

ENVIRONMENTAL MANAGEMENT PLAN

MEAT BOARD OF NAMIBIA – KATIMA MULILO - ZAMBEZI REGION - NAMIBIA

AN ENVIRONMENTAL MANAGEMENT PLAN
FOR A
MEAT ABATTOIR IN KATIMA MULILO, ZAMBEZI REGION,
NAMIBIA.



PREPARED FOR

MEAT BOARD OF NAMIBIA

BY



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PROJECT DETAILS

TITLE ENVIRONMENTAL MANAGEMENT PLAN FOR A MEAT
ABATTOIR KATIMA MULILO, ZAMBEZI REGION, NAMIBIA.

TERMS OF REFERENCE

AND SCOPE OF THE PROJECT MEAT BOARD OF NAMIBIA

AUTHORS OTRUN CONSULTANTS CC

CLIENT MEAT BOARD OF NAMIBIA

REPORT STATUS FINAL ENVIRONMENTAL MANAGEMENT PLAN

DATE 14 JULY 2020

AUTHORISED SIGNATURE:

JOSIAH T. MUKUTIRI

EIA PRACTITIONER



Executive Summary

This Environmental Management Plan was compiled following an Environmental Impact Assessment processes conducted by Outrun Consultants CC following the Namibian Environmental Assessment Policy (1995) and the Environmental Management Act (2007). The EIA study was provoked by the proposed recommissioning of the existing meat abattoir at Katima Mulilo. This abattoir was constructed by the Government of the Republic of Namibia through the line ministry, Ministry of Agriculture, Water and Land Reform in order to create a formal market for the farmers of Zambezi Region to sell their cattle. Public consultations were done during the development of this report and draft reports were availed to Interested and Affected Parties for commenting. An Environmental Management Plan (EMP) was formulated for implementation by the Proponent so as to mitigate the identified environmental impacts during the operation of the abattoir. The proponent is also advised to adhere to all laws and policies relevant to this project. It was concluded that the project has both positive and negative impacts on the environment and will be managed through the successful implementation of the environmental management plan.

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List Of Abbreviations

DEA	Directorate of Environmental Affairs
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
GM	Katima Mulilo Municipality
MET	Ministry of Environment & Tourism
SABS	South African Bureau of Standards
SANS	South Africa National Standards

List Of Annexure

Annex 1. Sample advertisement: invitation to participate and attend public meetings.

Annex 2. Background and Invitation to participate Document.

Annex 3. List of registered I&APs.

1. PURPOSE OF THIS DOCUMENT

The purpose of this document, the Environmental Management Plan (EMP) is to list the actions required to mitigate the environmental and social impacts arising from the operation of the meat abattoir established in Katima Mulilo by the Ministry of Agriculture, Water and Land Reform.

Once approved by the Ministry of Environment, Tourism and Forestry: Directorate of Environmental Affairs, this EMP will guide all activities and aims to promote sound Environmental Management during the lifespan of this abattoir. The EMP should be taken as a dynamic document which is subject to review and should be updated in response to changes over time. It should be kept onsite and be referred to as and when it's required. The responsibility for its implementation lies with the appointed abattoir manager, although the ultimate compliance with the EMP requirements and / or conditions is the responsibility of Proponent, Meat Board of Namibia.

INTRODUCTION

The applicant, Meat Board of Namibia Limited is planning to resuscitate operations of an existing red meat abattoir in Katima Mulilo. The abattoir is designed for the slaughter of cattle being the main target. The handling and slaughter facilities are located at Katima Mulilo. It has the capacity to handle and / or slaughter fifty (120) head of cattle per day. The scope of this exercise will cover the operation and management of the existing abattoir. It will cover all stages from the lairages for holding received cattle, slaughter house, meat processing facility, chillers, quartering, loading and dispatch bay, administration area, guard house, ablution facility and waste management facility. This facility is serviced and has both electricity and water. The operation of an abattoir is a listed activity under the Environmental Management Act, 7 of 2007 (EMA 2007) and requires one to obtain an Environmental Clearance Certificate (ECC) before project commences. This is enough motivation for the Proponent: Meat Board of Namibia to appoint an independent consultant, Outrun Consultants cc to craft an Environmental Management Plan and subsequently apply for the ECC.

1.1. Description of the Property and Location

The abattoir is located on Erf number 577 along the B8 Highway in the industrial area of Katima Town. Bordering the site are industrial ervens on the northern side, Telecom Tower and Butterfly Informal Residential on the eastern while the southern and western areas is the Katima Mulilo Townlands No. 1328.

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MEAT BOARD OF NAMIBIA – KATIMA MULILO - ZAMBEZI REGION - NAMIBIA

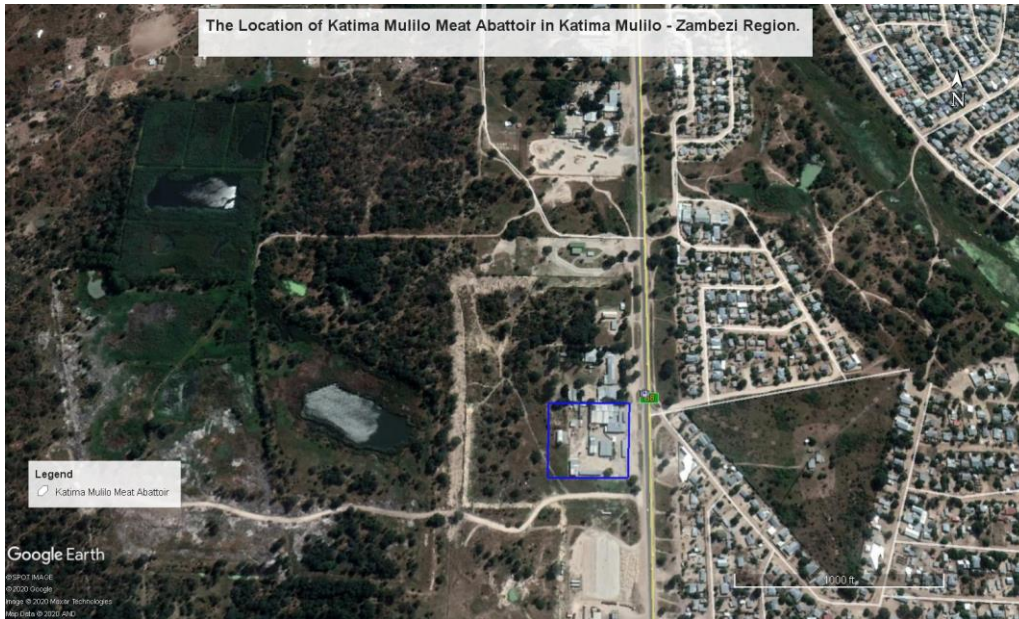


Figure 1: The location of the Katima Mulilo Meat Abattoir in Katima Mulilo.

Table 1: Coordinates of the Katima Mulilo Meat Abattoir.

Polygon Point	Coordinates	
1	-17.517920	24.268032
2	-17.517865	24.269132
3	-17.51890	24.267923
4	-17.518878	24.269082

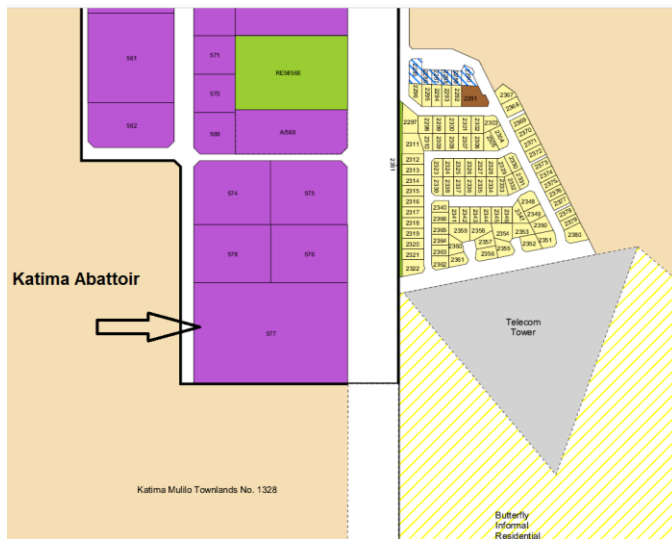


Figure 2: The location of Katima Mulilo Meat Abattoir in relation to other zones.

1.1.1. Access and / or Provision of services / utilities to the Abattoir

- Ownership and Accessibility

The facility is accessible using the B8 highway and it belongs to the Government of The Republic of Namibia. The management is done by the Meat Board of Namibia which was enacted through an Act of Parliament: Meat Industry Act (Act 12 of 1981). The abattoir is on lease to the Zambezi Meat Company and will be commissioned once the Environmental Clearance Certificate is issued.

- Water

Water is supplied by Katima Mulilo Town Council. There are eight 10 000-liter water storage tanks that serves as a backup to ensure water supply at all times during process. This facility uses approximately 17 000 litres of water per month.

- Energy

This facility mainly uses both electricity and petroleum energy products, diesel and petrol. The equipment in this facility is heavy duty industrial equipment powered by

electricity. Diesel is used to fire the boilers for generation of steam with a smaller portion being used for vehicles as well as petrol. Diesel is stored onsite using 23 000liter above ground tanks. Diesel consumption averages about 15 000 litres per month.

- **Hazardous chemicals**

The cooling facilities comprise of chillers and freezers that use ammonia (NH₃) as a cooling agent. This is a result of the chemical's superior thermodynamic properties and affordability. It does not contribute to ozone depletion or global warming and so is considered environmentally friendly. However, it is classified as an extremely dangerous chemical due to its hazardous nature in large quantities. Should there be leakage it is self-alarming due to its strong pungent smell.

1.1.2. The Abattoir Status Quo

The abattoir was renovated and trial slaughter completed successfully. This was followed by DVS audit and only the Environmental Clearance Certificate is pending to enable the recommissioning of the abattoir.

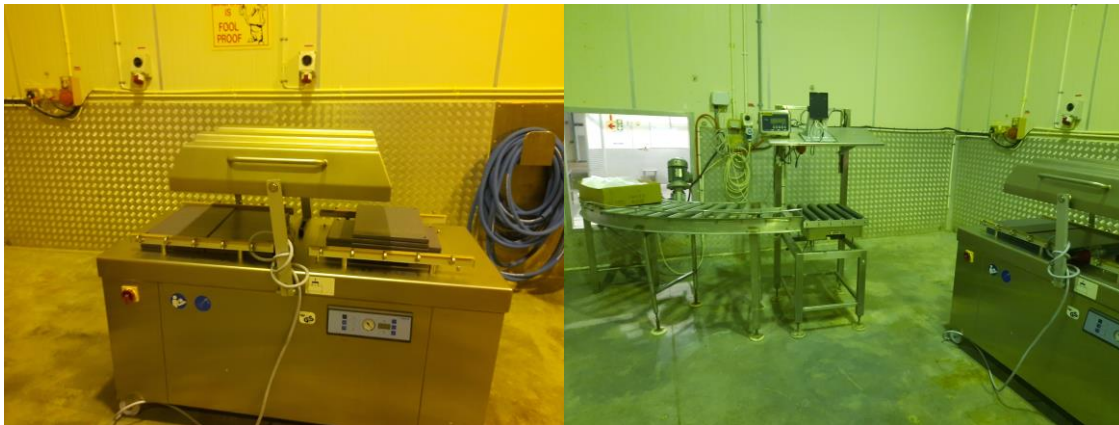


Figure 3: New installed meat processing equipment at the Katima Meat Abattoir.

1.1.3. Waste generated from the slaughter of livestock

The slaughter of red meat livestock especially cattle generates diverse and sizeable quantities of waste material both solid and liquid. Broadly these can be:

- a. General solid waste (plastic, paper, cardboard etc)
- b. Scrapings from trucks and screens
- c. Organic waste / undigested material
- d. Blood
- e. Condemned meat and trimmings
- f. Liquid waste

1.2. The need for the project

The benefits for the recommissioning of this abattoir are among others:

- A reliable formal market for the farmers of Zambezi Region. It is now about 5 years since the abattoir was closed due to FMD outbreaks.
- Employment creation and thus improve the well-being of the local people. Employment preference will be afforded to previously disadvantaged Namibians inhabiting the Zambesi Region.
- Supply of raw materials to downstream industry for economic growth. Such industries include but are not limited to the manufacturing industries such as tanneries etc.
- A contribution to the balance of payments through exports.

1.1. Objectives

- to describe the project in detail for everyone's understanding
- to describe the project environment and the interrelationships among the various components
- To identify potential positive and negative impacts of the project.

- To develop mitigation measures for the identified negative impacts of the project.
- To review the relevant policies and legislation governing the project.
- To develop an environmental monitoring and management plan for the project.

1.2. Project Description

The business concept that has given rise to this project is focused on slaughtering cattle and small livestock for both local and export market. In addition, further processing of meat into various products will also be done. Most of the livestock is sourced from within the region but also from other bordering regions. The abattoir is located in Katima Mulilo town's industrial area and so the governing authority is Katima Mulilo Town Council. Katima Mulilo is located 1 226km from Windhoek along the B1 road up to Otavi then B8 the rest of the way until Katima Mulilo.

1.3. The slaughtering process

In the abattoir also known as slaughterhouse, animals are received and kept around in stockyards and pens for 1 day. The animals are watered, but in most cases not fed unless they are kept more than 1 day (not recommended). The animals are then driven from the holding pens to the slaughtering area where the following activities take place:

- Stunning;
- Suspension from an overhead rail by the hind legs;
- Sticking and bleeding over a collecting trough. The collected blood may be sewered or processed;
- Hide removal (cattle) or scalding and dehairing (hogs);

In some plants hogs are skinned to eliminate scalding and dehairing. Scalding is a method to loosen hair before removal. For several minutes the hogs are held in a

scalding tank at 45°C to 65°C. After scalding, the hogs are mechanically dehaired by abrasion and singed in a gas flame to complete the hair removal process.

- Decapitation;
- Opening of the carcass by cutting;
- Inspection of the carcass;
- Evisceration (removal of intestines and internal organs);
- Splitting and cutting of the carcass; and
- Chilling or freezing.

Meatpacking

Many large-scale plants ship whole graded carcasses to retail markets, others perform some on-site processing to produce retail cuts which is also done here. The processes are the following:

- Cutting and deboning; and
- Meat processing. This includes a variety of operations amongst which grinding, mixing with additives, curing, pickling, smoking, cooking and canning.

Rendering

Rendering is a heating process for meat industry waste products through which fats is separated from water and protein residues for the production of edible lards and dried protein residues. Commonly it includes the production of a range of products of meat meal, meat-cum-bone meal, bone meal and fat from animal tissues. It does not include processes where no fat is recovered.

Handling of viscera, paunch and intestines

Viscera can be recovered as edible products (e.g. heart, liver). They can also be separated for inedible rendering or processing (e.g. lungs although some cultures eat these).

Handling of paunch

The paunch contents, ‘paunch manure’ (partially digested feed), is estimated to range from 27 to 40 kg per head. The paunch can be handled in four ways, total dumping, wet dumping, dry dumping and whole paunch handling. Whole paunch handling is most preferred and is presented in the EMP table in the later chapter. Intestines may be rendered directly, or hashed and washed prior to rendering. De-sliming of intestines prior to thorough washing is necessary.

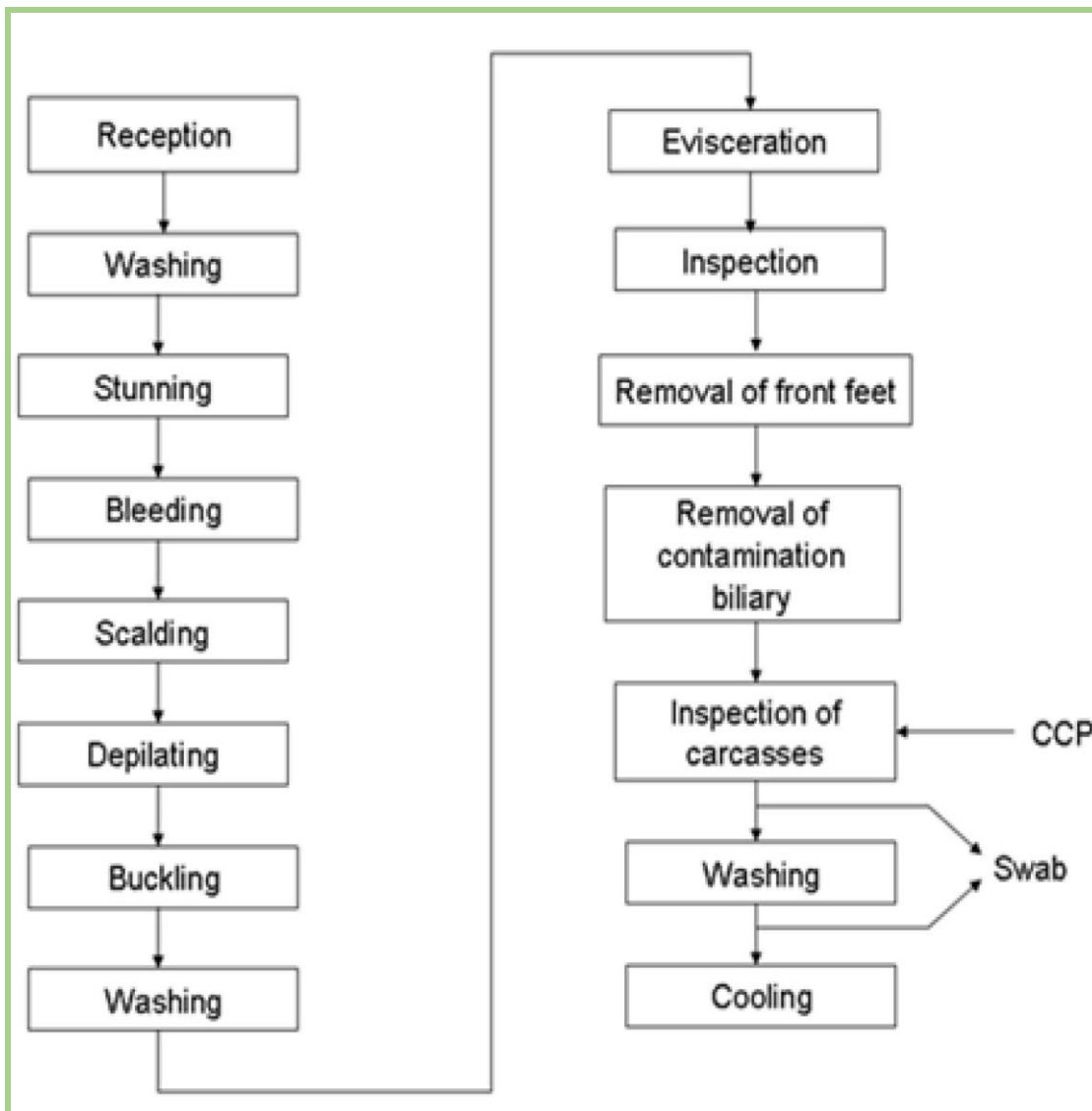


Figure 4: A generic red meat slaughter house process flow diagram. Source: www.fao.org

1.4. Environmental Concerns / Implications Emanating from the Operation of an Abattoir.

1.4.1. Production of blood

Blood is one of the major wastes generated from the operation of abattoirs and has the highest polluting value. Blood itself has a high Biological Oxygen Demand (BOD): 150,000 - 200,000 mg/l, the extreme value being 405,000 mg/l. Just for comparison's sake domestic wastewater has a BOD of 300 mg/l. In the killing, bleeding and skinning phases, blood is produced which, when completely sewered, leads to a total waste load of 10 kg BOD per ton of LWK. A waste load of up to 3.0 kg BOD per ton of LWK may occur in wastewater flowing out of the killing-area and the hide-removal-area.

In order to reduce the waste load, attempts should be made to collect and process blood (= drying). Drying of blood can be done by direct heating which produces large quantities of blood water (corresponding waste load approximately 1.3 kg BOD per ton of LWK) but preferably it is done by indirect (external) heating (corresponding waste load approximately 0.3 kg BOD per ton of LWK).

1.4.2. Paunch

Paunch manure is the second most important source of pollution. It may substantially contribute to the total waste load if not properly handled. Dumping (sewering) of the entire paunch content gives a BOD of 2.5 kg per ton of LWK.

1.4.3. Stockyards and pens

Waste results from manure and urine, feed, livestock dirt, sanitizers and cleaning agents. The waste will reach the sewer by means of water overflowing from water troughs, by rain and pen wash down water. The sewered raw waste, assuming that solid contaminants have been removed, has been estimated at 0.25 kg BOD per ton of LWK.

1.4.4. Slaughtering

During the slaughtering the following wastes are produced (Edible offals are excluded because these are considered as meat (by-products)):

- Blood and tissue produced during hide removal fall on the floor. External contamination of the hide with dirt and manure is a secondary source of pollutants. The waste load is also increased as a result of cleaning-up operations in this area.
- Wastewater is produced from intentional washing of blood, dirt, manure and hair (0.15 kg BOD per ton of LWK).
- Slime and casings from intestines; de-sliming and casing washing add 0.6 kg BOD per ton of LWK to the raw waste load.
- Inedible offal that are produced are hair, recovered from fluming water, heads and carcass trimmings, lungs and paunch. They also contribute to the amount of wastewater, (FAO, 2015).

1.4.5. Meatpacking

Cutting and deboning operations produce trimmings, blood, bones and bone dust. The total of raw waste loads from meat processing plants (including cutting and deboning) has been estimated at 5.7 - 6.7 kg BOD per ton of product. Meat processing generate raw waste load from:

- Blood, tissues and fat that reach the sewer during cleaning activities;
- The curing of solutions containing sugar and salt. Pickling can cause a high chloride waste, only 25% of the curing brine remains in the product;
- Baking, smoking etc. and energy use (contributing to air pollution).

1.4.6. Edible Rendering

Both wet-rendering and continuous rendering at low temperatures produce polluted tank water containing residues of fat and protein (2 kg BOD per ton of LWK).

2. Methodology

The study involved carrying out an investigation on the possible environmental impacts of the abattoir. We then went further to formulate ways of avoiding or mitigating any negative environmental effects that the abattoir may cause to the environment, and to enhance the benefits of the project. Environment is defined as the complex of natural and anthropogenic factors and elements that are mutually interrelated and affect the ecological equilibrium and the quality of life, including:

- the natural environment that is the land, water and air, all organic and inorganic material and all living organisms; and
- the human environment that is the landscape and natural, cultural, historical, aesthetic, economic and social heritage and values, (Schlichting, 2013)

An environmental scoping process was entered into by the applicant and for during the crafting of this EMP as required under Environmental Management Act (2007).

2.1.1. Terms of Reference for the Environmental Impact Assessment

Meat Board of Namibia appointed Outrun Consultants cc to conduct an Environmental Impact Assessment study for the operation of an abattoir in Katima Mulilo. The study was carried out in 2 phases, the scoping phase and the compilation of the EMP.

The study took consideration of:

- Due consultation with the applicant and interested and affected parties.
- Review the development / activity at the local level.
- Identification of legal framework governing various aspects of the project.
- Characterising the nature of the site.
- Identification through scoping and on – site evaluation of issues relating to the abattoir and its potential impacts on the environment.

2.1.2. Activities carried out during the scoping phase

The scoping process undertaken includes the following activities:

- Reviewing of standards, guidelines, policy and legislation relevant to the establishment of an abattoir and regulating the meat industry.
- Description of the proposed project
- Description of the affected environment
- Description of the public participation process followed
- A detailed description of the potential impacts associated with the abattoir
- Evaluation of whether a full EIA is required or an EMP only.

2.1.3. Activities carried out during the EIA process

The study covered the following areas in detail:

- Detailed project description
- Public consultation and a register of issues and / or concerns raised
- Identification of the possible and known impacts of the project
- Detailed analysis of the identified impacts
- Review of relevant policies and legislation and the development of a legislative framework compliance plan
- Development of an Environmental Management Plan (EMP) with workable mitigation measures for adoption.

2.2. Assumptions and Limitations

No alternative sites were proposed for this study since the facility is in existence already.

2.3. Public Participation Process

Public consultation is an integral part of a comprehensive EIA and is done to ensure that issues are identified early during the process before major decisions are made. It is a requirement to carry out public consultations under the Namibia Environmental Assessment Policy of 1994 and also to achieve principles of best practice during the EIA process. Although a full EIA was not carried out for the reasons mentioned

earlier on in this report, the Consultant initiated public consultation. This was done through advertisements published in the New Era and the Confidente (Advertisements are annexed at the end of this report).

Table 2: Publications and the respective dates.

PRINT MEDIA	FIRST PUBLICATION DATE	SECOND PUBLICATION DATE
New Era	05 May 2020	13 May 2020
Confidente	30 April to 06 May 2020	07 May to 13 May 2020

2.4. Purpose of the Public Participation Process

The purpose of the public participation process is to:

- Provide information to IAPs and other stakeholders about the project background, proposed site, project concept and predicted potential impacts.
- Establish the public's interests, concerns and expectations regarding the proposed project.
- Obtain input from IAPs, the public and other key stakeholders.

2.5. Identification Of Key Stakeholders

The following stakeholders were identified for consultation purposes:

- Ministry of Agriculture, Water and Land Reform
- Katima Mulilo Town Council
- Katima Mulilo Community members
- Other members with interest or affected by the project.

2.6. *Initiation of the Scoping Process*

The scoping process was initiated by publicising it through the media. The advertisements announced the beginning of the scoping process and invited stakeholders and members of the public to register as I & AP as well as participation. A Background Information Document (BID), see attached copy, was provided to stakeholders and members of the public.

The BID contained the relevant information about the abattoir and promoted stakeholders and public participation in the scoping process. A comment sheet was provided at the end of the BID report inviting comments on issues of interest and importance to the stakeholders.

2.7. *Review of draft EMP*

The report was published and made accessible for public review and commenting at the following centres:

- Katima Mulilo Meat abattoir
- Katima Mulilo Town Council

2.8. *Public Participation: Way Forward*

No comments were received and the draft document was adopted as the final EMP to be submitted to METF: DEA for approval. MET: DEA's decision on the EMP will be made available to the Proponent and all I&APs.

2.9. Project Team

Table 3: Environmental Impact Assessment Experts and their Area of Responsibility in the Study.

ORGANIZATION	AREA OF RESPONSIBILITY / FIELD OF EXPERTISE	TEAM MEMBERS
OUTRUN	Project management EIA coordination EIA process	Josiah T. Mukutiri
OUTRUN	Legislation & Policy Review	Josiah Mukutiri
OUTRUN	Development of Environmental Management Plan (EMP)	Josiah T. Mukutiri
OUTRUN	Public Consultation	Josiah T. Mukutiri and Zambezi Meat Company (ZAMCO)

N.B. CVs OF CONSULTANTS ARE ANNEXED AT THE END OF THE REPORT

3. LEGAL REQUIREMENTS

This section presents the treaties, policies and legislations that were reviewed in line with this project. The various compliance requirements are also presented.

3.1. Relevant Treaties, International agreements and Protocols, policies and legislation.

<p>3.1.1. Namibia's Environmental Assessment Policy of 1994.</p>	<p>The policy contains a list of prescribed projects that may have significant negative impacts on the environment. Such projects require authorisation from the Ministry of Environment, Tourism and Forestry (METF) - Directorate of Environmental Assessment (DEA). Construction and operation of an abattoir are listed activities that warrant an EIA. Accordingly, the project requires authorisation from METF: DEA.</p>
<p>3.1.2. Environmental Management Act (2007)</p>	<p>The Namibian Environmental Management Act of (2007) guided the EIA study and made reference to the principles contained in the Act. This is the very Act that binds all the responsible parties against their respective environmental obligations against which the EIA clearance is issued. Failure to comply attracts fines and / or prosecution depending on the severity of the matter. The Proponent should meet environmental conditions upon which the Environmental Clearance Certificate will be issued.</p>

<p>3.1.3. Water Resources Management Act (1956)</p>	<p>Water Act 54 of 1956 and the Water Resources Management Act 24 of 2004, provides the general protection against surface and ground water pollution. It prohibits the pollution of ground and surface water bodies including liability of clean-up costs after closure / abandonment of an activity. It also regulates the drilling of boreholes for groundwater abstraction. There is an existing borehole and the Proponent should comply with the requirements of the Ministry of Agriculture, Water & Land Reform (MAWLR).</p>
<p>3.1.4. Hazardous Substances Ordinance 14 of 1974</p>	<p>The hazardous substances ordinance 14 of 1974 controls substances with potential to cause injury or ill-health or death of human beings because of their toxic, corrosive, irritant, strongly sensitizing or flammable nature. Petroleum fuels are covered under this Act. Care should be taken throughout the product lifecycle right from receiving, storage, product use and disposal. In cases where special storage facilities are required the Proponent should provide as such.</p>
<p>3.1.5. Pollution Control and Waste Management Bill</p>	<p>This bill aims to prevent and regulate the discharge of pollutants to air, water, and land. It further aims to promote the establishment of a system of waste management, and enable Namibia to meet its international obligations. Waste management should be guided by the 3R principle, Reduce, Reuse and Recycle. Only unrecyclable and unusable materials will be disposed of at a designated disposal site.</p>
<p>3.1.6. Atmospheric Pollution Prevention Ordinance 11 of 1976</p>	<p>This regulation sets the principles for the prevention of atmospheric pollution and associated matters arising thereto. Part IV and Part V prevents atmospheric pollution by dust and gaseous emissions respectively.</p>

3.1.7. Labour Act (1992)	The labor Act governs the employer to employee relationship including issues pertaining to occupational health and safety, remuneration, provision of appropriate protective clothing, grant of leave etc. It is important to refer to the Act and ensure compliance with fair labor practices at all project phases, (Schlichting, 2013).
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Table 4: Summary of legal compliance instruments and their regulatory authority.

Act/Regulation	Compliance	Regulatory Authority
Environmental Management Act (2007)	Obtain EIA Clearance Certificate	Ministry of Environment, Tourism & Forestry
Environmental Management Act Chapter 20:27	Produce biannual reports; adhere to the EMP outline in this report and renewal of EIA certificate.	Ministry of Environment, Tourism & Forestry
Labor Act (1992)	It is important to refer to the Act and ensure compliance with fair labour practices and occupational health and safety.	Ministry of Labour
Water Resources Management Act (1956)	Acquire water permits and pay the designated fees as prescribed.	Ministry of Agriculture, Water & Land Reform
Water Resources Management Act (2004)	Monitor water quality and comply with waste water discharge quality standards. Prevent both surface and groundwater contamination.	Ministry of Agriculture, Water & Land Reform

This section presents an inventory of some of the standards and guidelines for the design and operation of abattoirs / slaughter houses. Namibia Standards Institute is in the process of developing local standards hence the need to refer to South African Standards (SANS) codes and EU codes where necessary. Our standards that have been effected this far are:

3.2. Namibian standards

- NAMS/ISO 22000:2013: Food Safety Management Systems:- Requirements for any organization in the food industry;
- NAMS/ISO 14001:2013: Environmental Management Systems:- Requirements with guidance for use;
- NAMS/ISO 9000:2013: Quality Management Systems:- Fundamentals and Vocabulary;
- NAMS/ISO 9001:2013: Quality Management Systems:- Requirements;
- NAMS/ISO 9004:2013: Managing for the sustained success of an organization:- A quality management approach;
- NAMS/ISO 19011:2013: Guidelines for auditing management systems.
- NAMS/ISO 50001/2013: Energy Management Systems:- Requirements with guidance for use;
- NAMS/ISO 22002 – 1:2013: Prerequisite programmes on food safety:- Food Manufacturing;
- NAMS/ISO 22005:2013: Traceability in the feed and food chain – general principle and basic requirements for systems implementation;
- NAMS/BS OHSAS 18001:2013: Occupational Health and Safety Management Systems – Requirements;
- NAMS/ISO 10001:2015: Quality Management: Customer satisfaction:- Guidelines for codes of conduct for organizations;

- NAMS/ISO 10002:2015: Quality Management: Customer satisfaction:- Guidelines for complaints handling in organizations;
- NAMS/ISO 10003:2015: Quality Management: Customer satisfaction:- Guidelines for dispute resolution external to organizations;
- NAMS/ISO 10004:2015: Quality Management: Customer satisfaction:- Guidelines for monitoring and measuring;
- NAMS/ISO 10005:2015: Quality Management:- Guidelines for quality plans;
- NAMS/ISO 10006:2015: Quality Management Systems: Customer satisfaction:- Guidelines for quality management in projects;
- NAMS/ISO/TR 10013:2015: Guidelines for quality management systems documentation;
- NAMS/ISO 10014:2015: Quality Management:- Guidelines for realizing financial and economic benefits;
- NAMS/ISO 10018:2015: Guidelines on people involvement and competence;
- NAMS/ISO/TS 22002 - 4:2015: Prerequisite programmes on food safety:- Part 4:- Food packaging manufacturing, (NSI, 2016).

3.3. European standards relevant to the project

- S.I. No. 45 of 2004: Beef carcass classification regulations 2004.
- S.I. No. 269 of 2004: Registration of importers of animal products regulations 2004.
- S.I. No. 74 of 2004: Fees for health inspections and controls of fresh meat regulations 2004.

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- S.I. No. 820 of 2004: Trade in the production, processing, distribution and introduction of products of animals origin for human consumption regulations 2004, (EU, 2004).

4. Environmental Management Plan

The environmental management plan (EMP) should be adhered to at all levels during design, planning, construction, operation and decommissioning stages of the project. Given that this facility is in existence and we do not see any reason for possible decommissioning in the near future, this EMP will only cover the operation phase in detail. It is important to note that there are different people responsible for the work during operations. While the people doing the work must follow the instructions laid in this EMP, it remains the responsibility of the Proponent to ensure that the EMP is made available to the people doing the work, that they understand the contents and comply. The EMP is clearly laid out indicating the identified impacts, the proposed mitigation measures, implementing agent, monitoring agent and the monitoring frequency. The Proponent is encouraged to extract the different sections and incorporate them in the contracts issued to the consulting personnel, Contractors and Employees etc. **The EMP will be implemented by the Facility Manager. The Facility Manager will report to the Commissioner in the Directorate of Environmental Affairs, Ministry of Environment , Tourism and Forestry.**

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Table 2: Environmental Management Plan

ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
DESIGN AND PLANNING PHASE – NONE								
As alluded to earlier in the report this abattoir is in existence hence no design aspects were considered in this EMP.								
CONSTRUCTION PHASE – NONE								
As alluded to earlier in the report this abattoir is in existence hence no construction activities were considered in this EMP.								
ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
OPERATIONAL PHASE								
Environmental Management	Legal compliance;	+ ve	All activities	Local regulations, city by-laws and MAWLR directives are enforced and potential modifications are	Facility Manager	Proponent	DEA / MAWLR and	Quarterly

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ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
system	Environmental conservation; EMP compliance; Codes of practice			anticipated. A legal register should be maintained; Significant environmental aspects and risks associated with each activity are identified, assessed and prioritised; A consolidation environmental action plan is drawn up and each action is monitored; Establish codes of practice and guidelines			GM	
Internal and external communication	EMP compliance and public perception	-ve	All activities	The environmental policy, objectives and action plan are explained, updated and posted for all employees to refer to as and when necessary. All incidents are reported and investigated; employees are informed of the corrective action plan. Improvement ideas and good practices are recorded. Maintain complains register and address complains promptly from members of the public.	Facility Manager	Proponent	DEA / MAWLR / GM	Quarterly

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ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
Chemical accidents	Pollution, Public health impact, Spillages	-ve	Refuelling of generators and storage of fuels and other chemicals, cleaning and meat processing.	Hazard analysis of all the activities and the facility should be done and appropriate procedures crafted and implemented. HAZOP risk analysis is done as part of the commissioning stage; Develop a plan for hazardous goods management on site.	Facility Manager	Proponent	DEA / GM	Quarterly
Surface and ground water quality	Ground and surface water contamination and / or pollution: Both chemical and physical contamination Soil pollution -Groundwater pollution	-ve	Slaughtering and meat processing.	Storm water management measures will be inspected on a regular basis in order to ensure that the structures are functional and do not cause soil erosion. Effective storm water measures will be implemented to minimize soil erosion, such as: The storm water drainage system	Facility Manager	Proponent.	DEA / GM	Monthly sampling of the monitoring wells.

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				<p>must be maintained (free-draining) and not contaminated by other waste sources.</p> <p>Storm water must be kept separate from the sewage effluent system.</p> <p>Storm water must be diverted away from chemical storage areas and wastewater treatment areas.</p> <p>Train employees in spill response and provide clean up materials.</p> <p>Pollution control measures should include proper storage and bunding of areas that contain chemicals and oils.</p> <p>Regular inspection and maintenance of containers, bunding, storage tanks and oil separation systems must be</p>				

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ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
				<p>undertaken.</p> <p>Implement an emergency response plan for spillages.</p> <p>Ensure that the trucks are manually swept to remove dust and manure and deposited in a nearby storage container.</p> <p>Only when dry cleaned can the trucks be moved to the washing bay for cleaning with water.</p> <p>The wash water should be collected and put through a sand and oil separator prior to discharge to the waste water treatment plant.</p> <p>Ensure that the sand and oil separator is well maintained on a regular basis.</p>				
Soil, surface and ground	Soil, surface and ground	-ve	Poor management	Disposal of meat waste must be done through turned windrows or	Facility Manager	Proponent	DEA / GM	Quarterly

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water quality	water contamination or pollution		of meat waste and blood	<p>trenches.</p> <p>Windrows:- the manure and any dry organic material should be mixed and pushed into stockpiles which are periodically turned over.</p> <p>The windrows should be built in layers with 25 to 50 cm of organic material between layers of meat waste.</p> <p>Volume ratio of materials should be about two parts carbon to one part meat scraps. The recommended C:N ratio is between 30:1 and 40:1.</p> <p>Recommended dimension: 2m height by 4m width by 35m length.</p> <p>Initial moisture levels should be maintained at around 63%.</p> <p>Turning is recommended as follows: every second month for 6-8 months</p>				

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				<p>and then once a month in the last four months for a 12month cycle.</p> <p>Windrows should be covered to avoid exposure of meat scarps at the surface and minimise odour and vector problems.</p> <p>After 12 months the composted material can be screened and then used as soil cover.</p> <p>Composting areas must be rotated to avoid nutrient overloading.</p> <p>Trenching:- the meat waste must be laid in the trenches and mixed with soil. Care must be taken to avoid overload the trenches as the decomposition process will not be effective and the scrapings will attract vermin.</p> <p>Recommended soil to meat waste</p>				

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				<p>ratio should be 2 to 1. The fields must be left fallow for a year to allow maximum assimilation of the waste material into the soil structure.</p> <p>Manure can be spread directly onto farmland for assimilation, it needs to be carefully mixed with surface soil to prevent fly breeding, reduce odour and avoid water pollution from surface runoff.</p> <p>All disposal sites must be managed carefully; the Facility Manager should audit these sites once every four months to ensure the practices are being carried out in accordance with waste management agreement.</p> <p>If the windrowing/trenching is not being properly managed and environmental harm is occurring, then steps should be taken to: i)</p>				

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				rectify the situation ii) find alternative operator iii) dispose of material to landfill.				
Soil, surface and ground water quality	Soil, surface and ground water contamination or pollution	-ve	Poor management of meat waste, blood and waste water.	<p>Regular monitoring of wastewater pre-treatment in the screening and FOG separation facility to ensure that discharge of water quality complies with the standards required by Katima Mulilo Municipality as stipulated in the trade waste agreement</p> <p>BH Fresh Produce & Meat Abattoir can only discharge waste into sewer only if the municipality waste water treatment plant meets its DAWF permit conditions.</p> <p>Ensure the daily removal of contents from screen by loading them onto a trolley and emptying in the appropriate bin. The bin must be</p>	Facility Manager	Proponent	DEA / GM	Quarterly

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				<p>sealed to avoid nuisance odours</p> <p>Regular inspections and maintenance of the screening facility to ensure wastewater outputs are in accordance with municipal requirements.</p> <p>Ensure that the trolley is not overloaded and material does not spill on the ground and contaminate the soil.</p> <p>Strict control of transport of screened material and its disposal in sealed bins should prevent the proliferation of vectors.</p>				
Surface and ground water quality	Water contamination or pollution	-ve	Slaughtering process	Wash or wastewater from the stun area must be contained to ensure that all blood is collected in the blood sump and be allowed to enter the waste water network.	Facility Manager	Proponent	DEA / MAWLR	Quarterly

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				All plastics or non-organic material must be collected and prevented from entering the wastewater stream.				
Hazardous Materials	Chemical pollution of soil and water;	-ve	Chemical store	<p>Hazardous chemicals to be stored in banded areas. Periodic checks for leaks from storage tanks or containers to be carried out. Chemicals to be stored in lockable well ventilated room with all appropriate warning signage.</p> <p>Pollution control measures to include regular inspection and continuous improvement policy. Store hydrocarbons in banded area, check tanks for leaks, and check oil separation system in wash bay.</p> <p>Used solvents oils to be kept in sealed containers and recycled.</p>	Facility Manager	Proponent	DEA / GM	Quarterly

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				<p>Contain and clean up any spills on site. Emergency spills kit and fire extinguishers to be kept on site. If maintenance of vehicles or equipment is required, drip trays must be used, Generators must be stored on a concrete floor in a bunded area. Remove any contaminated soil to an approved disposal facility like Municipal Waste Disposal Site.</p> <p>Any fuels stored in tanks on site must be bund walled, bund wall must be large enough to contain 110% of the tank volume and the tanks must stand on a concrete slab. If any fuelling is done on site the ground must be protected by using drip trays and the appropriate dispensing</p>				

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				equipment (hand pumps, funnels). Drums should not be tipped to dispensed fuel.				
ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
Domestic Solid waste	Hazardous to health and reduces the aesthetic value of the area.	-ve	Generated from food left overs, packaging materials etc.	Provide adequate waste receptacles or bins should be easily accessible. Waste collection should be done at least once per week.	Facility Manager	Proponent	DEA	Quarterly
Liquid waste	Hazardous to health and reduces the aesthetic value of the area.	-ve	Waste generated from showers, toilets, sinks etc	Use septic tanks for handling liquid waste from the sanitation facilities.	Facility Manager	Proponent	DEA	Quarterly
Delivery of live	Land surface	-ve	Trucks and	Ensure vehicles use existing access	Facility Manager	Proponent	DEA / GM	Quarterly

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animals	disturbances in the abattoir area giving rise to soil compaction, erosion etc.		animal movement.	road only. Vehicles should be washed in the designated washing bay only. Storm water measures should be inspected regularly to ensure that the structures and operation of this area are not causing erosion.				
Accidents	Traffic management.	-ve	Heavy trucks used to transport livestock.	Offloading bays must well secured and far from the main road. No racing should be tolerated. No driving under the influence of drugs. Drivers should maintain recommended speed limits. Ensure that all drivers are competent, licensed and take care when overtaking. On-going driver training should be offered to workers. All vehicles should travel with their headlights on. Ensure adequate communication systems and safety provisions in the	Facility Manager	Proponent /Project Manager	DEA / MAWLR	Quarterly

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				event of breakdowns or accidents.				

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Occupational Hazards / Work place accidents	Potential accidents and illnesses.	-ve	Operating of the abattoir (all activities refer to process flow diagram).	<p>Health and safety regulations should be enforced on all the workers.</p> <p>Workers should be provided with appropriate PPE and be trained on how to use the PPE properly.</p> <p>Safety regulations include life and health insurance, first aid kits; protective clothing such as uniforms and gloves.</p> <p>Workers should not be allowed to exceed working hours.</p>	Facility Manager	Proponent	Ministry of Labour	Quarterly
Occupational Hazards / Work place accidents	Potential fire accidents / break out.	-ve	Operating of the abattoir (all activities refer to process flow diagram).	<p>Appropriate equipment to deal with fire should be readily available on site and maintained (e.g. fire extinguishers).</p> <p>Safety signage including “No</p>	Facility Manager	Proponent	DEA	Quarterly

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				<p>Smoking”, “No Naked Lights” and “Danger”, and product identification signs, are to be clearly displayed on fuel stores and tanks.</p> <p>Smoking is prohibited near places where any readily combustible or flammable materials are present.</p> <p>Notices are to be prominently displayed prohibiting smoking in such areas.</p> <p>Night watchmen should be provided with adequate cooking and heating facilities (no open fires), and access to communication equipment.</p>				

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Community / Stakeholder relations	Lack of trust from community and stakeholders	-ve	Poor communication and failure to attend to complains.	<p>Implement and monitor relations with stakeholders and partnerships, and keep regular contact with all groups. Communications can be the form of open days, newsletters and other media channels.</p> <p>Keep a register of public complaints, addresses and follow up complains.</p> <p>Support improved service delivery and sustainable economic development projects in consultation with GM.</p> <p>Promote local procurement, use local service providers and assist where capacity is lacking; promote incorporation of women and previously disadvantaged groups into the local economy.</p> <p>Develop a recruitment strategy and prioritise employment from local</p>	Facility Manager	Proponent	DEA	Quarterly

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				community. Develop a closure plan that considers impact of closure on the GM and the surrounding communities.				
Air quality - noise	Nuisance to the public and nearby settlement.	-ve	Equipment and trucks including delivery of animals and despatch of carcasses.	Ensure that no sound amplifying equipment such as sirens and loud hooters are used on site except in an emergency. Equipment must be kept in good repair and any loose or rattling covers, worn bearings and broken equipment should be fixed immediately. Mechanical equipment should be securely mounted to isolate structure-borne vibration and noise. Efficient exhaust mufflers must be fitted on diesel forklift engines, other	Facility Manager	Proponent	DEA	Quarterly

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				<p>noisy vehicle and air powered tools.</p> <p>Ensure hours of operation are restricted to 7am to 6pm Monday to Friday and 7 am to 1 pm on Saturday.</p> <p>Vehicle movements should be restricted to normal working hours of operation.</p> <p>Ensure that the dispatch of dressed carcasses is done during operating hours and that the vehicles are well maintained.</p>				
Air Quality – dust, odours / foul smells.	Compromised air quality	-ve	Movement of trucks, manure, blood collected from blood sumps and equipment	<p>Ensure that lairages are dry and cleaned daily to remove manure and that is stored in the closed bins provided. These bins are to be emptied out daily.</p> <p>Minimise noise and fugitive dust emission from animal movements within the lairages by planning the</p>	Facility Manager	Proponent	DEA	Quarterly

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ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
			etc.	<p>delivery and movement of animals such that it is carried out efficiently. Ensure that animals are slaughtered the day they arrive.</p> <p>Minimise fugitive dust emissions from hauling and loading activities and restrict vehicular access along existing gravel access road.</p> <p>Ensure that the blood sump pump, structure, inlets and outlets pipes are well maintained to ensure that blood can be pumped out.</p> <p>Ensure that the doubled sealed lid is fitted properly to suppress odours. The blood sump must be emptied daily.</p> <p>Ensure that discharging of blood sump pump into the storage vessel is in a closed circuit to ensure that</p>				

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				<p>there are no spillages.</p> <p>If there are spillages they must be cleaned up immediately and disposed of into sealed waste bins.</p> <p>Blood should be removed from sump daily for disposal or further processing. Blood removal circuit equipment must be well maintained like the rest of the facility.</p>				
Public health	Illnesses	-ve	Consumption of condemned meat.	<p>Condemned meat must be chilled in a controlled access chiller section until such time that it can be removed.</p> <p>Any condemned trimmings must similarly be stored in an appropriate container in the chiller area.</p> <p>Condemned meat must not be sold to the public. It must be transported to an approved municipal landfill for</p>	Facility Manager	Proponent	DEA / MAWLR / GM	Quarterly

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				final disposal. If none exists locally, then the material must be transported to Windhoek for condemned meat. Records of condemned meat volumes and their disposal method must be maintained on record.				
Greenhouse gases	Climate change and air pollution	-ve	Incomplete combustion from boilers	Boilers should use clean fuels of low ash content, low Sulphur and heavy metals and no toxic wastes. Combustion equipment and air pollution control equipment should be designed and operated to minimize the production and emission of air pollutants. Stacks should be high enough to				

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				<p>prevent ground level concentrations of pollutants from reaching undesirable levels.</p> <p>To prevent or minimize air pollution caused by vehicles and other activities onsite.</p> <p>Regular maintenance to be undertaken, to ensure optimal combustion.</p>				
ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	
DECOMMISSIONING PHASE								
Soil and Water quality	Soil and water contamination	-ve	Spillages and indiscriminate dumping of	Minimize the disturbance of the local geology through effective	Construction Manager	Project Manager /	DEA	

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	or pollution		waste during decommissioning.	<p>rehabilitation measures.</p> <p>Replacement and rehabilitation should be progressive during the project and not left until the end.</p> <p>Temporary topsoil stockpiles should be seeded, or protected in a manner acceptable to the environmental planner, so as to avoid erosion by rain or wind.</p> <p>All waste should be disposed of at respective designated sites.</p> <p>Reusable or recyclable materials should be separated and treated as such.</p>		Proponent		
Topography	Land surface disturbances	-ve	Excavations and breaking of existing infrastructure	To minimize the disturbance of the local topography during the	Construction Manager	Project Manager / Proponent	DEA	

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			e	<p>decommissioning phase.</p> <p>Implementation of effective and sustainable rehabilitation and remediation practices. The disturbed area should be covered with topsoil, sloped and vegetated using appropriate plant species as soon as possible. These vegetated areas will be maintained and monitored in order to ensure the recovery of the vegetative cover.</p> <p>Alien and invasive vegetation will be eradicated and controlled by manual removal, chemical application and biological control. The regulations in terms of the Agricultural Pests Act,</p>				

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				No. 3 of 1973 apply.				
Land use and capability	Destruction of soil structure and land cover	-ve	Compaction, Pollution	To rehabilitate the site to previous agricultural potential. Implementation of effective and sustainable rehabilitation and remediation practices. Alien and invasive vegetation will be eradicated and controlled by manual removal, chemical application and biological control. The regulations in terms of the Agricultural Pests Act No. 3 of 1973.	Construction Manager	Project Manager / Proponent	DEA	
Soil	Destruction of soil structure and land cover	-ve	Soil compaction, pollution,	To ensure soil management practices take place, in order to effectively rehabilitate the site.	Construction Manager	Project Manager / Proponent	DEA	

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ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
			erosion etc.	The site must be monitored for signs of erosion whilst rehabilitation takes place.				
Alien and Invasive Vegetation	Growth of alien and invasive plant species	-ve	Introduction of alien plant species as ornamentals and movement of livestock from various places.	<p>To rehabilitate disturbed areas with indigenous species and to control the growth of declared weeds and/or invader plants.</p> <p>Implementation of effective and sustainable rehabilitation and remediation practices. The disturbed areas should be covered with topsoil, and vegetated using appropriate plant species as soon as possible.</p> <p>These vegetated areas will be maintained and monitored in order to ensure the recovery of the</p>	Construction Manager	Project Manager / Proponent	DEA	

ENVIRONMENTAL MANAGEMENT PLAN

MEAT BOARD OF NAMIBIA – KATIMA MULILO - ZAMBEZI REGION - NAMIBIA

ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
				vegetative cover. Alien and invasive vegetation will be eradicated and controlled by manual removal, chemical application and biological control.				

5. Conclusions And Recommendations

5.1. Conclusion

This report was compiled from information obtained from relevant authorities, stakeholders, I&APs and professionals. It has presented the context, benefits of the project and the process followed in the development of this EMP. The EMP focused on the operation phase excluding the construction phase since the facility was constructed or is in existence. The major pollutants posing the greatest environmental threat are blood, paunch, meat tissues and fats generated from the slaughtering and processing of meat. It is recommended that given that these wastes have very high BOD they must be treated before disposal to avoid nutrient overloading. This way the potential impacts are rendered insignificant. The EMP developed clearly indicates how each of the identified environmental impacts can be mitigated or eliminated, the implementing agent, responsible agent, the monitoring agent and the monitoring frequency throughout the project.

5.2. Recommendations

The following recommendations are made as they relate to the EMP formulated during the study:

The Proponent should adhere to the laws, policies, standards and regulations as presented earlier in the report. Where permits are required, they must be obtained from the relevant authorities.

The overall EMP should be implemented so as to avoid predicted environmental impacts as presented in the report.

5.3. *Way Forward*

The EMP will be submitted to METF: DEA. The decision made by METF: DEA will be made known to the Proponent, all registered I & APs and stakeholders.

END

6. References

1. *Environmental Law and Policy in Namibia*, 2013. Windhoek. Orumbonde Press and Welwischia Verlag.
2. EU, 2004. *European Communities Statutory Instruments*. Dublin Stationery Office.
3. FAO, 2015. *Slaughterhouses*. Rome. Food Agriculture Organization.
4. Helmut Stehn, 2008. *Rangeland Management*. Windhoek. Joint Presidency Committee (NAU and NNFU).
5. NSI, 2016. *List of Namibian Standards*. Windhoek. Namibian Standards Institution.

ANNEXURE 1: ADVERTISEMENTS / PUBLIC NOTICES

PUBLIC NOTICE

ENVIRONMENTAL IMPACT ASSESSMENT FOR A BEEF ABATTOIR AT KATIMA MULILO – ZAMBESI REGION.

OUTRUN CONSULTANTS CC HEREBY GIVES NOTICE OF AN EIA FOR THE OPERATION OF AN EXISTING BEEF ABATTOIR AT KATIMA MULILO. The exact location of the abattoir is indicated on the map (provided in BID). An EIA is being commissioned as required under the Environmental Management Act, 7 of 2007 and Regulations of 2012.

PROPONENT(S): MEAT CORPORATION OF NAMIBIA LIMITED

PROJECT ACTIVITIES: OPERATION AND MANAGEMENT OF AN EXISTING ABATTOIR AND ITS ASSOCIATED UTILITIES.

PROJECT LOCATION: KATIMA MULILO– ZAMBESI REGION – MAP IS PROVIDED IN THE BID.

PUBLIC PARTICIPATION: IAPs are invited to register with the consultant and communicate issues / concerns via email. No physical public meeting will be done but a zoom meeting only hence it is important to register.

Josiah Mukutiri – +264 817 181 828
E-Mail: outruninvest@hotmail.com



"RESEARCH. TRAINING & CAPACITY BUILDING"

ANNEXURE 2: BID
BACKGROUND INFORMATION DOCUMENT AND INVITATION TO COMMENT
FOR THE CRAFTING OF AN ENVIRONMENTAL MANAGEMENT PLAN FOR AN
EXISTING RED MEAT ABATTOIR AT KATIMA MULILO, ZAMBESI REGION.

FOR

MEAT BOARD OF NAMIBIA

Prepared by



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PURPOSE OF THE DOCUMENT AND CONTENTS

The purpose of this Background Information Document (BID) is to provide stakeholders with the opportunity to register as Interested and Affected Parties (I&APs) in the scoping exercise for the crafting of the Environmental Management Plan (EMP) for Ministry of Agriculture, Water and Land Reform's existing abattoir constructed at Katima Mulilo in the Zambezi Region. We will share with you the process being followed and also obtain your initial comments on the project. The document also gives you information on the benefits of the proposed project, potential impacts of the project and proposed environmental studies needed. Further to that we advise you on how you can become involved in the project, raise concerns which you may have or receive information which may be of interest to you. This is the core of public participation during the EIA process. Information sharing is the cornerstone of successful Public Participation and your input will help ensure that all potential issues are taken into consideration before critical decisions are made.

1. PROJECT DESCRIPTION

The applicant, Meat Board of Namibia Limited is planning to resuscitate operations of an existing red meat abattoir in Katima Mulilo. The abattoir is designed for the slaughter of cattle being the main target. The handling and slaughter facilities are located at Katima Mulilo. It has the capacity to handle and / or slaughter fifty (120) head of cattle per day. The scope of this exercise will cover the operation and management of the existing abattoir. It will cover all stages from the lairages for holding received cattle, slaughter house, meat processing facility, chillers, quartering, loading and dispatch bay, administration area, guard house, ablution facility and waste management facility. This facility is serviced and has both electricity and water. The operation of an abattoir is a listed activity under the Environmental Management Act, 7 of 2007 (EMA 2007) and requires one to obtain an Environmental Clearance Certificate (ECC) before project commences. This is enough motivation for the Proponent: Meat Board of Namibia to appoint an independent consultant, Outrun Consultants cc to craft an Environmental Management Plan and subsequently apply for the ECC.

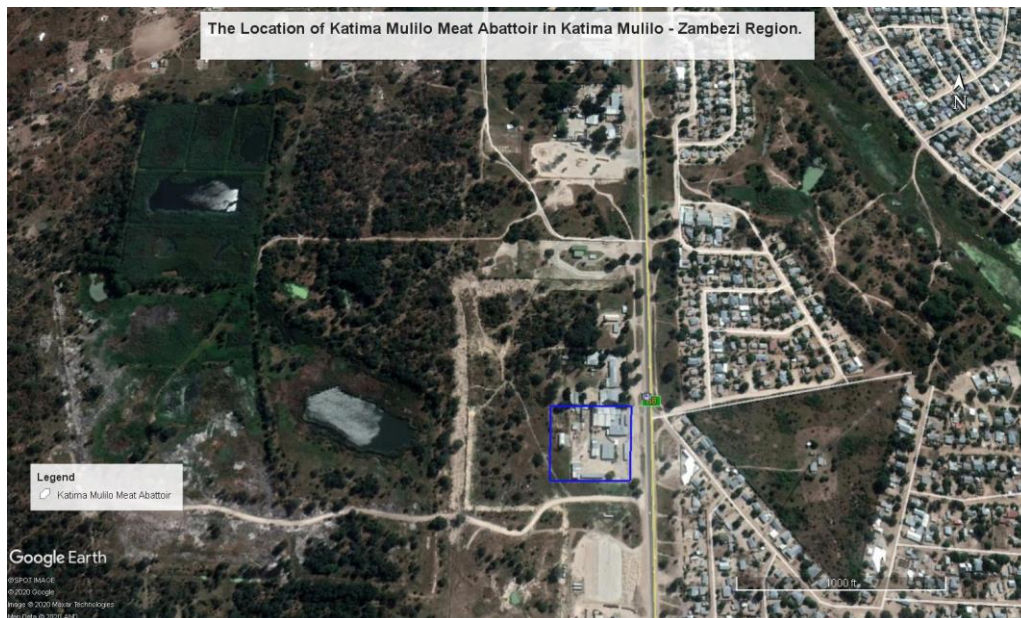


Figure 5: The location of the Katima Mulilo Meat Abattoir in Katima Mulilo.

Table 5: Coordinates of the Katima Mulilo Meat Abattoir.

Polygon Point	Coordinates	
1	-17.517920	24.268032
2	-17.517865	24.269132
3	-17.51890	24.267923
4	-17.518878	24.269082

1.3. Description of the Property

The abattoir is located on Erf number 577 along the B8 Highway in the industrial area of Katima Town. Bordering the site are industrial ervens on the northern side, Telecom Tower and Butterfly Informal Residential on the eastern while the southern and western areas is the Katima Mulilo Townlands No. 1328.

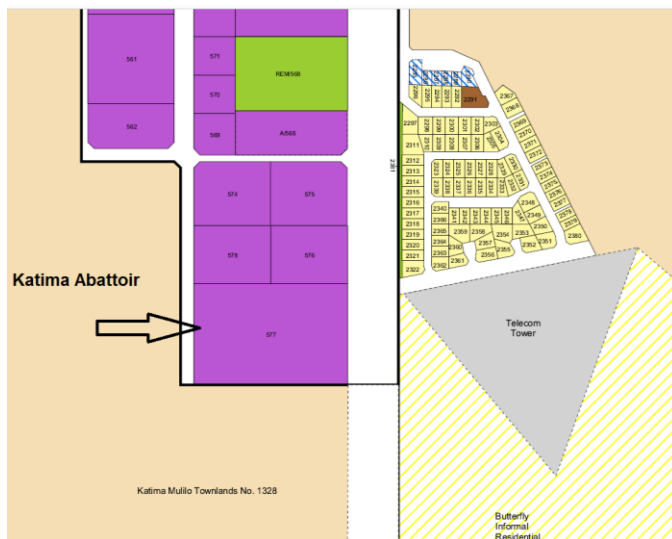


Figure 6: The location of Katima Mulilo Meat Abattoir in relation to other zones.

1.3.1. Access and / or Provision of services / utilities to the Abattoir

- Ownership and Accessibility

The facility is accessible using the B8 highway and it belongs to the Government of The Republic of Namibia. The management is done by the Meat Board of Namibia which was enacted through an Act of Parliament: Meat Industry Act (Act 12 of 1981). The abattoir is on lease to the Zambezi Meat Company and will be commissioned once the Environmental Clearance Certificate is issued.

- Water

Water is supplied by Katima Mulilo Town Council. There are eight 10 000-liter water storage tanks that serves as a backup to ensure water supply at all times during process. This facility uses approximately 17 000 liters of water per month.

- Energy

This facility mainly uses both electricity and petroleum energy products, diesel and petrol. The equipment in this facility is heavy duty industrial equipment powered by electricity. Diesel is used to fire the boilers for generation of steam with a smaller portion being used for vehicles as well as petrol. Diesel is stored onsite using 23 000liter above ground tanks. Diesel consumption averages about 15 000 liters per month.

- **Hazardous chemicals**

The cooling facilities comprise of chillers and freezers that use ammonia (NH₃) as a cooling agent. This is a result of the chemical's superior thermodynamic properties and affordability. It does not contribute to ozone depletion or global warming and so is considered environmentally friendly. However, it is classified as an extremely dangerous chemical due to its hazardous nature in large quantities. Should there be leakage it is self-alarming due to its strong pungent smell.

1.3.2. Waste generated from the slaughter of livestock

The slaughter of red meat livestock especially cattle generates diverse and sizeable quantities of waste material both solid and liquid. Broadly these can be:

- g. General solid waste (plastic, paper, cardboard etc)
- h. Scrapings from trucks and screens
- i. Organic waste / undigested material
- j. Blood
- k. Condemned meat and trimmings
- l. Liquid waste

Potential environmental challenges and / or issues to be investigated

What is the amount of waste to be generated by type and state in order to craft practical management options and ultimate disposal e.g. scrapings from trucks and screens will be predominantly organic and can be composted and used as manure while condemned meat and trimmings may require incineration?

1.4. The need for the project

The benefits for the recommissioning of this abattoir are among others:

- Employment creation and thus improve the well being of the local people. Employment preference will be afforded to previously disadvantaged Namibians inhabiting the Zambesi Region.
- Supply of raw materials to downstream industry for economic growth. Such industries include but are not limited to the manufacturing industries such as tanneries etc.
- A contribution to the balance of payments through exports.
- A reliable market for the local farmers.

2. PROPOSED SCOPE OF THE EIA STUDY

The EIA study will cover all the relevant legal and policies that govern and regulate the design, construction and operation of abattoirs in Namibia. In addition, the following key issues will also be covered:

2.1. Noise Pollution

A noise pollution impacts may be necessary given that the north eastern side of the abattoir is a residential area.

2.2. Air Quality Impact Assessment

This study is necessitated by the fact that the holding pens can be dusty and give out a strong odour when wet. This will be explored for the same reason of the residential area mentioned above.

2.3. Waste Characterization Study

This study will be focused on determining the amount of waste generated from the proposed abattoir by type and explore handling, treatment and disposal methods.

2.4. Katima Town Council Dumpsite

The study will explore the potential impacts of the proximity of the abattoir to the existing dumpsite.

2.5. Assessment of Alternatives

2.5.1. No-Go Option

The “no-go” option means maintaining the status quo. This option will be explored to assess the implications of not implementing the project.

2.5.2. Sites

No alternative site assessment will be carried out since the abattoir is already in existence.

2.5.3. Strategic Alternatives

Strategic alternatives will be explored to see the best ways to operate and manage the abattoir in an environmentally sustainable manner.

2.5.4. Technological Alternatives

There are different technologies available that are used in waste management e.g. composting, autoclaving, shredding, incinerating etc. All these technologies are used to treat different types of waste and come in different sizes depending on the amount of waste to be handled. Above all capital and operational costs are also diverse. The various options will be explored and appropriate recommendations made for sustainability of the abattoir.

3. THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

An EIA is the process of identifying, predicting, evaluating and mitigating the biophysical, social, health and other relevant effects of development projects prior to major decisions being taken and commitments made.

The objectives of the EIA will be to:

- Provide you with adequate information to understand the potential environmental and socio-economic impacts of the proposed project and opportunities to comment on the project and the process.
- Provide information that will assist the consultants to incorporate effective mitigatory measures into the management and operation of this abattoir.
- Provide the regulatory authorities with sufficient information to serve as a basis for sound decision making.

3.1. Project elements to be covered by the EMP.

The EIA will cover the following elements:

- Operation and management of the abattoir.
- Decommissioning

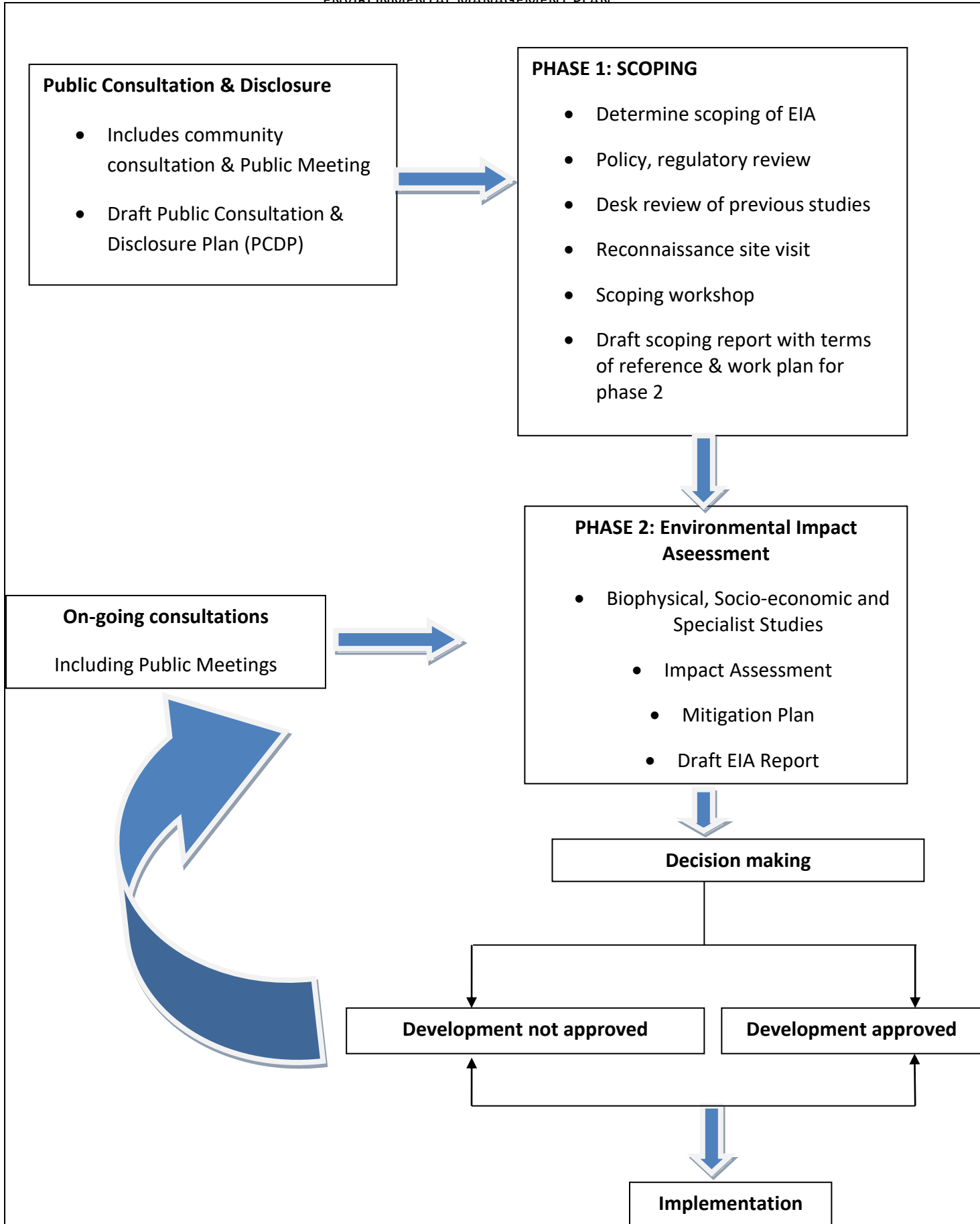


Figure 8: The EIA process to be followed.

3.2. Scope Of The Work

The EIA will focus on the legal and policy issues, noise pollution, waste management and air quality impacts during the operation of the abattoir. The EIA will be done in 2 phases (See Figure.2).

PHASE 1 – SCOPING

It is a formal requirement during the EIA process to carry out a scoping study and this is in-line with the Namibian Environmental Management Act (2007). The purpose of this study is to direct the assessment on the key issues for assessment and at the same time eliminate those that do not require detailed intensive studies.

3.3. Scoping Activities

- Consultations with key stakeholders, government departments etc.
- Advertising and carrying out public meetings.
- Distribution of project information to the public.
- Producing draft scoping report.
- Gathering public comments on draft scoping report.
- Submission of final report to Ministry of Environment & Tourism (MET).

PHASE 2

Issues that are raised during the scoping study will be used to develop terms of reference for specialist studies if there are any. Experts within the Consultancy Team will be assigned to carry out the specialist studies. The results from the specialist studies will be incorporated into the Draft EIA report.

3.4. Draft EIA Report

The draft EIA report will reflect all the identified issues, mitigation measures and the proposed environmental management plan. The draft EIA document will be made

available to the public for comments on issues of interest and can also raise any concerns they may feel require further attention.

3.5. Legal Framework

The Namibian Government gazzeted the Environmental Management Act in 2007 and is supported by a set of guidelines and regulations. The EIA process will follow the EIA Policy and the Environmental Management Act & its regulations. The EIA will also take cognizance of applicable international standards and guidelines, conventions and treaties.

4. PUBLIC CONSULTATION AND DISCLOSURE PLAN

According to the Environmental Management Act (2007), public participation forms an integral part of the EIA process. Adequate public consultation is important to identify issues relevant to the project, evaluating their significance and deciding measures to mitigate these impacts. A public consultation plan has been developed in line with the Environmental Management Act (2007) and seeks to achieve the following objectives:

- To ensure all stakeholders are included in the consultation and disclosure process;
- To ensure initial information disclosure about the project is appropriate and understandable to the non-technical stakeholders and the local population;
- To ensure that adequate and timely information is provided to the public;
- To ensure that all stakeholders are given sufficient opportunity to express their issues, concerns and opinions;
- To ensure that stakeholders' opinions and concerns influence project decisions;
- To ensure regular feedback is given to the public;
- To ensure that effective communication will continue during the construction and operational phases of the project;

Meat Board and the Outrun Team are committed to active and ongoing communication and consultation with all members of the public with regards to the commissioning and operationalizing the abattoir at Katima Mulilo.

4.1. How you can be involved?

- Attend public meetings that will be advertised in the press.
- Contact the EIA consultants for further information.
- Review the draft reports when you are invited to do so within the timeframes provided.

Please ensure that you are registered on the project database by providing your contact details to the EIA consultants. Registration will ensure that you receive on-going communication about the EIA process, meeting invitations, project updates and invitations to review the draft reports.

ANNEXURE 3: LIST OF REGISTERED IAPs

NAME	CONTACT DETAILS
Mary Kabuku	0812365189
Robert Mapenzi	0818287449
C. Mubita	0812748177
George	0812517833
Willem Schutz	0811293070
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