



OUHOLAMO

Trading & Environmental Solution CC

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED
OKALAGO PIGGERY ESTABLISHMENT IN OKANYA VILLAGE,
OMUSATI REGION NAMIBIA.



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LIST OF ABBRECIATIONS

TERMS	DEFINITION
OTA	Ongandjera Traditional Authority
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
DEA	Department of Environmental Affairs
HDPE	High-density polyethylene
PPPPs	Projects, Plans, Programmes and Policies
NDC	Namibia Development Consultants
SANS	South African National Standards
I&APs	Interested and Affected Parties
PM	Particulate Matter

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1. INTRODUCTION

Okalago Piggery proposes the construction of the caretakers' house, construction, and operation of the piggery farm at Okanya Village, Okahao Constituency, Omusati Region Namibia. The production process will be taking place in building block A, which will be made up of Farrowing ward with 18 bays and 20 other stalls that will be divided into: 6 recovery stalls, and 14 mating stalls. Each of the mating and recovery stalls will have the capacity to host 4 (four) sows or 2 (two) boars. Maternity stalls only, will accommodate 1 (one) birthing saw at a time. Given this restriction, all production planning will be conducted to accommodate the bottleneck. The site of the proposed project is **2ha**.

Ouholamo Trading & Environmental Solutions has been appointed to conduct an Environmental Impact Assessment and Environmental Management Plan (EMP) for the proposed Okalago Piggery Farm establishment project at Okanya Village, Omusati Region Namibia. The study will investigate the biophysical and socio-economic, environmental issues relating to the proposed project. The Environmental Impact Assessment is conducted to meet the requisites of Namibia's Environmental Management Act (No. 7 of 2007). See locality map **Figure 1**.

In terms of the Namibian environmental legislation (Environmental Management Act (No. 7 of 2007)), an EIA is required to obtain an Environmental Clearance Certificate from the Ministry of Environment, Forestry and Tourism (MEFT) before the project can be approved.

1.1. Objectives of the EIA

The objective of EIA is to foresee the potential environmental problems that would arise out of a proposed development and address them in the project's planning and design stage. The EIA process should then allow for the communication of this information to:

- ❖ The project proponent.
- ❖ The regulatory agencies; and,
- ❖ All stakeholders and interested groups.

2. TERMS OF REFERENCE

The proposed project proposed Okalago Piggery, in Okanya Village, is a listed activity that cannot be undertaken without an Environmental Clearance Certificate. Therefore, as part of the commissioning process an Environmental Impact Assessment (EIA) is required. Thus, the Okalago Piggery appointed Ouholamo Trading & Environmental Solutions to provide consultancy services to undertake an environmental impact assessment compliant to Environmental Management Act (2007).

The Terms of Reference (ToR) for the consultants are, but not limited to the following:

- The collection of all possible data on the environmental, social and natural resource components and parameters of necessity;
- A description of the location of the proposed project including the physical area that may be affected by the project activities;
- Description of the design of the proposed project;
- Description of the activities that will be undertaken during the project construction, operation and decommissioning phases;
- Listing of the materials to be used, products and by products, including waste to be generated by the project and the methods of disposal;
- Identification of the potential environmental impacts of the proposed project and
- The mitigation measures to be taken during and after implementation of the project;
- Accidents during the project cycle;
- Establishment of a plan to ensure the health and safety of the workers and neighboring communities;
- Identification of the economic and socio-cultural impacts of the proposed project;
- Economic and social analysis of the project including project risk and measures to mitigate them.
- Establishment of an action plan for the prevention and management of possible (EMP).
- The consultant will prepare recommendation on the project for its future use.

3. SCOPE

A Scoping Report was produced by Ouholamo Trading & Environmental Solution cc July 2024 following a public participation process, site investigation and consultations with certain relevant stakeholders. The report includes full details of the public participation activities and all the issues and concerns raised by the Interested and Affected Parties. There was considerable support for the project, particularly from the people of Okanya, who were looking for employment opportunities and better living standard in a way that the proposed project will bring other services and improve their living standards. It was apparent from the public participation that many of the public accepted/ welcomed the proposed project and that their concern was as to when the project commences, for them to start forwarding their applications.

EIA thus has three main functions:

- ❖ To predict problems,
- ❖ To find ways to avoid them, and
- ❖ To enhance positive effects.

The potential environmental impacts and associated social impacts were identified and addressed in this report. Below are the project activities for the two phases of the project which are namely the construction and operational phase.

The construction phase of the proposed Okalago Piggery will involve:

- The preparation of the site.
- Earthworks and excavations for the trenches for foundations, the effluent dam as well as canals to transport wastewater; no blasting required.
- Transportation of materials supply with road transport trucks.
- Off-loading of materials
- The constructions of the buildings and other substructures
- The constructions of bulk services infrastructures such as water, solar power lines connections and sewage (Septic).
- The supplying of bulk services such as water, power, waste disposal plan and waste management

The operational phase of the proposed Okalago Piggery will involve:

- The maintenance of the site by the proponent.
- Breeding, feeding and maintenance of pigs for commercial sale.
- Loading and offloading of pigs.
- Maintenance of the piggery and associated infrastructure.

- Repair work when required.
- Storage of the solid waste for use as fertilizer on farm fields or for purchase by local farmers
- Storage and treatment of the liquid wastewater fraction; and
- Re-use of the liquid wastewater fraction as a source of plant nutrients (organic fertilizer).
- Overall, all services infrastructure once constructed, the proponent will maintain them with the assistance of the Constituency Council or the Regional Council as well as Private Service Providers were possible.

4. METHODOLOGY OF THE EIA

Ouholamo Trading & Environmental Solution has been appointed by Okalago Piggery to prepare the EIA Report. The team used both secondary and primary data during the preparation of the EIA Report.

The EIA study has been conducted and the present report prepared based on the information provided by the Okalago Piggery as well as all possible secondary information and data collected from all relevant sources and from the field through observation, primary data collection, and public consultation. The following general methodology was used in this EIA of the proposed project in Okanya Village, Omusati Region Namibia; to investigate the potential impacts on the social and natural environment due to the construction and operation of the proposed development:

During this process, the following steps have been followed:

Activity	Description
Establishment of the environmental baseline	This chapter involved the study and the descriptions of the existing characteristics of the environment on which the proposed project is to be implemented. It then involved a site visit, physical inspection of the study of the area soil, biology, topography, animal species, water resources, climate and the local socio-economic environment.
Impact analysis	This is the main stage and involved a detailed identification, prediction and evaluation of the potential environmental and social impacts of the proposed project. The impacts of the project were analyzed for the construction, operation and the decommissioning phases.

Impacts mitigation	This chapter involved identification of mitigation measures to be undertaken for the identified negative impacts at all stages of the project phases. An EMP was made as framework for mitigation of impacts and environmental monitoring.
Review of alternatives	This entailed a review of the alternatives to the proposed project. This was aimed at determining better ways of avoiding or minimizing environmental impacts while still realizing the project goals. The review of alternatives provided opportunities for environmental enhancement. The alternatives reviewed were alternative sites, alternative designs and the no project alternative.
Public Participation Process (PPP)	PPP was done by conducting stakeholder's consultations, immediate project neighbors, and interested parties were also consulted and involved in the EIA. Newspaper adverts were placed in two (2) local newspapers. Advert notices requesting all Interested and Affected Parties to raise concerns on the project appeared in New Era newspapers (On 20 th & 27 th May 2024). A public consultation meeting was held at Okanya Village at the subject area on the 01 st of June 2024 from 09:00am.
Preparation of the report	This report was prepared in accordance with the EIA terms of reference and to comply with Namibia's Environmental Assessment Policy, Environmental Management Act (No. 7 of 2007) with its 2012 EIA Regulations

Table 1: Steps followed on EIA Methodology

5. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

The following are the legal instruments that govern or advocate the construction and operation of the proposed project:

5.1. The Namibian Constitution

The Constitution of Namibia encourages wise and sustainable use its resources. According to Article 95 of Namibia's Constitution provides that the State shall actively promote and maintain the welfare of the people by adopting policies aimed at the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources in a sustainable way for the benefit of all Namibians, both present and future.

Article 95 of Namibia's constitution stipulates that:

“The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the following:

(l) management of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future; in particular the Government shall provide measures against the dumping or recycling of foreign nuclear and toxic waste on Namibian territory.”

This article recommends that a relatively high level of environmental protection is called for in respect of pollution control and waste management.

5.2. Environmental Assessment Policy (1994)

The environmental assessment policy details the principles of achieving and maintaining sustainable development that underpin all policies, programmes and projects undertaken in Namibia. This is related in particular, to the wise utilization of the country's natural resources, together with the responsible management of the biophysical environment, which is intended to benefit both present and future generation. The policy also provides guidance on undertaking the assessment procedures.

It further provides a guideline list of all activities requiring an impact assessment. The proposed development is listed as a project requiring an impact assessment as per the following points in the policy:

- Transportation of hazardous substances & radioactive waste.
- Storage facilities for chemical products.
- Activity 5.1 (d) Land Use and Development Activities
- Activity 7 Agriculture and Aquaculture Activities
- Activity 11 Other activities

Activity description and No(s):	Description of relevant Activity	The portion of the development as per the project description that relates to the applicable listed activity
5.1 (d) Land Use and Development	The rezoning of land from the use for nature conservation or zoned open space to any other land use.	The proposed project includes the rezoning of land from Undetermined to Agriculture.
7. Agriculture and Aquaculture Activities	The construction and operation of Piggery Farm.	The proposed project includes the the establishment of a Piggery Farm which falls under the Agricultural Activities.
11. Other Activities		

Table 2: List of triggered activities identified in the EIA Regulations which apply to the proposed project.

The policy provides a definition to the term “environment” - broadly interpreted to include biophysical, social, economic, cultural, historical and political components and provides reference to the inclusion of alternatives in all projects, policies, programmes and plans. Cumulative impacts associated with proposed developments must be included as well as public consultation. The policy further requires all major industries and mines to prepare waste management plans and present these to the local authorities for approval.

Apart from the requirements of the Draft Environmental Assessment Policy, the following sustainability principles need to be taken into consideration, particularly to achieve proper waste management and pollution control:

5.3. Cradle to Grave Responsibility

This principle provides that those who manufacture potentially harmful products should be liable for their safe production, use and disposal and that those who initiate potentially polluting activities should be liable for their commissioning, operation and decommissioning.

5.3.1. Precautionary Principle

There are numerous versions of the precautionary principle. At its simplest it provides that if there is any doubt about the effects of a potentially polluting activity, a cautious approach should be adopted.

5.3.2. The Polluter Pays Principle

A person who generates waste or causes pollution should, in theory, pay the full costs of its treatment or of the harm, which it causes to the environment.

5.3.3. Public Participation and Access to Information

In the context of environmental management, citizens should have access to information and the right to participate in decisions making.

5.4. Environmental Management Act of Namibia (2007)

The Environmental Management Act, No.7 of 2007 specifies the environmental assessment procedures to be followed and the activities that require an EIA. The Act provides a procedure for environmental assessments as indicated under Part VII and Part VIII, which is set out to:

- ❖ better inform decision makers and promote accountability in decisions taken;
- ❖ strive for public participation and involvement of all sectors of the Namibian community in the environmental assessment process;
- ❖ take into account the environmental costs and benefits of proposed policies, programmes and projects;
- ❖ take into account the secondary and cumulative environmental impacts of policies, programmes and projects; and
- ❖ Promote sustainable development in Namibia, and especially ensure that a reasonable attempt is made to minimize the anticipated negative impacts and maximize the benefits associated with the development.

5.5. Environmental Management Act Regulations (2012)

The Environmental Management Act Regulations have been finalised (February 2012) and have been used as guidance in the compilation of this scoping and EIA reports. Namibia's Environmental Assessment Policy was the first formal effort in the country to regulate the application of environmental impact assessment. The regulation set out the

process to be followed during the compilation of EIA reports as well as the minimum requirements for such reports.

5.6. National Heritage Act No. 27 of 2004

The Heritage Act of 2004 makes provision for the developer to identify and assess any archaeological and historical sites of significance. The existence of any such sites should be reported to the Monuments Council as soon as possible. The Council may serve notice that prohibits any activities as prescribed within a specified distance of an identified heritage/archaeology site.

5.7. Water Resource Management Act on Namibia (2004)

The Water Resources Management Act, No.24 of 2004 provides for the management, development, protection, conservation, and use of water resources; to establish the Water advisory Council, the Water Regulatory Board and the Water Tribunal; and to provide for incidental matters.

Section 25 imposes an obligation on the Minister responsible for health to ensure that the water supply is healthy and safe.

5.8. Pollution Control and Waste Management Bill (guideline only)

The proposed development at Okanya Village, Omusati Region Namibia in reference to the above, only applies to Parts 2, 7 and 8 respectively.

Part 2 states that no person shall discharge or cause to be discharged any pollutant to the air from a process except under and in accordance with the provisions of an air pollution licence issued under section 23, and also further provides for procedures to be followed in licence application, fees to be paid and required terms of conditions for air pollution licences.

Part 7 stipulate that any person who sells, stores, transports or uses any hazardous substances or products containing hazardous substances shall notify the competent authority, in accordance with sub-section (2), of the presence and quantity of those substances.

The competent authority for the purposes of section 74 shall maintain a register of substances notified in accordance with that section and the register shall be maintained in accordance with the provisions.

Part 8 provides for emergency preparedness by the person handling hazardous substances, through emergency response strategies.

5.9. Atmospheric Pollution Prevention Ordinance of Namibia (No. 11 of 1976)

Part 2 of the Ordinance governs the control of noxious or offensive gases. The Ordinance prohibits anyone from carrying on a scheduled process without a registration certificate in a controlled area. The registration certificate must be issued if it can be demonstrated that the best practical means are being adopted for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process.

Regulated by the Ministry of Health and Social Services

5.9.1. Hazardous Substances Ordinance (No. 14 of 1974)

The Ordinance applies to the manufacture, sale, use, disposal and dumping of hazardous substances, as well as their import and export and is administered by the Minister of Health and Social Welfare. Its primary purpose is to prevent hazardous substances from causing injury, ill-health or the death of human beings.

Regulated by the Ministry of Health and Social Services

5.9.2. Public Health Act (Act 36 of 1919)

Section 111 makes provision that requires the local authorities to take measures for the prevention of water pollution. Section 119 provides that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.

Section 120 requires local authorities to take measures for maintaining their district at all times in a clean and sanitary condition and for preventing the occurrence therein of, or for remedying or causing to be remedied, any nuisance or condition liable to be injurious or dangerous to health.

Various forms of nuisances are set out in section 122. For present purposes the following are most relevant:

- a) any dwelling or premises which is or are of such construction or in such a state or so situated or so dirty or so verminous as to be injurious or dangerous to health or which is or are liable to favour the spread of any infectious disease;
- e) any accumulation or deposit of refuse, offal, manure or other matter whatsoever which is offensive or which is injurious or dangerous to health;
- g) any public building which is so situated, constructed, used or kept as to be unsafe, or injurious or dangerous to health;

- k) any area of land kept or permitted to remain in such a state as to be offensive, or liable to cause any infectious, communicable or preventable disease or injury or danger to health;
- i) any chimney (not being the chimney of a private dwelling) sending forth smoke in such quantity or in such manner as to be offensive or injurious or dangerous to health;
- n) any other condition whatever which is offensive, injurious or dangerous to health.

The local authority may serve a notice on the author of the nuisance. Should the author refuse or fail to comply the local authority must approach a magistrate to lodge a complaint where upon the latter is required to issue a summons on the author to appear before court.

6. NEED FOR THE PROJECT

The proposed development falls under agricultural activities, which are aimed at enhancing food security, promoting environmental sustainability, and creating economic opportunities for residents. Operating a piggery farm can create economic opportunities for the local community and eradicate poverty by providing jobs to unskilled, semi-skilled, and skilled people from Okanya Village, Okahao, and Omusati Region.

The concept of promoting agricultural development in Okahao will diversify the local economy, reducing its reliance on a single sector. This diversification enhances the resilience of the community, making it less vulnerable to fluctuations in global markets. By encouraging agricultural entrepreneurship and innovation, Council can foster a dynamic business environment and attract skilled individuals who can contribute to the growth and prosperity of Okahao. Additionally, the presence of agricultural activities can enhance the quality of life in Okaho, promoting healthier lifestyles and creating a sense of pride and identity within the community.

Furthermore, in 2012, the Meat Board of Namibia approved the "Pork Market Share Promotion Scheme." In addition to safeguarding the industry from the importation of cheap pig products, the scheme aims to encourage local swine meat production. The scheme also aims to ensure Namibia's access to a consistent supply of pork meat in the event of disease outbreaks in the countries from which it imports pork. With this regard, our nation ought to promote and safeguard regional pig farming. With this background, the proponent intends to operate a pig farm at Okanya Village in Okahao, Omusati Region, in order to supply quality local pork meat.

7. DESCRIPTION OF THE PROPOSED PROJECT

The project will consist of three (3) phases, namely the construction phase, operational phase and possible decommissioning phase.

7.1. Locality of the project

The proposed Project which is the construction and operation of the piggery farm is situated in the Okanya Village, which is 8km out of Okaha town, in the Okahao Constituency in Omusati Region. The proposed project site is approximately 2ha and the proposed land site is undeveloped land but earmarked for Piggery Project. The coordinates for the proposed project are Latitude: 17.81885° S and Longitude: 15.08454° E. See locality map (Figure 1).



Figure 1: Locality Map of the Project

7.2. Land and project ownership

According to the Certificate of Registration of Customary Land Right Certificate No. OMUCLB-CLR-040033, the ownership vests with Mrs. Dhiginina Anna Ileka, who gifted her daughter Stella Ndapanda Ileka a portion of **2 ha** on her land parcel of **9.8 ha**.

The property is located within the communal jurisdiction of the Ongandjera Traditional Authority, and all relevant permissions have been obtained as attached hereto; see **Appendix E**. The proposed site land is allocated to the proponent by the Ongandjera Traditional Authority for the provision of Pig Farm.

7.3. Proposed project details

The proposed development will entail the following activities:

- The construction of the caretakers' house, construction and operation of the piggery farm consisting of the units in the table below and the layout plan is attached in **Appendix B**;

TYPE OF STALLS	NUMBER (UNITS)
Farrowing ward	18 (Bays)
Recovery stalls	6
Mating stalls	14
For sows	12
For boars	2
Total stalls (exc. maternity)	14
Total stalls (inc. maternity + recovery)	26

The production process begins with acquiring the initial production stock of 4 (four) boars and 48 (forty-eight) sows. These 52 pigs are housed in build block A, where they occupy 14 of the mating stalls. Climbing takes place over a 2-week period where each boar is placed into a stall of 4 sows. By the end of the two-week period all 4 shows in each stall will be in gestation. Given that there are 4 boars, and each is placed individually into a stall of sows, by the end of each climbing period there will be 16 (sixteen) pregnant sows. This process repeats itself 3 times to ensure all 48 sows are pregnant. There is a 2-week gap in between each climbing session, to ensure that each group of 16 sows is 2-weeks ahead or behind the next group in terms of gestation period.

Once pregnant, the sows are kept in their stalls undisturbed, where they are fed a specific diet of xx feed until the start showing signs of labor. Sows are in gestation for 3-months, 3-weeks, and 3-days (about 15 weeks). Each group of 16 sows.

Sows are moved to the maternity stalls after 15 weeks or when they display signs of labor. They will be kept in the maternity ward for two weeks before being transferred to the recovery stalls where they will spend another 2 weeks. Each sow is expected to give birth to an average of 8 piglets, however there are cases where they have had more and at times less. Therefore, the model assumes 8 piglets as the base case, 10 as the bull case, and 6 as the bear case. The production process assumes 8 piglets from each sow, thus 128 piglets per group of 16 sows. Therefore, there will be a total of approximately 384 piglets by the end of the birthing cycle. After two weeks in recovery, the sows are moved back to the initial mating stalls where they are given more time to recover and are fattened with a specific diet. While the piglets are moved to build block B, where they are sorted into feeder stock or breeding stock. They stay here for two complete weeks before boars are placed in the stalls of the newly fattened sows for mating, and the process repeats itself again. Each sow only participates in two birth cycles before it is moved out of production to be slaughtered.

A new batch of 48 of the best breed piglets are selected from the first cycle of piglets each year and breed to replace the sows who complete their second cycle of production.

To prevent the spread of disease, particularly from older to younger pigs, the pigs will be separated into different homes based on their growth stage. By separating pigs at their different stages of growth, it will be easier for the farmer to disinfect breeding facilities once all the stock has moved on to the next facility. The feeding and management requirements will be made simpler with this batch system.

7.4. Description of the site

Okalago Piggery proposes the construction of the caretakers' house, construction, and operation of the piggery farm at Okanya Village, Okahao Constituency, Omusati Region Namibia. The production process will be taking place in building block A, which will be made up of Farrowing ward with 18 bays and 20 other stalls that will be divided into: 6 recovery stalls, and 14 mating stalls. Each of the mating and recovery stalls will have the capacity to host 4 (four) sows or 2 (two) boars. Maternity stalls only, will accommodate 1 (one) birthing saw at a time. Given this restriction, all production planning will be conducted to accommodate the bottleneck. The site of the proposed project is **2ha**.

The following are the characteristics of the site observed during the site visit:

- It was observed that the slope of the site is relatively flat.
- No characteristics of ground slope instability were observed on site.
- No ground or surface water was encountered during the site investigation.
- No erosion was evident during the investigation.
- Medium excavations can be expected but no blasting operations are fore seen.
- The proposed subject area is currently undeveloped but clearly shows disturbances by animals and human activities, no much clearing of vegetation will occur.

7.5. Photographic History of the Site

Below are the photographs indicating the general situation and environment of the proposed site and its surrounds.



Figure 2: *vegetation on site*

7.6. Services and management

7.6.1. Accommodation

Accommodation facilities for staff members will be constructed, however, during the construction phase, a temporary campsite consisting of tents and portable water will be established.

7.6.2. Electricity

Solar panels will be installed, and this will be used as a source of energy.

7.6.3. Water

Water will be sourced from the rural water supply pipeline of NamWater, the subject area will have its own water meter.

7.6.4. Storm water

The proposed site is currently vegetated with grass and shrubs but undeveloped. The vegetation is inferred to have led to a high infiltration of surface water and therefore very little evidence of erosion was noted during the site visits. As the site is currently undeveloped and, in a village, there is no formal stormwater management system evident. The layout design is largely informed by the existing topography and does respect the drainage lines (iishana) accommodating the sub-regional flood occurrences. The subject area is located on the higher lying and developable land.

7.6.5. Waste Management (Solid Waste Management)

The construction and operational phase of the proposed activity will result in the generation of general and hazardous waste. The construction phase will generate general solid waste (rubble, cement bags, general domestic waste etc.) which will be disposed of at the approved dumping site of the Okahao Town. Construction phase activities will generate hazardous waste such as empty chemical containers and oil rags. These will be disposed of by a Private Service Provider at the nearest permitted landfill site.

Animal carcasses should be properly managed and quickly disposed of in order to prevent the spread of disease and Oduors and avoid the attraction of vectors.

7.6.6. Effluent and Manure Management

The effluent emanating from the piggery will be managed in such a way that the flooring in the pig houses will be slatted and spilt feed, and water, urine, and faeces will fall through the slats into concreted underfloor channels. The flooring will be hosed regularly to dislodge dried manure. Furthermore, to remove effluent from the sheds, the under-floor channels will be flushed or drained to the septic system on a regular basis. The effluent is then pre-treated by removing some of the solids. The liquid component is to be pumped to the pond to be treated before the effluent is evaporated.

7.6.7. Outbreak of piggery diseases.

At the Okalago Piggery, the management will be inspecting mortalities daily and recovering them where necessary. The management must ensure that all mortalities are removed from the pig houses daily and stored in an enclosed area prior to being taken to the carcass pit. Each of the mortality is to be placed in the pit and be covered with sawdust or straw.

7.6.8. Mortality Management

The expected mortality rate at the Okalago Piggery is not assessed. However, a carcass pit of a 3m in diameter and 3 meters deep will be constructed on the site next to the effluent dam. It will be designed in line with a liner to minimize seepage.

7.6.9. Biosecurity

The piggery will be fenced and will have one access point to control entry into the facility. Disinfectant sprayers will be installed at the entrance to the piggery to disinfect all vehicles entering the farm.

7.6.10. Blasting

No blasting is required since the area is relatively flat and sandy.

7.7. Activities during the Construction Phase

Activity	Description
Site clearance and fencing	This will involve clearance of the vegetation that is currently found on the proposed site. The site will then be isolated for public safety and for the security of construction material and equipment.
Site Office	The contractor shall construct a temporary site office to run and manage all activities at this phase.
Excavation	This will involve excavation of the ground for the pipe working and constructions of bulk services and buildings and other substructures as per the engineering drawings. This will use appropriate excavation equipment.
Construction of buildings	Based on the proposal of the proponent, this will entail the construction of the caretakers' house and construction of the piggery house with components that include:- <ul style="list-style-type: none"> ➤ Constructions of dwelling units, ➤ Sewage reticulation (Septic) ➤ Solar panels installations ➤ Portable water supply network ➤ Associated piping work and many more
Installation of bulk services	This involves the installations of all the bulk infrastructure such as water supply, power supply and sewage.

Table 3: Activities during the Construction Phase

7.8. Activities during the operation and maintenance phase

The proponent will run the piggery farm and the sale of pigs on the site on a daily basis and will be responsible for the maintenance of the site during the operational phase, such as waste management on site from the generation stage to the storage stage and the arrangement of waste disposal from the site, noise pollution control, light pollution, and being responsible to train employees on saving water, saving energy, safety, as well as technical maintenance of the afore-mentioned services. The proponent will also be responsible for the maintenance of the stormwater network within the site.

7.9. Activities at the decommissioning phase

In this stage of the development, there will be no need for demolishing the project as there are no mineral resources which might lead to the demolishing of the project and replace it with a mine. Therefore, the development of this project would not be affecting any of the locals in a negative way.

8. CONSIDERATION OF ALTERNATIVES

The following alternatives have been considered and addressed in the EIA process:

8.1. Site alternative

The site is located within an area which is generally suitable for this type of operation. The environmental footprint is expected to be minimal as the project location is already disturbed by animal grazing, undeveloped and earmarked for proposed development. The possible impacts on the project location, both environmental and socio-economic, are of such a nature that they can be mitigated through good practice. Hence, no other sites have been considered.

The following reasons justify the use of the proposed site for the development:

- The land is allocated to Okalago Piggery; therefore, the proponent has already acquired the consent from the Traditional Authority with the purpose to construct and operate a piggery farm/project (See Consent letter attached) and is now in the process of registering the land parcel to acquire the certificate of the land at the ministry hence, the proponent is applying for the ECC. That means is less complexity to get lease of the site.
- The proposed change in land use was found to be ideal for the proposed development for the recreational facilities and conference facilities.
- No red data recorded on the proposed land which might hinder the development on the proposed land.
- The proposed land is s 2.1 ha; therefore, there is adequate space for the proposed development on the land.
- The proposed site is located at a very suitable location that will avoid problems associated with traffic system and that no closure of the road is expected.
- It will create job opportunities for the local community in both construction and operational phases in terms of domestic work of taking care of pigs and piglets, and the technical maintenance which will improve their skills.

8.2. No-go alternative

The no project option is the least preferred option from the socio-economic and partly environmental perspective due to the following factors:

- The option of not proceeding with the project retains the status quo, but with potential loss in transformation and employment opportunities and revenue generation and related social benefits, which could potentially be generated from the development.
- The site would remain in its current state (Vacant), undeveloped and underutilized with mixed dry Mopane Shrubs and grass, and far from the local community thereby providing no immediate or indirect social benefit.
- No employment opportunities will be created for the locals who would work on the project.
- The local skills would remain underutilized.
- Leaving it in its current situation is not an option.

9. NATURAL ENVIRONMENT

9.1. Climatic conditions

The climate of the subject area can be described as a semi-arid climate prevailing (Köppen climate classification BWh), with very hot summers and extremely warm winters (with warm days and cold nights). The average annual temperatures are usually more than 22°C, with average maximum temperatures between 34°C and 36°C and average minimum temperatures between 6°C and 8°C (Mendelsohn, Jarvis, Roberts, et al., 2002). The subject area generally experiences more rainfall than the south and west of the country with an average rainfall of 350 to 550 mm.

9.2. Topography, Geology and Soils

The Omusati Region forms part of the Kalahari Group Geological Division. The Kalahari Sequence forms a blanket of unconsolidated to semi-consolidated sand covering most of the area. The soils within the area are dominated by deep Kalahari and Namib sand that mostly occur in the formation of sands and other sedimentary materials, while the clay sodic sands dominate in the Oshanas (Robertson, Jarvis, Mendelsohn, & Swart, 2012).

9.3. Hydrology, Surface Water Resources and Drainage System

Namibia is an arid country with low rainfall and high evapotranspiration. The only permanent rivers are along the northern and southern borders. Across the country, surface waters are ephemeral after seasonal rainfall, with many of them dammed.

In terms of groundwater, the subject area falls within the Cuvelai-Etosa groundwater basin. The hydrogeological Cuvelai Basin comprises the Omusati, Oshana, Ohangwena, and Oshikoto Regions and parts of the Kunene Region (Ministry of Agriculture Water and Rural Development, 2011). The Cuvelai Basin consists of thousands of drainage channels or oshanas which flow during the rainy season. The oshanas are “shallow, often vegetated and poorly defined, interconnected flood channels and pans through which surface water flows slowly or may form pools depending on the intensity of the floods (“efundja”)” (Ministry of Agriculture Water and Rural Development, 2011).

The Cuvelai Basin is the most densely populated areas in the country with most communities living in rural areas largely dependent on agriculture (Ministry of Agriculture Water and Rural Development, 2011). The villages and towns located within the Cuvelai Basin are supplied with water from the Calueque Dam, north of the Angolan border, via an extensive system of canals and pipelines. “Water stored in the Calueque Dam on the Kunene River just north of the border is pumped via a canal to the Olushandja Dam in Namibia, from where it is gravity fed via a concrete-lined canal to Oshakati” (Ministry of Agriculture Water and Rural Development, 2011).

Because surface water is only available during the rainy season, people rely on other water sources during the dry season. As such groundwater is sourced in the region through dug wells and boreholes.

9.4. Vegetation Cover

The vegetation of the Omusati Region is classified into four physiographic regions;

- The Etaka-gzuvelai Drainage Basin north of Tsandi which is a palm savanna with open grassy drainage depressions.
- The Western Sandveld area having a gentle undulating character, covered by bush savanna,
- The Elc_uma girassveld vegetation and
- The Kallfeld terrain with its suppressed and diffuse drainage system and edible grass cover.

The vegetation on site consists of grass and few scattered Mopane trees/shrubs around the site. The project site is currently undeveloped, with disturbances from animal grazing. Refer to chapter 7.

9.5. Fauna and Flora

The Omusati Region falls within the broader Tree-and-Shrub Savanna biome and forms part of the Acacia Tree-and -shrub Savanna sub-biome. The Acacia Tree-and -shrub Savanna sub-biome is characterized by large, open expanses of grasslands dotted with Acacia trees (Mendelsohn et al., 2002). The trees within this biome are tallest in the east where they grow in deeper sands and become more shrub-like to the west where they grow in shallower soils. The indigenous trees found within the region include Makalani Palm Trees (*Hyphaene petersiana*) and Mopane Trees (*Colophospermum mopane*). The Makalani Palm and Mopane trees are protected tree species and should thus not be removed. If removal is required a permit needs to be obtained from the Ministry of Agriculture Water and Forestry prior to removal. Trees protected under the Forestry Act 12 of 2001 should be protected within the layout of the proposed development.

The proposed site was visited on the 01 May 2024, and examined for any possible traces of red data or endangered species. It was observed that the proposed site is generally covered with grass and few scattered Mopane trees/shrubs around the site, (see vegetation photo on the historical photos). However, no red data noted / recorded during the site visit, therefore it was decided that it is unnecessary to include an ecological specialist study in the report. There are no protected species onsite that needs to be preserved and be made part of the development. No endangered species were observed present on site; therefore, no significant fauna and flora were found to be located within the development area.

10. BASELINE INFORMATION

10.1. Demographics

According to the Namibia 2011 Population and Housing Census the total population in Omusati is estimated to be 243,166 with 133,621 females and 109,545 males (NPC, 2011). Furthermore, the population density is 9.1 persons per km² and the Human Poverty index (HPI) is 32.0 compared to National HPI of 24.7. Ninety four (94 %) percent of the population lives in rural areas and six (6%) percent live in urban areas. Life expectancy is 60 years for females and 55 years in males, resulting in most houses being head by females at 55% and the remainder by males at 45%. The population was divided into 20988, with an average size of 3.6 persons. Most (96%) of the households residing within the Omusati Region speak Oshiwambo (NPC, 2011). However, OvaZemba and OvaHimba people are native to the area of Ruacana.

According to the Population Census of 2011, the population of the Okahao electoral constituency was at 17,548 people of which 1,600 people reside in the town. Although the urban population of Okahao is very small the actual number of people served by the town is high due to migration of people from nearby constituencies. The majority (51%) of the population are people at the age between 15-59 years old. This same group of people also represent the labour force of Okahao constituency of which 63% are employed while 37% are unemployment (Population Census, 2011).

10.2. Education Profile

The Omusati Region is well placed with regards to academic rates in the whole of Namibia. According to (EMIS, 2012) there are 140 Primary schools, 105 Combines school and 28 Secondary schools in total. The percentage literacy rates for persons older than 15 years in the Omusati Region is 82% compared with that of Namibia which is 81%. There are 274 schools altogether, where 267 are state owned and 7 privately owned and other schools there 1 owned by the state. From the 86,430 learners 84,555 are enrolled in public schools while the remaining 1,875 attend private schools. Only 94 of all 3,632 teachers in the Omusati Region are without training. The Omusati Region is known to yield exceptional results when it comes to academic ratings in the country, most schools offer quality education to the young ones as from primary to high schools. The Region

has one tertiary institution (UNAM Ogongo campus) which provides knowledge and skills in terms of agriculture.

10.3. Employment Opportunities

By the year 2011, 58% of the population older than 15 years were employed and 49% unemployed. The population outside the labour force comprised of students, homemakers and retired or old age persons.

10.4. Income

According to the 2011 censuses, the subsistence farming and labour migration were considered the primary livelihood sources of many households. The majority of the employed population (58%) are employed in the formal sector making Wages and Salaries 25% the main source of income in the region. Pensions 31%, Non-farming business 10%, Cash Remittance 5% and farming 22% is the means of survival for the rest of the population.

10.5. Economic activities

There has been immense commercial and administrative growth in Omusati Region. Omusati is commonly an agricultural region, with both cropping and livestock farming, with the sector employing more than 50% of economic active population. The trade and service sectors in the urban areas provide employment outside the agricultural sector while manufacturing occurs only on a small scale. However, the main economic activities are centred around agriculture and retail trade, public services such as cuca shops, open air butcheries, mechanical land panel beating workshops, shoemakers, woodcarving and leather works. These are popular Open Markets to be found in most towns and villages, while many traders find this an excellent facility to meet their clientele. Modern supermarkets, restaurants, general shopping facilities, pharmacies, private medical facilities schools and other support services are also available in the Region. The proclamation of settlements, which is a priority with the MRLGH, encourages private entrepreneurs to invest in the region. Therefore, the Omusati Regional Council assists small farmers in obtaining access to markets to sell agriculture produce on the open market. There are large salt pans in this region. These Salt pans are resources that can be developed into a major source of income to the Region. These pans consist of the large alkaline and saline content.

The Omusati region has various agricultural activities, mainly the irrigation crop farming projects. Examples of these are Etunda Irrigation Scheme (large scale commercial farming), Olushandja Horticultural Producers, Omahenene Agriculture, Ogongo UNAM Agriculture Projects. The Etunda Irrigation Scheme is the large-scale commercial farming in the region that was initiated by the government of Namibia in 1993 with the aim of increasing food production through irrigation to create jobs opportunities and to create wealth. All these activities have improved both the economic and social stance of the Region.

10.6. Health Profile

Omusati region has four district hospitals, (Okahao, Oshikuku, Outapi and Tsandi) six health centres and 40 clinics and 124 Outreach points. Namibia is one of the ten worst affected countries in terms of the HIV/AIDS epidemic. According to the 2013 Namibia Demographic and Health Survey (NDHS), in Namibia, it is estimated that 14% of adults aged 15-49 and 16.4 % of those ages 50-64 are infected with HIV. Furthermore, the 2014 National HIV Sentinel Survey (NHSS) estimated that amongst pregnant women attending Antenatal Clinics (ANC) in Namibia, the overall prevalence was 16.9% which shows a reduction from 18% in 2012 (NARPR. 2015). The HIV Prevalence rate among men in Namibia age 15-49 was 10.9%. According to the 2013 (NDHS.2013), the HIV/AIDS prevalence rate among adult pregnant women in the Omusati region is 17.4%. The 2013-2014 HIV Prevalence rate survey report shows that the HIV Prevalence rate among women aged 15-49 in Omusati Region was estimated to be 21.9% (NARPR. 2015).

10.7. Acquisition

Jobs emanating from the construction and operation of the proposed development will be outsourced to small medium enterprises in the Okanya village and in and around Okahao.

11. PUBLIC PARTICIPATION PROCESS

The Public Participation Process (PPP) is an integral part of the EIA process whereby it allows the public to obtain information about the proposed project, to view documentation, to provide input and voice any concerns concerning the project. This section of the report provides details of Public Participation Process (PPP) undertaken in the compilation of the EIA final report. Therefore, in terms of Section 26(1)(h) of the Namibian Environmental Assessment Regulations (2012), it is a requirement to provide details of

the public participation process conducted in accordance with Section 32 of the Environmental Assessment Regulations.

The Public Participation Process (PPP) forms a key component of the EIA process. The following steps were taken during the PPP:

Ouholamo developed an initial I&AP database consisting of key IAPs and authorities. This database was maintained throughout the duration of the process; and I&APs were notified of the process through:

- Placement of an advertisement (in local newspapers (the New Era of the 20th and 27th May 2024);
- The distribution of Background Information Document (BID) during a public meeting on 01 June 2024
- Public Participation Meeting held on 01 June 2024;
- Placement of notices on notice boards;
- Discussions with key authorities and IAPs

11.1. Aim for Public Participation Process (PPP)

The aims for the Public Participation Process are but not limited to;-

- Informing Interested and Affected Parties (I&APs) of the proposed project;
- Identifying issues, comments and concerns as raised by I&APs;
- Promoting transparency and an understanding of the project and its consequences;
- Serving as a structure for liaison and communication with I&APs; and
- Providing local knowledge and input in identifying potential environmental (biophysical and social) impacts and “hotspots” associated with the proposed development.

11.2. Background Information Document

This document provides a short summary of the project and the EIA process. Therefore, a background information document (BID) was prepared and was ready to be distributed to Interested & Affected Parties. However, no body requested for it, and it was only distributed to the relevant identified stakeholders by hand delivery before the meeting day and only one person showed up for the meeting. See a copy of the BID in **Appendix D**

11.3. Compilation of stakeholder database

The first step in the Public Participation Process (PPP) is to identify key stakeholders. A stakeholder database was compiled and the target groups for this project involved, but were not limited, to:

- Neighbouring communities
- General public.

I&APs were encouraged to register their interest in the project from the beginning of the process, the identification and registration of I&APs has been on-going for the duration of the EIA process.

11.4. Notification of I&Aps

The requirements for the notification of potentially interested and affected parties of this application are set out in detail in section 32(2)(b) of the EA regulation. These requirements have been addressed and include;-

- Fixing a notice board at a place conspicuous to the public in English not at the site since it's far from the public.
- Announcement of the public meeting through Oshiwambo National Radio Station
- A word-of-mouth invitation by the Headmen and representatives of the nearby villages inviting the communities.
- Placing advertisements twice in at least one local newspaper.

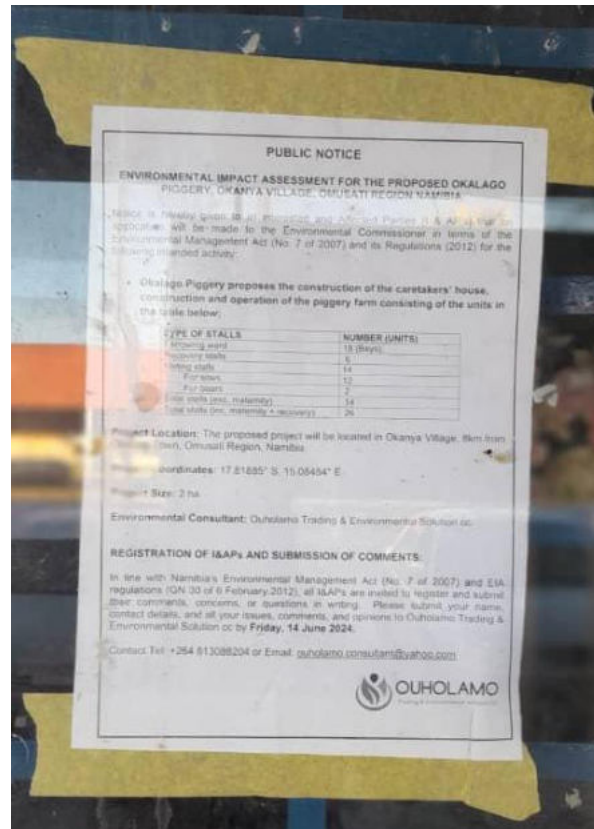


Figure 3: Proof of Public Notice Board Notice

The poster provided background information about the project and gave interested and affected parties an opportunity to forward their issues and comments about the project. No further concerns were received from the general public regarding the development.

11.5. Advertisement

The advertisement of the public participation on the proposed project were placed in the national newspaper, the New Era (dated: 20th and 27th May 2024). Proofs of advertisements are presented in **Appendix C**.

11.6. Traditional Authority Meeting held at Ongandjera TA

The consultation with the Ongandjera Traditional Authority was done during the project initiation phase, through which due information and documentation were provided to the Environmental Assessment Practitioner (EAP). The meeting was attended by various

heads; unfortunately, no minutes were taken, but the project was accepted; see consent letter in **Annexure E**.

Venue	Date	Time
Ongandjera Traditional Authority Meeting Room	12 July 2023	09:00AM

11.7. Public Meeting held at Okanya Village, Okahao

In compliance with the EIA Regulations (2012), public (I&AP) and all stakeholders were notified as a requirement for EIA process. Therefore, to incorporate the varying needs of stakeholders and I&APs, as well as to ensure the relevant interactions between stakeholders and the EIA specialist team, the public was invited to the public meeting at Okanya Village – as per the itinerary below.

Venue	Date	Time
Project site, Okanya Village, Okahao	01 June 2024	10:00AM

Interview questionnaires and comment forms for comments were distributed to the participants who attended the meeting; see **Appendix D**. Despite the questionnaires and comment forms distributed to interested parties, no further comments were received apart from the comments that were discussed in the meeting. However, the duration for comments was extended for the whole month of June, but still no comments were received. A signed meeting attendance register is provided in **Appendix D**.



Figure 4: Public Consultation

11.8. Issues raised by interested and affected parties

Based on the public participation data, it shows that there were no major issues raised by the I & APs in line with the proposed development. The Traditional Authority leaders, general public and all interviewed stakeholders raised no major environmental concerns regarding the development. The public interest in this project is minimal. However, they all welcomed the development and emphasized the need for recruiting local unemployed youth from Okanya village and the surrounding areas in order to eradicate poverty. Despite distributing questionnaires written in both English and Oshiwambo, unfortunately no one filled any of the questionnaire. See **Appendix D** of the sample of the questionnaire distributed. Due to a lack of newspapers in Okanya Village, the mouth-to-mouth process was followed and that resulted in many people attending the meeting.

More positive comments were raised regarding the development that it will solve the unemployed rate in the area. See **Appendix D** (Meeting minutes recording comments & questions raised).

12. ENVIRONMENTAL IMPACT ASSESSMENT

12.1. Methodology used in determining impact significance

Low (L 1-4.9): Where the impact would not have an influence on the decision or require to be significantly accommodated in the project design.

Low to Medium (LM 5-9.9): Where the impact could have an influence on the environment and would require to be significantly accommodated in the project design.

Medium (M 10-14.99): Where the impact could have an influence on the environment, which would require modification of the project design or alternative mitigation.

Medium to High (HM 15-19.9): where the impact would requires serious attention on the modification of the project design or alternative mitigation

High (H 20-25): Where it could have a no-go implication for the project irrespective of any possible mitigation.

The significance of the impact should be determined through the following criteria:

(a) Nature of Impact

This includes a brief description of how the proposed activity will impact on the environment.

(b) Extent

This refers to the geographic area on which the activity will have an influence and can include the following extents:

- ❖ Within immediate area of the activity- within the immediate location of the activity location on the project site.
- ❖ Surrounding area within project boundary- Immediate environs within the Study area/ Project site
- ❖ Beyond project boundary- District
- ❖ Regional – Province
- ❖ National – Country/International

(c) Duration

This refers to the expected timeframe of an impact and can be expressed as:

- ❖ Less than 1 month or quickly reversible;
- ❖ Less than 1 year or quickly reversible;
- ❖ More than 1 year or reversible over time;
- ❖ More than 10 years
- ❖ Beyond life- beyond the project life (Permanent- over 40 years and lasting change that will always be there).

(d) Severity or Intensity

This part describes the level of intensity or severity of the impact in terms of its potential for causing either negative or positive effects and can be described as:

- ❖ Negligible or non-harmful (where no environmental functions and processes are affected);
- ❖ Minor or potentially harmful or measurable (where environmental functions and processes are reasonable); or
- ❖ Moderate/ harmful/ moderate deterioration (where the environment continues to function but in a modified manner).
- ❖ Significant/ very harmful
- ❖ Irreversible (permanent or might cause death)

(e) Probability

This considers the likelihood of the impact occurring and should be described as:

- ❖ 1- Almost impossible (very low likelihood)
- ❖ 2- Unlikely (impact would not occur, if might occur, would be low);
- ❖ 3- Probable (there is a possibility that impact would occur);
- ❖ 4- Highly likely (most likely to occur) or
- ❖ 5- Definite (impact would occur regardless of prevention measures).

(f) Frequency

This considers the probability of the impact occurring as to how often it likely to occur and should be described as:

- ❖ 1- Less than once a year
- ❖ 2- Once in a year (the impact is likely to occur just once in a year)
- ❖ 3- Quarterly (the impact is likely to occur quarterly in a year)
- ❖ 4- Weekly (the impact is likely to occur weekly)
- ❖ 5- Daily (the impact is likely to occur everyday)

(g) Mitigation Measures and monitoring

Where negative impacts are identified, consultants/specialists should set mitigation measures to reduce impacts. If positive impacts are identified, suggestions should be given to enhance those impacts. The specialists should set quantifiable standards against which the effectiveness of the mitigation can be measured. This may include input into monitoring and management programmes (EMP).

Assessment and Rating of Severity

Rating	Description
1	Negligible / non-harmful / minimal deterioration (0 – 20%)
2	Minor / potentially harmful / measurable deterioration (20 – 40%)
3	Moderate / harmful / moderate deterioration (40 – 60%)
4	Significant / very harmful / substantial deterioration (60 – 80%)
5	Irreversible / permanent / death (80 – 100%)

Table 4: Assessment and Rating of Severity

Assessment and Rating of Duration

Rating	Description
1	Less than 1 month / quickly reversible
2	Less than 1 year / quickly reversible
3	More than 1 year / reversible over time
4	More than 10 years/ reversible over time/ life of project or facility
5	Beyond life of project or facility/ permanent

Table 5: Assessment and Rating of Duration

Assessment and Rating of Extent

Rating	Description
1	Within immediate area of the activity
2	Surrounding area within project boundary
3	Beyond project boundary
4	Regional/ Provincial
5	National/ International

Table 6: Assessment and Rating of Extent

Assessment and Rating of Consequence

Consequence is calculated as the average of the sum of the ratings of severity, duration and extent of the environmental impact.

Determination of Consequence (C)	(Severity + Duration + Extent) / 3
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Table 7: Assessment and Rating of Consequence

Assessment and Rating of Frequency

Rating	Description
1	Less than once a year
2	Once in a year
3	Quarterly
4	Weekly
5	Daily

Table 8: Assessment and Rating of Frequency

Assessment and Rating of Probability

Rating	Description
1	Almost impossible
2	Unlikely
3	Probable
4	Highly likely
5	Definite

Table 9: Assessment and Rating of Probability

Likelihood

Likelihood considers the frequency of the activity together with the probability of the environmental impact associated with that activity occurring.

Determination of Likelihood (L) =	(Frequency + Probability) / 2
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Table 10: Assessment and Rating of Likelihood

Environmental Significance

Environmental significance is the product of the consequence and likelihood values.

Rating	Description
L (1 - 4.9)	Low environmental significance
LM (5 - 9.9)	Low to medium environmental significance
M (10 - 14.99)	Medium environmental significance
MH (15 - 19.9)	Medium to high environmental significance
H (20 - 25)	High environmental significance. Likely to be a fatal flaw

Table 11: Determination of Environmental Significance

12.2. Impacts Associated with Construction Phase

Potential effects on the environment and their mitigation measures during construction are:

Waste Impacts- The construction phase of the development is likely to generate waste from clearing of vegetation, builder's rubble, general construction refuses and minor hazardous waste including paint tins, cleaning acids, asphalt's and oils. The development could therefore impact on the environment by generating solid waste pollution.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	3	<ul style="list-style-type: none"> — Ensure that no excavated soil, refuse or building rubble generated on site are placed or dumped on surrounding properties or land. — Contaminated wastes in the form of soil, litter, building rubble and other material must be disposed off at an appropriate disposal site. — The contractor and developer should ensure that all the waste generated by the development is appropriately disposed of at the recommended waste disposal sites close to the area. — Waste handling procedures must be cleared with the Okahao Settlement Council/Omusati Regional Council and the construction contractor should be informed about this. — The contractor should provide an adequate number of waste receptacles for general waste at points around the construction site, and a single collection point for hazardous waste; 	1	Severity
Duration	3		1	Duration
Extent	3		1	Extent
Consequence	3		1	Consequence
Frequency	5		4	Frequency
Probability	4		2	Probability
Likelihood	4.5		3	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	7.5 (LM)		4 (L)	Confidence/ Significance

		<ul style="list-style-type: none"> — Strictly, no burning of waste on the site or at the disposal site is allowed as it possess environmental and public health impacts; — In general, no littering, discarding or burying of any materials are allowed on site and roadways and sidewalks shall be left clear of waste materials. — To avoid contaminating the soil and underground ecosystem, no wastewater should be disposed on soil. 		
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Table 12: Waste Impacts

Air Quality Impacts- These are expected to be site specific, short-termed and will most probably pose a negligible nuisance and health threat to those residing nearby. The construction of the proposed development will have impact on the surrounding air quality as construction vehicle will be frequenting the site and surrounding. The clearing of vegetation in preparation for construction exposes the soil to dust which increases the Particulate Matter concentration in the atmosphere. PM is contributing to respiratory tract infections, especially in rural areas much like the proposed site.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	2	<ul style="list-style-type: none"> — Dust may be generated during the construction/decommissioning phase and might be aggravated when strong winds occur; therefore, dust suppression during the construction process is advised if dust becomes an issue. — Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 40 km/hr should be set for all vehicles travelling over exposed areas. 	1	Severity
Duration	2		1	Duration
Extent	2		1	Extent
Consequence	2		1	Consequence
Frequency	5		1	Frequency
Probability	5		1	Probability
Likelihood	5		1	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	7 (LM)		2 (L)	Confidence/ Significance

		— Loads could be covered to avoid loss of material in transport, especially if material is transported off site.		
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Table 13: Air Quality Impacts During Construction

Noise caused by construction activities- Noise levels are expected to rise during the construction phase of the development. Construction activities that cause noise include vehicle trafficking, generator noise, pressure hammers and construction worker’s voices, including earthmoving equipment which will be utilized during the construction phase.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	3	<ul style="list-style-type: none"> — Construction should be limited to normal working days and office hours from 08h00 to 17h00 and 7:30 – 13:00 on Saturdays. — Provide ear plugs and ear muffs to staff undertaking the noisy activity or working within close proximity thereof or alternatively, all construction workers should be equipped with ear protection equipment. — Noise pollution should be addressed and mitigated at an early stage of construction phase. 	1	Severity
Duration	4		1	Duration
Extent	3		1	Extent
Consequence	3.33		1	Consequence
Frequency	5		1	Frequency
Probability	3		1	Probability
Likelihood	4		1	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	8.33 (LM)		2 (L)	Confidence/ Significance

Table 14: Noise Impacts caused by construction activities

Soil Loss and Erosion- Loss of topsoil during the construction period caused by the clearing and removal of vegetation, the digging of structure foundations, and earthworks may expose soils to wind and rain and could result in localized erosion.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	5	<ul style="list-style-type: none"> — Removal of vegetation to take place only within demarcated construction site. — Topsoil should only be exposed for minimal periods of time and adequately stockpiled to prevent the topsoil loss and run-off. — Planting more indigenous trees on some open spaces within the subject area should be done. — Reuse topsoil to rehabilitate disturbed areas. 	1	Severity
Duration	5		2	Duration
Extent	3		2	Extent
Consequence	4.33		1.66	Consequence
Frequency	5		1	Frequency
Probability	4		3	Probability
Likelihood	4.5		2	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	8.83 (LM)		3.66 (L)	Confidence/ Significance

Table 15: Soil Loss and Erosion Impact during construction phase

Groundwater Contamination – Leakages from equipment and machinery might occur during the construction phase or mixing of cement and the use of toilets all will lead to the contamination of the groundwater.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	5	<ul style="list-style-type: none"> — Chemicals used during construction e.g. paint and paint remover is also posing a risk. Care must be taken to avoid contamination of soil and groundwater. — Ensure no cement or cement containers should be left lying around. — Mixing of cement should be done at specifically selected areas on mortar boards or similar structures to contain surface run-off. — Proper toilet facilities should be installed at the construction site. — The contractor shall ensure that there is no spillage when the toilets are cleaned and that the contents are properly removed from site. — Cleaning of cement mixing equipment should be done on proper cleaning trays. — Prevent spillage of contaminants or of water potentially contaminated by cement, chemicals, sewage 	1	Severity
Duration	4		2	Duration
Extent	4		1	Extent
Consequence	4.33		1.33	Consequence
Frequency	4		5	Frequency
Probability	5		3	Probability
Likelihood	4.5		4	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	8.83 (LM)		5.32 (LM)	Confidence/ Significance

Table 16: Groundwater Contamination Impact during construction phase

Sewage Pollution of environment with waste materials

	Unmitigated	Mitigation measures:	Mitigated	
Severity	4	<ul style="list-style-type: none"> - Adequate sanitation facilities e.g. chemical toilets must be provided at the camp depot and construction site. - Adequate sanitation facilities i.e. 15 employees per facility should be provided. - The toilets should be located at least 50m from the construction site. - They should be kept clean and hygienic regularly to ensure that they are usable. - Effluent must not be discharged into natural environment and bush-toileting is prohibited. — Letter of consent from a registered waste facility to allow contractor to empty the toilet facility at their sewer system should be provided. 	1	Severity
Duration	5		1	Duration
Extent	3		2	Extent
Consequence	4		1.33	Consequence
Frequency	2		1	Frequency
Probability	5		2	Probability
Likelihood	3.5		1.5	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	7.5 (LM)		2.83 (L)	Confidence/ Significance

Table 17: Sewage Impact during construction phase

Ecological Impacts

	Unmitigated	Mitigation measures:	Mitigated	
Severity	1	<ul style="list-style-type: none"> — If trees with stem diameter > 20mm be found within the development site, it should be conserved and be made part of the development. — No known conservation worthy vegetations are located on the proposed site, except trees with stem diameter > 20mm.that is recommended to — No negative impact on the archaeological sites. There is no archaeological and historical site adjacent to the proposed site 	1	Severity
Duration	1		1	Duration
Extent	1		1	Extent
Consequence	1		1	Consequence
Frequency	1		1	Frequency
Probability	1		1	Probability
Likelihood	1		1	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	1 (L)		1 (L)	Confidence/ Significance

Table 18: Ecological Impacts during construction phase

Heritage Impacts – There are no known heritage areas or artefacts were identified at the project site during the site visit. However, there is a potential damage or destruction to undiscovered heritage sites in the area

	Unmitigated	Mitigation measures:	Mitigated	
Severity	5	<p>— There were no sites or objects of archaeological finds, Graves, historical and cultural significance identified, however, if during construction any possible finds are made (e.g. Pottery, bones, shells, ancient clothing or weapons, ancient cutlery, graves etc), it should be barricaded off and the operations must be stopped and the relevant authorities should be contacted immediately for the qualified archaeologist to come and do the assessment of the findings. Work may only commence once approval is given from the heritage agency.</p> <p>— No specific mitigation measures are required at the moment.</p>	1	Severity
Duration	5		1	Duration
Extent	5		1	Extent
Consequence	5		1	Consequence
Frequency	5		1	Frequency
Probability	2		1	Probability
Likelihood	1.5		1.5	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	6.5 (LM)	2.5 (L)	Confidence/ Significance	

Table 19: Heritage Impacts during construction phase

Employment Creation (Positive Impact) this is a job creation and economic benefit to local community since the construction activities associates with the installation of services infrastructure which will require labourers from the surrounding.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	1	<ul style="list-style-type: none"> — Various employment opportunities will be created during all phases of the development, ranging from highly skilled to unskilled. — When recruiting, the responsible contractor should ensure gender equality is taken into consideration that both men and women are employed equally and treated equally. — Equity, transparency, should be put into account when hiring and recruiting and that Public Participation i.e. Community Leaders or Community committees should also take part in the recruiting process for decision makings. — In terms of human resource development and capacity building, the contractor must enforce training programs that skilled workers should always train unskilled workers, when necessary, in order for them to enhance their performances and to gain more knowledge that they might demonstrate at other levels in future. 	1	Severity
Duration	2		2	Duration
Extent	5		2	Extent
Consequence	2.66		1.66	Consequence
Frequency	3		2	Frequency
Probability	5		5	Probability
Likelihood	4		3.5	Likelihood
Status	Positive		Positive	Status
Confidence/ Significance	10.64 (M)		5.81	Confidence/ Significance

Table 20: Employment Creation Impact during construction phase

Stimulation of Skills Transfer

	Unmitigated	Mitigation measures:	Mitigated	
Severity	1	— As the construction and operation of the development requires specialized work and skills it can be expected that experts will be training locals in certain skills during construction and operation.	1	Severity
Duration	2		2	Duration
Extent	1		1	Extent
Consequence	1.33		1.33	Consequence
Frequency	5		5	Frequency
Probability	3		3	Probability
Likelihood	4		4	Likelihood
Status	Positive		Positive	Status
Confidence/ Significance	5.32 (LM)		5.32 (L)	Confidence/ Significance

Table 21: Stimulation of Skills Transfer Impact

Safety and Security- During the construction and decommissioning phase, earthmoving equipment will be used on site. This increases the possibility of injuries. Presence of equipment may encourage criminal activities (theft).

	Unmitigated	Mitigation measures:	Mitigated	
Severity	3	<ul style="list-style-type: none"> — The site must be fenced off to prevent unauthorized access during construction. — All visitors must report to the site office and sign on the visitors' register book. — Ensure that the contact details of the police or security company and ambulance services are available on site. — Strictly, no burning of waste on the site or at the disposal site is allowed as it possess environmental and public health impacts; 	1	Severity
Duration	3		1	Duration
Extent	3		1	Extent
Consequence	5		1	Consequence
Frequency	4		4	Frequency
Probability	4.5		2	Probability
Likelihood	4		3	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	7.5 (LM)	4 (L)	Confidence/ Significance	

Table 22: Safety and Security Impact

Health and Safety- Health and Safety Regulations pertaining to personal protective clothing, first aid kits being available on site, warning signs, etc. is very important and should be adhered to. During construction phase, there is a possibility of injuries to occur if no measures are taken into consideration.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	5	<ul style="list-style-type: none"> — A health and safety plan is to be developed and implemented as soon as land clearing commences. — During construction, earthmoving equipment will be used on site. This increases the possibility of injuries and the responsible contractor must ensure that all staff members are briefed about the potential risks of injuries on site. — Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction. — The contractor is further advised to ensure that adequate emergency facilities are available on site. — The construction staff handling chemicals or hazardous materials must be trained in the use of the substances and the environmental, health and safety consequences of incidents. — All construction staff must have the appropriate PPE. 	2	Severity
Duration	5		1	Duration
Extent	2		2	Extent
Consequence	4		1.66	Consequence
Frequency	5		1	Frequency
Probability	3		2	Probability
Likelihood	4		1.5	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	8 (LM)		3.16 (L)	Confidence/ Significance

Table 23: Health and Safety Impact

Increased Spread of HIV/ AIDS- migrant workers with HIV/AIDS may affect local people leading to a high rate of HIV/AIDS in Okahao.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	5	<ul style="list-style-type: none"> — The spending power of locals and expatriates working for the developer and/or its contractors are likely to increase, and this might be a perfect opportunity for sex workers to explore. Migrant labourers from other regions and expatriates are normally vulnerable and may use the services rendered by the sex workers. — External construction workers should be housed in secure camp and are to abide by rules of the EMP to prevent public disruption (ie. Spread of HIV/AIDS, crime, public disturbance). — Contractors should be encouraged to source labour from surrounding areas to prevent the spread of HIV/AIDS from external workers who will be sourced from other areas out of Okahao because sourcing labour from the surrounding will prevent the spread of the HIV/AIDS as the residents will not be vulnerable to new workers in the area. — Condoms as a contraceptive should be distributed to construction employees. 	2	Severity
Duration	5		1	Duration
Extent	3		1	Extent
Consequence	4.33		1.33	Consequence
Frequency	5		1	Frequency
Probability	3		2	Probability
Likelihood	4		1.5	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	8.33 (LM)		2.83 (L)	Confidence/ Significance

Table 24: Increased Spread of HIV/AIDS

12.3. Impacts Associated with Operational Phase

Employment creation- This is a Generation of local employment opportunities and skills transfer

	Unmitigated	Mitigation measures:	Mitigated	
Severity	1	<ul style="list-style-type: none"> — Give priority to the local communities if and when employment opportunities arise, provided applicants have the necessary skills. — Notify the local community of employment opportunities prior to broader (public) advertisement. — When recruiting, ensure gender equality is taken into consideration that both men and women are employed equally and treated equally. 	1	Severity
Duration	2		2	Duration
Extent	5		2	Extent
Consequence	2.66		1.66	Consequence
Frequency	3		2	Frequency
Probability	5		5	Probability
Likelihood	4		3.5	Likelihood
Status	Positive		Positive	Status
Confidence/ Significance	10.64 (M)		5.81	Confidence/ Significance

Table 25: Employment Creation during Operational phase

Increased water utilization - Namibia is a water scarcity country, therefore, the additional development like this one will increase the water demand.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	5	<ul style="list-style-type: none"> - The proponent will install water-conserving automatic taps or push type taps. - Any water leaks resulting from damaged pipes and/or faulty taps, should be fixed by qualified staff. - High-pressure hoses should be used in the washing of the piggery house, Piggery facilities, and equipment, to minimise the amount of water used. 	1	Severity
Duration	5		2	Duration
Extent	5		1	Extent
Consequence	5		1.33	Consequence
Frequency	5		1	Frequency
Probability	5		2	Probability
Likelihood	5		1.5	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	10 (LM)		2.83 (L)	Confidence/ Significance

Table 26: Increased water utilization

Improved aesthetic look of the area- The development of this project at this site is essential to improve the visual and aesthetics view of the area. This potential impact of the infrastructure on the economic structure is positive impact.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	3	<ul style="list-style-type: none"> — No mitigation required because it's a positive impact. However, the developer should create awareness among the personnel working on the development about energy conservation and other resources as well as to implement measures to prevent or minimize any adverse effects on the environment. — Lighting must be carefully planned and kept to a minimum to enable work to continue. Consideration is to be given to the fact that light at night travels great distances. — Parking areas will be provided with 1 parking bay per 25m². — Ensure proper and regular maintenance of the area. — Good housekeeping and management of the piggery will be critical to prevent waste being strewn across the site and entering adjacent land. — Planting of communities of indigenous plants will enhance biodiversity and improve aesthetics. 	1	Severity
Duration	4		4	Duration
Extent	1		2	Extent
Consequence	2.66		2.33	Consequence
Frequency	5		5	Frequency
Probability	4		5	Probability
Likelihood	4.5		5	Likelihood
Status	Positive		Positive	Status
Confidence/ Significance	7.16 (LM)	7.32(LM)	Confidence/ Significance	

Table 27: Aesthetic look of the area

Geology and Soils- Unregistered fertilizer use of organic wastes on agricultural land can result in contamination build up within soils and water resources.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	2	<ul style="list-style-type: none"> - Re-use of the liquid and solid fractions of the wastewater must take cognisance of Precautionary Practices - Sludge may only be stored in suitable facilities that are designed to ensure minimal impact on the environment. - All organic compost must be registered with the Ministry of Agriculture, Water and Land Reform and meet all the necessary requirements as per the Regulations on the Registration of Fertilizers, Farm Feeds, Sterilising Plants and Agricultural Remedies (GN 112 of 2007). 	1	Severity
Duration	5		1	Duration
Extent	5		1	Extent
Consequence	4		1	Consequence
Frequency	5		3	Frequency
Probability	3		2	Probability
Likelihood	4		2.5	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	8 (LM)		3.5 (L)	Confidence/ Significance

Table 28: *Geology and Soils*

Hazardous Substances and Waste management- The project is expected to generate solid waste during its operation phase. The bulk of the solid waste generated during the operation of the project will consist mainly of organic wastes, packaging wastes amongst others. Such wastes can be injurious to the environment through blockage of drainage systems, choking of water bodies.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	5	<ul style="list-style-type: none"> — The wastewater management system must regularly be maintained and inspected to ensure that it is in working condition. This will prevent the development of leaks — The Pollutant, Microbial and Stability Classes of the wastewater sludge must be established. — The nutrient content of the wastewater sludge must be confirmed before each major planting season by determining — the phosphorous, nitrogen and potassium concentration on at least four composite samples — Each mortality must be placed in the pit and covered with sawdust or straw. — Solid animal waste may only be temporarily stored in designated areas, on impermeable surfaces. — Preparation and Implementation of Waste Management Plan. — Illegal dumping should be prohibited. — Installation of sufficient waste bins skips or bulk containers, where necessary. — All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. — Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. 	1	Severity
Duration	5		2	Duration
Extent	5		1	Extent
Consequence	5		1.33	Consequence
Frequency	5		1	Frequency
Probability	5		2	Probability
Likelihood	5		1.5	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	10 (LM)		2.83 L	Confidence/ Significance

Table 29: Hazardous Substances and Waste management

Storm water, Surface and Groundwater- Storm water usually runs off the areas and flow into the water bodies without any kind of treatment. This can pollute the water bodies like creeks, lakes and rivers and have adverse effects on their chemical as well as biological nature.

In this project, the building roofs and pavements will lead to increased volume and velocity of storm water or run-off flowing across the area covered. This will lead to increased amounts of storm water entering the drainage systems, resulting in overflow and possible damage to such systems in addition to increased erosion or water logging in the neighboring. Poor slurry and effluent management lead to potential soil, surface water and groundwater contamination.

To ensure that there are no adverse effects on the quality of surface and groundwater, the effluent dam must be positioned in accordance with the engineer's specifications. To reduce the possible detrimental effects on surface and groundwater quality, the piggery's wastewater management system, mortality management system, and other management practices must be appropriately implemented. High-density polyethylene (HDPE) membranes are required on the effluent dam in order to confine or prevent waste components and leachate from escaping the proposed waste management facility.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	5	<ul style="list-style-type: none"> — The SWMP must be designed to ensure that run-off arising from operational actions, for example, the washing of vehicles and containers must be regarded as contaminated run-off and shall be treated according to wastewater management requirements. — Ensure that surface run-off water accumulating on-site are channeled and captured through a proper storm water management system to be treated in an appropriate manner before disposal into the environment. — Do not dispose the wash water from cleaning the Piggery facilities into the environment. — Runoff and stormwater must be diverted using berms and trenches. — Wash and sanitize Piggery facilities and equipment with biodegradable soaps and disinfectants. — Use biodegradable soaps and disinfectants in the footbath and showers. — Use biodegradable soaps and disinfectants for washing of vehicles. — Surface water quality monitoring network must include monitoring for the quality of uncontaminated run-off water in stormwater drains on and adjacent to the Site — Surface water and groundwater monitoring must be undertaken throughout the piggery operations — 	1	Severity
Duration	3		2	Duration
Extent	3		1	Extent
Consequence	3.66		1.33	Consequence
Frequency	5		5	Frequency
Probability	5		3	Probability
Likelihood	5		4	Likelihood
Status	Positive		Positive	Status
Confidence/ Significance	8.66 (LM)		5.32LM	Confidence/ Significance

Table 30: Storm Water, Surface and Groundwater Impact

Air Quality- degradation of ambient air quality and nuisance due to odour generation. The operational phase of the piggery will decrease the ambient air quality of the site, thereby potentially affecting the surrounding houses located in proximity to the site. Air emissions from the piggery will include ammonia, methane, nitrous oxide, odours, bioaerosols, and dust. The main sources of odour at piggery operations are poorly maintained pig houses, inadequate housekeeping, and poor management and storage of wastewater (effluent).

	Unmitigated	Mitigation measures:	Mitigated	
Severity	5	<ul style="list-style-type: none"> — Effective housekeeping and best management practices must be implemented. Houses should be cleaned and maintained on a regular basis. — Ventilation points on the piggery houses must be as high as possible to ensure exiting gases enter the air column as high as possible. — Covering the wastewater collection pond can reduce odorous emissions. — Waste spillages should be prevented at all times. — Drains and treatment systems should be well maintained 	2	Severity
Duration	5		1	Duration
Extent	3		1	Extent
Consequence	4.33		1.33	Consequence
Frequency	5		1	Frequency
Probability	3		2	Probability
Likelihood	4		1.5	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	8.33 (LM)		2.83 (L)	Confidence/ Significance

Table 31: Air Quality

Noise Impact- During the operational phase, noise will be generated by pigs, equipment, and transport vehicles. Increased noise levels during the operational phase will potentially result from disturbed or excited animals (eg. pigs that are fed at designated times during the day become excited when the feed wagon approaches). The piggery houses will be solidly constructed and will largely contain noise generated by the pigs.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	5	<ul style="list-style-type: none"> — Maintain vehicles and machinery in good working order — Unnecessary disturbance of the pigs should be avoided — A complaints register should be kept onsite. — Although the facility is in a village, vehicles travelling to and from the site during night-time hours must be kept to a minimum 	1	Severity
Duration	3		1	Duration
Extent	3		1	Extent
Consequence	3.66		1	Consequence
Frequency	5		1	Frequency
Probability	5		2	Probability
Likelihood	5		1.5	Likelihood
Status	Negative		Negative	Status
Confidence/ Significance	8.66 (LM)		2.5L	Confidence/ Significance

Table 32: Noise Impact

Biosecurity- The operational phase of the proposed piggery has the potential to increase pests such as flies, weavils, ants, termites, cockroaches, fleas, lice, mites, ticks, etc. These can be a serious problem as pest carry infectious vectors which can be detrimental to the health of the pigs. Increased pests and spread of vectors associated with poor mortality management has the potential to spread disease leading to secondary impact on adjacent farms.

	Unmitigated	Mitigation measures:	Mitigated	
Severity	1	<ul style="list-style-type: none"> — The feed storage and distribution systems must be designed and maintained in a manner that prevents the presence and breeding of pests — Effective sanitation and housekeeping at the piggery will minimise the area where flies can rest and breed. — Regular flushing of the wastewater from the houses will minimise fly breeding. — Regularly clean the feeding areas and collect wasted feed. This will prevent the attraction of flies to the piggery. — Electrocutation devices are available to kill flies, while other mechanical devices include traps, sticky tapes or baited traps — Mortalities must be inspected on a daily and re-covered where necessary — Mortalities must be removed from the pig houses daily. — Mortalities must be stored in enclosed areas prior to being taken to the carcass pit. — Animal carcasses should be properly managed and quickly disposed of in order to prevent the spread of disease and odours and avoid the attraction of vectors. — Each mortality must be placed in the pit and covered with sawdust or straw. 	1	Severity
Duration	2		2	Duration
Extent	5		2	Extent
Consequence	2.66		1.66	Consequence
Frequency	3		2	Frequency
Probability	5		5	Probability
Likelihood	4		3.5	Likelihood
Status	Positive		Positive	Status
Confidence/ Significance	10.64 (M)		5.81	Confidence/ Significance

Table 33: Biosecurity

12.4. Impacts Associated with Decommissioning Phase

At this point, it is difficult to visualise and assess the decommissioning phase, although the procedures for decommissioning phase should be the same as for the construction phase however, there will be possible pollution the demolition of the project. Furthermore, during the decommissioning phase, an Environmental Impact Assessment (EIA) will be required and the disposal of decommissioned equipment and hazardous contaminated materials should be disposed following the disposal of hazardous material legislation.

13. CONCLUSION

Ouholamo Trading and Environmental Solution cc had conducted an Environmental Impact Assessment (EIA) and prepared an Environmental Management Plan (EMP) for the construction, operation and decommissioning phases of the proposed development.

All potential environmental issues associated with the proposed activities have been identified. A number of potential impacts were assessed, and mitigation measures are provided. The impacts assessed by the EAP have allowed for the development of the EMP report (**Appendix A**). Therefore, they are considered sufficient, and no additional specialist study is required. The area is generally suitable for the proposed development.

The proposed Okalago Piggery facility will have positive and negative impacts on the biophysical and social environment at the site. All environmental risks can be minimised and managed through implementing preventative measures and sound management systems. It is further emphasized that all mitigation measures proposed in this report and the EMP must be implemented during all phases of the proposed project. It is further noted that the EMP must be viewed as a dynamic, working document that will be improved upon as and when required.

It is concluded that the development of this project would not be affecting any of the locals in a negative way. On the contrary there will be abundant opportunities for employment during the construction phase (both skilled and labor), although temporary and there will be permanent employment opportunities during the operational phase of the project. It is then unanimously concluded that the proposed development goes ahead without any objections.

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