required during construction phase	Project implementation Unit & Construction Supervision Consultant	Regional Environment officer, Project implementation Unit& Construction Supervision Consultant
3 Tree Felling or Site Clearance	Tree felling by contractor	1. Tree felling will be done with approval from Department of Forest (DoF). The application for tree felling process has been initiated and approval will soon be accorded	Contractor	Construction Supervision Consultant budget & Directorate of Forestry (DoF) Budget

		2. Upon approval from the DoF, Vinsina Investment cc will carry out tree felling in accordance with procedure set forth in Forest and Nature Conservation policies. Only the necessary trees that marked by the DoF will be felled. 3. The economically valuable timbers will be handed to the sold by the developer inline with Forestry laws and regulation. 4. Vinsina Investment cc in consultation with DoF will carry out compensatory plantation. Depending on the availability vacant or barren government land, compensatory ratio of minimum of 1:1 will be followed if area designated is small and for large area a ration 1:4 to be applied.		
4 Baseline Environment data	Establishment of baseline data on air	1. As part of institutionalization and capacity building for environmental compliance	Construction Supervision Consultant & Contractor	Project implementation Unit & Construction Supervision

(Air and Noise)	and noise	monitoring and reporting, financial institutions together with Vinsina Investment cc will finance the procurement environmental monitoring equipment and provide the necessary training. Baseline data on air quality and noise levels of all sensitive area (commercial, residential and institutional) will be assessed before commencement of civil works. These data will help in assessing project impacts during implementation. 2. Based on noise quality assessment, detailed design will design noise barrier of high concrete compound wall around Truck port compound to limit direct noise impact during operation. Further during detailed and preconstruction stage, the hired contractor will ensure that tree felling strictly limited to required level. Design will consider wherever possible leaving those trees that are immediately in and outside the proposed concrete boundary wall (noise barrier)		Consultant

		to further act as noise barriers.		
CONSTRUCTION STAGE				
1. Safety Precautions for the Workers	Ensure worker's safety	1. Worker's occupational health and safety will be generally governed Labour and Employment Act of Namibia 11of 2007. Construction works will generally result in accidents and injuries or even demise of the workers if no health and safety measures are followed. General Rules and Regulations on Occupational Health and Safety (OHS) in Construction, Manufacturing, Mining and Service Industries will be applied for occupation safety. Mitigation measures to be implemented by contractors to ensure health and safety of workers are as follows: 1. The contractor will conduct of training (assisted by Project implementation Unit) for all workers on safety and environmental hygiene at no cost to the employees. The contractor will instruct workers in health and safety matters as	**Contractor**	Construction Supervision Consultant budget & Directorate of Forestry (DoF) Budget

		required by law and by good engineering practice and provide first aid facilities. 2. The contractors will instruct and induct all workers in health and safety matters (induction course) including construction camp rules and site agents/foremen will follow up with toolbox talks on a weekly basis. Workforce training for all workers starting on site will include safety and environmental hygiene. 3. Fencing on all areas of excavation greater than 1m deep and sides of temporary works shall be observed. 4. Workers shall be provided with appropriate personnel safety equipment such as safety boots, helmets, gloves, protective clothes, dust mask, goggles, and ear protection at no cost to the workers.		

		5. Reversing signals (visual and audible) shall be installed on all construction vehicles and plant. 6. Contractor will at all-time keep the first aid kit at the construction sites. 7. Contractor will be responsible for evacuation injured person to the nearest medical center and bear all the medical expenses		
3. Public safety	Prevent accident with public in local community	1. Install barriers (e.g., temporary fence) at construction areas to deter pedestrian access to the roadway except at designated crossing points. 2. The general public/local residents shall not be allowed in high-risk areas, e.g., excavation sites and areas where heavy equipment is in operation and such sites have a watchman to keep public out.	**Contractor**	Construction Supervision Consultant budget & Directorate of Forestry (DoF) Budget

		3. Speed restrictions shall be imposed on Project vehicles and equipment when traveling within 50 m of sensitive receptors 4. Upon completion of construction works, borrow areas will be backfilled (if suitable materials are available, e.g., excavation spoils) or fenced.		
4a. General Construction Waste Management	Reduce, reuse and recycle waste and contamination due to poor waste disposal practices	Uncontrolled waste disposal operations can cause significant impacts. Mitigation measures will seek to reduce, recycle and reuse waste as far as practicable. The contractors will ensure implementation of following measures. 1. In principle, the waste generation will be minimized at source. 2. Waste products will be segregated, placed into wheel bins and skip container where possible. 3. Recyclable waste will be sold to the scrap dealers. 4. Organic waste such as plant materials will be composted	**Contractor**	Construction Supervision Consultant budget & Directorate of Forestry (DoF) Budget

		5. Residual non-hazardous waste will be disposed off in the municipal landfill. 6. Construction/workers' camps will be provided with sufficient refuse bins. 7. Burning of construction and domestic wastes will be prohibited. 8. Disposal of solid wastes into flood ways, wetland, rivers, other watercourses, farmland, forest and associated places of worship or other culturally sensitive areas or areas where a livelihood is derived canals, agricultural fields and public areas will be prohibited.		
4b. Use of hazardous substances and hazardous waste disposal	Minimize contamination due to use and storage of hazardous substances	Use of hazardous substances including oils and lubricants can cause significant impacts if uncontrolled or if waste is not disposed correctly. Hazardous substance disposed of into open area and drainage system will directly harm surrounding environment and downstream water body. Mitigation measures will seek to control access to and the use of hazardous substances such as oils and lubricants and control waste disposal. Contractor will carry out following measures to	**Contractor**	Construction Supervision Consultant budget & Directorate of Forestry (DoF) Budget

		minimize the impacts: 1. Oil and lubricants will be safely stored. Secondary containment around fuel storage area will be ensured. 2. Hydrocarbon, toxic material and explosives (if required) will be stored in adequately protected sites as per the Explosive and Hazardous Rules of government to prevent soil and water contamination. 3. Equipment/vehicle maintenance and refuelling areas will be confined to areas in construction sites designed to contain spilled lubricants and fuels. Such areas will be provided with drainage leading to an oil-water separator that will be regularly skimmed of oil and maintained to ensure efficiency. 4. Fuel and other hazardous substances will be stored in areas provided with roof, impervious		

		flooring and bund/containment wall to protect these from the elements and to readily contain spilled fuel/lubricant. 5. Hazardous wastes (oil, used batteries, fuel drums) will be segregated, labelled and safely stored. The spent oil and batteries will be sold to recycling dealers 6. Hazardous materials will be stored away from water bodies and above flood level. Clean-up operation using readily available absorbent such as sawdust will be carried out immediately during accidental spillage of hazardous waste. 7. All areas intended for storage of hazardous materials will be quarantined and provided with adequate facilities to combat emergency situations complying with all the applicable statutory stipulation.		

5. Drainage and Hydrological Impacts	To minimize hydrological impacts flooding and runoff of river banks. be	Since there is no river close by the project area, no direct adverse effects will be caused by the Truck Port construction activities. However, there will be an induced impact on the underground water quality and its aquatic life, since the storm water carrying silt and other waste might ultimately join the under. Contractor will implement following measures to minimize the impacts: 1. During construction, the contractor will ensure the proper disposal of spoil and other waste. 2. Hazardous waste such as oil and lubricants will be properly stored and sent for recycling. 3. Solid municipal waste will be disposed of in a municipal landfill	**Contractor**	Construction Supervision Consultant budget & Directorate of Forestry (DoF) Budget
6. Traffic Management	Minimize disturbance of traffic and traffic congestion	1. Communicate to the public through local officials regarding the scope and schedule of construction, as well as certain construction activities causing disruptions or access restrictions. 2. In coordination with local traffic authorities,	**Contractor & Project implementation Unit**	Project implementation Unit budget, Construction Supervision Consultant budget & Directorate of Forestry (DoF) Budget

		implement appropriate traffic diversion schemes to avoid inconvenience due to project operations to road users, ensure smooth traffic flow and avoid or minimize accidents, traffic hold ups and congestion 3. In coordination with local traffic officials, schedule transport of materials to avoid congestion, set up clear traffic signal boards and traffic advisory signs at the roads going in and out the road and bridge construction sites to minimize traffic build-up. 4. Provide safe vehicle and pedestrian access around construction areas. 5. Install bold diversion signs that would be clearly visible even at night and provide flag persons to warn of dangerous conditions (24 hours, as necessary) 6. Provide sufficient lighting at night within and in the vicinity of construction sites.		
7. Sanitation and Diseases	Control of infectious diseases	1. Standing water will not be allowed to accumulate in the temporary drainage facilities	**Contractor**	Project implementation Unit budget, Construction

		or along the roadside to prevent proliferation of mosquitoes. 2. Temporary and permanent drainage facilities will be designed to facilitate the rapid removal of surface water from all areas and prevent the accumulation of surface water ponds. 3. Malaria controls ((e.g., provision of insecticide treated mosquito nets to workers, installation of proper drainage to avoid formation of stagnant water, etc.) and HIVAIDS education will be implemented in line with social plans for the project.		Supervision Consultant budget & Directorate of Forestry (DoF) Budget
9. Noise and dust nuisances	To minimize air impacts effectively and avoid complaints due to the airborne dust.	Although temporary in nature, construction activities generate noise and dust pollution affecting local communities as well as other establishments. Noise and dust may affect the communities living across the Liselo area or trans-caprivi highway. Following mitigation measure will be applied to reduce nuisances: 1. Water sprinkling or spraying using tanker will be done twice a day to reduce dust generation. 2. No work will be carried out within 500m of any	**Contractor** & **Construction Supervision Consultant**	Project implementation Unit budget, Construction Supervision Consultant budget & Directorate of Forestry (DoF) Budget

		settlement during the night (2100 hrs to 0700 hrs). 3. Fuel-efficient and well-maintained haulage trucks will be employed to minimize exhaust emissions. Regular maintenance will be carried out. 4. Noise and dust monitoring will be required carried out during the construction. 5. Temporary Noise barrier made of thick ply board or MS sheet will be erected during construction. 6. High concrete wall (as prescribed by design) will be constructed all around the Truck port area to noise travel and impact on communities living nearby.		
10.Compensatory Plantation	Provide environmental enhancement of the project	Project Investors in consultation with local government; Divisional of Forest Office and community will locate the government or even community barren for compensatory plantation. Compensatory plant using local or native tree species will be carried out to replace the trees felled during the construction. Ratio for	**Contractor**	Project implementation Unit budget, Construction Supervision Consultant budget & Directorate of Forestry (DoF) Budget

		compensation will be 1:1 if the area of plantation is small. However, the project can go up to 1:4 if the larger areas available.		
OPERATIONAL STAGE				
1. Noise and Dust	Minimize noise and dust pollution	1. Noise will be monitored within Truck port project area and as well as for sensitive areas (residential places) during construction and operational stages. Based on noise quality assessment, detailed design will design noise barrier of high concrete project area wall and constructed it all around Truck port area to limit direct noise impact. Further during detailed and pre-construction stage, the hired contractor will ensure that tree felling strictly limited to required level. Design will consider wherever possible leaving those trees that are immediately in and outside the proposed concrete boundary wall (noise barrier) to further act as noise barriers. 2. Truck port operation will give rise to dust and	**Vinsina Investment cc**	Vinsina Investment cc budget

		toxic fumes pollution both within and outside Truck port area. Dust pollution will be of problem particularly during dry winter season, it will be reduced by having concrete/asphalt surfacing of parking and trucks plying area. Further, if required, the water will be sprayed at least twice daily to dampen the dust. 3. Toxic fumes emissions, the trucks entering the project area will be checked of emission standards. Routine checking and penalizing the defaulters is expected to bring level of toxic fume emission to acceptable limits.		
2.Dangerous goods and Hazardous waste	**Minimize noise and dust pollution impacts**	During operations, Truck Port may handle dangerous and hazardous goods which will pose risk to safety of workers and the surrounding inhabitants. Import and handling of hazardous chemicals and explosives may result in accidents and injuries or even death to people working and living in and around the port. Hazardous chemicals if discharged into drainage system will affect	**Vinsina Investment cc**	Vinsina Investment cc budget

		the downstream water quality. If the hazardous substances are disposed of in an open area it will affect surrounding vegetation and even pose health and safety risk to local population. Therefore, Truck Port operator, the Department of Health will implement following measures to avoid accidents or poisoning local environment: 1. Hazardous chemicals, oil and lubricants waste will be safely stored. Secondary containment around fuel storage area will be ensured. 2. Explosive material or substances will be prohibited into Project truck port area 3. Equipment/vehicle maintenance and refuelling areas will be confined to designated areas. And it will be provided with drainage leading to an oil-water separator that will be regularly skimmed of oil and maintained to ensure efficiency. 4. Fuel and other hazardous substances will be stored in areas provided with roof, impervious flooring and bund/containment wall to protect		

		these from the elements and to readily contain spilled fuel/lubricant.		
2.Waste Water management	Management Prevent waste water from entering into local water bodies	Truck Port operation will generate sewage and wastewater. If untreated sewage and wastewater from truck port is released directly surrounding into environment or into the local drainage system, it will lead to pollution of land and water bodies. In order to avoid impacts of sewage and wastewater, Trans-Vinsina Investment cc will implement following measures: 1. Truck port sewage system will be connected large septic tank to be constructed through sewage network in the area and Investors will frequently apply a sewerage reduction chemical reduction so that sewerage does not saturate. Also treated wastewater could be used for spraying to dampen dust during operation.	**Vinsina Investment cc**	Vinsina Investment cc budget

The EMP will have specific targets for each year that will be evaluated by the annual Environmental audit. The audit can make recommendations which will necessitate Changes in the EMP. The EMP will be reviewed on an ongoing basis as new environmental challenges arise or targets/objectives are achieved. The Operations Manager will ensure that this review occurs in a timely manner.

15. DECOMISSIONING PHASE

Once the development for Dry Truck Port Leasehold years have lapsed, the project will be subject for decommissioning. Although the lease is often subject for renewal and/or extension of the years for leasing, the building as a permanent structure will be donated to the Liselo community for use to any use of their choice. However other harmful items such absolute metal construction equipment's which have been used for years, will be destroyed and will be disposed at a designated Katima Mulilo dumping site where community members have no access due to restriction of the site and can only be accessed with permission from the Katima Town Council. The permanent structures (administration building) as per the agreement with the investors (Vinsina Investment cc) will become the property of the Liselo community. All management actions as provided for in the operational phase are therefore valid up to the decommissioning. At the time of the Truck port closure, the investor (Vinsina Investment cc) must ensure that the area has been successfully rehabilitated and all waste, including polluted soil or water, has been removed and disposed of at an approved dumping site. No form of waste may be buried.

16. CONCLUSIONS AND RECOMMENDATIONS

This study reveals that the impacts from Liselo truck port construction and development are predictable and manageable; impacts can be either avoid, minimized or compensated. The Environmental Management Plan (EMP) covers all aspects Truck port construction and development. The contractor engaged for Truck port development, will be responsible for carrying out the detailed design and subsequent construction of truck port's facilities. The current EMP will be further reviewed and updated by Project implementation Unit and Construction Supervision Consultant of the Truck Port prior to the construction and even

during the construction. Institutionalization of environmental compliance monitoring and capacity building of project and related staffs will be carried out.

The proposed Truck Port will enable grouping of Migration clearance services; immigration; and other facilities in one single area thus enabling faster processing of goods and services. In addition, by providing appropriate transportation and parking areas for the trucks in the truck port area, the current illegal parking of trucks on the highway and congestion in the town of Katima Mulilo will be avoided. The major benefits of the project are following:

i) Truck and cargo idle time savings resulting from reduced dwell time in the Zambezi region.
ii) Reduction of losses of perishable goods resulting from the construction of a covered area.
iii) Share of the benefits (Vehicle operating cost and travel time savings) resulting from avoided distance to drive to the current weighbridge before going down into town or to Customs office.

Over all, the environmental benefits result from lower emission due to lesser requirement of truck movements due to faster customs clearance and efficient transportation. Benefit also result from lesser waste generation due to minimum spoilage of perishable goods. Therefore, this project is recommended for implementation as its implementation will benefit both natural and man-made environment in the long run.

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Nyepez Consultancy cc

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