

ENVIRONMENTAL SCOPING AND MANAGEMENT PLAN

Proposed TradePort
Namibia's On-the-hoof
Sheep Import-Transit-
Export trading by Sea to
Asia and The Pacific
(Middle-East and other
Markets) Region, along the
Trans-Oranje Corridor and

JUNE 30

Compiled for: TradePort Namibia (Pty) Ltd
P.O. Box 22458
Windhoek, Namibia

Authored by: Mr. Shadrag Tjiramba



**Tradeport
Namibia**

Logistics Specialist



P. O. Box 25874, Windhoek






+264 81 232 6843



eap.trigen@gmail.com

report details

DOCUMENT INFORMATION AND APPROVAL		
Title	Environmental Scoping and Management Report for the Proposed TradePort Namibia's On-the-hoof Sheep Import-Transit-Export trading by Sea to Asia and The Pacific (Middle East and Other Markets) Region along the Trans-Oranje Corridor and through the Lüderitz Port, Namibia	
ECC Application Reference number	APP- 001740	
Location	Lüderitz Port, Namibia	
Proponent	TradePort Namibia (Pty) Ltd P. O. Box Windhoek Namibia, 9000	
Author:	Signature	Date
Mr. Shadrag Tjiramba (EAP – Team leader) 1		20 October 2021
Mr. Vilho P. Mtuleni (EAP – Reviewer 1)		17 October 2021
Mr. Titus Shuuya (EAP – Reviewer 2)		17 October 2021
Approval – Client 1		
Mr. Jacques Marais		20 October 2021
Copy Right: "This document is the intellectual property of ELC and may only be used for the intended purpose. Unauthorized use, duplication, plagiarism or copying without referencing is prohibited"		

executive summary

Project Overview

TradePort Namibia (Pty) Ltd (herein referred to as the proponent) is a registered Namibian company, which ventures in the Import and Export Trade Operations that mainly entails the transportation, handling and storage of various commodities. TradePort Namibia intend to obtain an Environmental Clearance Certificate for its proposed on-the-hoof import, transit and export of between 10 000 – 70 000 Sheep per voyage along the Trans-Oranje Corridor through Lüderitz Port to the Middle-eats and other Markets.

While their operations stimulate diversification in the national economic and development activities, consequently creating employment opportunities and trickling benefits to the larger Namibian population, it poses the risks of unprecedented negative environmental impacts.

Potential impacts may vary in terms of scale (locality), magnitude and duration e.g. minor negative impacts in the form of dust and noise pollution especially during the handling (loading and off-loading) will be experienced.

To ensure that development activities are undertaken in an economic, social and environmental sound / sustainable manner, the Namibian Constitution and Environmental Management Act No. 7 of 2007 provides for an environmental assessment process. The purpose of the environmental assessment and therefore this report are to ensure compliance of the proposed operations with the environmental legislation in respect to managing potential impacts associated with TradePort Namibia's export operation by:

- Identifying potential socio-economic and environmental impacts
- Proposing management measures to avoid, prevent and of mitigate these
- Compile an Environmental Management for compliance monitoring and reporting on the implementation of the Environmental Clearance Certificate conditions

Need for the Project

The proposed activity responds to Namibia's strategic vision of being key player in the distribution and logistics sector within the Southern Africa Development Community (SADC) region. This desired outcome is stipulated in its Logistics Master Plan, which states that by 2022 Namibia shall have a world-class Logistics Hub connecting SADC to the International Markets.

On the other hand, Livestock production makes a significant contribution to human existence; recent estimates suggest that the global biomass of livestock is twice that of human populations (Bar-On et al., 2018). The sector makes a major contribution to the global economy, employing at least 1.3 billion people worldwide and providing livelihoods for 600 million poor smallholder farmers in developing countries (Thornton et al., 2006). Since livestock were first domesticated, some 10,000 years ago, their production has played a significant role in the development of civilization (FAO, 2007).

Critically, going ahead with the proposed activity creates potential for the following marginal net benefits:

- Contribution Taxes and Royalty
- Technological Skill and Knowledge transfer
- Creates the most needed employment opportunities

Project Description

TradePort Namibia (Pty) Ltd (herein referred to as the proponent) is a registered Namibian company, which ventures in the Import and Export Trade Operations that mainly entails the transportation, handling and storage of various commodities. TradePort Namibia intend to obtain an Environmental Clearance Certificate for its proposed primarily import sheep from South Africa and occasionally augment in an event of shortage from the import, by sourcing the balance locally in Namibia, transit and export of between 10 000 – 70 000 Sheep per voyage (at least two per year) on-the-hoof along the Trans-Oranje Corridor through Lüderitz Port to the Middle-eats.

The proposed operation entails primarily, the import of live Sheep from South Africa, transporting it by truck to Keetmanshoop where the sheep is quarantined for 21 Days on arrival, and the transported to an intermediate holding facility at Aus Settlement before its transporting further to the Lüderitz Port for export.

In order to achieve this, TradePort Namibia requires the construction of two permanent feedlot (holding) and handling (quarantine) crush-pens facility both at Keetmanshoop and Aus, and temporary holding or loading facility at the Port of Lüderitz. The Facility at Keetmanshoop, which will be located in the Urban Agriculture zoned area will be of a slightly larger holding capacity than that at Aus and Lüderitz given that the site offers adequate land area for such purpose and is closest to potential livestock feed sources.

Need for an Environmental Impact Assessment

While increased economic activities can stimulate demographic changes and alter social, economic and environmental practices in many ways. Adverse environmental and socio-economic impacts have become a major area of concern for the business community, their customers, and other key stakeholders. As a result, companies seek to manage these impacts as part of their ethical and sustainable business conduct. Similarly, identifying, avoiding, mitigating and managing impacts, is a necessary condition for TradePort Namibia (Pty) Ltd to undertake its operation in compliance with the environmental legislative requirements in Namibia.

Therefore, TradePort Namibia (Pty) Ltd has appointed Enviro-Leap Consulting cc to conduct an environmental assessment and facilitate the process of obtaining and Environmental Clearance Certificate.

Approach to the EIA Process

The assessment process consisted of a site visit to the project location and public consultation meetings with the Interested and Affected Parties (I&APs). An environmental scoping and management plan (EMP) were compiled and constitute the application for an Environmental Clearance Certificate submitted to the Ministry of Environment and Tourism (Office of Environmental Commissioner).

Overall Recommendation

Preliminary identification of potential stressors reveals that to eliminate or mitigate both psychological and physical stressors in relation to the conditions on vessels transporting animal, the following considerations are key:

- a) Physical Restraint and Handling
- b) Noise – loading, journey, off-loading, and Vibration – of vessel and ocean.
- c) Social Regrouping – disease transmission, bullying, mounting.
- d) High Ammonia build up / Respiratory problems.
- e) Lack of veterinary treatment and provision during the journey.

The proposed operations is considered to have, despite the animal welfare concerns raised which can also be mitigated, overall low negative environmental impact and an overall higher positive socio-economic impact.

Enviro-Leap acknowledges, as key limitations of the scoping assessment the following factors to have hindered adequate consideration of all potential impacts associated with the proposed operation:

- In-adequate (figurative) data / information relating to the operation of the proposed activity in order sufficiently analyze the potential impacts (positive / negative) e.g. value of investment in infrastructure needed to enable the proposed operation
- Covid-19 Regulations limited extensive stakeholder engagement, although most of the key pre-identified stakeholder were consulted for inputs / comments
- Not having at the time of scoping assessment, precise information relating to exact feedlot facility's site meant that the water and hydrological environments could not be adequately assess and so are the impacts associated with the proposed project on these environments.
- In-adequate scientific data /information synthesizing the true nature of animal welfare concerns on live sheep export vessels, most publications cited are based on one whistle-blowers observations
- Comparative Economic benefit assessment, live export vs. frozen meat export (the assessment would compare the cost-benefit-analysis of both options)

Enviro-Leap environmental practitioner confidently concludes and recommends that sufficient consideration and recommendation for a framework within which potential impact can be mitigated were made, thus an environmental clearance may be issued.

However, should the department require a comprehensive environmental impact assessment (EIA), the above pullet-points should constitute the Terms of Reference (ToRs) for the specialist studies to be considered.

AfDB	African Development Bank
BID	Background Information Document
BoN	Bank of Namibia
CA	Competent Authority
DEAF	National Department of Environmental Affairs and Forestry
EA	Environmental Authorization
ECC	Environmental Clearance Certificate
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
GPS	Geographical Positioning System
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
NAU	Namibia Agricultural Union
NECFU	National Emerging Commercial Farmers Union
NNFU	Namibia National Farmers Union
IMF	International Monetary Fund
GPS	Geographical Positioning System
IMF	International Monetary Fund
OEC	Office of Environmental Commissioner
PPP	Public Participation Process
SADC	Southern African Development Community
SDGs	Sustainable Development Goals
SPCA	Society for the Prevention of Cruelty to Animals
UDHR	The Universal Declaration of Human Rights
UN	United Nations

contents

Executive Summary	iii
Project Overview.....	iii
Need for the Project	iii
Project Description	iv
Need for an Environmental	iv
Impact Assessment	iv
Approach to the EIA Process.....	v
Overall Recommendation.....	v
1. INTRODUCTION	8
1.1. PROJECT APPLICANT AND PROJECT OVERVIEW	8
1.2. PROJECT MOTIVATION (INCLUDING NEED AND DESIRABILITY)	9
1.3. REQUIREMENTS FOR AN ENVIRONMENTAL IMPACT ASSESSMENT	11
1.4. EIA TEAM.....	13
1.5. DETAILS AND EXPERTISE OF THE EAP	13
1.6. OBJECTIVES OF THE ENVIRONMENTAL SCOPING ASSESSMENT	13
2. PROJECT DESCRIPTION	15
2.1. OVERVIEW OF THE LIVESTOCK EXPORT SECTOR.....	15
2.2. CONSTRUCTION AND OPERATION OF VETERINARY QUARANTINE FACILITIES.....	17
2.3. CLOSURE AND DECOMMISSIONING	29
2.4. HAULAGE, LOADING AND SAILING ACTIVITIES	29
3. DESCRIPTION OF THE AFFECTED ENVIRONMENT	35
3.1. BIOPHYSICAL ENVIRONMENT.....	35
3.2. SOCIO-ECONOMICAL ENVIRONMENT	40
4. APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION	42
4.1. OVERVIEW OF APPROACH ADOPTED IN COMPILING THE SCOPING AND EMP REPORTS	42
4.2. LEGAL CONTEXT FOR THIS EIA.....	42
4.3. LEGISLATION AND GUIDELINES PERTINENT TO THIS ENVIRONMENTAL ASSESSMENT	43
4.4. PRINCIPLES FOR PUBLIC PARTICIPATION / CONSULTATION	47
4.5. PUBLIC PARTICIPATION PROCESS	47
4.6. AUTHORITY CONSULTATION DURING THE EIA PHASE	48
4.7. APPROACH TO IMPACT ASSESSMENT AND SPECIALIST STUDIES	48
5. ASSESSMENT OF ALTERNATIVES AND IMPACTS	51
5.1. ASSESSMENT OF IMPACTS AND MITIGATION	51
5.2. ASSESSMENT OF ALTERNATIVES.....	51
5.2.1 NO-GOALTERNATIVES.....	51
5.2.2 ALTERNATIVES FOR HAULAGE ROUTE AND FEEDLOT SITES SELECTION.....	52
5.2.3 ALTERNATIVES HAULAGE METHODS – RAIL VS. ROAD	53
5.3. CONCLUDING STATEMENT ON ALTERNATIVES	54
5.4. ASSESSMENT OF IMPACTS AND MITIGATION	55
5.4.1 IMPACTS ON THE BIOPHYSICAL ENVIRONMENT	55
5.4.2 IMPACTS ON THE SOCIO-ECONOMIC ENVIRONMENT	61
6. CONCLUSIONS AND RECOMMENDATIONS	65
6.1. CONCLUSIONS.....	65
6.2. RECOMMENDATIONS	67
REFERENCE	68
APPENDIX A – STAKEHOLDER ENGAGEMENT REPORT	71
APPENDIX B – ENVIRONMENTAL & EMERGENCY RESPONSE PLAN	72
APPENDIX C – CHANCE FIND GUIDELINES.....	73
APPENDIX D – LIST OF POSSIBLE LIVESTOCK CARRIERS	75
APPENDIX F – RESUMES OF EAPS TEAM	75

1. INTRODUCTION

The Environmental Management Act No. 7 of 2007 (also referred to as the EMA) and its Regulations promulgated in the Government Gazette No. 4878 of 2012, stipulates that for each developmental activity, which is listed as those that may not be undertaken without obtaining an Environmental Clearance Certificate (ECC), an Environmental Assessment (EA) must be conducted. The proposed import-transit-export of live sheep triggers some listed activities in terms of the EMA.

Therefore, an environmental assessment must be conducted with an aim to identify, assess and ascertain potential environmental impacts that may arise as a result of undertaking the proposed operations. Hence, the environmental assessment is a process by which the potential impacts, whether positive or negative are predicted / identified, findings interpreted and communicating to interested and affected parties (I&APs) for inputs.

Additionally, this report presents findings of an environmental scoping process that evaluates the likely socio-economic and environmental effects the proposed operation, and further identifies suitable mitigation measures for avoiding or minimizing the predicted impacts. The envisioned EIA process was undertaken in a holistic approach encompassing different elements as shown in **Figure 1**.



Figure 1: Anticipated Environmental Assessment Timeline

1.1. PROJECT APPLICANT AND PROJECT OVERVIEW

TradePort Namibia (Pty) Ltd (herein referred to as the proponent) is a registered Namibian company, which ventures in the Import and Export Trade Operations that mainly entails the transportation, handling and storage of various commodities. TradePort Namibia intend to obtain an Environmental Clearance Certificate for its proposed on-the-hoof import, transit and export of between 5 000 – 70 000 Sheep along the Trans-Oranje Corridor through Lüderitz Port to the Middle-eats.

The proposed operation entails the import sheep from South Africa and occasionally augment in an event of shortage from the import, by sourcing the balance locally in Namibia,

transit and export of between 10 000 – 70 000 Sheep per voyage (at least two per year) on-the-hoof along the Trans-Oranje Corridor through Lüderitz Port to the Middle-east.

Primarily, TradePort will import live Sheep from South Africa, transport it by truck to Keetmanshoop where the sheep is quarantined for 21 Days on arrival, and then transported to an intermediate holding facility at Aus Settlement before its transporting further to the Lüderitz Port for export.

In order to achieve this, TradePort Namibia requires the construction of two permanent feedlot (holding) and handling (quarantine) crush-pens facility both at Keetmanshoop and Aus, and temporary holding or loading facility at the Port of Lüderitz. The Facility at Keetmanshoop, which will be located in the Urban Agriculture zoned area will be of a slightly larger holding capacity than that at Aus and Lüderitz given that the site offers adequate land area for such purpose and is closest to potential livestock feed sources.

1.2. PROJECT MOTIVATION (INCLUDING NEED AND DESIRABILITY)

Livestock production makes a significant contribution to human existence; recent estimates suggest that the global biomass of livestock is twice that of human populations (Bar-On et al., 2018). The sector makes a major contribution to the global economy, employing at least 1.3 billion people worldwide and providing livelihoods for 600 million poor smallholder farmers in developing countries (Thornton et al., 2006). Since livestock were first domesticated, some 10,000 years ago, their production has played a significant role in the development of civilisation (FAO, 2007).

Although most of the food consumed worldwide is sourced locally, global trade has been instrumental for achieving food security and thus trade in food and agricultural produces has increased by around fivefold over the past five decades. Global meat production is further projected to be 19 percent higher in 2030 relative to now (FAO, 2016). Livestock's share of total agricultural output is nearly 40 percent in developed countries and 20 percent in developing ones (FAO, 2009). The vigorous growth of the sector, and its ability to reach into many different areas of the economy and society, presents a major opportunity for many countries on their path towards economic development (FAO, 2009).

While the largest producers (Brazil, China, the European Union (Member Organization) and the United States of America) will continue to dominate meat production, developing countries are expected to account for almost all of the total increase (**Figure 2**). This creates a window of opportunity for emerging trade business such as TradePort Namibia in developing countries like Namibia to exploit the import-and-export markets.

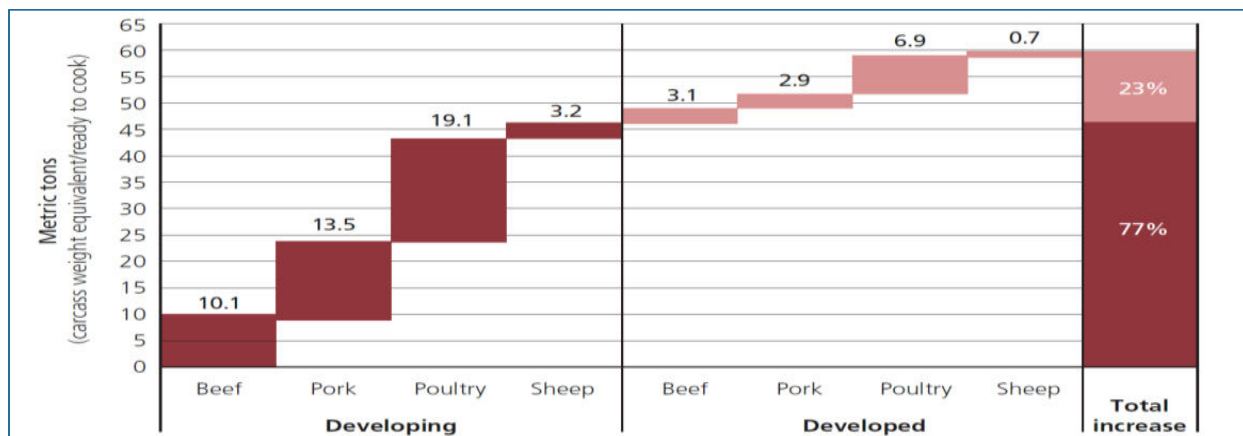


Figure 2: Recorded (2017) and Projected (2030) growth in global meat production (source: FAO, 2018)

1.2.1. Need and Desirability

Over the past decades, the production and consumption of animal products has become one of the fastest growing sectors in agriculture. This phenomenon, dubbed the “livestock revolution”, has been driven by population and income growth, plus rapid urbanization. Continuing expansion is expected, with demand for animal products fuelled by the continued increase in the world’s population, forecast to climb from 7.6 billion in 2017 to 8.6 billion in 2030 (FAO, 2009).

Equally, the consumption of livestock products has increased rapidly in developing countries over the past decades, particularly growth per capita which has markedly outpaced growth in consumption of other major food commodity groups (**Figure 3**). Given the rapid growth expected for the sector, and the empirical observation that the livelihoods of many poor people depend on livestock, the sector’s contribution to poverty reduction has been widely anticipated (FAO, 2009).

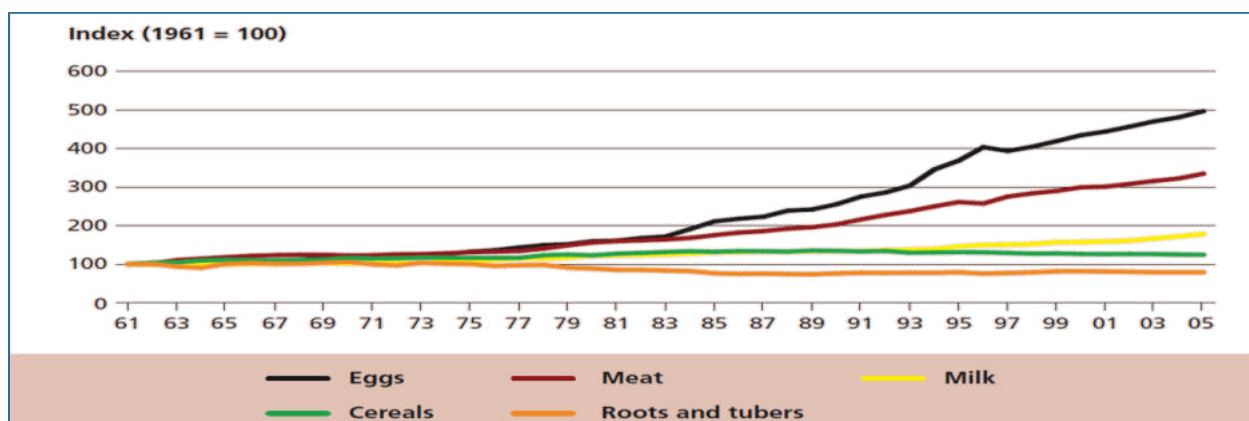


Figure 3: Per capita consumption of major food items in developing countries, (source: FAO, 2009)

Livestock's presents an effective capacity to transform rapid growth into poverty reduction depends on a combination of microeconomic and macroeconomic factors. At the microeconomic scale, it entails the capacity of producers to use their livestock-related assets to generate income; the ability of workers to take up expanding employment opportunities; and the possibility for consumers to benefit from more competitive prices (De Janvry and Sadoulet, 2009). While, at the macroeconomic scale it comprise the size of the sector in the economy, its level of growth, and the participation of the poor in that growth (Christiaensen *et al.*, 2011).

As noted earlier, livestock play an important role in helping poor households maintain their livelihood levels. However, they may not necessarily be able to capture the benefits from the sector's expected growth unless of'course the participation of the population in the livestock sector's economic activities is encouraged.

Critically, the Sustainable Development Goals (SDG 1 and SDG 8) identifies the Livestock Sector as important in contributing to the attainment of poverty eradication, given its vigorous growth and ability to reach into many different areas of the economy and society.

SDG 1 calls for a multidimensional approach to ending poverty (FAO, 2009). Given the livestock sector's expected rapid growth, and the assumption that many of the poor rely on livestock for their livelihoods, positive contribution of livestock to poverty reduction cannot be taken for granted.

On the other hand, SDG 8 proposes an integral approach towards more sustainable and inclusive economic growth through targeting higher economic productivity through diversification, technological development, and innovation, and through a focus on high value-added and labour-intensive sectors (FAO, 2009). Equally, the sector presents a major opportunity for many countries on their path towards economic development. Hence, the proposed activity responds to Namibia's strategic vision of being a developed country, and the attainment of SDGs 1 and 8.

By going ahead with proposed TradePort Namibia's trading operations, offers an opportunity for the utilization of the Namibian Ports as alternative avenues to South Africa, for the export trade in Livestock. In turn, the proposed activity creates potential for the following marginal net benefits:

- Contribution to Taxes and Royalty
- Technological Skill and Knowledge transfer
- Creates the most needed employment opportunities
- Attainment of the SDGs 1 and 8 in Namibia

1.3. REQUIREMENTS FOR AN ENVIRONMENTAL IMPACT ASSESSMENT

While increased economic activities can stimulate demographic changes and alter social, economic and environmental practices in many ways. Adverse environmental and socio-economic impacts have become a major area of concern for the business community, their customers, and other key stakeholders.

The various negative environmental impacts of livestock production relates mainly to water consumption and pollution, land use changes, biodiversity losses and greenhouse gas emissions (Steinfeld et al., 2006). These are particularly associated with Intensive, large-scale livestock operations which is relevant to a component of the proposed TradePort Namibia's operation. It is proposed that feedlots / handling (veterinary quarantine, holding and feeding, and loading) facilities shall be constructed both at Keetmanshoop and Aus.

Simultaneously, there has been growing concerns relating to the second component of the proposed activity which is the export by sea, of livestock on-the-hoof and these include poor animal welfare (Robbins et al., 2016). As such the livestock sector discourse is increasingly of interest to the wider population (Stevens et al., 2018) and remains a contentious topic (Busch and Spiller, 2018).

To meet market standards and address societal concerns, companies seek to manage these impacts as part of their ethical and sustainable business conduct. Similarly, identifying, avoiding, mitigating and managing impacts, is a necessary condition for TradePort Namibia (Pty) Ltd to undertake its operation in compliance with the environmental legislative requirements in Namibia.

Therefore, TradePort Namibia (Pty) Ltd has appointed Enviro-Leap Consulting cc to conduct an environmental assessment and facilitate the process of obtaining and Environmental Clearance Certificate (see **Table 1**).

Table 1: List of activities identified in the EIA Regulations which apply to the proposed project

EMA 2007 Legislation	Description of activity	Relevance to this project
Regulation 29(sub-regulation 1), GG 4878 of 2012: <u>Energy Generation, Transmission and Storage</u>	The construction of facilities for -(a) the generation of electricity; (b) the transmission and supply of electricity	For emergency purpose, the facility may consist of an emergency back-up generator to provide electricity as may be needed.
Regulation 29(sub-regulation 5), GG 4878 of 2012: <u>Land Use and Development Activity</u>	5.3 "The construction of veterinary protected area or game proof and international boundary fences"	In order to comply with national veterinary requirements an intensive livestock holding facilities will be constructed.
Regulation 29(sub-regulation 9), GG 4878 of 2012: <u>Hazardous substance treatment, handling and Storage</u>	9.2 "Any process or activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste."	The project involves management of an animal holding and handling facility which may result in the generation of organic and effluent wastes, extraction of water and storage of fuel for energy generation purposes.
Regulation 29(sub-regulation 9), GG 4878 of 2012: <u>Hazardous substance treatment, handling and Storage</u>	9.4 The storage and handling of a dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.	For undisturbed operation and given the sensitivity of the operation, the facility may consist of fuel storage for an emergency back-up generator use.

As previously noted, Enviro-Leap Consulting (see Table 2, for the composition of ELC's team for this EA) has been appointed by TradePort Namibia (Pty) Ltd to conduct an environmental assessment and facilitate the process of obtaining and Environmental Clearance Certificate.

1.4 EIA TEAM

TradePort Namibia (Pty) Ltd to undertake the EIA required for the proposed project. A public participation process (PPP) forms an integral part of the Environmental Assessment Process to aid in identifying issues and possible alternatives for consideration. Details on the PPP are included in section 4 of this Scoping Report.

Table 2: The EIA Management Team

NAME	ORGANISATION	ROLE/ SPECIALIST STUDY UNDERTAKEN
Environmental Assessment Practitioners		
Shadrag Tjiramba	Enviro-Leap Consulting cc	Project Leader
Vilho Pendainge Mtuleni	Enviro-Leap Consulting cc	Environment Practitioner
Titus Shuuya	Independent Consultant	External Reviewer

1.5. DETAILS AND EXPERTISE OF THE EAP

Over the past four years the Enviro-Leap Consulting has been involved in a multitude of Environmental Assessment projects across SADC and within Namibia. The Environmental Practitioners of Enviro-Leap Consulting has a combined of more than 35 years' experience in the environmental sector (management and policy), ecological research and stakeholder engagement. Consequently, the team offers a wealth of experience and appreciation of the environmental and social priorities and national policies and regulations in Namibia.

1.6. OBJECTIVES OF THE ENVIRONMENTAL SCOPING ASSESSMENT

The primary objective of this EA Report is to present stakeholders, I&APs and the Competent Authority, the DEA, with an overview of the predicted impacts and associated management actions required to avoid or mitigate the negative impacts; or to enhance the benefits of the proposed TradePort Namibia operations.

In broad terms, the 2012 EMA EIA Regulations (GG 4878) stipulates that an EIA Process must be undertaken providing to determine the potential environmental impacts, mitigation and closure outcomes, as well as the residual risks of any listed activity. Therefore, based on these (EIA Regulations), the objectives of the Environmental Assessment (EA) Process is to:

- determine the policy and legislative context within which the activity is located and note how the proposed activity complies with and responds to the policy and legislative context;
- describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;

- determine the nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and the degree to which these impacts (a) can be reversed; (b) may cause irreplaceable loss of resources, and (c) can be avoided, managed or mitigated; and
- identify suitable measures to avoid, manage or mitigate identified impacts;

In terms of legal requirements, a crucial objective of the Environmental Scoping or EIA Report is to satisfy the requirements of EIA Regulations in respecting to obtaining an Environmental Clearance Certificate. This section regulates and prescribes the content of the Scoping Report and specifies the type of supporting information that accompany the submission of the ECC application to the Competent Authority.

2. PROJECT DESCRIPTION

This section provides an overview of the conceptual operational overview of the livestock export chain (**Figure 4**), sites and technology selection process for both the construction of holding / loading facilities, livestock carries specifications in respect to carrying capacities, health and welfare requirements, and the preferred haulage methods and routes on land and at sea.

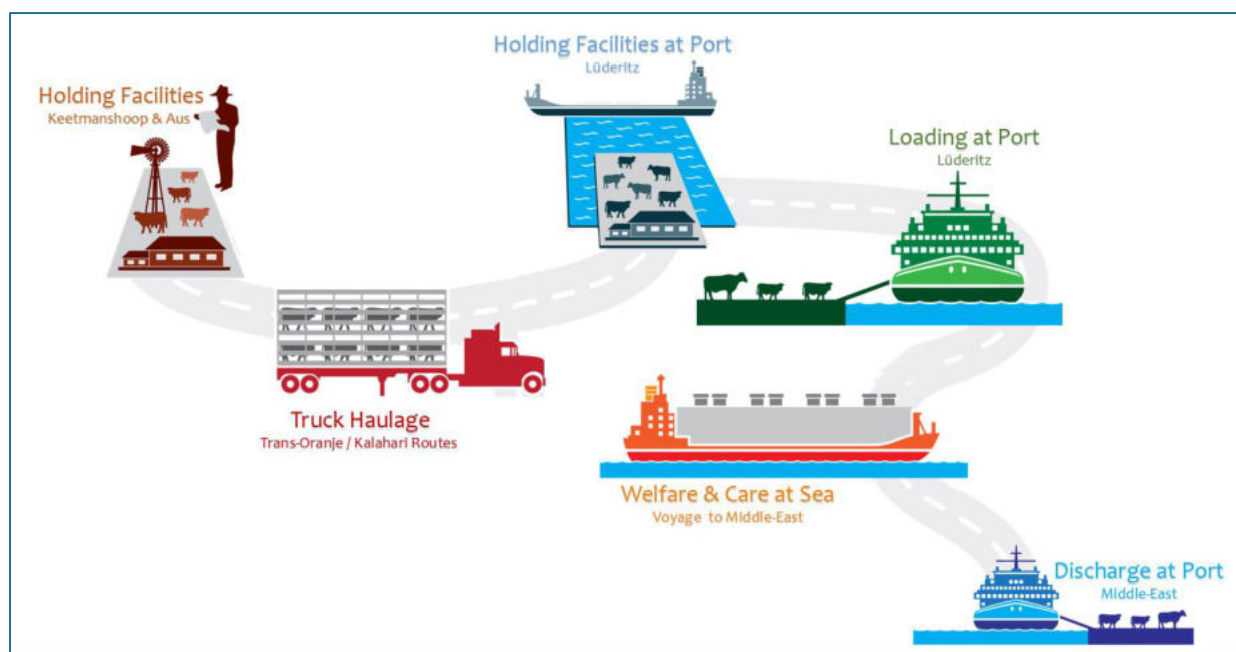


Figure 4: Livestock export-chain diagram starting with holding facility to discharge at the export destination in the Middle-east, the assessment however covers activities till voyage at sea (Graphics: LiveCorp, 2020)

2.1. OVERVIEW OF THE LIVESTOCK EXPORT SECTOR

The livestock export supply chain, begins with the operator finding a licensed exporter who negotiates a commercial transaction with an importer in the Middle-east and other countries. The importer provides the exporter with an import permit and health protocol. This includes specific requirements for the shipment, animal welfare and legislative compliance requirements.

Producers are contacted and suitable livestock are selected and purchased taking into account the following:

- Breed factors – most low-land middle-east and other markets feedlots uses only Brahman and Brahman-cross cattle and Dorper / MeatMaster Sheep for the hot and humid local conditions.
- Importing feedlot requirements – the type of animal that the feedlot requires, the period of feeding, the most suitable weight range, sex and class.
- Seasonal factors – the difficulties of sourcing stock and associated higher prices.

Health protocols requires that the exporter's / producer's establishment from where the animal are being sourced to be free of certain diseases, and thus livestock may be sourced only from establishment certificated to meet the protocol requirements by the relevant veterinary authority.

Some importers send a selector to personally choose appropriate stock; others rely on the experience of the exporter. Livestock agents are frequently used to source stock for exporters. Road transport companies are contracted to deliver the selected stock to registered assembly depots for preparation of the consignment. Feed manufacturers are contacted to source fodder for both the time spent in the registered premises and the voyage.

Services of the state or accredited veterinarians is sourced to conduct health tests, treatments and inspections required for export. The appropriate veterinary documentation must be made readily available to proof completion of all required treatments and inspections.

At all stages of the export process, animals are constantly inspected for health and welfare, and any ill, injured or unsuitable animals are rejected from the consignment. To effectively implement the proposed trading operations in compliance with the crucial legislative requirements and export standards, good infrastructure will be needed for the ethical handling and caring for the livestock.

The standards takes a whole-of-chain approach to minimise the chance of an adverse animal health and welfare outcome. They aim to identify critical risks and to develop and implement risk management measures. The key elements in the chain are:

- sourcing and on-farm preparation of livestock
- land transport
- pre-embarkation at Port
- vessel preparation and loading
- sea voyage
- discharge at destination

The proposed TradePort Namibia's operation entails the import of live Sheep primarily from South Africa, transporting it by truck to Keetmanshoop where the sheep are first quarantined and sufficient stock will be built before its transporting further to Aus where they are prepared (kept for not less than 10 days, selected on the basis of fit-to-load principle) for export prior to final loading at the Lüderitz Port for export. Additionally, as TradePort may occasionally require to augment the number of sheep imported from South Africa by sourcing sheep locally (in Namibia).

The section therefore, provides a detailed description of various activities relating to the proposed operations, and which is divided into two key components i.e. 1. Construction and operation of veterinary quarantine facilities, and 2. Haulage and loading Operations.

2.2. CONSTRUCTION AND OPERATION OF VETERINARY QUARANTINE FACILITIES

2.2.1 SITE SELECTION

TradePort Namibia, considers two options with regard to the sites for holding facilities and these are: **Option 1:** TradePort shall lease existing infrastructures such as Meatco / Privately owned Feedlots in Keetmanshoop, and **Option 2:** TradePort shall acquire / lease suitable land (in an appropriately zoned area and preferably in the periphery of a townlands or semi-urban settlements (see **Figure 6 - 8**), and or on privately owned farms along the haulage routes) on which it shall construct its own livestock holding facilities.

As illustrated in **Figure 5**, the operation shall require the use of two feedlot facility along the route (Upington-to-Lüderitz), a permanent and intermediate holding feedlot. Preferably, the facilities for the Lüderitz route will be located at Keetmanshoop and at Aus (both permanent structures), and a temporary structure at the Port of Lüderitz.

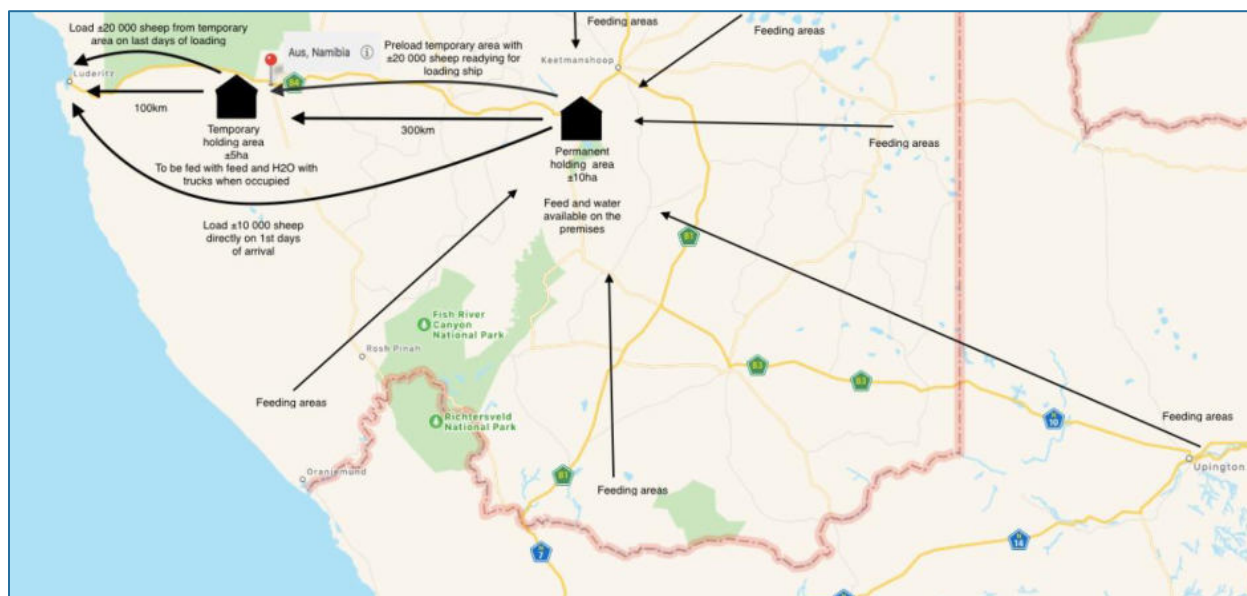


Figure 5: Illustrate strategic siting of the sheep sources and holding facilities to ensure that the livestock do not travel long distances in one go but are afforded the necessary care, rest and recovery period prior to export by sea

While **Option 1** is the most preferred and recommended scenario, the assessment does take into account the worse-case scenario in which-case **Option 2** is the only practically applicable option.

Hence, in respect to proceeding with **Option 2** the suitable sites were select in accordance to the applicable Town planning Schemes or Integrated Infrastructure Plan, and are Keetmanshoop and Aus for the South Africa-Lüderitz route (see **Table 3** for area coordinates).

Additionally, as TradePort may occasionally require to augment the number of sheep imported from South Africa by sourcing sheep locally (in Namibia), the siting of holding facility's sites also took into account distance to possible stock feeding/sources areas (as illustrated in **Figure 5**).

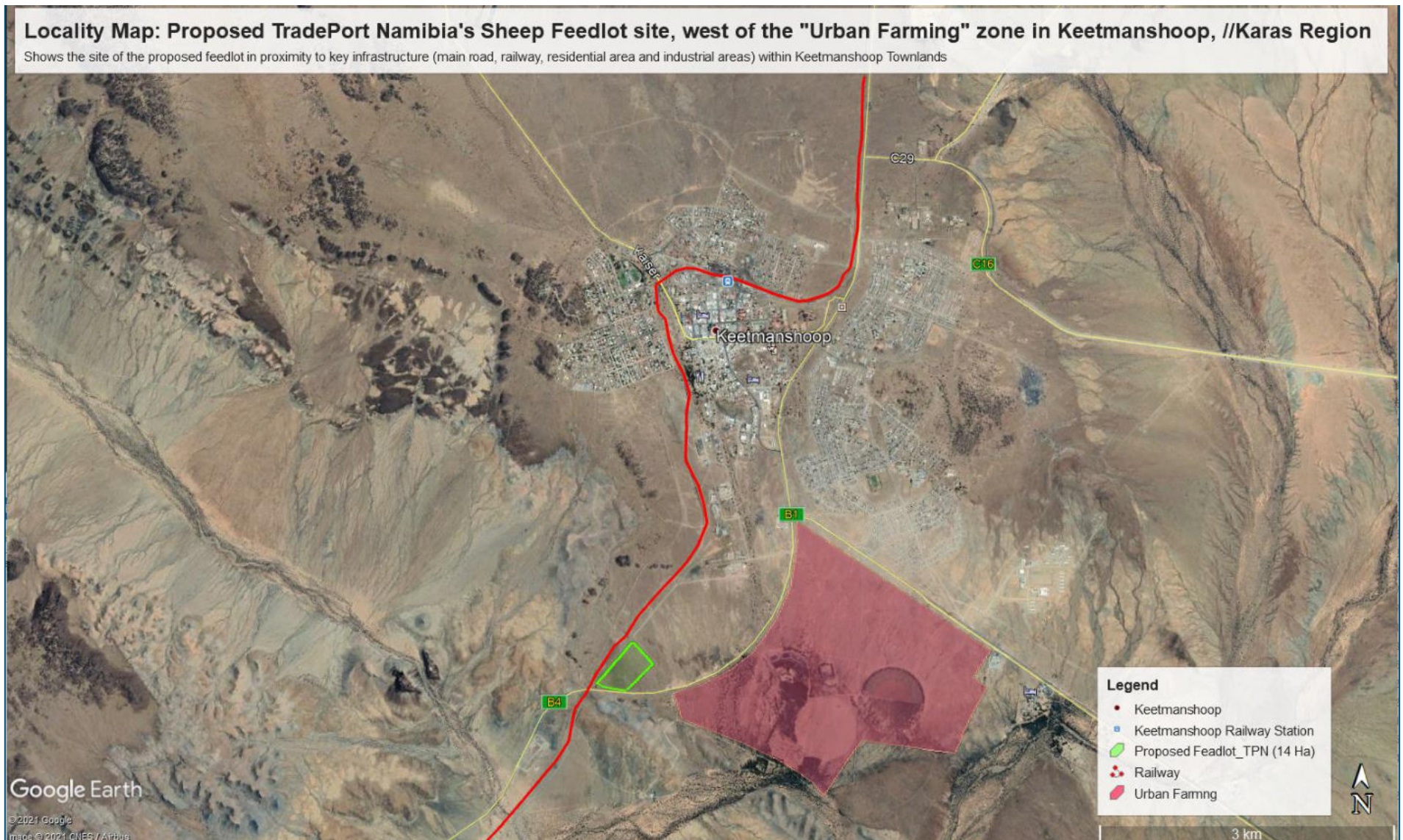


Figure 7: Illustrate strategic siting of the proposed sheep holding facility in the Urban Farming zone of Keetmanshoop Town

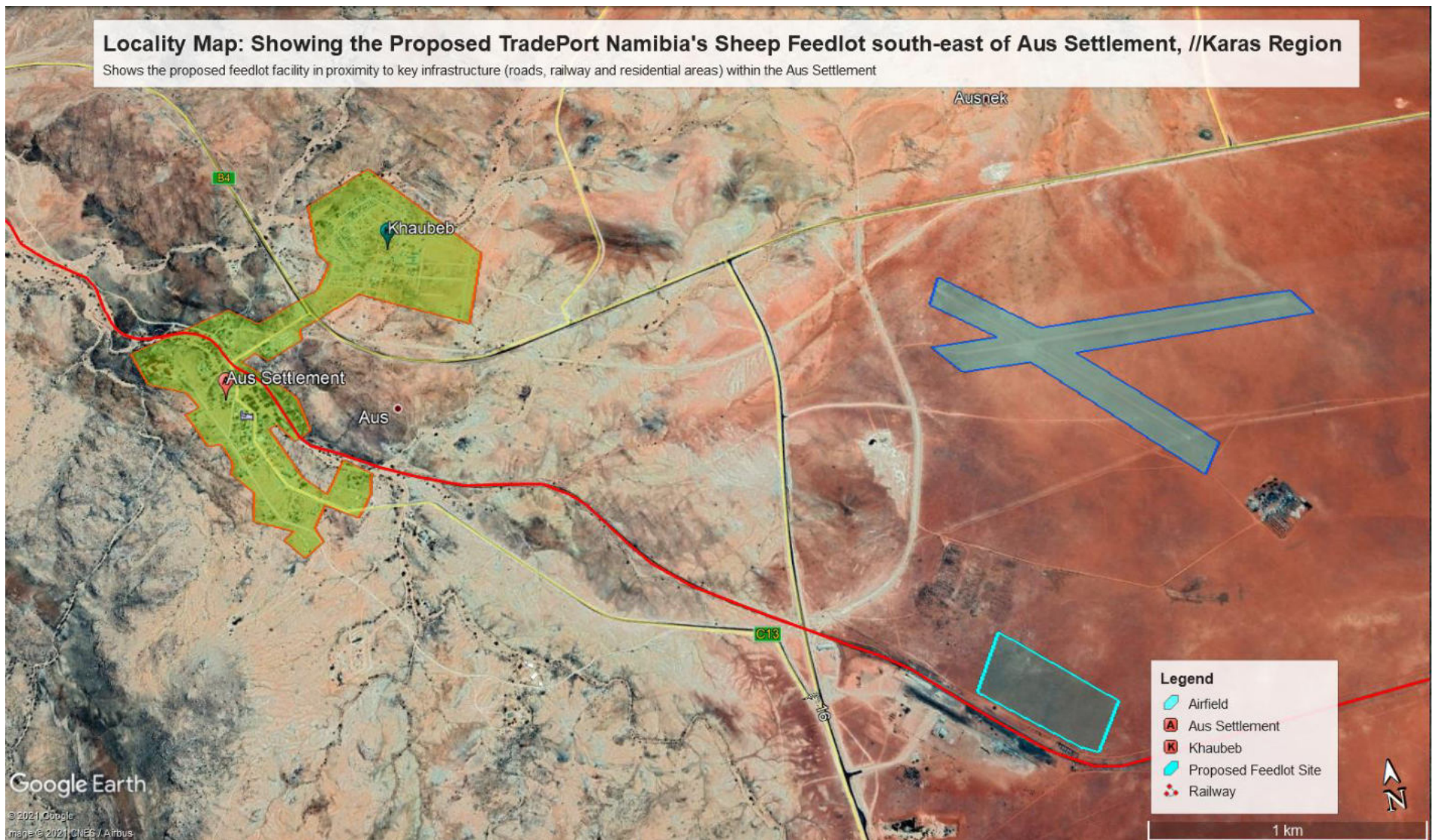


Figure 8: Illustrate strategic siting of the proposed sheep holding facility within the Urban Farming zone of Aus Settlement

Both side were selected deliberately within the peripheries of the two towns (corner GPS coordinates presented in **Table 3**), in order to provide sufficient space, close proximity to the needed services including ease of transport and reduce noise nuisance.

Table 3: Corner coordinates of the proposed development site

Corner point	Latitude	Longitude
A – Keetmanshoop Point 1	-26.607671°	18.125154°
B – Keetmanshoop Point 2	-26.609697°	18.127273°
C – Keetmanshoop Point 3	-26.612156°	18.124585°
D – Keetmanshoop Point 4	-26.611527°	18.121515°
E – Aus Point 1	-26.678440°	16.288645°
F – Aus Point 2	-26.681330°	16.292364°
G – Aus Point 3	-26.682834°	16.291105°
H – Aus Point 4	-26.680252°	16.287273°
I – Lüderitz Port Area	-26.640786°	15.153682°

The site selection process took into consideration key site selection factors such as land availability, proximity to sensitive receptors, site accessibility, topography, risks, current land use. Most importantly, the sites requires minimum disturbance on the natural environment in terms of land servicing i.e. no vegetation clearing will be required.

2.2.2. CONSTRUCTION DESIGNS AND REQUIREMENTS

The construction activities will take place subsequent to the issuing of an Environmental Clearance Certificate (ECC). The construction activities are expected to extend over a period of between three and six months concurrently for the respective sites (see **Table 4** for technical specifications of the respective Feedlots facilities). These assumes that normal daylight working hours shall be adhered to in respect to the Labour Act provisions.

Table 4: Technical details of the proposed facility as required by the Competent Authority

Component		Description / Dimensions	
		Keetmanshoop and Aus	Lüderitz
Height of Holding facility		1.2 meter	Only for loading
Areas of Holding facility		45 000 sq m	Only for loading
Area occupied by buildings		5 %	Only for loading
Number of Livestock exported Monthly	Sheep	50 000 to 60 000 every 2-3 months	5000 – 70 000
	Cattle	n/a	n/a
	Goat	n/a	n/a
Power Requirements and source			-
Water Requirements and source		600 000 liters per day	n/a
Feeds Requirements and source		81 000 kg per day	n/a
Height of fencing		1.2 meter	n/a
Type of fencing		Combination of iron piping and woven wire fencing	n/a

The layout and design of the sheep handling facilities (**Figure 9**) consists of mainly the feedlot sheds and yard, veterinary office, fodder sheds and a small administrative block (with ablution facilities) which includes a First Aid / Medical room, parking area (also used as an emergency assembly site). The facility is complemented with a Solid and Effluent waste management systems (**Figure 10**) aimed providing a conducive environment for both the livestock and the surrounding community, as well as mitigation key environmental impacts.

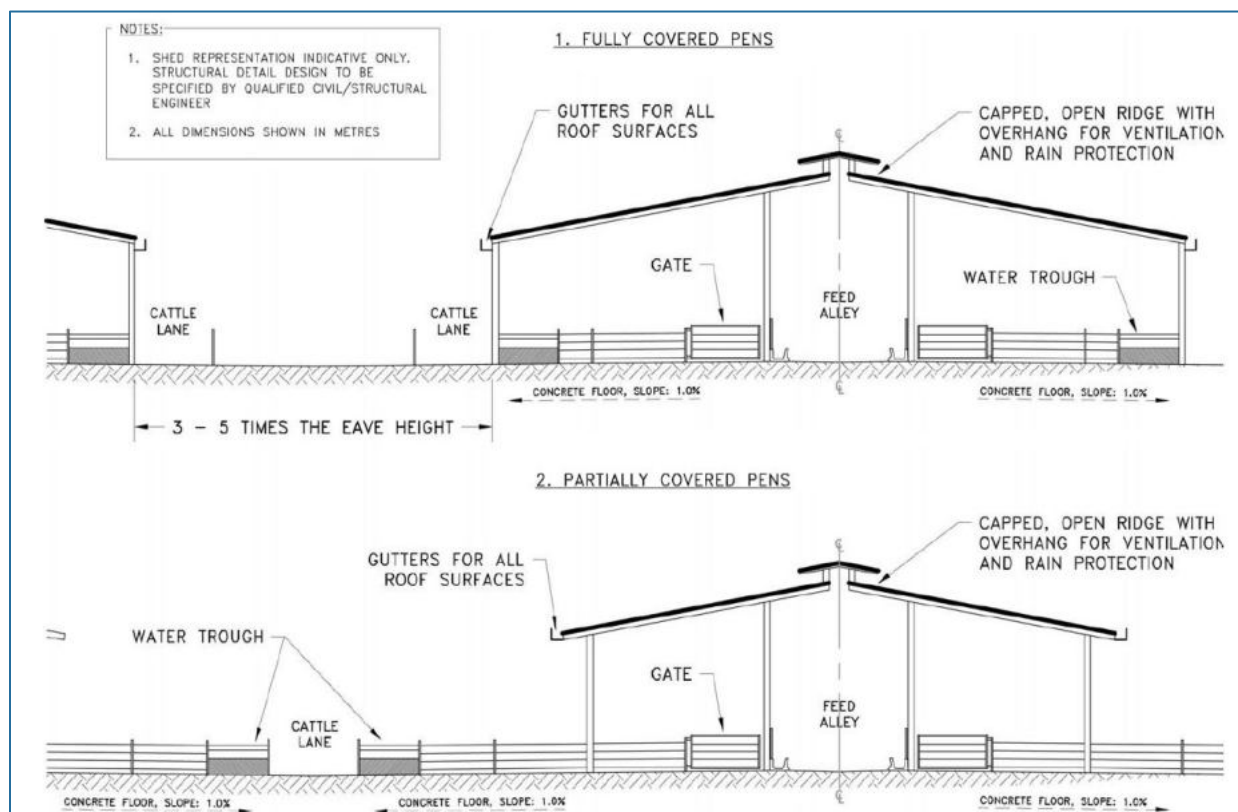


Figure 9: The technical design of a typical feedlot shed and elevations proposed to be constructed at Keetmanshoop and Aus Settlement (**Source:** LiveCorp, 2020)

The operating conditions of a feedlot are based on the local climate, the environmental sensitivity of the area, the type of livestock (Sheep) being held at the facility, the nature and availability of commodities and the social structure of local communities. The climate in both South Africa (where the livestock are sourced) and Namibia (through which they will transit and exported) is the single most important factor influencing the holding facility's design. It is characterised by:

- highly variable rainfall (spatially and temporally)
- hot and dry summer temperatures
- Very cold and sometimes wet winter weather

These aspects influence feedlot design (**Table 5**), particularly from the perspectives of animal welfare and waste management. For example, large quantities of rainfall run-off could contaminate areas of high environmental value while equally, the generally large-framed animals with high tolerances to heat and humidity has better preference for feedlot operations. Breeds with low or poor heat and humidity tolerance requires special consideration and thus some mechanisation may improve the efficiency of the export livestock operations. Best practise practical examples are provided in **Figures 9, 10** and **11**.

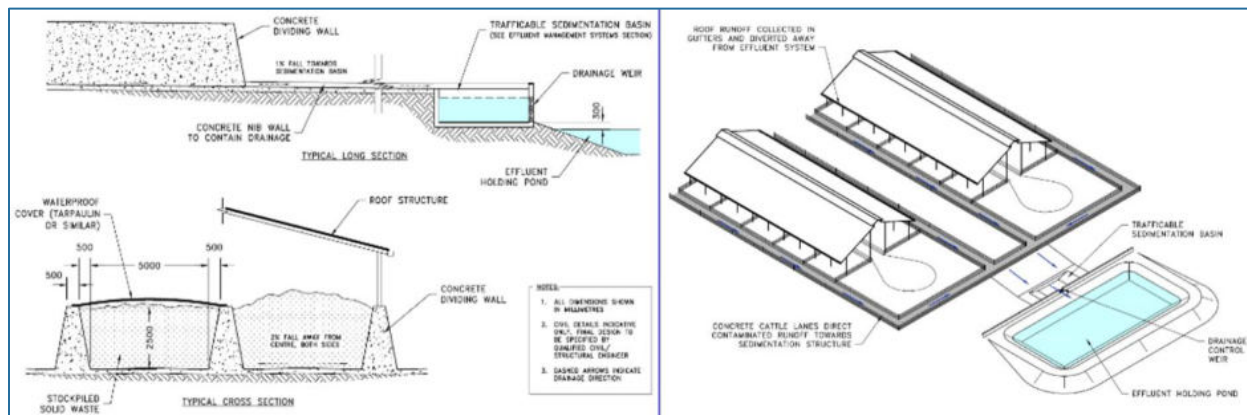


Figure 10: An illustrative diagram of the design of solid (left) and effluent (right) waste management systems at a typical livestock holding / feedlot facility, similar are proposed for TradePort operations (**Source:** LiveCorp, 2020)



Figure 11: Example of good practical holding with shed shielding the sheep harsh weather and allowing them roam around (**Source:** Elders through Grain Central, 2020)

During the construction phase, both skilled and unskilled temporary employment opportunities will be created. It is difficult to specify the actual number of employment opportunities that will be created at this stage; however approximately 100 personnel in project support industries will be utilized during the construction phase.

The construction specific activities will involve the transportation of personnel, construction material and equipment to the site, and personnel away from the site. In terms of site establishment, laydown areas will be required at the outset of the construction phase, as well as dedicated access routes from the laydown areas to the working areas. Haul roads for construction traffic (for the delivery of concrete, paving materials and other construction materials) will be required.

Table 5: Factors to be considered when choosing the design aspect of the livestock feedlot facility

Aspect Function of Housing and Holding Facilities Systems	Description	Specifications and benefits
1.1 Pen capacity	Pen capacity is best matched with the expected numbers of cattle entering or leaving the feedlot in each consignment e.g. a standard truck / ship load.	
1.2 Stoking Density	The stocking density describes the area allowed for each animal, and is based on the size of animals with larger heavier cattle needing more space than smaller lighter one. It is also based on the type of housing intended.	Fully covered pens can be stocked more densely (2.5–4 m ² per head) than partially covered pens (5–9 m ² per head).
1.3 Roofing	All roof run-off should be collected in gutters and diverted away from any effluent management systems.	Roof pitches should be steep enough (between 1:2 and 1:3 slope) to promote good natural ventilation.
1.4 Shed spacing	Sheds should be spaced apart a distance of 3–5 times the eave height to promote natural ventilation.	
1.5 Slope	The surface should slope from the feed trough end of the pen to drain any moisture.	Slopes should be 0.5–1.5% for covered pens and 1–2% for uncovered pens.
Feed delivery and Water Supply systems Functions	Livestock must have easy and comfortable access to fresh feed, which can be delivered by hand or by machine. Equally livestock need a constant supply of good-quality, clean and cool drinking water.	
2.1 Feeding and Water trough length	For the most efficient delivery of feed, troughs should be continuous along each row of pens and must be protected from rain to prevent feed being spoiled by excess moisture. Water troughs should be in-line with the side fences A trough positioned within the pen will allow access from both sides, provided it does not hinder cleaning of the pen. A neck rail above the centre will prevent cattle climbing into the water.	Each animal should have 200–300mm length of accessible feed trough Concrete is strongest and most durable. Provide 50cm of accessible trough length per animal. Water supply pipes Reticulation systems should be able to deliver 5–6 litres/head/ hour with pipes shielded from direct sunlight to keep water cool.
2.2 Feed delivery access	Delivery of feed and roughages to the troughs should not be obstructed by overhead cables or rails. Feed delivery roads should be wide enough for two feed delivery vehicles.	
Solids and Effluent Waste management systems	Solid wastes from the feedlot (manure, spoiled feed and carcasses) must be contained and then allowed to dry to become beneficial, with minimal harm or nuisance to the environment and surrounding residences. Effluent waste, should be contained, treated and contaminated water from the feedlot pens and manure storage area disposed-off to prevent pollution of surrounding water resources.	
3.1 Design features Solid waste Storage capacity	Solids waste are cleaned out of pens and sedimentation structures and transferred to storage areas. Solid waste management systems must have enough capacity to store solids produced from the feedlot as they dry and are processed for reuse.	Simple bunk-style storage areas can offer adequate protection and containment for minimal cost. Reuse or sale of stockpiled solid wastes will reduce the required capacity of storage systems.
3.2 Design features Effluent waste Storage capacity	Effluent systems must have sufficient capacity to limit effluent overflow from any structures to once in every 20 years on average, and should be able to contain large rainfall events without overflowing. Drainage structures should direct all contaminated run-off to a sedimentation structure.	System capacity should be determined by run-off modelling using long-term daily rainfall records. Effluent management systems consist of drainage networks, sedimentation structures and effluent storage ponds.

All needed construction material (different sand and stone aggregate, cement, corrugated iron sheets, metal / wooden beams, pipes and associated accessories, and fencing materials (still wire, droppers and poles etc.) will be sourced from local suppliers, and most preferable within the Hardap and Karas regions. Equally the basic / utility service shall be sourced from the relevant local authorities or service providers.

Both Water (~600 m³ per day) and Electricity (< 1.5 Kilowatt per Day) will be needed both for domestic and construction use purpose during the construction and operational phases of the proposed activity.

2.2.3. LIVESTOCK HANDLING AND MAINTAINANCE OF FACILITY

2.2.3.1 GENERAL OPERATIONAL OVERVIEW

The TradePort Namibia's key operational activities revolves around the on-the-hoof import, transit and export of between 10 000 and 70 000 sheep per voyage along the Trans-Oranje Corridor through the Lüderitz Port to the Middle-eats and other markets. The Sheep will be imported in fractions depending on loading capacity of the trucks procured for transportation.

Because the loading of ship will be conducted at least every two months (equating to a maximum / total of six voyages per annum, see **Table 6** for breakdown of days), the import calendar shall be preceded by not less than a month (**30 Days**) of compulsory on-land holding period including a **21 days** quarantine on entry of the sheep imported from South Africa at the Keetmanshoop Facility. To achieve this, the proposed activity consist of two holding facilities which will be operated adopting a feedlot approach (**Figure 12**), with an initial **21 days** strict quarantine period at Keetmanshoop and **9 days** intermediate holding at Aus prior to loading at Lüderitz.



Figure 12: A typical sheep kraal / pens, however the proposed TradePort Namibia's facility will be complemented by veterinary and feed storage facility (Photo sourced from internet, 2020)

Table 6: Breakdown of Number needed to complete a single shipping cycle

Location / stage of operation	Number of Days spend at location / Stage
Transport from South Africa	10
Quarantine at Keetmanshoop	21
Transport to Aus	5
Holding at Aus	9
Loading at Lüderitz Port	5
Voyage at Sea	12
Total Days of Operation	62

The proposed Livestock Holding / feedlot facility shall be managed by general manager and, frequently, an assistant general manager. It shall be further organized into several distinct units that allow for improvements in production efficiency through the specialization of management and labour resources. These units include, but are not necessarily limited to, the administrative unit, production unit, yard maintenance unit.

2.2.3.2 ESSENTIAL FEEDLOT ACTIVITIES

TradePort Namibia proposes to venture into the on-the-hoof import and export trading operations (see **Figures 2 – 4** for imagery illustrations), which involves:

1. The transportation of between 5 000 and 70 000 sheep from South Africa to Namibia by truck
2. Off-loading the livestock at quarantine / holding facility at Keetmanshoop, here the livestock will be held and cared for under an intensive feeding and veterinary programme (for not less than **21 Days** quarantine). The sheep will be kept and cared for at the feedlot facility until they are cleared of any contagious diseases and sufficient stock for export is built
3. The veterinary cleared livestock will then be transported further to another feedlot facility at Aus Settlement, where they stay for another 10 day acclimatization period before the fit-to-load individuals are selected and transported for boarding into Ship at Lüderitz, cleared by customs for export to target markets
4. Therefore, to complement the above activities two holding facilities (feeding and handling pens/kraals) shall be constructed both at Keetmanshoop Town and Aus Settlement.

Livestock (Sheep) Induction

In accordance (Animal Health Act No. 1 of 2011) with the relevant Namibia livestock import legislatures requirements, quarantine regulations shall apply to all the livestock arriving at the facility in Keetmanshoop. Hence, the facility shall consist of an animal quarantine section where the livestock shall be kept for **21 Days** as per the Act (Animal Health Act No. 1 of 2011) during which they are inspected by quarantine veterinarians (may be subject to state veterinary).

The new arrivals shall be given complete rest in pens with plenty of room to allow them to lie down preferably in the same groups, based on age and sex as they arrive, and also fed and

watered as much as necessary. In three days from arrival, resting and rehydration, normal induction activities such as vaccinations, ear-tagging and blood testing are performed.

If animals are in good health at the end of the quarantine period, the quarantine veterinarians permit their release to join the rest of the production herds.

Recognising sick animals

It is unlikely that all sick animals will be identified when they are being unloaded from trucks at the facility. Newly-arrived livestock must be observed carefully in their quarantine pens to identify any serious health problems. Identified sick or injured livestock must be immediately isolated or moved to the hospital pen by experienced staff to minimise disturbance to both the main group of sheep and the sick animal. The staff will be well trained to recognise injured or sick animals at induction and during the first week at the feedlot. The following signs for injury shall be observed in determining whether the animal:

- Is depressed and hold their heads lower than normal
- have a 'distant' or disinterested attitude
- have soft, repetitive coughing and an increased breathing rate
- have watery, dull eyes and a clear nasal discharge
- have stiff movements or shortened stride and drag their toes
- tuck their tails tightly between their hocks

Veterinary Treatment Administration

With guidance of the relevant national and target market legislative requirements, the veterinary technicians shall develop and seek pre-approval of a Preventive Herd Health Plan (PHHP) or strategy. The PHHP helps with the prevention and treatment of health disorders in the livestock herds at the facility and throughout the export chain.

The preventive health programs for the export chain and the holding facilities must include:

- Biosecurity – quarantine of new arrivals for at least 21 days, and limiting access of people and animals to the feedlot
- Stress reduction – to minimise stress from factors such as nutrition, handling, transport, and environmental, as well as from disease
- Early detection and identification of disease problems adopting a stringent regular observation and disease prevention protocols
- Vaccinations at induction – to reduce losses from easily preventable diseases and to control parasite (internal and external) at induction
- Good nutritional management
- Prudent informed use of hospital pens, antibiotics and other veterinary drugs
- Environmental management – development of good safe facilities, adequate shade, shelter, food and water, ventilation.
- Formal treatment protocols for anticipated disease problems

Diet Requirements, Delivery and Bunk Management

Given the design and magnitude of the proposed operation which adopts a feedlot approach, TradePort Namibia prefers to implement a multiple feeding programme. This approach allows more livestock to be fed in a shorter period of time earlier in the day and helps keep them from standing without feed and water for extended period of time.

Multiple feedings in a single day reduce the amount of time in the day that the diet remains in the bunk exposed to heat or inclement weather, which keeps feed fresh and improves feed intake.

TradePort adopts for bunk-management the clean- or slick-bunk management programs, which is aimed at ensuring that:

- minimize variation in daily intake
- minimize incidence of binging or feed aversion
- frequency of digestive disorders, and ultimately
- maximize long-term feed intake and growth

With these programs, the objective is to encourage each pen of livestock to consume the prior day's feed allotment just prior to the first feeding of the day. This strategy stabilizes consumption patterns, minimizes carryover of feed from day to day, and reduces potential for binge eating when feed is delivered.

In respect to water requirements, it is an essential nutrient for all animals and thus important for both animal welfare and business profitability that livestock have an adequate supply of good quality water. Amount and quality of water required vary between species of livestock, between classes of stock within the species, and in response to the environment in which the stock are running (**Table 7**). It is anticipated that on a daily basis TradePort will need to supply an average of **600 cubic metre (m³)** of water daily or **90 megaliter (ML)** per annum to maintain its entire operations water demand (spread across the different stages and along the routes i.e. at the different feedlots and on-board the ship).

Table 7: Daily Water Demand by Livestock Type and estimated total for TradePort

Stock type	Consumption Per head per day (L)	Total Number of livestock	Total Water Requirements
Sheep / Goat			
Weaners	2–4	35000	105000
Adult dry	2–6	35000	140000
Cattle			
Young stock	25–50	–	–
Dry stock (400 kg)	35–80	–	–
Total Livestock Water Demand (Litres)			245000

Nutritional value and filling effect are key factors affecting effective livestock production under feedlot facilities. For instance, poor nutrition triggers stress in livestock and both leads

to reduced immune responses which creates an opportunity for feedlot disease such as pneumonia.

Deficiencies of minerals can cause ketosis, transport tetany and other metabolic diseases that cause serious stress. These are caused by provision of unbalanced nutrition to the livestock while holding facilities. Therefore, TradePort Namibia, intends to procure (both locally and regionally) and provide feed and licks ration that specially designed for animal production in feedlot facilities. It is estimated that in total, TradePort shall need to procure about **361 tons** of feeds and licks per day or **132 (MT)** metric ton (**Table 8**) per annum to maintain its entire operations water demand (spread across the different stages and along the routes i.e. at the different feedlots and on-board the ship).

Table 8: Daily Dry Matter Feed-Intake by Livestock Type and estimated total for TradePort

Stock type	Consumption Per head per day (kg)	Total Number of livestock	Total Dry Matter Feed-Intake
Sheep / Goat			
Weaners	1.3 – 2	35000	63000
Adult dry (80 kg)	1.5–8.5	35000	297500
Cattle			
Young stock	5.5–24.5	–	–
Dry stock (400 kg)	9.5–39.5	–	–
Total Livestock Feed Demand (tons)			360500

2.3 CLOSURE AND DECOMMISSIONING

The main aim of decommissioning is to return the land to its original, pre-construction condition. Should the unlikely need for decommissioning arise (i.e. if the facility becomes outdated or the land needs to be used for other purposes), the decommissioning procedures will be undertaken in line with the EMP and the site will be rehabilitated and returned to its pre-construction state.

A closure and rehabilitation plan shall be prepared and submitted to DEA for approval prior to the commencing with the on-ground de-commissioning activities. The process will entail consultations with all relevant stakeholder and consideration for alternative uses of the facilities before demolition of the infrastructure.

2.4. HAULAGE, LOADING AND SAILING ACTIVITIES

2.4.1 Proposed Haulage Route

The TradePort Namibia's proposes to undertake its import-transit-export of between 5 000 – 70 000 Sheep along the Trans-Oranje Corridor (**Figure 13**) through the Lüderitz Port to the Middle-east and other markets. The sheep will be imported or sourced in fractions depending on loading capacity of the trucks procured for transportation.

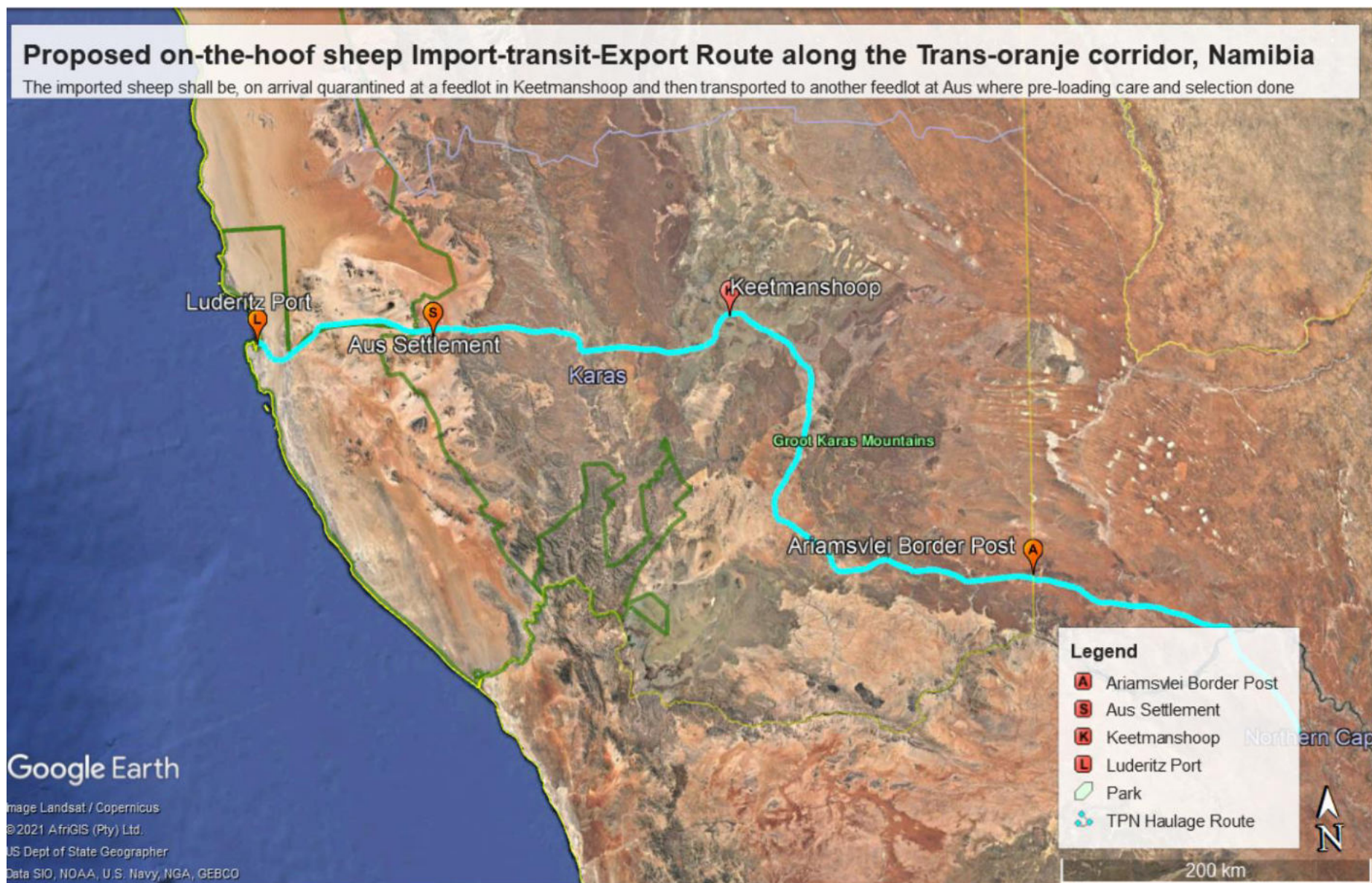


Figure 13: Illustration of the proposed Truck / Rail transportation route along the Trans-Oranje and Lüderitz Port

2.4.2 Proposed Mode of Transport

The proposed operation entails the import of live sheep from South Africa and or from local sources / feeding areas, transporting it by truck (**Figure 14**) each carrying in accordance with permitted loading capacity, sheep to Keetmanshoop where sufficient stock will be built before its transporting further to the Aus and the Lüderitz Port for export.

At the Port of Lüderitz, the livestock will be loaded onto a livestock Carrier Ship (**Figure 15**) by which they will exported to the Middle-east and other Markets. Throughout the transportation of the livestock, TradePort will be outsourcing the services of livestock carriers (Trucks or Ship) and or of TransNamib, while NamPort will be providing the logistical infrastructure for off- and on-loading the livestock onboard the ship.



Figure 14: Illustrates a typical livestock transportation method, however two options will be considered i.e. rail vs. road mode (LiveCorp, 2020)



Figure 15: Illustrates a typical livestock transportation and handling of livestock boarding process within a Port area (LiveCorp, 2020)

2.4.3 Livestock Haulage and Handling

While there are no standards which set out specific requirements to ensure the welfare of livestock during transport in Namibia, it is critical that TradePort Namibia adopts available sectoral good practice including adherence with the World Organization for animal health (OIE) Terrestrial Animal Health Code (the Terrestrial Code) guidelines.

Livestock welfare consideration are important and must apply to all key players (operators) involved in the livestock export chain namely; consignor, transporter or receiver of livestock and include producers, managers, sale-yard managers/superintendents, feedlot operators, agents, and livestock processing plants, drivers and transporters.

The chain of responsibility for livestock welfare in the transport process is:

- the consignor for the assembling and preparation of livestock, including the assessment and selection as ‘fit for the intended journey’, feed and water provisions, and holding periods before loading.
- the transporter for the journey, which involves the loading, including final inspection as ‘fit for the intended journey’, the loading density, inspections and spelling periods during the journey, and unloading.
- the receiver after unloading.

TradePort Namibia is cognisant of the need to employ ethical measures and practices that will enable it to meet the global animal welfare requirements. Therefore, protection from pain, injury or distress is central to TradePort Namibia’s objective in achieving positive welfare outcomes for the livestock.

2.4.4 Handling of livestock

Being cognizant of animal welfare requirements, TradePort Namibia intends to adopt and comply with international standards for working with animals as per the World Organization for Animal Health i.e. understand the following key points:

- Animals have natural flight zones
- How animals use sight and sound influences their direction of movement
- Animals need to be handled in a balanced way to avoid harm, distress or injury
- Aids such as the ‘sheep talker’ can be used to encourage movement and direction of animals
- Unacceptable practices include creating noise that will agitate the animals, using implements that may cause pain or stress, hitting animals, and walking animals over the top of other animals.

Preparing Animals for Transport

Where possible, livestock suitable for transport (ready for export) will be and organized in groups in ample time prior to transport in order to allow social order to be established. These

groups should then be brought to the yards using low stress sheep handling techniques and allowed to settle prior to loading.

Provision for access to dry feed and water to the livestock shall be continued up to the point of loading. However, where transportation time is minimal, a four-hour fasting before trucking will be practiced to help reduce livestock excreta on the truck floor.

Livestock Loading, Unloading and Loading Density

Single file loading ramps will be used and always kept in good condition to allow livestock to load safely. The design of the loading ramp(s) shall take into account the different type of livestock (Sheep) and shall incorporate a steel plate that folds down between the back of the truck/trailer and the ramp.

It is highly recommended that the livestock are loaded quietly and calmly and also tightly enough to give each other support but not so tight as to result in suffocation, injury or trampling. Livestock of a similar size or weight should be loaded together in pens, and horned sheep should be transported in separate pens to sheep without horns.

Special care must be taken with regard to vulnerable livestock such as the pregnant and weak (sick / unfit-to-load), these must not be transported at all. Once loading is complete, the trailer / truck gates shall be tightly closed prior to leaving the ramp and transportation shall commence as soon as the animals are loaded.

Once at destination, after approximately 12 – 15 days voyage, the livestock are to be off-loaded as soon as practically possible as they arrive. During unloading, the animals will be allowed to walk quietly off the truck / carrier ship and placed onto pens with feed and water.

In-Transit Care

After departure, the livestock shall be inspected within the first 30 minutes of the journey or voyage, and again every two hours (for truck journey) or three hours (for carrier ship) to ensure their wellbeing. The inspection of livestock during transit must include the following observations:

- For trucking,
 - ensure that all animals are standing - any that are down should be assisted to regain their footing
 - If necessary, offloaded and treated for any injuries that have been incurred.
 - No animals are exhibiting signs of heat or cold stress
- For carrier ship,
 - adaptation to social grouping (sex, age and physical condition), ensure that animals are grouped appropriately in order to prevent disease transmission, bullying, mounting
 - ensure that all animals have ample space to stand / lay-down in their pens and are free of excreta

- no animals are exhibiting signs of heat or cold stress as necessary, they have adequate water and feed (hay) supplies
- discomfort associated with sea-sicknesses

Transporting in Extreme Weather

The trade involving the export of livestock on-the-hoofs is reported to present inherently high-risk relating to animal welfare while on voyage, particularly during the summer season. Hence, a key requirement in the proposed transportation of livestock, particularly for sea voyages is the provision of veterinary treatments.

In attempt to address this concern, TradePort consignments will be accompanied by a qualified veterinary technician to attend to livestock while at sea. Other precautionary

Wherever possible, the sheep should not be transported in extreme hot, cold, wet, or windy weather, unless where the vessels is equipped with adequate weather regulating devices / equipment. It is particularly important to avoid transporting wet sheep during very cold weather. Water on the coat of the animal reduces its insulating qualities, and in extreme cold can lead to ice formation on the coat that extends to the skin and the onset of hypothermia and subsequent death.

When the air temperature falls below 10oC, adding bedding material such as straw to the floor of the pens may provide good insulation against the cold, particularly if any sheep go down during the journey and helps the animals keep dry.

For trailers with adjustable vents, these may be selectively closed off while travelling to reduce the effect of wind chill in the trailer. However adequate ventilation needs to be maintained at all times to prevent development of respiratory issues.

Correct loading density reduces the risks of heat stress on hot days, and frostbite on cold days by allowing individual animals experiencing extreme temperature to reposition themselves away from the source of discomfort. Provision of high nutritional value forage to the sheep after prolonged exposure to the cold during transport will assist with recovery.

Preliminary identification of potential stressors reveals that to eliminate or mitigate both psychological and physical stressors in relation to the conditions on vessels transporting animal, the following considerations are key:

- f) Physical Restraint and Handling
- g) Noise – loading, journey, off-loading, and Vibration – of vessel and ocean.
- h) Social Regrouping – disease transmission, bullying, mounting.
- i) High Ammonia build up / Respiratory problems.
- j) Lack of veterinary treatment and provision during the journey.

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT

This chapter of the Scoping Report provides an overview of the affected environment for the proposed most especially the two key operational sites (Keetmanshoop, Aus Settlement and Lüderitz) and other key receptors along the rail route across Namibia. The receiving environment is understood to include biophysical, socio-economic and heritage aspects which could be affected by the proposed development or which in turn might impact on the proposed development.

3.1 BIOPHYSICAL ENVIRONMENT

Namibia is characterized by four land type systems, the Namib, which runs along the entire west coast from the port town of Lüderitz, northwards into southern Angola; the Succulent Karoo which lies south of Lüderitz and extends across the Orange River into South Africa; the Nama Karoo which occurs immediately to the east of the previous two desert systems and covers most of the southern third of Namibia, tapering to a narrow belt from central Namibia northwards; and the Southern Kalahari which extends eastwards across to Botswana. However, the Trans-Zambezi route only crosses through three of these, namely the Namib Desert, Nama Karoo and the tree and shrub savannah.

3.1.1 Climatic Conditions

About 22% of Namibia's land is classified as desert (hyper-arid), 70% is classified as arid to semi-arid and the remaining 8% is classed as dry sub-humid (Mendelsohn et al. 2003). Most of the country receives an annual average of more than nine hours of sunlight per day. The north and south of the country experience the highest temperatures with the average maximum for the hottest month being over 34°.

The average maximum temperature at Keetmanshoop during the hottest month is 34 - 36°C while in Windhoek it is 32 - 34°C. Temperature averages about 20°C. In summer temperatures above 40°C are common (Mendelsohn et al. 2003).

Rainfall is highly erratic and unpredictable with an inter-annual coefficient of variation that ranges from about 30% in the north-east to over 100% in the driest areas. Along the project route and across the different biomes (**Figure 16**), annual average rainfall is 138 mm at Keetmanshoop, and this decreases along the east-west gradient to annual averages of less 20 mm per annum.

All of Namibia, except for the coastal plains, experiences humidity of below 30% during the day for much of the year - in the north-east for about six months, the north-centre for seven months, the central area for eight months and in the south for all 12 months. High temperatures and low humidity result in high rates of evaporation. Evaporation rates from an open body of water inland of the coastal plains range from about 2000 mm to over 2660 mm per annum (Olivier, 1995).

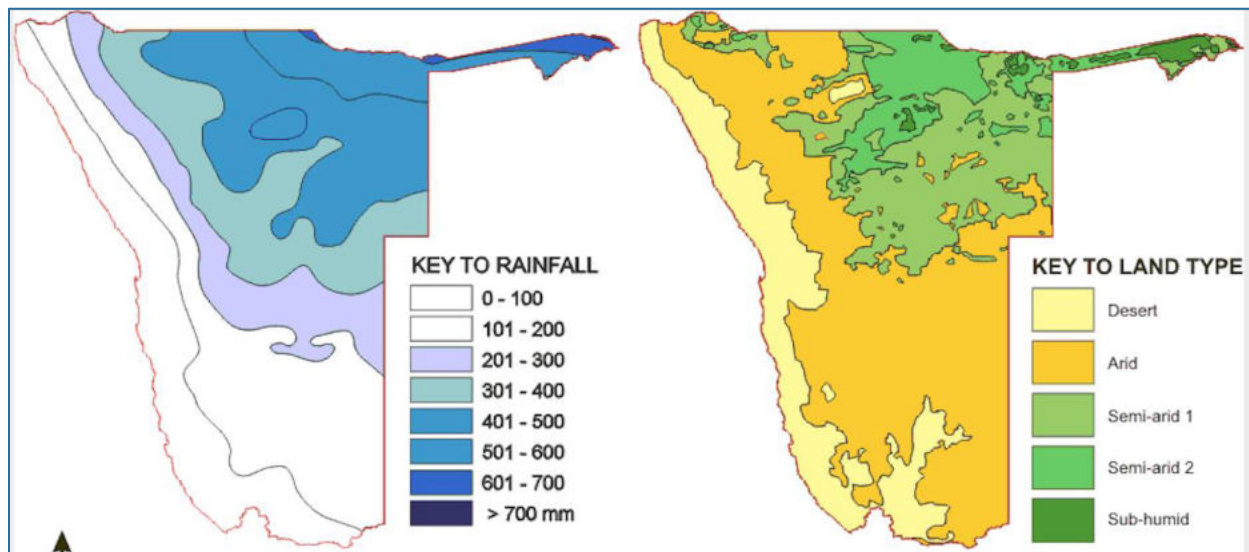


Figure 16: Shows the annual rainfall variation across west-to-east gradient a gradient and across the different biomes

With respect to the Feedlots related activities, wind and rainfall has the greatest probability to affect the proposed operations as far as the handling of the sheep in crush pens / holding facilities may generate dust particulates. At Keetmanshoop, the prominent winds blows from South South-West (SSW) and North North-East (NNE, see **Figure 17**) at speeds of 0 – 22 kts (Robertson et. al, 2012).

Contrary, at Lüderitz, offshore winds are characterized by homogeneous South (S) and South South-West (SSW, see **Figure 18**) winds blowing parallel to the coast at speeds of 0 – 22 kts, the inshore winds are more variable, mainly in the north-south component (Robertson et. al, 2012).

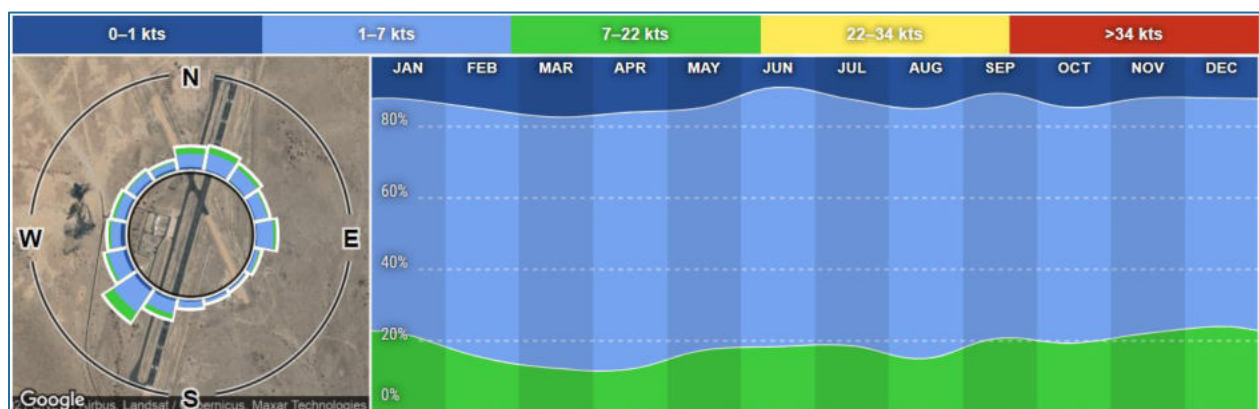


Figure 17: Observed climate data Wind-Rise Direction and Speed (knots) at Keetmanshoop

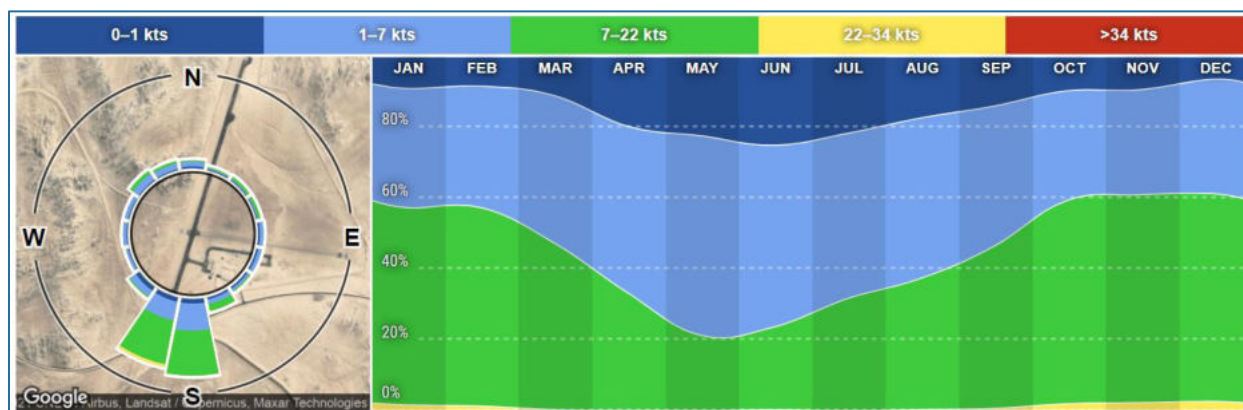


Figure 18: Observed climate data Wind-Rise Direction and Speed at Lüderitz

3.1.2 Geology

Considering that TradePort Namibia's sheep haulage component of their operations will transit entirely along the Trans-Oranje (B1) Corridor, which runs through a variety of geological setups consisting mainly of the Karoo Super-group (see **Figure 19**).

The Keetmanshoop area is characteristic of the Nama-Karoo Basin. This area accommodates a large, flat lying plateau which dominates much of Southern Namibia (Mendelsohn, Jarvis, Roberts, & Robertson, 2002). The landscape is extremely barren and rocky (Ministry of Agriculture, Water and Forestry, 2011).

The local geology consists of outcrops with black limestone located on the top, underlain by a clay rich marl (occurring as a schist in tectonised areas) and then gravel (occurring as quartzite in tectonised areas). Most of the southern region's surface geology is dominated by shale/sandstone sequence and black limestone of late Namibian age.

The terrain around Lüderitz is dominated by a pediplane which is possibly as old as Jurassic and which stretches almost to Aus 85 km inland. The immediate coastline, however, shows the effects of rejuvenation deepening and steepening of the valleys west of the dune belt and terracing in the major valleys.

The local and regional geology were subjected to numerous events of deformation which led to the formation of geological faults, fractures and folds.

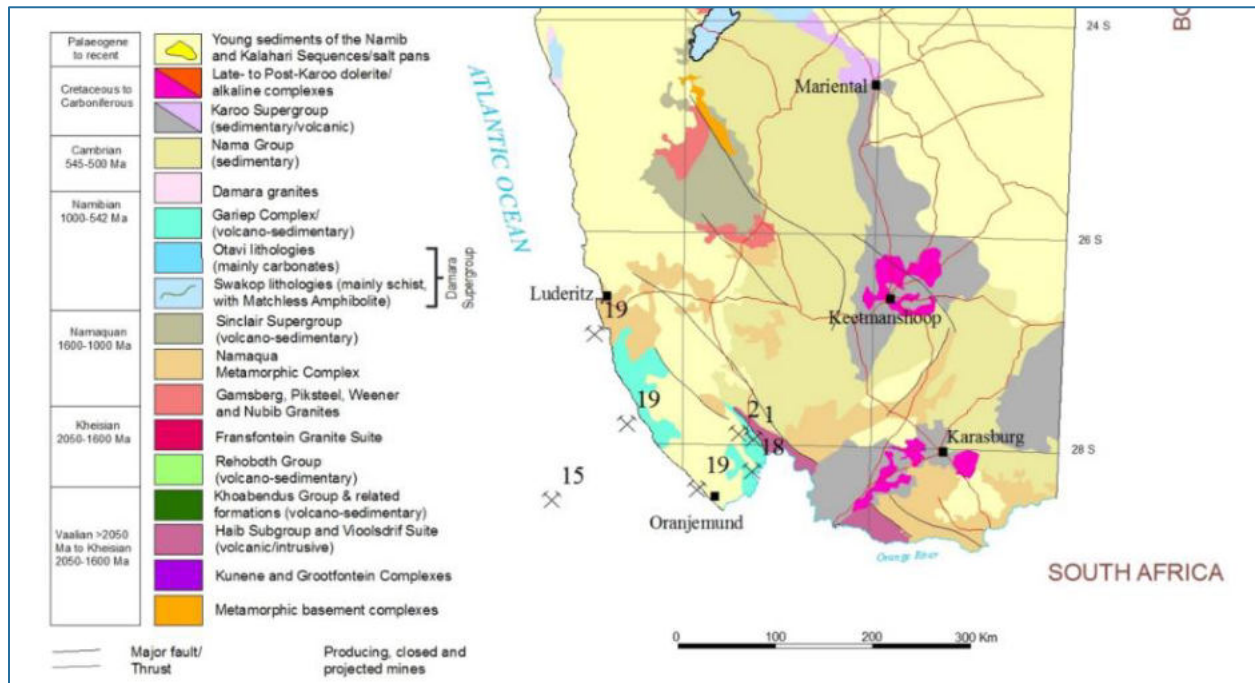


Figure 19: Generalized geology of the southern section of Namibia showing the centralized cluster of kimberlites and associated carbonatites in a broad NW-SE trend (Geological Survey 2011).

3.1.3 Terrestrial Ecology and Sensitivity

Namibia's vegetation and biomes are classified into five major types, shown in (Figure 20). These are, the Namib Desert, Nama Karoo, Succulent Karoo and the Trees and Shrub savannah. These biomes fall within the project area and thus key receptors of environmental impact particularly in case of tanker capsizing resulting into potential spillage of the fuels.

Overall terrestrial diversity of plants and animals is highest in the north-eastern parts of Namibia (Figure 20, green map indicator), because of the higher rainfall and presence of wetlands and forest habitats that are not found elsewhere in the country. Many species in the north are also more tropical, with ranges that extend into neighbouring countries to the north and north-east. Species richness is highest in Namibia's mesic wetlands and woodlands in the vertebrate classes particularly (Barnard 1998).

Due to its low productivity, the south-west African arid zone is endowed with modest diversity of species compared to more mesic habitats. What is most distinctive about Namibian biodiversity is its high degree of endemism (Barnard 1998).

Unlike the concentration of biodiversity in the north-east, the great majority of Namibia's endemic species are found in the dry western and north-western regions (Figure 20, brown map indicator) (Barnard 1998, Mendelsohn et al. 2002). The patterns of endemism reflect the importance of arid habitats in supporting unique and specially adapted species.

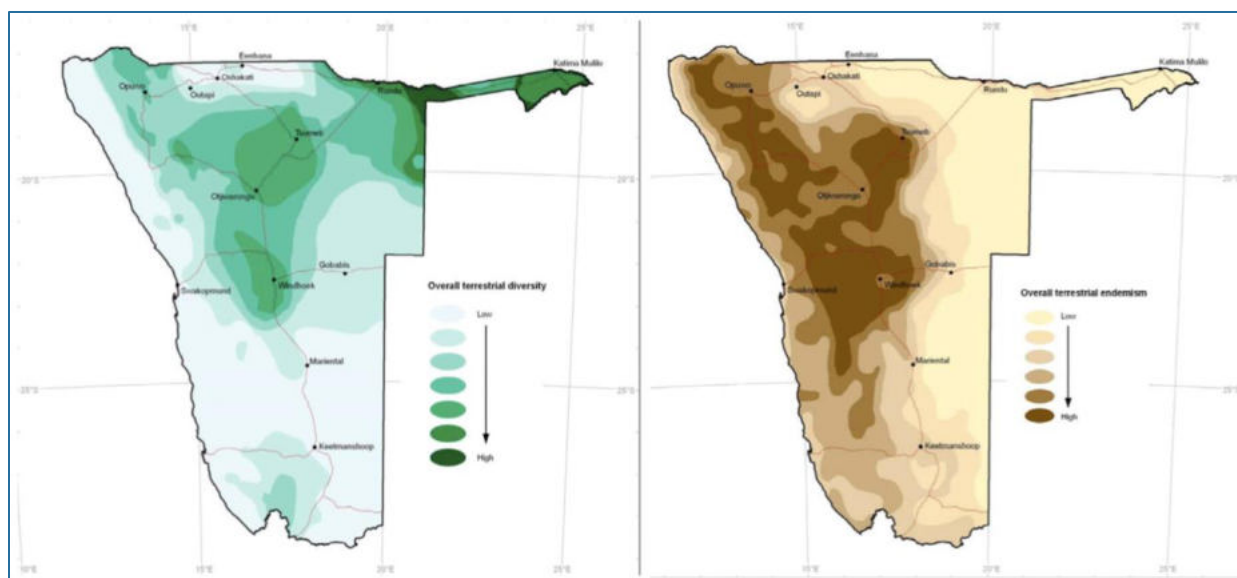


Figure 20: Shows a comparison of overall terrestrial species diversity (green) against overall endemism (brown), with the most endemism observed within operations route resulting in a “Red Flag” in terms of environmental risks.

Endemic species, particularly of birds, mammals and reptiles, are concentrated in the escarpment zone. In the Namib, endemics are associated with the dunes, rocky inselbergs and hills, and the sandy and gravel plains. For instance, approximately 60 reptile species (50% of all Namibian endemic reptiles) are endemic to, or found mainly in, Namibia’s Namib Desert (Griffin 1998).

In birds, the greatest diversity of southern African endemics is centred on the arid savannah and Karoo biomes and extends into the escarpment (Brown et al. 1998). Highland areas of the country, including Waterberg, Khomas Hochland, Karas Mountains, Brandberg, inselbergs in the Sperrgebiet and the karstveld are particularly important for many endemic plants (Mendelsohn et al. 2002).

In respect to the TradePort Namibia’s operations, habitats of special ecological importance and therefore requiring special care for both richness of species generally and of endemic species include (Barnard 1998):

- The coastal zone;
- The Namib sand sea and adjacent gravel plains;
- The winter-rainfall desert zone

3.1.7 Protected Terrestrial Areas

Land uses outside of protected areas are still generally defined by broad farming practices. Within the project area in the northeast of Namibia, the important land-uses include timber and non-timber forest products, fish, wildlife and tourism benefits. About 14% of this area is under conservancies and community forests, however, 82% of total household income comes from non-farming activities (MET, 2018).

Critically, an important outcome of Namibia's policy and legislative framework to devolve rights over wildlife, tourism and forestry to local land owners and custodians is that land adjacent to protected areas is often more suited and more profitable under wildlife and tourism than under conventional farming.

3.2 SOCIO-ECONOMICAL ENVIRONMENT

3.2.1 Demographic Profile

The //Karas Region is the southernmost region of Namibia's 14 political regions. With a total land area of 161,086 km², the region occupies 19.6% (almost one-fifth) of the country's total land surface and it is the largest region, in terms of land, in the country (Karas Poverty Profile, 2007). The //Karas Region has a relatively small population compared to the vast land cover. With 77,421 people residing in the region this means a density of 0.5 persons per km² (NSA, 2014).

At Keetmanshoop, with a population size of 20 977 people (NSA, 2014) is the regional capital of the //Karas Region and is within a strong small stock farming industry. The main source of income for households in the //Karas Region is from Wages and Salaries (72%), Pension (9%) and farming (5%).

The private sector employees 49.9% of the employed sector within the //Karas Region, while the government sector employees 15.8% and the parastatal sector 13.5%. The main employment industry is the agriculture sector with roughly 32.4% employed in this sector; followed by public administration and defence with 8.5% (NSA, 2013). The Gobabis Urban Constituency has an unemployment rate of 27.7% (NSA, 2013 and NSA, 2014).

3.2.2 Heritage and Culture Profile

The heritage and culture consideration through a desktop study, indicates that although the southern regions of Namibia is not well studied archaeologically, several field surveys have been carried out indicate that the archaeological sequence is represented over the whole of southern and central Namibia. These surveys tend to concentrate mainly on the physical setting of known archaeological sites e.g. river valleys with an emphasizes on the higher and mid- slopes of hills, as well as a number of localized resources such as small springs and outcrops.

In one survey conducted for a NamPower powerline (QRS, 2015), about 189 archaeological sites covering the last two million years of human occupation were located and described over a spatial area spanning from South of Windhoek to South of Keetmanshoop (S 27°0'0'').

More importantly, however, this assessment identified at least ten (10, **Figure 21**) declared national heritage sites (monuments such as buildings) along the route, although all are situated at least 5 km away from the activity sites.

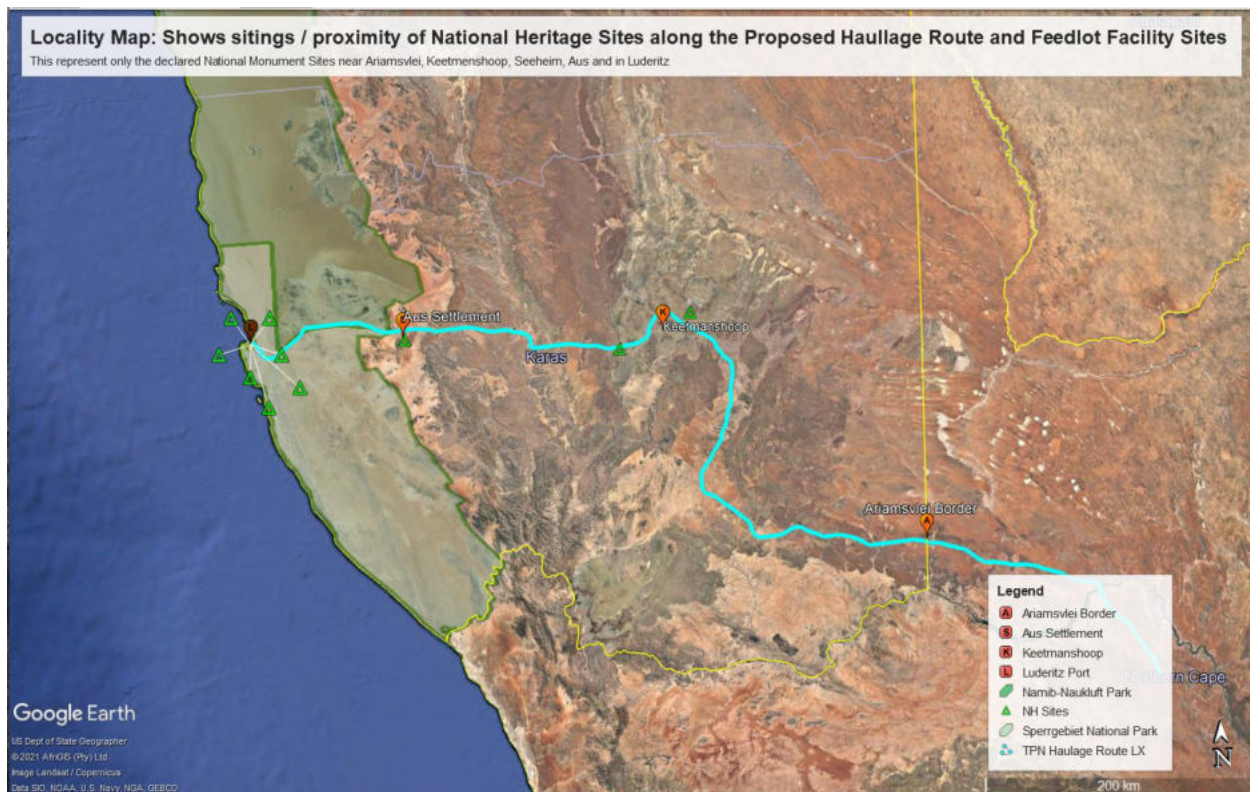


Figure 21: Shows a locations of declared national heritage (monuments) site in proximity to the proposed haul route (most of these sites are at 5 km away from the proposed feedlot site and haulage route (road / railway))

In the light of the evidence found during the field assessment and other desktop review of previous field surveys, it can be concluded that should a detailed heritage assessment be necessary and conducted it may yield the following results:

- Pre-Quaternary palaeontological evidence in insignificant quantity and mainly in the vicinity of Palaeozoic shale outcrops near Keetmanshoop, Aus and Lüderitz.
- Generalized occurrence of mid- to late Pleistocene to early Holocene artefact scatters primarily between the 26° and 27° South latitude.
- Moderately high density of late Holocene to recent pre-colonial archaeological sites throughout the extent of the power-line route, including burial cairns and remains of nomadic pastoral encampments, as well as possibly of some rock art sites and rock shelter sites containing sealed occupation debris
- Generalized occurrence of colonial era sites, including farm settlements, battlefield sites and related remains.

Therefore, it remains necessary that in the absence of extensive heritage and culture studies in the region there remains a possibility of encountering numerous undeclared artefacts / sites of heritage importance. A search and find procedure (**Appendix C**) must be strictly followed in accordance with the stipulations of the Namibian National Heritage Act in the highly unlikely event that artefacts are found in the sand mining area.

4. APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

This chapter presents the approach to the Environmental Scoping Assessment process, for the proposed TradePort Namibia's trade operations and gives particular attention to the legal context and guidelines applicable to this assessment. The assessment approach and the steps in the Public Participation component of this scoping report were undertaken in accordance with Regulations 29 and 30 of Government Notice No. 30 of 2012. Overall, this section highlights information including the approach to stakeholder engagement, identification of issues, overview of relevant legislation, and key principles and guidelines that provide the context for this scoping assessment process. Hence, in a nutshell, the purpose of the environmental assessment is to:

- Address issues that have been identified through the Scoping Process;
- Assess alternatives to the proposed activity in a comparative manner;
- Assess all identified impacts and determine the significance of each impact; and
- Recommend actions to avoid/mitigate negative impacts and enhance benefits.

4.1 OVERVIEW OF APPROACH ADOPTED IN COMPILING THE SCOPING AND EMP REPORTS

The objectives of the environmental scoping assessment are noted in Section 1 of this Report. Section 6 of this Scoping Report includes a summary of the findings, the overall conclusions and the recommendations. The Scoping Report was made available for a 30-day I&AP and authority review period, as outlined in the EMA Regulations of 2012. Although adverts were put in two local newspapers (the New Era (**06 August** and **20 August 2020**) and *Confidente* (**06-12 August** and **13 - 19 August 2020**), with several responses or inputs were received (see **Appendix A** for detailed report).

As previously noted, the Scoping Report includes an Environmental and Emergency Response Plan (EERP, **Appendix B**). The EERP is based broadly on global environmental management principles and embodies an approach of continual improvement and mitigation actions.

These are drawn primarily based on the identified potential impacts for both the construction and operational phases of TradePort Namibia's proposed operations. If the project components are decommissioned or re-developed, this will need to be done in accordance with the relevant environmental standards and clean-up / remediation requirements applicable at the time.

4.2 LEGAL CONTEXT FOR THIS EIA

In accordance with the provisions of the Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 gazette and the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007), the activity to be undertaken by TradePort Namibia (Pty) Ltd may not be undertaken without an Environmental Clearance Certificate.

4.3 LEGISLATION AND GUIDELINES PERTINENT TO THIS ENVIRONMENTAL ASSESSMENT

As the main source of legislation, the Namibian constitution makes provision for the creation and enforcement of applicable legislation. In this context and in accordance with its constitution, Namibia has passed numerous laws (those of relevant to this project are listed in Table 2) intended to protect the natural environment and to mitigate adverse environmental impacts.

Namibia's policies provide the framework to the applicable legislation. Whilst policies do not often carry the same legal recognition as official statutes, policies can be and are used in providing support to legal interpretation when deciding cases. Below are several of the key legislations applicable to the governance of certain component / aspects of the proposed operation activity. Key acts and policies currently in force include:

- Namibia's Environmental Assessment (EIA) Policy for Sustainable Development and Environmental Conservation (1995)
- Environmental Management Act (No. 7 of 2007);
- Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012)
- Namibia Agriculture Policy of 2015
- Namibia Vision 2030, and other national development plan e.g. Harambee Prosperity Plan
- Meat Industry Act, 1981 (Act No. 12 of 1981), as amended
- Social Security Act, 1994 (Act No. 34 of 1994) and the Affirmative Action (Employment) Act, 1998 (Act No. 29 of 1998)
- Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947)
- Animal Health Act, 2011 (Act No. 1 of 2011)
- Animals Protection Act, 1962 (Act 71 of 1962) and the Animals Protection Amendment, 1972 (Act 7 of 1972)
- Animal Diseases and Parasites Act, 1956 (Act No. 13 of 1956),
- Animal Diseases Act, 1984 (Act 35 of 1984)
- Stock Brands Act, 1995 (Act No. 24 of 1995)

4.3.1 Environmental Management Act No. 7 of 2007

The environmental management act No.7 of 2007 aims to promote the sustainable use of natural resources and provides the framework for the environmental and social impact assessment, demands precaution and mitigation of activities that may have negative impacts on the environment and provision for incidental matters. Furthermore, the act provides a list of activities that may not be undertaken without an environmental clearance certificate.

The purpose of the Environmental Management Act is:

- a) to ensure that people carefully consider the impact of developmental activities on the environment and in good time
- b) to ensure that all interested or affected people have a chance to participate in environmental assessments
- c) To ensure that the findings of environmental assessments are considered before any decisions are made about activities which might affect the environment see **Figure 14.**

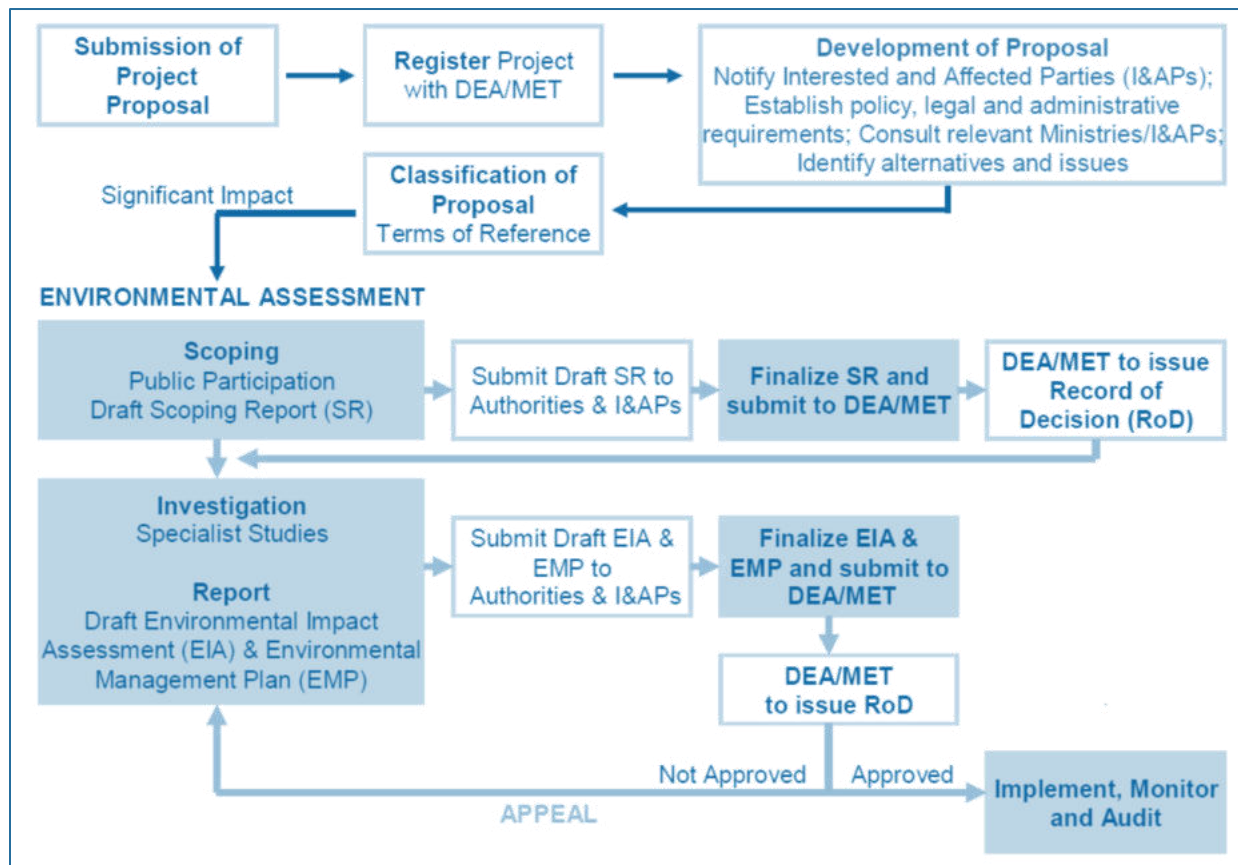


Figure 22: Illustration of the environmental assessment process in Namibia (Source: Risk Based Solution)

4.3.2 Environmental Assessment Policy (1995)

The Environmental Assessment Policy for Sustainable development and Environmental Conservation emphasize the importance of environmental assessments as a key tool towards implementing integrated environmental management. Sets an obligation to Namibians to prioritize the protection of ecosystems and related ecological processes.

The policy subjects all developments to environmental assessment and provides guideline for the Environmental Assessment. The policy advocates that Environmental Assessment take due consideration of all potential impacts and mitigations measures should be incorporated in the project design and planning stages (as early as possible).

4.3.3 Other Legal Requirements and relevance to the proposed activity

In addition to the EMA and the Environmental Assessment Policy, there exist other regulatory frameworks that TradePort must comply with. This is due to the supporting infrastructure that are needed to compliment the proposed operation which includes the construction of holding facilities. The process of obtaining the additional permits can be undertaken concurrently to the EIA process.

Furthermore, the proponent has the responsibility to ensure that the project activities conform to all other relevant legal documents and guidelines as listed in **Table 9** below).

Table 9: Other relevant legislation and applicability thereof (Source: Risk Based Solution)

Legislation	Relevance
Namibian Ports Authorities Act 2 of 1994	<ul style="list-style-type: none"> • Use of the Port services and facilities
National Transport Services Holding Company Act 29 of 1998	<ul style="list-style-type: none"> • Use of TransNamib services and facilities
Petroleum Products and Energy Act 13 of 1990, as amended	<ul style="list-style-type: none"> • Disposal of used oil, and potential spillage due to accidents
Territorial Sea and Exclusive Economic Zone of Namibia Act 3 of 1990	<ul style="list-style-type: none"> • Exploitation of natural resources in the EEZ
Marine Resources Act 27 of 2000, and accompanying regulations	<ul style="list-style-type: none"> • Discharge of substances into the sea
Seashore Ordinance 37 of 1958	<ul style="list-style-type: none"> • Removal of living and non-living resources from seashore or seabed and depositing of rubbish within 3 nautical miles of the shore
Marine Traffic Act 2 of 1981, as amended	<ul style="list-style-type: none"> • Right of innocent passage through the territorial sea, for all ships • Regulation of marine traffic within the Namibia EEZ
Wreck and Salvage Act 5 of 2004	<ul style="list-style-type: none"> • Wrecks and salvaging • Pollution prevention
Prevention and Combating of Pollution of the Sea by Oil Act 24 of 1991	<ul style="list-style-type: none"> • Discharge of oil • Prevention/removal of marine pollution by oil
Immigrations Control Act 7 of 1993	<ul style="list-style-type: none"> • Employment / Work permits / Customs clearance • Priority to be given to employment of Namibians
Merchant Shipping Act 57 of 1951	<ul style="list-style-type: none"> • Safety of vessels at sea
Dumping at Sea Control Act 73 of 1980	<ul style="list-style-type: none"> • Control of dumping of substances in the sea within 12 nautical miles of the Low Water Mark. • Prevent pollution of the sea and marine life, damage to amenities and interference with other marine users.
Labour Act, 1992, (Act No. 6 of 1992) and Regulations Related to Health and Safety of Employees	<ul style="list-style-type: none"> • Labour matter • Health and Safety of Employees
Meat Industry Act, 1981 (Act No. 12 of 1981), as amended	<ul style="list-style-type: none"> • Establishment of the Namibian Meat Board • Importation and export of and the imposition of levies in respect of livestock / Livestock products
	<ul style="list-style-type: none"> • Establishment of the Social Security Commission

Social Security Act, 1994 (Act No. 34 of 1994) and the Affirmative Action (Employment) Act, 1998 (Act No. 29 of 1998)	<ul style="list-style-type: none"> Administration of a pension and incidental matters fund – affirmative employment opportunities
Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947)	<ul style="list-style-type: none"> Regulate or prohibit the importation, sale, acquisition, disposal or use of fertilizers, farm feeds, agricultural remedies and stock remedies Designation of technical advisers and analysts and to provide for matters incidental thereto.
Animal Health Act, 2011 (Act No. 1 of 2011)	<ul style="list-style-type: none"> Prevention, detection and control of animal disease Maintenance and improvement of animal health and incidental matters
Animals Protection Act, 1962 (Act 71 of 1962) and the Animals Protection Amendment, 1972 (Act 7 of 1972)	<ul style="list-style-type: none"> Consolidate and amend the laws relating to the prevention of cruelty to animals
Stock Brands Act, 1995 (Act No. 24 of 1995)	<ul style="list-style-type: none"> Registration of Stock brand and certification as livestock producer Consolidate and amend the law relating to the branding of stock; and to provide for incidental matters

4.3.4 Precautionary and Polluter Pays Principles

The Precautionary Principle is worldwide accepted when there is a lack of sufficient knowledge and information about proposed development possible threats to the environment. Hence if the anticipated impacts are greater, then precautionary approach is applied.

Equally, the Polluter Pays Principle ensures that the proponent takes responsibility of their actions. Hence in cases of pollution, the proponent bears the full responsibility and cost to clean up the environment.

4.3.5 Terrestrial Animal Health Code (TAHC)

The OIE Terrestrial Animal Health Code (Terrestrial Code) sets out standards for the improvement of terrestrial animal health and welfare and veterinary public health worldwide, including through standards for safe international trade in terrestrial animals (mammals, birds and bees) and their products.

The health measures in the Terrestrial Code should be used by the veterinary authorities of importing and exporting countries to provide for early detection, reporting and control agents pathogenic to terrestrial animals and, in the case of zoonosis, for humans, and to prevent their transfer via international trade in terrestrial animals and terrestrial animal products, while avoiding unjustified sanitary barriers to trade.

The health measures in the Terrestrial Code have been formally adopted by the World Assembly of OIE Delegates, which constitutes the organization's highest decision-making body. In particular respect to this proposed trading operation, **Section 7** of the TAHC is most

applicable and necessary in addressing potential animal welfare concerns that may arise during the implementation phase.

4.4 PRINCIPLES FOR PUBLIC PARTICIPATION / CONSULTATION

The PPP for this Scoping Process was driven by a stakeholder engagement process that includes inputs from authorities, I&APs and the project proponent. In respect to provisions of the EIA Regulations, “Public Consultation” means a process referred to in regulation 21, in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters. This stems from the requirement that people have a right to be informed about potential decisions that may affect them and that they must be afforded an opportunity to influence those decisions. Effective public participation also improves the ability of the Competent Authority (CA) to make informed decisions and results in improved decision-making as the view of all parties are considered.

Contrary, it is important to recognize and highlight two key aspects of public participation which must be considered at the outset:

- There are practical and financial limitations to the involvement of all individuals within a PPP. Hence, public participation aims to generate issues that are representative of societal sectors, not each individual. Consequently, the PPP is designed to be inclusive of a broad range of sectors relevant to the proposed activity.
- The PPP will aim to raise a diversity of perspectives and will not be designed to force consensus amongst I&APs. Certainly, diversity of opinion rather than consensus building is likely to enrich ultimate decision-making. Therefore, where possible, the PPP will aim to obtain an indication of trade-offs that all stakeholders (i.e. I&APs, technical specialists, the authorities and the development proponent) are willing to accept with regard to the ecological sustainability, social equity and economic growth associated with the project.

4.5 PUBLIC PARTICIPATION PROCESS

The key steps and or approach adopted for this particular Scoping assessment has been confirmed with the DEA through the registration of the proposed activity / operations on their Online EA system.

Despite the national Lockdown due to the COVID19 pandemic, which affected the possibility for public meetings, adverts were placed consecutively (at 14 days interval) in two local newspapers (the New Era (**31 March** and **14 April 2020**) and Confidente (**02** and **16 April 2020**) in order to notify and inform the public of the proposed projects and invite I&APs to register.

The correspondence sent to or received from I&APs and other competent authorities during the Scoping Phase were incorporated into the stakeholder engagement report appended to this report (**Appendix A**). A second round of stakeholder engagement process was again undertaken in **30 August 2021** (for period of **28 Days, 30 September 2021**), and mainly entailed

the distribution of the draft Scoping report and accompanying documents to the registered I&APs (**Appendix A**) shall be included in Appendices and contains a detailed comment-response record. Comments received in the second round of stakeholder engagement are also attached unaltered in **Appendix A**.

4.6 AUTHORITY CONSULTATION DURING THE EIA PHASE

Authority consultation is integrated into the PPP, with additional one-on-one meetings held with the lead authorities, where necessary. A pre-application meeting was scheduled with the relevant competent authorities prior to the Lock-down, however were later cancelled. It is proposed that the Competent Authority (DEA) as well as other lead authorities be consulted as necessary and at various stages during the application review process of the DEA. During the Scoping phase, the following authorities were identified and consulted (see **Appendix C**) for the purpose of consultation:

- Department of Environmental Affairs, Ministry of Environment, Forestry and Tourism
- Namibia Ports Authority, Ministry of Works and Transport
- TransNamib (Pty) Ltd Group, Ministry of Works and Transport
- Ministry of Agriculture Water and Land Reform

4.7 APPROACH TO IMPACT ASSESSMENT AND SPECIALIST STUDIES

Potential environmental impacts were identified through both desktop literature review and consultation with I&APs, regulatory authorities, specialist and Enviro-Leap Consulting. In case of social impacts, the assessment focused on third parties only (third parties include members of the public and other local and regional institutions) and did not assess health and safety impacts on workers because the assumption was made that these aspects are separately regulated by health and safety legislation, policies and standards.

The impacts are discussed under issue headings in this section. The discussion and impact assessment for each sub-section covers the construction, operational, decommissioning and closure phases where relevant. This is indicated in the table at the beginning of each sub-section. Included in the table is a list of project activities/infrastructure that could cause the potential impact per farming phase. The activities/infrastructure that are summarized in this chapter, link to the description of the proposed project (see Section 5 of the EIA report).

Mitigation measures to address the identified impacts are discussed and included in this report. In most cases (unless otherwise stated), these mitigation measures have been taken into account in the assessment of the significance of the mitigated impacts only.

Both the criteria used to assess the impacts and the method of determining the significance of the impacts is outlined in **Table 10**. This method complies with the method provided in the Namibian EIA Policy document and the draft EIA regulations. **Part A** provides the approach for determining impact consequence (combining severity, spatial scale and duration) and impact significance (the overall rating of the impact). Impact consequence and significance are determined from **Part B** and **C**. The interpretation of the impact significance is given in **Part D**. Both mitigated and unmitigated scenarios are considered for each impact.

Table 10: Criteria for Assessing Impacts

PART A: DEFINITION AND CRITERIA		
Definition of SIGNIFICANCE	Significance = consequence probability	
Definition of CONSEQUENCE	Consequence is a function of severity, spatial extent and duration	
Criteria for ranking of the SEVERITY/NATURE of environmental impacts	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action. Irreplaceable loss of resources.
	M	Moderate/measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints. Noticeable loss of resources.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/will remain in the current range. Recommended level will never be violated. Sporadic complaints. Limited loss of resources.
	L+	Minor improvement. Change not measurable/will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favorable publicity.
Criteria for ranking the DURATION of impacts	L	Quickly reversible. Less than the project life. Short-term
	M	Reversible overtime. Life of the project. Medium-term
	H	Permanent beyond closure – Long-term.
Criteria for ranking the SPATIAL SCALE of Impacts	L	Localized-Within the site boundary.
	M	Fairly widespread-Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/national

PART B: DETERMINING CONSEQUENCE						
SEVERITY = L						
DURATION	Long-term	H	Medium	Medium	Medium	
	Medium term	M	Low	Low	Medium	
	Short-term	L	Low	Low	Medium	
SEVERITY = M						
DURATION	Long-term	H	Medium	High	High	
	Medium term	M	Medium	Medium	High	
	Short-term	L	Low	Medium	Medium	
SEVERITY = H						
DURATION	Long-term	H	High	High	High	
	Medium term	M	Medium	Medium	High	
	Short-term	L	Medium	Medium	High	
			L	M	H	
			Localized Within site boundary Site	Fairly widespread Beyond site boundary	Widespread Far beyond site boundary	
SPATIAL SCALE						

PART C: DETERMINING SIGNIFICANCE					
PROBABILITY (of exposure to impacts)	Definite/Continuous	H	Medium	Medium	High
	Possible/frequent	M	Medium	Medium	High
	Unlikely/seldom	L	Low	Low	Medium
			L	M	H
CONSEQUENCE					

PART D: INTERPRETATION OF SIGNIFICANCE	
Significance	Decision guideline
High	It would influence the decision regardless of any possible mitigation.
Medium	It should have an influence on the decision unless it is mitigated.
Low	It will not have an influence on the decision.

*H = high, M = medium and L = low and + denotes a positive impact.

This section outlines the assessment methodology and legal context for specialist studies, as recommended by the DEA 2006 Guideline on Assessment of Impacts. In addition to the above, the impact assessment methodology includes the following aspects:

Spatial extent – The size of the area that will be affected by the impact/risk:

- Site specific;
- Local (<10 km from site);
- Regional (<100 km of site);
- National or International (e.g. Greenhouse Gas emissions or migrant birds).

Consequence – The anticipated consequence of the risk/impact:

- Extreme (extreme alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they permanently cease);
- Severe (severe alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);
- Substantial (substantial alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);
- Moderate (notable alteration of natural systems, patterns or processes, i.e. where the environment continues to function but in a modified manner); or
- Slight (negligible alteration of natural systems, patterns or processes, i.e. where no natural systems/environmental functions, patterns, or processes are affected).

Duration – The timeframe during which the impact/risk will be experienced:

- Short term (less than 1 year);
- Medium term (1 to 10 years);
- Long term (the impact will cease after the operational life of the activity (i.e. the impact or risk will occur for the project duration)); or
- Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient (i.e. the impact will occur beyond the project decommissioning)).

Probability – The probability of the impact/risk occurring:

- Very likely or Likely;
- Unlikely or Very unlikely; and
- Extremely unlikely

5. ASSESSMENT OF ALTERNATIVES AND IMPACTS

5.1 ASSESSMENT OF IMPACTS AND MITIGATION

This chapter discusses the alternatives, as well as the selection process of the preferred alternatives that have been considered and assessed as part of the Scoping Phase. The 2012 EIA Regulations (GG4878) define “alternatives”, in relation to a proposed activity, “as different means of meeting the general purpose and requirements of the activity, which may include alternatives to the:

- property on which or location where the activity is proposed to be undertaken;
- type of activity to be undertaken;
- design or layout of the activity;
- technology to be used in the activity; or
- operational aspects of the activity; and
- Includes the option of not implementing the activity”.

The Scoping Report therefore provided a full description of the process followed to reach the proposed preferred activity, site and location within the site. It further includes the following as a minimum:

- The consideration of the no-go alternative as a baseline scenario;
- A comparison of the reasonable and feasible alternatives; and
- Providing a methodology for the elimination of an alternative.

5.2 ASSESSMENT OF ALTERNATIVES

5.2.1 NO-GO ALTERNATIVES

The no-go alternative assumes that the proposed project will not go ahead i.e. the proposed TradePort Namibia’s trade operations (handling and care for the sheep at the holding facilities and the construction of associated facilities) does not realize. This alternative entails that the trading operations would not drive any environmental change and result in no additional environmental impacts on the Feedlots sites and along the haulage route.

It favors the *status quo* or baseline against which other alternatives are compared and will be considered throughout the report. However, the likely negative environmental impacts of other current and future user that may still happen in the absence of the proposed activities includes: Natural dust and generation of particulate matter during windy event particularly resulting from other regional economic activities such as construction, mining and tourism, pollution and environmental degradation associated with current land use along and around the proposed project route and sites.

Therefore, in terms of the “No-go Alternative”, potential economic gains that may never be realized if the proposed project activities do not go-ahead include: loss in income for both TransNamib and NamPort, unemployment and the loss of socio-economic benefits derived from current and future export and import trading opportunities. Most importantly, is the reduced regional integration in terms of trade and investment, loss of direct and indirect

contracts and employment opportunities, export earnings, foreign direct investments and various taxes payable to the Government.

5.2.2 ALTERNATIVES FOR HAULAGE ROUTE AND FEEDLOT SITES SELECTION

The Port of Lüderitz is selected as the preferred export site for the proposed project taking into account the following consideration of alternatives Location and suitable routing infrastructure i.e. rail or road network and the capacity of alternative port facilities.

While the Walvis Bay Port is, in terms of cargo handling capacity the most suitable export option, its accessibility in terms of distance is farthest than the Lüderitz Port, and the route may present more environmental impacts as it passes through more densely populated settlement and towns as opposed to the other. Therefore, the Ariamsvlei / Keetmanshoop-to-Lüderitz Port route is selected as the most suitable and available alternative.

The Feedlot locations were selected within either an appropriately zoned area (**Figure 7**) in respect to the site in Keetmanshoop or farther away from residential and other hi-density land-uses at Aus Settlement (**Figure 8**). Notably, the site at Aus settlement is proposed in the same area as the existing waste disposal site which was sited in consideration of the prominent windrose direction, thus minimizing air nuisance from animal manure.

5.2.2.1 Key environmental attributes

Overall, the operations of TradePort Namibia presents no potential for significant negative socio-economic and environmental impacts in relation to the Feedlot locations along the preferred haulage route, as the proposed feedlot sites are situated with suitably zoned areas. The route and primary mode of transport which is “Road” for the most operations, and to a lesser degree “Rail”, offers a combined benefit (**Table 7**) of the least potential negative impacts on the receiving environments.

Table 10: Comparison of both haulage and storage alternative methods considered

ALTERNATIVE DESCRIPTION: FEEDLOT SITES ALONG THE ROUTE		
	Keetmanshoop – Aus - Lüderitz	Any Other e.g. Walvis Bay
Advantages	<ul style="list-style-type: none"> • Chance for lesser impact on settlements and a towns • Best railway and road network connection and thus minimum potential traffic impacts • Closest route from the Northern Cape, thus has the potential to cut operational costs 	<ul style="list-style-type: none"> • Farthest Route possible, thus the unsustainable in terms operational costs • The Port has the best capacity (technical, human and infrastructure) for bulk cargo handling
Disadvantages	<ul style="list-style-type: none"> • Need for construction of Feedlots facility shall delay project commencement 	<ul style="list-style-type: none"> • Need for construction of Feedlots facility shall delay project commencement
Preferred Alternative	<ul style="list-style-type: none"> • Both haulage method and land availability offers the least negative socio-environmental impacts 	<ul style="list-style-type: none"> • Combination of both haulage methods and land availability for feedlot sites has to be considered

5.2.2.2 Spatial character

The preferred sites location for the construction of the “Feedlots facilities” both at Aus and in Keetmanshoop are within suitably zoned and located. These site’s suitability over any other sites has been determined in terms of the site selection requirements associated with bulk import-export trading operations namely: (i) key environmental attributes; (ii) spatial character; and (iii) proximity to sensitive receptors (settlement or civil structures).

5.2.2.3 Proximity to sensitive human structures

Both sites at Aus and Keetmanshoop, presents opportunity to impact less on potential sensitive receptors (biophysical features including local community structures, areas of natural conservation and or archaeological significance) present in the area, purely as a result of it being located further away from these structures. The closest receptors, particularly residential, protected areas and heritage sites are within sufficient distance from these proposed facilities.

This is a noteworthy consideration both in terms of potential noise and air emission / nuisance from the livestock excreta, but also in terms of the inherent human health risk associated with the import-transit-export operations (handling of the sheep on land and on-board the vessels).

Equally, the proposed operations of the project may have insignificant visual impact on sensitive visual receptors as the infrastructure or facilities to be constructed blends-in very well with most of the other agricultural and or industrial existing structures.

5.2.3 ALTERNATIVES HAULAGE METHODS – RAIL VS. ROAD

The proposed project / activity’s description as presented provides for two options or alternatives to be used, and these provides varying positive and negative impacts respectively. Table 8 portrays a comparison of the options (Rail vs. Road) in terms of their advantages and disadvantages and suggest a preferred option based on the information presented.

Table 11: Comparison of both haulage and handling methods

ALTERNATIVE DESCRIPTION: TRANSPORT MODE		
	Rail	Road
Advantages	Excellent option for containment of traffic impacts, and reduced hauling frequency.	Excellent option for enhancing animal welfare, but requires a convoy of truck moving at the same time
Disadvantages	More expensive than road, and limitation of rail axle capacity at sections or the rail-line resulting in slow shipment.	Results in increase in traffic volume and associated impacts, suitable for sections of the routes, mainly for alternative Site 2
Preferred Alternative	Combination of methods has to be considered, advised for contingency cases only – or in combination with road	Road transport reduce the transportation period, from a welfare stand this is the preferred and recommended option

Alternative Haulage method: the hauling options considered entails the transportation of both the sheep either both by a combination of “Rail” or “Road” transport as suitably and practically possible, or mainly by use of “Road” transport.

Given the need to minimize transportation duration and thus enhance compliance and or with animal welfare codes e.g. uphold the 28 hour best practice rule, the road transport option is considered the most suitable for the proposed TradePort Namibia’s operations.

The road transport option, however, present greater implications relating to traffic impacts such potential road users-conflict and consequent accidents, the impacts can be minimized through practical measures proposed in the EERP.

5.2.4 ALTERNATIVE EXPORT METHODS – FROZEN / CHILLED MEAT VS. LIVE SHEEP

Although, TradePort Namibia prefers the export of live sheep, it emerged during the stakeholder engagement process that animal welfare campaigner consider the local slaughter of sheep and export as frozen meat a better alternative to live sheep export. The alternative comparison of these two options is considered in **Table 12** below.

Table 12: Comparison of both live sheep and frozen carcass export methods

ALTERNATIVE DESCRIPTION: EXPORT METHOD		
	Frozen / Chilled	Live Sheep
Market Requirements	Islamic consumers place paramount importance on the religious requirements for the production of food. Hence, sheep processed and destined for the Middle East market must be slaughtered under a supervised halal program.	The live sheep for the Middle-East Market eliminates the requirement for establishment of hala slaughtering protocols as sheep are slaughtered at halal certified abattoirs in destination country. However, this option is faced by animal welfare challenges and resistance
Advantages	This supports the Namibia’s growth-at-home development strategy, which provides opportunities for job creation. It provides for micro-economic growth, through SME business development.	International protocols for animal welfare for the live export including those to which is party do exists. Further, options to lease vessels suitable for live export also available in the market.
Disadvantages	Legislative procedures / protocols to ensure certified Halal meat products does not exist in Namibia and is subject to a lengthy process to develop and must also be accredited by Islamic certifying authorities.	The live sheep export method is prone to animal welfare concerns and subject to complete ban in the near future. Hence it is over the long-term not a sustainable business option, although viable with proper mitigation measures in place.
Preferred Alternative	Attaining and adopting strict program for Halal meat market may be a good option for long-term objectives. Both the infrastructure and protocols must be established prior to venturing this route.	With a handful reputable shipping operators, compliance with required welfare protocols can be guaranteed. Hence this option is suitable for an immediate commencement of export.

5.3 CONCLUDING STATEMENT ON ALTERNATIVES

Namibia has a huge potential to be an international logistics hub for the inland areas of Southern African Development Community (SADC). A milestone indicator of the realization of this goal, is the advanced expansion of the Port of Walvis Bay container trans-shipment hub.

Additionally, the Namibia Ports Authority considers several options to enhance handling capacity at the Port of Lüderitz including the development of a new deep-water port at Agra Point, and or the deepening of the current port (which is deemed to have great environmental implications / restriction) and or introducing a transshipment vessel facilities.

Despite the limited capacity to handle large bulk cargo, the Port of Lüderitz is considered the preferred export route for the proposed operation given its close proximity from the proposed animal holding facilities and feed supply. Alternative Haulage method considered entails the “Rail” or “Road” transport and the “Road Option” is recommended as far as enhancing animal welfare is concerned.

In case of social impacts, the assessment focused on third parties only (third parties include members of the public and other local and regional institutions) and did not assess health and safety impacts on workers because the assumption was made that these aspects are separately regulated by health and safety legislation, policies and standards.

The No-Action Alternative comparative assessment, suggests that environmental impacts of a future in which the proposed activities do not take place, may be good for the receiving environment because there will be no potential negative or positive environmental impacts associated with the proposed activities (import and exports trading).

5.4 ASSESSMENT OF IMPACTS AND MITIGATION

Mitigation measures to address the identified impacts are discussed in this section and included in more detail in the EERP report that is attached in **Appendix B**. In most cases (unless otherwise stated), these mitigation measures have been taken into account in the assessment of the significance of the mitigated impacts only

5.4.1 IMPACTS ON THE BIOPHYSICAL ENVIRONMENT

Potential impacts in respect to the Biophysical (Table 10) environment involves particularly the terrestrial and marine ecology (**Table 13**) environments and relate mainly to the handling and storage of the commodities both at the TransNamib and NamPort premises (both in Keetmanshoop and Aus respectively).

Table 13. Impact on the Terrestrial Environment – Construction of feedlots and transportation activities

Impact Event	Disturbances to the terrestrial ecology					
Description	The two proposed Feedlots facilities could have implications on the terrestrial ecology particularly during the construction and operation phases. However, careful site selection drastically eliminated the impacts as both site are to be located within build-up environments, and on suitably zoned area. The use of on the major road and rail network further reduces potential implication on wildlife and livestock (road-kills).					
Nature	Impacts on the terrestrial environment as a result of the project could result from the following: <ul style="list-style-type: none">• Generation of dust contaminating the environment• Secondary impacts such as Fauna and Flora Poaching• Truck / Train – animal (Wild / Livestock) collisions, where the road / railway passes through farms and national parks.					
Phases: Phases during which sources of terrestrial ecology impacts apply are highlighted below; Significance assessment was carried out on the operational phase which presents a long term risk.						
Construction Phase	Operational Phase		Decommissioning Phase		Post Closure	
<ul style="list-style-type: none">• Land preparation and construction activities• Temporary lodging for construction staff	<ul style="list-style-type: none">• Transportation of sheep by truck / rail• Operation and maintenance of the feedlot facility• Back-up water supply		N/A		N/A	
Severity	Taken together, the disturbances will have a high severity in the unmitigated scenario. In the mitigated scenario, many of these disturbances can be prevented or mitigated to acceptable levels, which reduces the severity to low.					
Duration	The Significance of the potential impacts is subject to the proposed operation's life-time, however the identified impact's duration is incidental and short-term.					
Spatial Scale	Low, localized although the affected environment extend the length of the entire transportation route incidents occurrence may be highly localized					
Probability	Very Low, especially in respect to wildlife / livestock collision as most livestock are contained in farms while the Karas regions has very low wildlife population					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	H	L	M	H	L	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	M	L	L	M
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none">• Strict compliance with the EERP is recommended in respect to managing incidental events;• Dust and noise suppression measures must be strictly observed at all times particularly during the construction and operation phases• All facilities (Trucks and Feedlot) must appropriately equipped emergency response kits (fire extinguishers and spill kits) to prevent any contaminations					

Table 14. Impact on the Terrestrial Environment – Sheep Welfare at Destination Country

Impact Event	Anthropogenic impacts of the Sheep species					
Description	The global trade in live farm animals has more than quadrupled in size over the past 50 years, but patchy regulation means animals may be put at risk on some journeys, or exposed to cruelty when they reach their destination. These concerns has led animal welfare campaigners to call for banning of live export, it has not been banned in either New Zealand or Australia but rather stringent measures were proposed.					
Nature	Numerous exposes, investigations and reports conducted destination countries have produced evidence of severe and systemic animal cruelty and welfare issues in overseas destinations which affect the Namibian beef industry as follows: <ul style="list-style-type: none">• Damage to the national reputation• Robs the local economy of the ‘value-add’ beef market					
Phases: Phases during which sources of terrestrial ecology impacts apply are highlighted below; Significance assessment was carried out on the operational phase which presents a long term risk.						
Construction Phase	Operational Phase		Decommissioning Phase		Post Closure	
N/A	<ul style="list-style-type: none">• Introduction of the Live Sheep Export through Namibian Ports		N/A		N/A	
Severity	Given the target market (Halal / Religious), requiring strict procedures for which the sheep may be exposed to inhumane conditions during slaughter. Unfortunately, the responsibility of TradePort in respect to ensuring animal welfare is limited to Namibia and on the vessel, thus once at destination country the severity is very-high.					
Duration	The Significance of the potential impacts on the beef market is non-existent or very low, as no sheep is currently slaughtered locally for the export market.					
Spatial Scale	Low, export is conducted though Namibia the impact on sheep export is entirely subjected to South African sheep export market (exclude the Namibian population from the operations)					
Probability	Very Low, strictly no sourcing of livestock from Namibia is foreseen thus supply for the local processing / value addition shall remain unaffected. While reputational damage is subject to livestock export carrier appointed.					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	H	L	M	H	L	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	M	L	L	H	L	H
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none">• Strict compliance with the OIE Terrestrial Animal Health Code (TAHC) and other relevant legislations (Animals Protection Act. 71 of 1962) and the Animals Protection Amendment Act. 7 of 1972) is highly recommended in respect to addressing animal welfare concerns• It is further recommended that the proponent enters into a binding agreement with the relevant competent authority (as legislations may allow) in respect to strictly sourcing the Sheep for the export operations from South Africa. This is in order to promote the Namibian “Growth-at-Home” initiative and thus sustaining the local economic growth and harnessing job employment• Strict monitoring and reporting on the implementation of the proposed operations to the relevant competent authorities i.e. Ministry of Agriculture, Water and Land Reform (Directorate of Veterinary Services) and Ministry of					

	Environment, Forestry and Tourism (Department of Environmental Affairs and Forestry).
--	---

Table 15. Impact on the Terrestrial Environment – Waste Management (Solid and Bio-matter)

Impact Event	Waste generation and disposal					
Description	Operational activities relating the delivery, and handling and feeding program present room for the generation of both solid waste (packaging material) and bio-waste (animal manure). Livestock in holding facilities tend to generate large amounts of manure and about 0.08% mortalities are record, thus consideration for practical mitigations were made.					
Nature	In general, feedlot facilities generates very little domestic solid waste includes but may not be limited to: <ul style="list-style-type: none">Packing materials i.e. feed bags, veterinary cartons, wood pallets and minor hydrocarbons (fuels and lubricants)Bio-waste includes animal manure and dead carcassesPossible contamination of soils and groundwater, in case of hydrocarbon spillage mainly from maintenance of equipment and vehicles					
Phases: Phases during which sources of terrestrial ecology impacts apply are highlighted below; Significance assessment was carried out on the operational phase which presents a long term risk.						
Construction Phase	Operational Phase		Decommissioning Phase		Post Closure	
N/A	<ul style="list-style-type: none">Sheep husbandry activities (Feeding and veterinary care)		N/A		N/A	
Severity	Taken together, waste generation in feedlots facilities presents impacts that are of low severity as in general little is generated.					
Duration	The duration of the potential impacts is bound to the duration of the proposed operations thus medium to long-term in nature					
Spatial Scale	Low, waste generation shall be limited mainly to the feedlot related activities and thus to Keetmanshoop and Aus Settlements, hence very localized					
Probability	Very High, Livestock in holding facilities tend to generate large amounts of manure and about 0.08% mortalities are record, although very low in respect to domestic waste generation.					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	M	H	L	M	M	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	L	L	M
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none">Domestic solid-waste shall be collected and temporarily stored on-site till its collect by the town or village council solid waste units / departmentsHydrocarbon waste shall be contained and stored separate from the domestic waste, transported to the nearest waste-oil recycling facility in KeetmanshoopI respect to bio-matter, manure will be scraped every six (6) months from the feeding pens (or during rotation cycles of the sheep) and appropriately stockpiled, and it will then be sold in bulk to customers able to fetch it with trucks. While the carcasses can be donated to wildlife conservation facility or dogs and other domestic animals rescue homes.A sufficient number of sill kits shall be acquired and strategically placed, particularly in the maintenance workshop facility area to ensure that timely response to any potential fuel and lubricant spills is conducted. These shall include an on-site used oil disposal bin(s)					

Table 16. Impact on the Marine Environment - Handling of sewerage and dead carcass waste

Impact Event	Disturbances to the marine ecology – marine pollution					
Description	<p>Impacts in respect to Marine Ecology relates manly to accidental spillage or leakage of oil, fuel, or contamination of sea water and thus affecting the chemical or biological oxygen demand (COD or BOD, respectively).</p> <p>Dissolved particulate matters as a result of dumping at sea could lead to diminished oxygen levels in seawater which forces mobile fauna to flee while sessile and sediment-dwelling organisms die.</p>					
Nature	<p>When oxygen is no more available for the break-down of discharged matter, other microbial communities take over, leading to emissions of sulphide but this is trues as far as hazardous chemical are concerned and not organic matter such as livestock carcasses or sewerage matter.</p>					
Phases: Phases during which sources of marine ecology impacts apply are highlighted below; Significance assessment was carried out on the operational phase which presents a long term risk.						
Construction Phase	Operational Phase		Decommissioning Phase		Post Closure	
N/A	<ul style="list-style-type: none">Shredding of dead sheep and disposing itHandling and disposing of animal sewer		N/A		N/A	
Severity	In the unmitigated scenario, the potential risk for sea water contamination is medium if illegal sewerage dumping is done. However, It is a common practice on these vessels to leave the sewerage in the pens as it forms a mat. This mat prevents the animals from slipping and serves a great purpose during the voyage. Hence, with mitigation the severity in this case is low.					
Duration	The Significance of the potential impacts is subject to the proposed operation's life-time, however the identified impact's duration is incidental and short-term.					
Spatial Scale	Low, localized although the affected environment extend the length of the entire transportation route incidents occurrence may be highly localized					
Probability	Very Low, illegal discharge at sea is highly perspective as not all operators engage in such conduct, thus depending on choice of carrier operator chance of it occurring are slim (low).					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	M	H	M	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	M	L	L	M
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none">Strict compliance with the EERP is recommended in respect to managing incidental events;It is highly recommended that TradePort Namibia negotiate and engage a responsible livestock carrier with a credible record (about 26, Appendix D) operators to select from.Strict compliance with the international polluter pays principle and other relevant legislations (Dumping at Sea Control Act 73 of 1980, Prevention and Combating of Pollution of the Sea by Oil Act 24 of 1991, Marine Resources Act 27 of 2000, and Namibian Ports Authorities Act 2 of 1994) is highly recommended in respect to addressing animal welfare concernsEqually, monitoring and reporting to this effect must be timely and in the appropriate form and manner undertaken					

Table 17. Sea Environmental Impacts on the Sheep – On-the- vessels disease and veterinary care

Table 17/ Sea Environmental Impacts on the sheep On the vessels disease and veterinary care						
Impact Event	Disturbances to the marine ecology – marine pollution					
Description	Impacts in respect to Animal welfare for the transported livestock. The long truck journeys (>20 hours, no food or water) to the ports are the first concern, but these would be followed by many weeks at sea. Stocking densities on board prevent animals from comfortably lying down or accessing food and water.					
Nature	Many animals do not adapt to the abrupt change in diet to pellet feed a few days before they are loaded on to the vessels and therefore starve or develop other illnesses. It is further perceived that, conditions such as salmonellosis, heat stress, pneumonia are prevalent, with high mortality in live sheep export vessels.					
Phases: Phases during which sources of marine ecology impacts apply are highlighted below; Significance assessment was carried out on the operational phase which presents a long term risk.						
Construction Phase	Operational Phase		Decommissioning Phase		Post Closure	
N/A	<ul style="list-style-type: none">Handling and care for the sheep while on voyages at sea		N/A		N/A	
Severity	If not mitigated, impacts related to communicable diseases present severe risks which include potential rejection of consignment, to/by especially destination country (Namibia or Middle-East etc...). In the mitigated scenario, the severity is low.					
Duration	The Significance of the potential impacts is subject to the proposed operation’s life-time, however the identified impact’s duration is incidental and short-term.					
Spatial Scale	Low, localized although the affected environment extend the length of the entire transportation route incidents occurrence may be highly localized					
Probability	Very Low, this depends highly on choice of carrier operator and credibility of their operations chance of it occurring are slim (low)					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	H	L	L	H	L	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	M	L	L	M	L	M
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none">An interval between road and sea transportation provides for ample recovery of livestock from handling and transportation stress, while all animal health protocols will be observed. The planned holding facilities at key/strategic locations allows for disease control through a 21 days sheep quarantine program.Equally a fit-to-load assessment practice will be adopted to ensure that only the healthy and strong animals are loaded for the export while the others remains at the holding facility for further care.Strict compliance with the OIE Terrestrial Animal Health Code (TAHC) and other relevant legislations (Animals Protection Act. 71 of 1962) and the Animals Protection Amendment Act. 7 of 1972) is highly recommended in respect to addressing animal welfare concernsEqually, monitoring and reporting to this effect must be timely and in the appropriate form and manner undertakenAs with humans, animals can fall ill at any time. The vessels have registered veterinarians who attend to all diseased animals. They have access to all the necessary medication in order to treat the animals on board the vessel.					

5.4.2 IMPACTS ON THE SOCIO-ECONOMIC ENVIRONMENT

Table 18. Environmental Impact: Health and Safety Human both on Land and at Sea

Impact Event	Disturbances to the terrestrial ecology					
Description	Scientific evidence suggests that most common health risks on livestock vessels is related to noxious gases (particularly ammonia, hydrogen sulphide and carbon dioxide) resulting in irritant pollutants that have potential impacts on the comfort and health of both livestock and humans. Further, should there be insufficient ventilation ammonia levels as a result of high animal concentrations of waste cause severe respiratory conditions.					
Nature	Due to the lack of proper protocols, there are risks to the people in the importing countries as well as on-board the vessels. If the long journeys are coupled with poor hygienic conditions, it result in crew exposure to potentially zoonotic disease creating a risk of disease transfer between the animals and the crew.					
Phases: Phases during which sources of terrestrial ecology impacts apply are highlighted below; Significance assessment was carried out on the operational phase which presents a long term risk.						
Construction Phase	Operational Phase		Decommissioning Phase		Post Closure	
N/A	• Stocking density, feeding and pen management		N/A		N/A	
Severity	In the unmitigated scenario, the potential risk for the crew to be exposed to zoonotic disease and respiratory condition may be severe. However, with mitigation the severity in this case is low.					
Duration	The Significance of the potential impacts is subject to the proposed operation's life-time, however the identified impact's duration is incidental and short-term.					
Spatial Scale	Low, localized although the affected environment extend the length of the entire transportation route incidents occurrence may be highly localized					
Probability	Very Low, especially given that there are clear guideline and protocols governing health and safety of both the stock and crew on-board the vessels					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	M	H	L	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	M	L	H
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none">• Strict compliance with the EERP is recommended in respect to managing incidental events;• It highly recommended that measures to ensure sufficient ventilation on the vessel are employed in addition to good hygiene management, ppm concentrations for the respective gasses recorded during a given voyage indicate a low risk.• On-board, medical emergency facilities must regularly checked and re-filled.• Daily observation (monitoring of sheep condition) across each and every deck of the vessel) as indicator of potential system malfunctions is recommended. The daily report includes inter alia:<ul style="list-style-type: none">- Dry bulb temperature, wet bulb temperature and calculated humidity;- Floor / pad conditions;- Respiration rate;- Panting scores;- Mortalities for each deck, and mortalities for each class of sheep or cattle;- Lambs born and euthanasia.					

Table 19. Impact on the Terrestrial Environment – Traffic and Noise

Impact Event	Disturbances to the terrestrial ecology					
Description	The two proposed Feedlots facilities could have implications on the nearby noise receptors particularly during the construction and operation phases. However, careful site selection drastically eliminated the impacts as both site are to be located within areas suitably zoned for similar activities.					
Nature	Impacts on the receiving noise receptors is limited mainly to the construction phase when high traffic of earth moving equipment and delivery trucks is expect to frequent the construction site. Noise during the operational phase will be very sporadic once or twice a week when feed delivery and new sheep stock is brought to the feedlots.					
Phases: Phases during which sources of terrestrial ecology impacts apply are highlighted below; Significance assessment was carried out on the operational phase which presents a long term risk						
Construction Phase	Operational Phase		Decommissioning Phase		Post Closure	
<ul style="list-style-type: none">Land preparation and construction activitiesTemporary lodging for construction staff	<ul style="list-style-type: none">Transportation of sheep by truck / railOperation and maintenance of the feedlot facility		<ul style="list-style-type: none">Structure demolition and ground leveling activitiesTemporary lodging for decommissioning staff		N/A	
Severity	Taken together, the disturbances will have a high severity in the unmitigated scenario. In the mitigated scenario, many of these disturbances can be prevented or mitigated to acceptable levels, which reduces the severity to low.					
Duration	The Significance of the potential impacts is subject to the proposed operation's life-time, however the identified impact's duration is incidental and short-term.					
Spatial Scale	Low, localized although cumulative as haulage along the designated routes may lead to increased traffic. The noise aspect is mainly limited to the feedlot facility site which far from residential areas.					
Probability	Very Low, the only noisy activities associated with the proposed operation are limited to the construction and decommissioning					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	M	L	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	L	L	H
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none">Strict compliance with the EERP is recommended in respect to managing incidental events;Noise complaint register must be kept and maintained regularly with mitigation measures adopted accordingly.All excessive noise generating activities must be strictly carried out during the day between 08h00 (am) and 17h00 (pm) week days only.Conditions of the Environmental Clearance Certificate and Landlord code of conduct at the port must be accordingly adhere to.					

Table 20. Impact on the Terrestrial Environment – Air Quality and Nuisance

Impact Event	Disturbances to the terrestrial ecology					
Description	One environmental downside of feedlots is that the way they concentrate and store manure often leads to high levels of local air and water pollution. In terms of air pollution and nuisance (Odour) to surrounding receptors, the generation of animal manure is a possible concern.					
Nature	Manure generation in livestock feedlot facility presents, depending on environmental factors such as geographical and climatic condition a number of concerns relating to release of odour and dust pollution. These particularly attributed to the confined nature of sheep handling and stockpiling of manure which if exposed to extended period of wet weather it generate odour.					
Phases: Phases during which sources of terrestrial ecology impacts apply are highlighted below; Significance assessment was carried out on the operational phase which presents a long term risk.						
Construction Phase	Operational Phase		Decommissioning Phase		Post Closure	
<ul style="list-style-type: none">Land preparation and construction activitiesTemporary lodging for construction staff	<ul style="list-style-type: none">Handling of sheep during feeding and or vaccination activitiesmaintenance of the feedlot facility i.e. scrapping of animal manure from pens		<ul style="list-style-type: none">Structure demolition and ground leveling activitiesTemporary lodging for decommissioning staff		N/A	
Severity	Severity is Low, disturbances relating to dust generation is rare in feedlots facilities, and given the dry Karas Region climate, sheep manure dries out quickly and thus eliminating potential release of odour.					
Duration	The Significance of the potential impacts is subject to the proposed operation's life-time, however the identified impact's duration is incidental and short-term.					
Spatial Scale	Medium, although chances of dust generation are very low, the region in general is prone large wind events which could blow both the dust and odour further towards sensitive receptors.					
Probability	Very Low, the nature of operation significantly limits dust generation while odour is reduced by the dry climatic conditions with prevent moisture in manure.					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	M	L	L	M
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	L	L	L
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none">Strict compliance with the EERP is recommended in respect to managing incidental events;Dust and odour suppression measures must be strictly observed as necessary and particularly during the construction and operation phasesA stakeholder complaint register must be kept and maintained regularly with mitigation measures adopted accordingly, recording all sources of ordour and or dust and areas mostly affected by these impacts.					

Table 21. Impact on the Economic Aspect

Impact Event	Disturbances on social and economic aspects					
Description	Potential economic gains that may never be realized if the proposed project activities does not go-ahead include: loss in income for both TransNamib and NamPort, unemployment and the loss of socio-economic benefits derived from current and future export and import trading opportunities.					
Nature	Impacts relating to the of the local socio-economic activities may arise from increased TransNamib and NamPort operational activities in relation to the export of live sheep through Lüderitz resulting in employment (positively) and noise (potential negative on residence and tourism).					
Phases: Phases during which sources of terrestrial ecology impacts apply are highlighted below; Significance assessment was carried out on the operational phase which presents a long term risk.						
Construction Phase	Operational Phase		Decommissioning Phase		Post Closure	
<ul style="list-style-type: none">Land preparation and construction activities	<ul style="list-style-type: none">Transportation of commodities by railHandling of wagons / containers at the Port		<ul style="list-style-type: none">Structure demolition and ground leveling activities		<ul style="list-style-type: none">Retrenchments, retirement and job losses due to closure	
Severity	In the unmitigated scenario, this implies in the case where the activity take not take effect, no economic benefits shall realize hence, the severity in respect to unemployment shall be very high. However, with the implementation of the proposed operations, the severity of unemployment shall be reduced to medium.					
Duration	The Significance of the potential impacts is subject to the proposed operation's life-time, with a long-term potential					
Spatial Scale	Low, localized and only limited to the two towns (Lüderitz and Keetmanshoop)					
Probability	Medium to High probability in respect to job creation on both the temporary during construction phase of Feedlots facilities and long-term during operation phase					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	H	L	L	L	L	L
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	M+	M+	H+	H+	H+
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none">It is critical that timely and continuous communication and dissemination of information with the local community is ensured to alleviate potential sense of social marginalization, drive gender equality and enhance the understanding and perception of the benefits associated with TradePort Namibia's operationsTo enhance the positive impacts relating to marginal net benefits for the micro-economy (local citizens of Keetmanshoop, Aus and Lüderitz) and national economy at larger, legislative provisions to Affirmative Action and Labour Welfare must be observed					

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSIONS

Initially, the proponent had proposed to introduce operations involving the import of livestock (cattle, goat and sheep) from South Africa, transit these at livestock handling facilities in Namibia and then export them to the Middle-East and other Markets. However, following after a comprehensive stakeholder consultation process as part of a first of its kind Environmental Scoping process, the proponent decided to only focus their operation on sheep.

Consequently, the environmental assessment process was diverted to focus on the import-transit-export of between 10 000 and 70 000 Sheep per voyage. Based on the findings of the environmental scoping, it is concluded that all potential negative impacts associated to the proposed TradePort Namibia's import and export operations are minimal and practical mitigation measures are available. Equally, the positive impacts can be harnessed to increase the net marginal benefits relating to the socio-economic aspects of the operations.

Overall, potential impacts may vary in terms of scale (locality), magnitude and duration e.g. minor negative impacts in the form of visual intrusion, dust and noise pollution especially during the handling (loading and off-loading will be experienced. Below is a summary of the likely positive impacts that have been assessed for the different phases of the proposed TradePort Namibia's import and export operations:

- Socio-economic development and capacity building through partnering with South African Operators, skills transfer and training on the import / export industry shall be achieved (Likely impacts are high).
- Creation of employment opportunities and strengthening /expansion of SME business in the Transport and Agriculture (feed supply) Sectors
- Infrastructure development, the construction of feedlot facilities and the installation of livestock embankment/transshipment platform at the Port of Lüderitz.

The following is a summary of the likely negative impacts that have been assessed for the different phases of the existing sand mining project:

- Ambient Air Quality and Nuisance (Likely impacts are Low).
- Traffic and Noise impact (Likely impacts are low for traffic congestion and noise are limited by phase of the proposed operation).
- Ecological and biodiversity loss (Likely impacts are localized and low).
- Health and safety (Overall likely impacts are low with the adoption and compliance of appropriate mitigation measures).
- Accidental Spill of Hazardous substance (Likely impacts are low with a contingency and environmental management plan in place).

Marine live and sea water pollution risks / impacts are likely to be low if the appropriate mitigation measures as detailed in the EERP Section of this report are implemented and monitored, the proposed activities can be integrated within the Port of Lüderitz's strategic business operations.

Critically, the assessment processes recorded a strong objection of the proposed operation citing serious animal welfare concern often associated with some key players (Livestock carriers / exporters) in the live-export industry. A majority of the welfare concerns raised revolves mainly around actions that may occur beyond/outside the Namibian borders and or Exclusive Economic Zone (EEZ) and thus beyond the scope of this assessment.

Therefore, legally the Namibian authorities do not have jurisdiction over misconduct or illegal activities perpetrated by operator authorized in other countries. It is thus assumed, that several animal welfare campaigner including the Namibian SPCA (who launched a petition against the proposed operation) considers a complete ban on the live export of livestock as the only solution.

Contrary, and as is evident in **Figure 23** (signatures received for the petition by NSPCA, against the proposed operation) the perceptions of mainly the Europeans and some African countries farther than the SADC region differs from those in the affected citizens. The results in Figure 23 shows that more resistance to proposed operation is mainly from the global community who are not directly affected by whether the operations is authorized or not.

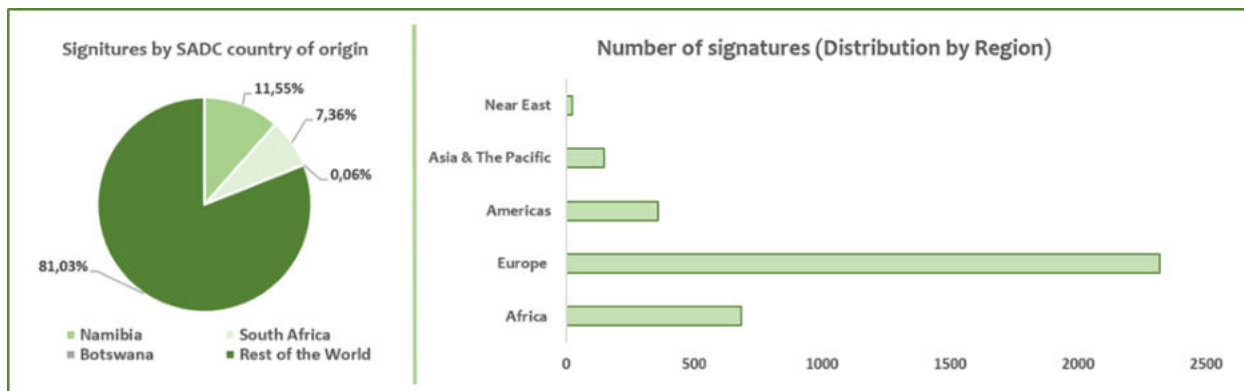


Figure 23: Breakdown of participants of the NSPCA's petition against the proposed TradePort Namibia's live livestock export operation

Although, varying conclusion can be drawn as why more signatures were received from countries other than South Africa, Namibia and the Middle-East whose citizen are directly affected, concerns raised relating to animal welfare cites a great component of human rights. The questions remains, however, where one draws the line as to whose rights must be upheld above the other.

Global evidence (national constitutions) supported by The Universal Declaration of Human Rights (UDHR) No. 18, suggest that as long as for instance the Halal practice is conducted sustainably, banning of the live export present detrimental socio-economic impacts for the

receiving Middle-East and other countries and thus violation of their right to promote, uphold and practice religion.

Equally, blindly banning the trade without due consideration and exhaustion of possible practical mitigation measures deprives the citizen of the exporting countries whether Namibia or South Africa and opportunity to enhance opportunity to economic emancipation and right to social security (UNHR No. 22).

In concluding, Enviro-Leap Consulting is cognizant that the Namibian government (competent authorities) may not have adequate capacity in terms of resources (human and capital) and institutional structure to sustainably support the implementation of the proposed operation. This therefore, present serious challenges for monitoring and compliance enforcement, and thus creating potential non-compliance and room for self-regulation of the sector.

6.2 RECOMMENDATIONS

The proposed operations is considered to have, despite the animal welfare concerns raised which can also be mitigated, overall low negative environmental impact and an overall higher positive socio-economic impact.

Enviro-Leap environmental practitioner confidently concludes and recommends that sufficient consideration and recommendation for a framework within which potential impact can be mitigated were made, thus an environmental clearance may be issued.

Enviro-Leap acknowledges, as key limitations of the scoping assessment the following factors to have hindered adequate consideration of all potential impacts associated with the proposed operation:

- In-adequate (figurative) data / information relating to the operation of the proposed activity in order sufficiently analyze the potential impacts (positive / negative) e.g. value of investment in infrastructure needed to enable the proposed operation
- Covid-19 Regulations limited extensive stakeholder engagement, although most of the key pre-identified stakeholder were consulted for inputs / comments
- Not having at the time of scoping assessment, precise information relating to exact feedlot facility's site meant that the water and hydrological environments could not be adequately assess and so are the impacts associated with the proposed project on these environments.
- In-adequate scientific data /information synthesizing the true nature of animal welfare concerns on live sheep export vessels, most publications cited are based on one whistle-blowers observations
- Comparative Economic benefit assessment, live export vs. frozen meat export (the assessment would compare the cost-benefit-analysis of both options)

However, should the department require a comprehensive environmental impact assessment (EIA), the above pullet-points should constitute the Terms of Reference (ToRs) for the specialist studies to be considered.

REFERENCE

- Bar-On, Y.M., Phillips, R., Milo, R., 2018. The biomass distribution on Earth. *P. Nat. Acad. Sci. USA* 115 (25), 6506–6511.
- Beukes, N.J. Swindell, E.P.W. Wabo, H. 2016. deposits of Africa. *Episodes* 39 (2): 285-317.
- Brimblecomb, P. and Grossi, C.M. 2010. Potential Damage to Modern Building Materials from 21st Century Air Pollution. *The Scientific World Journal* 10: 116-125.
- Boone, C.; Bond, C.; Cross, A.; Jenkins, J. 2017. National Pesticide Information Center, Oregon State University Extension Services. www.npic.orst.edu/factsheets/sulfurgen.html.
- Deane, J.G., 1995. The structural evolution of the Kombat deposits, Otavi Mountainland, Namibia. *Communications of the Geological Survey of Namibia*, 10: 99-107.
- Christiaensen, L., Demery, L. & Kuhl, J. 2011. The (evolving) role of agriculture in poverty reduction- An empirical perspective. *Journal of development economics*, 96(2): 239–254.
- De Janvry, A. & Sadoulet, E. 2009. *Agricultural growth and poverty reduction: Additional evidence*. The World Bank Research Observer. (available at https://openknowledge.worldbank.org/bitstream/handle/10986/4432/bro_25_1_1.pdf;sequence=1)
- Eckardt, K. Soderberg, L. Coop, A. Muller, K. Vickery, R. Grandin, et al. 2013. The nature of moisture at Gobabeb, in the central Namib Desert *J. Arid Environ.*, 93, pp. 7-19
- EPA. 2003. Health Effects Support Document for . U.S. Environmental Protection Agency Office of Water, Washington. https://www.epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_healtheffects_o.pdf Accessed 2018-12-07
- FAO. 2006. *State of world aquaculture 2006*. FAO Fisheries Technical Paper. No. 500. Rome, FAO. 134 pp.
- FAO, 2009. *The State of Food and Agriculture: Livestock in the Balance*. Food and Agriculture Organization of the United Nations
- FAO, 2007. *The State of the World's Animal Genetic Resources for Food and Agriculture*. Food and Agriculture Organization of the United Nations
- FAO. 2016b. *The FAO Action Plan on Antimicrobial Resistance 2016–2020*. Rome. (available at www.fao.org/3/a-i5996e.pdf)
- Government of the Republic of Namibia. 2004. *Namibia Vision 2030: Policy Framework for Long-Term National Development*. Office of the President, Windhoek.
- Geological Survey of Namibia, 1999. *Regional geological map of Namibia*. Ministry of Mines and Energy, Windhoek, Namibia.
- Government Gazette, 27 December 2007. No. 3966, Act No. 7, 2007 Environmental Management Act 2007.
- Henderson, L. 2001. *Alien Weeds and Invasive Plants: A Complete Guide to Declare Weeds and Invaders in South Africa*. Plant Protection Research Institute: Agricultural Research Council. Herbarium of Namibia (WIND).
2015. BRAHMS Database. National Herbarium of Namibia (WIND), National Botanical Research Institute, MAWF, Windhoek, Namibia.
- JICA. 2015. *An International Logistics Hub for SADC Countries in the Republic Of Namibia*. The Government of the Republic of Namibia, Windhoek.

- Klaassen, E. & Kwembeya, E. 2013. A Checklist of Namibian Indigenous and Naturalised Plants. National Botanical Research Institute: Windhoek.
- Lenntech, 2020a. Fossil Fuel: Characteristics, origin, application and effects of Fossil fuels. Accessed online (22/02/2020) at: <https://www.lenntech.com/greenhouse-effect/fossil-fuels.htm>
- Lenntech, 2020b. Copper: Chemical property, Health and Environmental effects. Accessed online (22/02/2020) at: <https://www.lenntech.com/periodic/elements/cu.htm>
- Lenntech, 2020c. Removal by physical-chemical way. Accessed online (22/02/2020) at: <https://www.lenntech.com/processes/iron/-removal-physical-chemical-way.htm>
- Mannheimer, C. & Curtis, B. A. (eds) 2009. Le Roux and Müller's Field Guide to the Trees and Shrubs of Namibia. Windhoek: Macmillan Education Namibia.
- Mendelsohn, J., Jarvis, A., Roberts, C. & Robertson, T. 2003. Atlas of Namibia. David Philips Publisher. Cape Town.
- Ministry of Environment and Tourism, 2018. *Sixth National Report to the Convention on Biological Diversity (2014-2018)*, Windhoek: Republic of Namibia.
- Ministry of Environmental Affairs, 2008. Procedures and Guidelines for Environmental Impact Assessment (EIA) and Environmental Management Plans (EMP), Directorate of Environmental Affairs, Ministry of Environment and Tourism, Windhoek.
- Ministry of Environment and Tourism, 2002. Atlas of Namibia. Comp. J. Mendelsohn, A. Jarvis, T. Roberts and C. Roberts, David Phillip Publishers, Cape Town.
- Müller, M.A.N. 1984. Grasses of South West Africa/Namibia. John Meinert Publishers (Pty) Ltd, Windhoek, Namibia.
- National Planning Commission, 2017. *Namibia's 5th National Development Plan (NDP5)*. , Windhoek: Republic of Namibia
- Namibia Statistics Agency, 2014. Namibia Intercensal Demographic Survey 2016 Report. Namibia Statistics Agency, Windhoek
- Namibia Statistics Agency, 2013. Profile of Namibia: Facts, Figures and other Fundamental Information. Namibia Statistics Agency, Windhoek
- Olivier, J., 1995. Spatial distribution of fog in the Namib. *Journal of Arid Environment*. 29:129-138
- Pinsino A, Matranga V and Roccheri MC. 2012. : A New Emerging Contaminant in the Environment, *Environmental Contamination*, Dr. Jatin Srivastava (Ed.), ISBN: 978-953-51-0120-8, Intech, Available from: <http://www.intechopen.com/books/environmental-contamination/-a-new-emerging-contaminant-in-the-environment>
- Rao C.S. (2014), *Environmental Pollution Control Engineering*, New WHO (2003) in drinking-water. Background document for preparation of WHO Guidelines for drinking-water quality. Geneva, World Health Organization
- Robertson, A., Jarvis, A., Mendelsohn, J. and Swart, R. 2012. Chapter 2: Weather and Water in: *Namibia's Coast: Ocean Riches and Desert Treasures*. Directorate of Environmental Affairs, Ministry of Environment and Tourism, Namibia, pp. 20-45
- Robinson, T.P., Yhornton, P.K., Franceschini, G., Kruska, R.L., Chiozza, F., Notenbaert, A., Cecchi, G., Herrero, M., Epprecht, M., Fritz, S., You, L., Conchedda, G. & See, L. 2011. *Global livestock production systems*. Rome, Food and Agriculture Organization of the United Nations (FAO) and International Livestock Research Institute (ILRI), 152 pp. Rome

- Steinfeld, H, et al. 2006. *Livestock's Long Shadow: Environmental Issues and Options*.FAO. Rome. 377 pp. (available at www.globalmethane.org/expo_china07/docs/postexpo/ag_gerber.pdf) .
- Stevens, G.A., Bennett, J.E., Hennocq, Q. et al. 2015. Trends and mortality effects of vitamin A deficiency in children in 13 low-income and middle-income countries between 1991 and 2013: a pooled analysis of population-based surveys. *Lancet Global Health*.
- Thornton, P.K., Jones, P.G., Owiyo, T.M., Kruska, R.L., Herrero, M., Kristjanson, P. U. et al. 2006. *Mapping climate vulnerability and poverty in Africa*. 200pp. Nairobi, Kenya. ILRI. (also available at <https://cgspace.cgiar.org/handle/10568/2307>).
- Turpie et al. (2007). *Climate Change Vulnerability and Adaptation Assessment for Namibia's Biodiversity and Protected Area System*.
- University of Gothenburg, 2009. "Damages Immune Response In Marine Animals, Research Finds." ScienceDaily. ScienceDaily, accessed online on: 19 November 2019 at. www.sciencedaily.com/releases/2009/08/090811143956.htm
- Van Wyk, B. and Van Wyk, P. 1997. *Field guide to trees of Southern Africa*. Cape Town: Struik Publishers.

APPENDIX A – STAKEHOLDER ENGAGEMENT REPORT

APPENDIX B – ENVIRONMENTAL & EMERGENCY RESPONSE PLAN

APPENDIX C – CHANCE FIND GUIDELINES

The following management procedures (extracted from Kinahan, 2012) for Chance Finds are intended to illustrate how these issues can be handled in the exploration and mining environment but could be applied in the case of the construction of the proposed feedlots. These are not intended to be prescriptive in any way but merely to indicate a best practice approach, comprising specific actions and responsibilities that are consistent with the law.

MANAGEMENT OF CHANCE FINDS

INTRODUCTION: Areas of proposed mining and related activity are subject to heritage survey and assessment at the planning stage. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found in the course of development work. The personnel and contractor heritage induction process is intended to sensitize people so that they may recognize heritage “chance finds” in the course of their work. The procedure set out here covers the reporting and management of such finds.

SCOPE: The “chance finds” procedure covers the actions to be taken from the discovery of a heritage site or item, to its investigation by a trained archaeologist or other appropriately qualified person.

INTENT: The “chance finds” procedure is intended to ensure compliance with the AMP, which is based on archaeological best practice, and the relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): “a person who discovers any archaeological ... object ... must as soon as practicable report the discovery to the Council.” The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

RESPONSIBILITIES:

- Operator: To exercise due caution if archaeological remains are found
- Foreman: To secure the site, and advise management timeously
- Superintendent: To determine safe working boundary and request inspection
- Archaeologist: To inspect, identify, advise management, and recover remains

PROCEDURE:

1. Action by person identifying archaeological or heritage material:

- If operating machinery or equipment, stop work
- Identify the site with flag tape
- Determine GPS position if possible
- Report findings to Foreman

2. Action by Foreman:

- Report findings, site locations and actions taken to Superintendent
- Cease any work in immediate vicinity
- Action by Superintendent:
- Visit site and determine whether work can proceed without damage to findings
- Determine and mark exclusion boundary
- Add site location and details to AMP GIS for field confirmation by archaeologist

3. Action by Archaeologist:

- Inspect site and confirm addition to AMP GIS
- Advise NHC and request written permission to remove findings from work area
- Recover, package and label finds for transfer to National Museum

4. In the event of discovering human remains:

- Actions as above
- Field inspection by Archaeologist to confirm that remains are human
- Advise and liaise with NHC and Police
- Recover remains and remove to National Museum or National forensic Laboratory, as directed

APPENDIX D – LIST OF POSSIBLE LIVESTOCK CARRIERS

Profile of 78 EU-approved livestock carriers

Name of ship	IMO number	Page
<i>Abdullah</i>	7819876	23
<i>Adel I</i>	8017970	25
<i>Al Farouk</i>	8813037	26
<i>Al Mabrouka 10</i>	6817003	27
<i>Alkhairat 9</i>	9152806	28
<i>Alondra</i>	9113719	29
<i>Anakin</i>	7422544	30
<i>Apus</i>	7510858	32
<i>Atlantic M</i>	8200577	33
<i>Bahijah</i>	9360788	35
<i>Barhom</i>	7614848	36
<i>Barhom II</i>	7607429	38
<i>Barhom III</i>	7405091	39
<i>Bashar One Transport</i>	8506361	40
<i>Blue Moon I</i>	7396630	42
<i>Brahman Express</i>	9238416	44
<i>Britta K</i>	7368815	45
<i>Bruna</i>	7601073	47
<i>Dragon</i>	7303231	49
<i>Elbeik</i>	6718427	50
<i>Elevation</i>	7407324	52
<i>Equality</i>	6703343	53
<i>Etab</i>	6609779	54
<i>F.M SPiridon</i>	7300992	56
<i>Fidelity</i>	7310507	58
<i>Freedom</i>	7104972	59
<i>Gamma Star</i>	7703259	60
<i>Gelbray Express</i>	9621211	62
<i>Gulf Livestock 2</i>	8009076	63
<i>Harmony Livestock</i>	7349871	65
<i>Holstein Express</i>	9004413	66
<i>Janay</i>	7015509	68
<i>Jawan</i>	9262895	70
<i>Jersey</i>	7639616	72
<i>Julia L.S.</i>	7901693	74
<i>Karazi</i>	8215807	76
<i>Karim Allah</i>	6519144	78
<i>Kenoz</i>	7022356	80

<i>Lady Maria</i>	6518425	81
<i>Lady Rasha</i>	7223041	83
<i>LSS Success</i>	6927092	85
<i>Mariona</i>	7113624	87
<i>Mariona Star</i>	7222982	89
<i>Maysa</i>	6829082	91
<i>Mira</i>	8300157	92
<i>Nabolsi I</i>	7128760	94
<i>Nader A</i>	7611547	96
<i>Neameh</i>	7903029	98
<i>Nelore</i>	7615309	100
<i>Noa</i>	7913153	101
<i>Norland</i>	7529940	103
<i>North Star 1</i>	8200565	104
<i>Ocean Drover</i>	9232852	106
<i>Ocean Swagman</i>	9360776	108
<i>Omega Livestock</i>	6401218	109
<i>Omega Star</i>	8917742	110
<i>Pacific M</i>	7041053	112
<i>Phoenix I</i>	7026871	114
<i>Phoenix III</i>	7711866	115
<i>Princess Hiyam</i>	7405089	117
<i>Queen Hind</i>	7920675	118
<i>Queensland</i>	9186390	120
<i>Rami M</i>	7026663	121
<i>Sarah M</i>	7808463	123
<i>Seastar Livestock</i>	6422303	124
<i>Spiridon II</i>	7311329	126
<i>Suha Queen II</i>	7406772	128
<i>Taiba</i>	7708807	130
<i>Talia</i>	7910888	131
<i>Transporter</i>	8701387	132
<i>Trust I</i>	7504158	133
<i>Tulip</i>	8614273	135
<i>Unimar Livestock</i>	7021821	136
<i>Uranus II</i>	9057214	138
<i>Uranus L</i>	8129254	140
<i>Victory</i>	7931985	141
<i>Yosor</i>	7819113	142
<i>Zad Elkhair</i>	9109079	144

APPENDIX F – RESUMES OF EAPS TEAM
