agriculture

Department:
Agriculture
PROVINCE OF THE EASTERN CAPE

EASTERN CAPE PROVINCIAL GOVERNMENT

DEPARTMENT OF AGRICULTURE

BID DOCUMENT FOR THE APPOINTMENT OF A PROFESSIONAL SERVICE PROVIDER TO CARRY OUT FEASIBILITY STUDY ON THE DEVELOPMENT OF A 10000 CAPACITY BIRHA BEEF CATTLE FEEDLOT AND HIGH THROUGHPUT ABBATTOIR IN NGQUSHWA LOCAL MUNICIPALITY OF AMATHOLE DISTRICT.

SCMU - 25/26 – 0014B

Terms of Reference for a 10 000 capacity beef feedlot and high throughput abattoir development

1. Introduction

The purpose of this Terms of Reference (ToR) is to define the scope, objectives, and expectations for the technical and economic feasibility in the development and operation of a 10000 capacity beef feedlot and high throughput abattoir at Wesley Village in Ngqushwa Local Municipality. The project involves establishing a facility capable of raising, feeding, and processing cattle for beef production. This ToR will guide the planning, development, and execution phases to ensure that the facility operates efficiently and meets all regulatory, environmental, and operational requirements.

2. Objectives

- To investigate suitability of the identified land parcels on ERF 252 for 10 000 capacity feedlot and high throughput Abattoir and identify potential alternative site.
- To plan, a technical and economic feasibility of a 10 000 capacity beef feedlot capable of housing and feeding cattle efficiently, while ensuring the welfare of the livestock.
- To conduct a feasibility study on establishing a high throughput abattoir for humane slaughtering, processing, and packaging of beef products.
- To ensure the facility complies with all health, safety, and environmental regulations.

- To optimize feedlot operations to ensure sustainability, productivity, and profitability.
- To meet market demands while ensuring traceability, quality control, and animal welfare standards.
- To advise on technical and financial feasibility of a phased approach for development of the 10 000 capacity feedlot and high throughput abattoir

The purpose include undertaking site specific tests on identified land to ensure suitability for a 10 000 capacity feedlot. This involves a series of assessments to ensure the site can support the infrastructure, environmental requirements, and operational needs of a feedlot. Below are the critical factors and tests that should be carried out to assess land suitability for a feedlot:

3. Scope of Work

The project will consist of the following assessment of major components:

3.1. Soil and Ground Conditions

The soil quality and ground conditions will impact the stability of structures, waste management, and cattle welfare.

a) **Soil Composition**:
   - **Test for soil texture** (e.g., sandy, clayey, loamy) to determine the drainage capacity and suitability for the feedlot and related infrastructure.
   - **Soil pH**: Determine if the soil pH is neutral or acidic. Acidic soils may require amendments for proper plant growth for cattle feed.

b) **Soil Compaction**: Assess if the ground is compacted, which could affect drainage and may cause runoff or pooling of water in the pens.

c) **Ground Permeability**: Assess the ability of the soil to allow water to drain. If the soil doesn't drain well, it could lead to muddy conditions, affecting cattle welfare and increasing manure and wastewater management challenges.

d) **Erosion Risk**: Test for soil erosion potential, especially on sloped lands, to ensure that there are no issues with runoff or sedimentation that could pollute nearby water sources.

2. Topography

The topography will affect both the feedlot layout and the management of animal waste.

- **Slope and Drainage**: Ideally, the feedlot should be on land with a gentle slope (about 1-3%) to allow for proper drainage of rainwater and wastewater. Avoid areas with steep slopes to prevent erosion, waterlogging, and runoff issues.
- **Flood Risk**: Assess whether the land is prone to flooding or waterlogging during heavy rainfall, which can affect the health of cattle and compromise the operation of the feedlot.

- **Elevation**: Ensure that the land is not in a low-lying area where water could collect, creating muddy conditions that are harmful to cattle and complicate manure management.

3.2 Water Availability and Quality

Water is essential for both the cattle and the feedlot operation. The availability and quality of water must be carefully assessed.

- **Water Source Availability**: Test for proximity to reliable water sources (e.g., rivers, boreholes,). Both the feedlot and abattoir require significant water for cattle drinking, cleaning, and managing waste. Ensure there's adequate capacity to meet demand Full capacity demand
- **Water Quality**: Test for contaminants, salinity, and the pH of the water to ensure it is safe for livestock consumption. Water testing should include checking for pathogens, heavy metals, and other pollutants that could harm animal health.

- **Water Storage**: Ensure that there's a viable method of storing water, such as water tanks, reservoirs, or boreholes, and that it's easy to transport to various parts of the feedlot and abbattoir.

3.3 Climate and Weather Conditions

Understanding the local climate and weather patterns is essential for designing the feedlot and managing the cattle.

- **Temperature Range**: Assess the typical temperature range of the area. Extreme heat or cold could stress cattle, affect feed consumption, and require additional infrastructure (e.g., shading, cooling systems).
- **Rainfall Patterns**: Understand the rainfall patterns to plan for drainage systems, water storage, and to prevent flooding or excessive runoff.
- **Wind and Storms**: In areas prone to high winds or severe storms, consider building protective structures like windbreaks to shield cattle from stress or injury during inclement weather.

3.4. Access to Transportation and Infrastructure

The feedlot must be easily accessible for both incoming livestock and outgoing products.

- **Road Access**: Ensure the land is accessible by well-maintained roads for transportation of cattle and feed. Roads should be able to accommodate large trucks for transportation of cattle and products.
- **Proximity to Utilities**: Check the proximity to electricity, water, and telecommunications infrastructure. These utilities are essential for feedlot operations (e.g., for lighting, equipment, refrigeration, and communication).
- **Waste Disposal and Management Infrastructure**: Verify access to waste disposal or recycling services for manure and other byproducts. Additionally, consider the possibility of installing on-site waste treatment facilities.

3.5. Environmental Considerations

The factors triggering environmental impact on developing the 10 000 capacity feedlot and high throughput abattoir should be assessed to avoid negative effects on the surrounding ecosystem and ensure compliance with regulations.

- **Environmental Impact Assessment (EIA)**: National Environmental Management Act 107 of 1998. (28) Duty of care and remediation of environmental damage states: (1) Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.

  The service provider is expected to advise on EIA requirements assess how the feedlot and the abattoir might affect local ecosystems, water sources, air quality, and biodiversity. Advise on mitigation strategies for any negative impacts.

- **Waste Management and Manure Disposal**:

  Feedlot and Abattoir owners have a shared responsibility to ensure that their activities do not infringe upon the environmental right of others. It is therefore important that waste is not released into our natural environment, i.e. illegal dumping, burying on farms and discharging untreated effluent into rivers as it may cause pollution, spread disease and overall environmental degradation in communities. The owners must ensure that measures are implemented to prevent any negative impacts on the environment. They can be held liable for corrective action under this legislation.

  Consider the capacity of the land to absorb or manage manure waste, and test if there's enough space for effective manure management. Manure handling and disposal systems should be designed to avoid pollution of nearby environments, communities and water bodies.

- **Meat Safety Act 40 of 2000**

  Section 11 Essential National Standards applies to all abattoirs as follows:

  (1) (i) "no dead animal or animal suffering from a condition that may render the meat unsafe for human and animal consumption may be presented at an abattoir"

  (r) "the treatment, removal or disposal of condemned material, effluent, refuse and emissions must be carried out in accordance with the prescribed (prescribed by regulation) procedures"

- **Structural and Operational Standards**

Abattoirs and slaughterhouses must adhere to specific structural and operational standards to maintain their licences. The service provider is expected to advise on various international, regional, national and municipality standards covering various aspects of facility design, including the construction materials used, the layout of processing areas, and the provision of adequate ventilation and drainage systems. The aim is to create an environment that minimises the risk of contamination and promotes efficient processing.

3.6. Zoning and Regulatory Compliance

Ensure that the land is zoned for agricultural or industrial use, and check for any regulatory or planning restrictions.

- **Land Use Zoning**: Verify that the land is suitable for agricultural use and specifically for livestock farming. Check local regulations regarding livestock management and animal welfare.

3.7. Proximity to Markets and Suppliers

Assess the location of the feedlot and abattoir areas in relation to proximity of suppliers of feed, equipment, and veterinary services, as well as to target markets for beef products.

- **Assess Feed Supply Availability**: Proximity to feed suppliers and service providers for maintenance and equipment could reduce operational costs. Investigate the availability and costs of feed supplies within the proximity of the Wesley area.
- **Market Access**: Consider the transportation routes to markets or processing facilities for beef products. Proximity to these markets can reduce costs associated with transporting cattle and beef products.

3.8. Biodiversity and Livestock Health

Assess the presence of other livestock in the area, as well as the potential for disease transmission between farms.

- **Health of Surrounding Livestock**: Check the general health status of nearby livestock to ensure the feedlot will not be exposed to diseases. Advise on biosecurity measures as needed to protect cattle health.
- **Biodiversity Considerations**: Ensure that local flora and fauna are not negatively impacted by the feedlot.

3.9 Feedlot and abattoir layouts

- **Site Assessment and Selection**: Identify suitable land consideration factors like topography, climate, water availability, and accessibility.
- **Infrastructure Requirements**: Design the layout for pens, feeding areas, water supply systems, waste management, and livestock handling facilities.

- **Capacity**: Define the number of cattle the feedlot is designed to house, taking into account future expansion possibilities.
- **Feed Management**: Advise on systems for managing cattle nutrition, feed storage, and feedlot health.
- **Water and Waste Management**: Design sustainable water management systems and waste disposal processes, including manure management and recycling methods.

3.10 Abattoir layout

- **Site Layout**: Develop a clear layout for entire value chain that include but not limited to slaughtering, processing, chilling, carcass disposal, waste handling and disposal and packaging areas.
- **Health and Safety Compliance**: Ensure the facility complies with all applicable animal welfare, hygiene, and safety standards.
- **Slaughtering Equipment**: Identify the necessary equipment for humane slaughtering, stunning, and processing of beef.
- **Waste Management**: Establish systems for handling blood, offal, and other byproducts.
- **Packaging and Storage**: Design refrigerated storage and packaging areas to maintain product quality and comply with food safety regulations.
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3.12 Operational and Management Systems

- **Staffing Requirements**: Define the workforce needs for managing the feedlot, abattoir, and related operations.
- **Training and Development**: Develop a training program for staff to ensure that they adhere to best practices in animal welfare, processing, and hygiene.
- **Health and Safety Protocols**: Create standard operating procedures for worker safety, including the handling of livestock, machinery, and chemicals.
- **Quality Control Systems**: Establish protocols for monitoring and ensuring the quality of beef products, including traceability from farm to consumer.

5. Marketing and Sales Value Chain

This chain covers the promotion and sale of beef products.

a) **Market Research**:

- Identifying consumer trends and demand for specific beef products (e.g., grass-fed, organic, premium cuts).
- Competitive analysis of pricing and product differentiation in the beef market.

b) **Branding and Promotion**:

- Developing branding strategies to distinguish the beef products in the market.
- Marketing efforts including advertising, public relations, and digital marketing.

c) **Sales Channels**:

- ❖ Wholesale distribution to supermarkets, butcheries, and restaurants.
- ❖ Direct-to-consumer sales through online platforms or farmers' markets.
- ❖ Export opportunities if applicable, depending on the region and product certifications.

d) **Customer Relationship Management**:

- ❖ Building relationships with large buyers (supermarkets, restaurants) and individual consumers.
- ❖ Feedback systems to improve product quality and customer satisfaction.

6. Waste Management and Environmental Sustainability

nsures the facility operates sustainably and minimizes its environmental footprint.

a) **Manure and Waste Handling**:

- ❖ Collection and management of manure from the feedlot.
- ❖ Composting or using manure for biogas production or as organic fertilizer.
- ❖ Wastewater treatment and runoff management.

b) **Byproduct Disposal and Recycling**:

- ❖ Disposal of non-marketable byproducts like bones, hides, and offal, ensuring compliance with waste management regulations.
- ❖ Recycling of packaging materials, including plastics and cardboard used in meat distribution.

7. Finance and Administration

Advise on the financial and management processes needed to ensure the smooth operation of the beef feedlot and abattoir project.

a) Financial Planning and Budgeting:

- ❖ Developing a detailed budget for the construction and operation of the feedlot and abattoir.
- ❖ Cost estimation for feed, labor, equipment, utilities, and waste management.
- ❖ Securing financing or investment to support the project.
- ❖ Formulate a phase development model for the feedlot and abattoir

9. Deliverables

- ❖ Site Assessment and Feasibility Report
- ❖ Feedlot and abattoir layout designs
- ❖ Environmental and Regulatory Compliance Requirement
- ❖ Operational and Management Plan
- ❖ Budget and Financial Projections of feedlot and abattoir developmental stages
- ❖ Risk Management and Contingency Plans
- ❖ A detailed timeline and project schedule

7. Budget and Timeline

- **Budget**: A detailed budget will be developed, covering construction costs, equipment procurement, staffing, and operational expenses.
- **Timeline**: The project is a flagship multi-year project. The service provider is expected to provide project phases with an estimated timelines for economic phased development until full operational capacity is realised.
- **The feasibility report from this exercise will map the unfolding of all the preceding activities as such the feasibility study is required in 4 months to allow appointments of other design stages.**

Monitoring and Evaluation

- Regular stakeholder progress reports will be conducted monthly.

9. Risk Management

- **Identification of Potential Risks**: Risks related to environmental impacts, regulatory changes, animal welfare issues, and operational delays.
- **Mitigation Strategies**: Development of contingency plans to address identified risks.

10. Conclusion

This Terms of Reference serves as the foundational document guiding the development of the 10 000 capacity beef feedlot and high throughput abattoir. The project must ensure that all regulatory, operational, and environmental requirements are met, while also maximizing efficiency and profitability. Regular progress reviews will ensure that the project remains on track.