

TANZANIA FISH PROCESSORS LIMITED

P.O.BOX-3001, MWANZA, TANZANIA



FEEDLOT BUSINESS

PLAN

KIBEHE - CHATO

Executive Plan

Tanzania has **32.2** million Cattle, **20** million Goats, **5.5** million Sheep and **2** million Pigs. Other livestock include **38.5** million local chickens and **40.6** million improved chickens. During the financial year 2011/2012 - 2018/2019 the production of Meat increased from 532,711 tons to 690,629 tons (MLF, 2019). The main breeds of beef Cattle include: Tanzania Shorthorn Zebu characterized by small size mature body weight (200-350Kg); Longhorn Cattle such as the Ankole which characterized by large mature body weight (500-730 kg) and the Boran which has a large body weight (500 - 800 kg). The Country accounts for about **1.4%** of the global cattle population and **11%** of the African cattle Population (FAO, 2014). The main livestock types are Cattle, Goats, Sheep, Pigs, Chickens and Donkeys. Despite of abundant resources and large number of livestock base, the rate of meat export is growing slowly.

Realising the potential of livestock industry in the country, TANZANIA FISH PROCESSORS intends to fatten cattle in pens/feedlots. Cattle will be purchased from the local farmers and transported to our farm which is located at Kibehc village close to the Chato town. We will then feed the cattle for a period of 90 days. During this period, we expect the cattle to increase in weight, and an increase in the quality of the beef to super grade. Therefore by feedlotting we can produce export quality, safe and healthy meat of consistent quality. We will continuously do this throughout the year.

Mission, Objectives and Keys to success

Mission

Our mission is to provide super grade beef and healthy fattened cattle to our local and export market customers at affordable prices. We value our relationships with current and future customers and hope to communicate our appreciation to them through our outstanding, guaranteed product quality, personal service, and efficient delivery. Our commitment to our customers and our country will be reflected through honest and responsible business. We will provide a safe, friendly working environment for our employees.

Vision

To produce high quality of beef that can be exported as well as marketed throughout Tanzania.

Core Values

- Customer satisfaction
- Commitment to achieving results
- Sustainability
- Corporate Social Responsibility
- Employment Creation
- Innovation
- Integrity

Objectives

- To demonstrate that export quality, safe and healthy meat of consistent quality can also be produced using our indigenous or other locally available cattle.
- To ensure that meat produced from Tanzania cattle can be exported and thereby importation can be minimized thus saving the foreign exchange.
- To motivate, sensitize and train the pastoralists of local community for economically viable feed lot business.
- To demonstrate them practically that feedlotting is achievable and implementing this practice they can generate an indirect employment for themselves and also for others.
- To demonstrate that feedlotting can improve the economic efficiency of their cattle business as feedlotting can achieve the marketable weight of cows in reasonable time irrespective of seasonal constraints.
- To create a central fair trading place where local livestock growers can bring, sale and buy the cattle directly to us at transparent price without interference of middle men.
- To create a multipurpose hub in Chato area which will serve pastoralists as a training and information center
- To establish a local pathological lab where we as well as local livestock growers can get their cattle diagnosed for diseases.
- To provide alternative source of income to local community by offering them to grow the grass for cattle on our land at free of cost and selling the grass back to us on reasonable agreed price.
- To promote local grass and fodder growers by providing them a ready market for selling their grass and fodder grown by them

Keys to Success

- Purchasing good breeds of cattle
- Giving the cattle high quality feed

- Providing the required medication and vaccination to cattle
- Purchasing cattle at a low price
- Minimizing feed cost

Company and Ownership

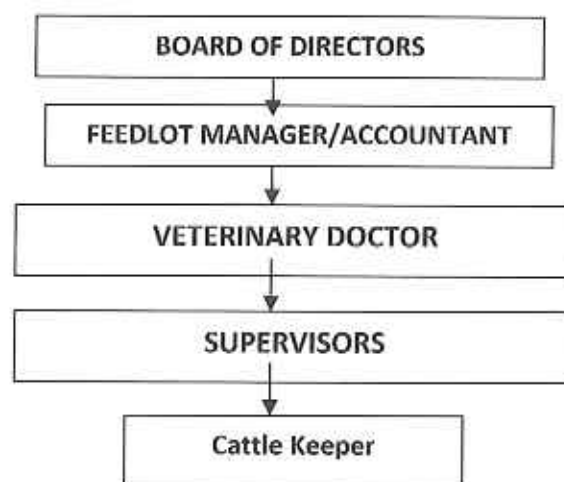
Tanzania Fish Processors Ltd, a part of Alpha Group with Mr. Karim S. Kurji, Mr. Arif S. Kurji and Mr. Ganesan Vedagiri as Directors, was incorporated in 1992 with the sole purpose of processing and exporting premium quality Nile Perch fillets all over the world.

Our company intends to fatten cattle in feedlots. Cattle will be purchased from the local farmers in the lake zone and transported to our farm which is located at Kibehe village which is almost 10 km from the Chato town. We will then feed the cattle for a period of 90 days. During this period, we expect the cattle to increase in weight, and an increase in the quality of the beef to super grade. We will then sell the cattle, and make a profit. We will continuously do this throughout the year.

Products

Our end products will consist of many species of high grade fattened cattle. We will manage our cattle systematically, in feedlots, feeding them with quality, nutritious feeds, till they reach the target weight.

Company Structure



Board of Directors

The board of directors' key purpose is to ensure the company's prosperity by collectively directing the company's affairs, whilst meeting the appropriate interests of the owners of the company. They determine the company's vision and mission to guide and set the pace for its current operations and future development.

Manager

One person will act as the manager and accountant. This person will be the owner of the business.

The duties will include:

- Staff management, supervises and coordinates activities of all the workers, assigns workers to duties
- Directs maintenance and repair of facilities and equipment at the farm
- Trains new workers
- Day-to-day operational decisions
- Business planning and operations, strategic planning, business management
- Giving employees their salaries
- Prepare, examine, and analyze accounting records, financial statements, and other financial reports to assess accuracy, completeness, and conformance to reporting and procedural standards.
- Analyze business operations, trends, costs, revenues, financial commitments, and obligations, to project future revenues and expenses or to provide advice.
- Develop, maintain, and analyze budgets, preparing periodic reports that compare budgeted costs to actual costs.
- Compute taxes owed and prepare tax returns, ensuring compliance with payment, reporting and other tax requirements.

Veterinary Doctor

- Examine the animal at time of procurement
- Regular monitoring of livestock health to ensure that all animals receive time sensitive care
- To maintain required hygienic and bio-security standards at farm
- To formulate high performance feed formulation and administration
- Examine and treat animals
- Weekly cattle sampling and analysis of reports
- Prevent and control of diseases in the farm
- Administration of required vaccine, worm treatments, flea and tick treatments and other aspects of preventive care
- Postmortem inspection in case of mortality of cattle
- To train new Veterinary Assistants and other members of the support staff
- To motivate , sensitize and train farmers /Local growers for feedlot practices

Assistant Veterinary Doctor

- Assist Veterinary Doctor to examine the animals at time of procurement.
- Regular monitoring of livestock health to ensure that all animals receive time sensitive care
- To maintain required to hygienic and bio-security standards at farm
- To examine and treat sick animals under Veterinary Doctor supervision
- To participate in weekly cattle sampling and report analysis
- To supervise feed preparation, storage and distributions in the farm.
- To assist Veterinary officer during administration of required vaccine, de-worming ,flea and ticks control and other aspects of preventive care
- To assist Veterinary Doctor to perform postmortem inspection in case of mortality of cattle
- To motivate, sensitize and train the farmers /local growers for feedlot practices

Cattle Keepers

Duties include:

- Feeding the cattle
- Miscellaneous chores which includes include medicating, vaccinating, repairing equipment, mowing grass, removing caked litter

Understanding Cattle Fattening

Feedlotting (also called pen fattening) involves the feeding of beef cattle with a protein balanced, high-energy diet for a period of 70 to 100 days under confinement to increase live weights and improve degree of finish and thus obtain better grades at the abattoir. Pen fattening enables the animals to express fully their genetic potential for growth. It also enables the profitability of beef production to be maximised, provided the beef price to feed cost ratio is favourable.

The aim of pen feeding is to transform feed into meat of a required quality as efficiently as possible. The best measure we have of this in the live animal is food conversion efficiency/ratio (FCE/FCR) i.e. kg of feed per kg live weight gain e.g. if 8Kg of feed leads to 1 Kg live weight gain of the cattle, then the FCR is 8:1. The lower the FCR, the more profitable you become.

It is important to emphasize the efficiency of feed use as if you subtract the induction cost of the animal; food constitutes some 90% of the remaining variable costs. So together with the slaughter price of the animal, feed has the major influence on the profitability of your feedlot operation.

Reasons for Pen fattening

Reasons for pen fattening can be summarised as:

- To add extra weight to stock at a younger age and thus increase turnover and maximize output from the beef enterprise
- To improve the degree of fatness and fleshiness (finish) of the carcass in order to achieve higher grades and better prices
- To take advantage of seasonal beef price fluctuations at the abattoirs.
- To improve the meat texture

The basic principles of pen fattening: A beef carcass comprises muscle, fat and bone. At birth, there is very little fat in a carcass and initial development is mainly bone and muscle growth. As the animal matures and gains mass, a stage is reached when fat deposition accelerates. Once an acceptable level of carcass fat is reached, an animal is said to be finished and can be

slaughtered. The live mass and fat content considered acceptable for slaughter should be decided by market demand.

Feeding energy is the pacesetter for meat production and performance in the feedlot exercise. Energy consumed in excess of maintenance requirements is used for muscle tissue synthesis (beef production), and the efficiency of energy use above maintenance remains constant. Hence the greater the energy intake by an animal above maintenance the smaller the maintenance cost per unit of gain and the cheaper the gain becomes.

Generally as the digestibility of feed increases, so does the voluntary feed intake up to certain limits. The combined effects of high digestibility and high intake, together with higher net efficiency, means the efficiency of use of energy will be greater if cattle are fed ad lib with diets of high digestibility or a high level of metabolisable energy (ME). Total feed consumed, net digestive efficiency, cost per unit of feed and return per kilogram of meat sold, other management costs and the optimum length of the feeding period determines margins realised.

Feeding cattle in order to obtain the right amount of fat on and in the muscle, and a higher carcass mass, can be done in many ways. The most common practices include:

1. Grazing on veld. Usually steers have to remain on the veld until they are two years or older before a suitable carcass fat content is reached. Cows are frequently fattened on good summer veld and achieve good finish in a reasonably short period of time.
2. Planted pastures can be used for fattening and growing out animals and the growth rates achieved are better than on veld. The most common practice is the use of annual ryegrass, where weaners go on to the pasture at weaning in autumn and are ready for market by Christmas. Although summer pasture can be used, this practice is often not successful because feeding starts in spring when the price of feeders is relatively high and finished animals are only ready in autumn, when beef prices are relatively low.
3. The majority of cattle marketed through abattoirs come from feedlots. These include: On-farm feedlots. Many farmers fatten animals in pens or large paddocks, using bought-in or home-grown feeds. The livestock can be home produced or purchased animals.

4. Commercial feedlots are probably the major method of finishing livestock. The feedlotter, often a speculator, buys animals for the feedlot. Ownership of the animal, and therefore the risk associated with feeding, are the responsibility of the feedlot owner. There are also custom feedlots, where the feedlot operator does not buy animals, but the owner of the animal sends them to be fattened e.g. to Montana Meats. In the latter case, risk usually remains with the owner of the animal

Operational Requirements

Feedlots

A beef cattle feedlot/pen is a confined yard area with watering and feeding facilities where cattle are completely hand or mechanically fed for the purpose of beef production. Feeding is done under confinement to prevent loss of energy through movement.

Why confine cattle within pens?

The confinement of cattle is fundamental for the operation of beef feedlots for the following reasons.

- The confinement of animals within feeding pens improves control of the environmental impacts of cattle.
- Feedlots are constructed to allow efficient collection of manure and effluent and provide protection to surrounding land, surface and ground water resources.
- The confinement of cattle permits the close health inspection of animals on a regular basis, and the removal of ill or injured cattle for treatment.
- The confinement of cattle allows the efficient provision of feed and water.

The feedlot must provide for:

- The proper construction and maintenance of facilities to high standards and the employment of full time, well trained and sufficient personnel.

- The correct siting of the feedlot to meet the needs of the confined animals for proper shelter from the weather. A well drained, hard standing surface and a constant supply of suitable and sufficient food and water.
- Consulting of veterinarians experienced with feedlot animals whose instructions regarding the maintenance of animal health and welfare must be followed.
- Sick animals to be quickly identified and isolated in proper sick bay facilities with appropriate treatment instituted.
- Special facilities for the proper care and handling of offspring born to confined mothers
- Constant monitoring of food quality, palatability, and disease processes.

Design and Layout

Proper housing is important in successful cattle fattening operation. Adequately protect animals against the adverse effects of weather when they are raised in relatively small areas. The TFP feedlot is covering 249 acres of land. Out of which 20 acre is used for the construction of sheds, open liarage, cow loading- unloading, quarantine, post-mortem, condemnation, biogas, office, laboratory, water treatment, feed godown and staff residential area. The remaining area is used for growing grass. The permanent type of housing consisting of roofing, metal frames, concrete floor, feed trough and water troughs are used in most farms. The shelter is open-sided and is located near the farm manager house. Shed height 4 meters while the length is 30 meters and width is 6 meters. There is also an open liarage covering an area of 100x 100 meter. In this 100x 100 meter area there are 8 feed troughs each of 100 meter length. Each animal can be allocated with 5 to 10 square meters. Cattle housing must offer very easy access to food and water, freedom of movement, ventilation that prevents harmful effects from poor air quality and natural ventilation and light.

The floors for the fattening pens must be smooth but not slippery. Housing must include a clean and dry area with ample bedding of straw or other suitable material. Feet problems are less severe in straw yards, mastitis tends to be a great problem that in cubicle-housed cows. If the straw yard system is chosen, best possible straw yard management should be implemented with frequent clearing of yards (maximum 5weeks) and plentiful bedding, with dry straw, both

mornings and evenings. Appropriate design of yards, avoiding dampness and contamination from water troughs and narrow entry points, is equally important.

Basically, the design and layout of the feedlot depends on permanency, size of operation, method of feeding and feed supply. It must be sited close to feed stores, handling facilities and water supplies. The feedlotter must also consider drainage by sitting on a 2% slope or on rocky ground and where there are windbreaks. A roof is not usually necessary, except over the feed troughs to prevent wetting of the feed in rainy weather and bleaching and loss of vitamins in hot sunny weather.

Space Allocations

A floor space allocation of 5-10 square meters/head is ideal depending on size and breed. Feeding space allocation should be 30-50cm/head depending on whether the animals are poled or horned. Feed must be offered free choice and at least 50l/head of drinking water must be available. A water reserve that carries 2-3 days supply must be installed in case of pump or borehole failure. Water troughs must be easy to clean, have a drain plug and sited far away from the feed to prevent fouling of the water. It can be economic to have several pens drinking from the same water trough.

Operational Strategy

Filling the Feedlot

Feedlot managers must be aware of the fact that keeping a feedlot enterprise running, a continuous income is needed. The only way this can be achieved is by having livestock to sell all the time. This is a difficult part of feedlotting, because animals remain in a feedlot for 90 to 120 days. The feedlotter must therefore predict market demand, and consequently predict selling price at least three months ahead. A continuous source of feeders is needed, but not always available.

Livestock can be obtained directly from farmers or be bought by private treaty through an agent or at livestock auctions. Where a buy-in feedlot system is used, buyers must be experienced in evaluating the potential for fattening of different types of animal (maturity type, age, gender) in relation to the market demand (price) of different grades of carcass. Funds to buy in animals

must be available at all times. A lack of funds to buy in animals when prices are favourable could lose an opportunity to make a profit. You need very good negotiation skills, so that you buy the cattle at a low price. If you are not careful, you will make a loss before you even start fattening the cattle.

Size of Feedlot

There is not an optimal size for a feedlot. In the case of a large enterprise where its sole source of income is the feedlot, the feedlot must be large enough to pay for running costs such as salaries, transport, cost of equipment and so on.

Choosing Cattle (Feeders) for feedlots

There are many factors to consider when choosing cattle for feedlots.

Breed

British and continental breeds (Angus, Sussex, Hereford, Charolais and Limousine) and their crosses are better performing in the feedlot compared to the Zebu types. It should also be noted that some breeds fatten earlier (Hereford and Angus compared to Charolais and Sussex) and should be slaughtered before they get too fat. Most native breeds also perform well for cattle fattening.

Sex

Females are earlier maturing than steers and steers in turn are earlier maturing than bulls. Bulls can do well in feedlots, but often cause problems by fighting. Females can do well in feedlots, but often have poor growth rates partly because they reach carcass finish at an earlier age and there is a tendency to be tardy in sending them for slaughter. Disruptions caused by females coming on heat could be a contributory factor. Heifers consume slightly less feed than steers and are about 7 % less efficient. They finish sooner and their corresponding minimum mass should be approximately 10% less than for steers. Bulls and short scrotum bulls grow faster, are most efficient and grade better than steers. This is provided they are sold at milk tooth.

Age

Animals can be placed in the feedlot at any age, usually after weaning. In practice animals tend to arrive at feedlots shortly after weaning (7 to 9 months of age), as yearlings (12 to 18 months of age) or at two and a half years of age. In most feedlots there is no differentiation in feeding

regime between animals of different ages and it has been found that irrespective of the age, animals tend to gain about 150 kg and are then ready for slaughter. Cattle placed on high energy rations at an early age tend to deposit fat more rapidly than if they are kept on low energy diets for a time before being placed on a high energy ration.

Arrival

On arrival at the feedlot animals must be processed. Processing varies from feedlot to feedlot, but usually includes:

- Dose and dip. Dipping is essential, but many people question the need to de-worm animals arriving at a feedlot. A positive response to dosing is often not seen, possibly because many farmers dose their animals before selling them.
- Supplementation of animals prior to putting them in the pens will get them used to eating concentrates and boost animal growth to achieve target induction masses.
- Vaccinate all animals against botulism, anthrax, quarter evil, IBR and any other diseases the veterinarian considers essential in the area where the feedlot is situated.
- Administer growth promotents. These have been shown to be highly cost effective. Injecting Vitamin A is usually worth the nominal cost involved.
- Identify and number the animals for record keeping purposes.
- On arrival at a feedlot it is good practice to group animals according to size and sex. Large animals tend to bully smaller animals and keep them away from feed troughs.
- The initial weight of animals should be recorded, preferably after 7 to 10 days in the feedlot. At this time, careful observation can identify poor performers and these can, at a next weighing which ideally takes place two to three weeks later, be culled if the mass gains confirm the earlier observations.
- Horned animals are a problem. Dehorning sets an animal back a great deal. Leaving animals with horns can lead to severe losses resulting from damage to other animals and

bruising. It is best to refrain from buying in animals that have not been properly dehorned.

Feeding System

Many feedlot operators mix their own ration, usually a complete feed, using the most readily available ingredients at the best price they can bargain for. Where home-produced feeds are available at low cost e.g. silage, the profitability of a feedlot can be improved.

Other feeding systems include:

- Buying in a complete feed. If large volumes of feed are bought, a better price can be negotiated. This option must always be investigated, especially when beef prices are good and ingredients are difficult to obtain. Cost of transport often offsets gains made on the feed price.
- Cafeteria feeding systems have been developed and have the advantage that the animal selects an increasingly concentrated diet over time, which leads to greater efficiency of feed utilization. The two cafeteria systems commonly used are the finisher feed system and the PRAM (protein-roughage-additive-mineral) system. To ensure profitability, many big feedlots employ a nutritionist who reformulates the ration or feeding system continuously. A nutritionist can buy ingredients and formulate the cheapest ration in relation to animal performance by monitoring markets continuously.

Home-made Feed

This section is important to those who might want to consider making their own feeds, in order to reduce costs, and increase profitability of the cattle fattening business. It is beyond the scope of this business plan to provide you a formula for home made feeds. You will have to consult a nutritionist. It is of great importance for your home made feeds to contain all the nutrients needed for fattening the cattle, in the right proportions.

Energy levels and sources

The energy level of the diet should be as high as economically possible. Ideally it must be in the region of 70 to 80 % Total Digestible nutrient (TDN) (10.5 to 12 MJME/kg on dry matter basis).

Maize is the most commonly used source of energy in this country. For convenience and to provide roughage, it is fed in the form of snap corn containing 75 to 83 % grain. Generally, the performance of animals on diets containing different energy feeds will be closely related to the energy content of the diets assuming it is correctly balanced in other respects. Sorghum can be used and taken to be 89 % maize value. The white varieties are better than the reds. The choice of the feed should be dictated by performance in relation to cost. For some feeds the quantities to be included in the diet must be restricted. Feeds containing high levels of oils such as cottonseed, sunflower and germ meal need to be restricted so that the oil content of the diet does not exceed 7%.

Feed grade wheat should not exceed 50% of the diet to avoid digestive disorders and reduction in intake. Molasses, which can improve the palatability and stability of the mixtures, should not exceed about 55% of the diet. It is usually included at 30 % of the diet. The value of silage in fattening diets is largely determined by the amount of grain in the silage. It should be noted that silage in pen fattening diets have an influence on protein and energy addition and if well balanced this can reduce costs significantly.

Roughage levels and sources

Although efficiency of energy use increases with increasing energy concentration, digestive disorders occur and efficiency declines if the diet contains inadequate roughage. A minimum of 15 to 20 % roughage should be included in the diet. This equates to 7 to 14 % crude fibre depending on types of concentrates and roughage used.

A wide range of roughages are suitable for inclusion in high-energy diets. These include maize sheath, cobs and stover, silage, grass and legume hay, cottonseed hulls groundnut hulls and sunflower hulls. While less important than the concentrate portion of the diet, the palatability and nutritive value of the roughage can affect feed intake, rate of gain and efficiency of feed utilization. Cottonseed hulls groundnut hulls and sunflower hulls and roughage substitutes such as sawdust and paper products generally give below average results. Jack beans and soya beans hays contain the enzyme called urease, which quickly break down urea to its products and may result in urea poisoning.

Protein content and sources

The protein content should be 12 to 13 % crude protein (CP). This level supplies in excess of normal animal requirements values, but it is desirable in order to promote maximum feed intake and efficiency. The protein can be divided into Natural protein and Non-protein Nitrogen (NPN). Generally the two should be mixed for economic reasons. The natural protein concentrates used are Cottonseed meal/ cake, soyabean seed cake /meal, sunflower seed meal /cake, groundnut meal /cake, blood meal, meat-meal and fishmeal. This is the expensive form of protein given to animals. The majority of pen fattening rations urea inclusion is 2 % of the total ration. This is fed as feed grade urea and weight gains based on urea peaks up later but are more economic than natural protein.

Other nutrients

The diet should be well balanced for calcium and phosphorus at correct levels. Diets based on most energy feeds other than molasses will be deficient of calcium and limestone flour needs to be included

Excessive amount of phosphorus (P) can adversely affect the use of other minerals and increase incidences of urinary calculi. Diets containing 70 % or more of grain or grain by products usually contain adequate P and there is no need to add more. But if such feedstuffs like molasses or silage or orange pulp make up a large proportion of the diet, additional P, in form of MCP or bone meal will need to be added. Ruminants can tolerate a wide range of Ca: P ratio than monogastrics but extremes result in reduced performance. The ratio less than 1:1 or more than 7:1 should be avoided. Undesirably low levels are most likely in diets based on grains and grain by products and it may be necessary to increase calcium levels well above requirements to improve the ration.

Other minerals

Mineral	Level on DM basis
Salt	0.5
K	0.5

Mg	0.1
S	0.15
Cu	10ppm
Co	0.1ppm
Fe	30ppm
Mn	30ppm
Zn	30ppm
Se	0.1ppm
I	0.2ppm

Of these only zinc, copper, cobalt and iodine are added to high-energy diets.

Vitamins

Diets with no sources of vitamin A should have an additional 3million I.U of vitamin A added per tonne. No other added vitamins should be necessary in this country.

Fats

Fats can be added to increase the energy content of the diets and to reduce dustiness. The total fat in the diet should not exceed 7 % otherwise feed intake may be depressed. If protected fats are used the fat content may be increased to 10 % (Not unsaturated fats). Fat should not be used as grain substitute and where unsaturated fats are used rancidity will be a problem.

Physical form of diet

Maize is usually coarsely milled in order to produce a consistent mixture with the protein concentrate. Whole maize can be fed without loss in efficiency provided the protein concentrate is pelleted or molasses based to prevent separation. When whole maize is fed, roughage is fed separately unless it is incorporated in the pellets. With a period of adaptation the roughage can be reduced to very low levels or even removed completely. Small grains like sorghum are best

coarsely milled or cracked. Roughage can be fed unmilled when it is fed free choice but it has to be milled for inclusion in complete diets. In this case particle size should be about 10 to 20 mm, which usually requires a screen size of 12 to 25 mm, depending on the mill design and speed.

Feed additives and supplements

Various additives and implants have been shown to improve the efficiency of feed conversion and can be used to improve the economics of pen fattening. These are:

Nutritional supplements (e.g. Nubo and Rumicell). These usually are administered as boluses or feed additives orally. They have an advantage of adjusting rumen flora and promoting beneficial microbes in the rumen after dosing. This increases feed efficiency and improve profitability.

Ionophores (e.g. *monensin*, *lasolocid*). These improve the efficiency of energy absorption, and reduce incidences of acidosis and bloat. Monensin tends to reduce intake while gains remain unaffected, while lasolocid has less effect on intake but increase gains.

Feed intake

This is the most important factor affecting the rate of gain and efficiency of feed conversion. Intake varies with the mass of the animal, the type of diet and the stage of the feeding period. On low energy diets intake is controlled by gut fill and is usually of the order of 2.5% of the body mass or less.

As energy increases with decreasing roughage levels intake increases reaching a peak with diets of about 20 to 30% roughage. With further increases in energy concentration, intake decreases tending to be controlled to a constant energy intake. The average DMI over a feeding period for yearlings on a standard 20% roughage maize based diet is 2.8% this figure may increase to about 3.3% if the ration is particularly palatable or if maize is replaced with an energy source with less energy. Intake usually starts at relatively low level, increases for a while and then levels off or slowly declines. Yearlings and 2.5 year olds on 20 % roughage usually consume 2.5% of their body mass initially increasing to about 3.2 to 3.5% at 6 to 8 weeks, thereafter declining slowly or remaining fairly constant in absolute terms. Weaners take longer to reach peak intake (about 12 weeks) and show less decline thereafter.

Complete Feeds

These are the easiest to use, though they are expensive compared to home-made feeds. They are complete, balanced meals, designed for finishing cattle in pens over the normal 70-90 days. They are high energy fattening meals containing all nutrients necessary for ad lib pen fattening. Feeding rate will depend on factors such as live weight and age of the animal, but normally averages between 8-15kg per head per day or 3.4% of a steer's live mass per day, and average daily gain at 350Kg live mass is about 1.6Kg.

It is advised that even if you are feeding these complete feeds, make available a good quality roughage source as an extra. The cattle might or might not nibble it, but when they do need it, it will help if it is available. These feeds contain urea; hence it is advisable to introduce your cattle to them gradually, preferably over a period of two weeks.

You may also buy concentrates to mix with snap corn. Snap corn is snapped maize (husk, cob and grain), and it has 78% grain content. After mixing the two, the result will be a complete feed. The reason behind using concentrates is to try and decrease feed costs, but for cattle fattening feeds, the cost decrease is usually slight, thus it may be more convenient to use straight complete feeds.

Health Management & Disease

A feature of crowded accommodation is the rapid spread of disease. Apart from the better known cattle diseases that can appear in feedlots, there are a number of diseases associated with feedlotting. Diseases such as rumenstasis, acidosis, laminitis and urinary calculi can be a problem in a feedlot. Prevention is always better (cheaper, hassle free) than cure in a feedlot operation.

The services of a veterinarian or animal scientist to advise on disease prevention and the treatment of sick animals is a cost well justified. However, one still needs to keep the veterinary cupboard stocked with such drugs as ammonium chloride, hypo (Na thio-sulphate), activated charcoal, vinegar, brown sugar, bicarbonate of soda, veterinary milk of magnesia, Epsom salts and some antibiotics in case of outbreaks of the above or other health conditions. Slurry disposal is a major issue in most feedlots and warrants attention. Waste can be wet or solid and, if not properly taken care of, can result in a fly and insect problem. Flies and insects must be combated

in a feedlot because they worry animals and increase stress. Stress has a negative effect on growth rate. A feedlot manager needs to be aware of the potential danger of these diseases, especially infective diseases such as IBR which can spread through a feedlot at a very rapid rate and even if mortalities are relatively low, profits are eroded by depressed animal performance. Although deaths occur in feedlots, where losses exceed 2% prompt action must be taken to find and eliminate the cause(s) of the mortalities in order to minimize losses.

Performance in feedlots

Factors which will affect performance:-

- Quality of cattle
- Consistency of size and type within pen
- Setting realistic performance targets in relation to the above
- Avoid waste
- Ensure clean fresh water is always available
- Avoid over-crowding. At least 7m² of pen per head.
- Feeding space : 40-50 cm of feed trough space per head
- Water space : 1 metre of water trough frontage per 30 cattle
- Prevent heat stress
- De-worming and vaccination.

Profitability in a Feedlot

It is very easy to make a loss from a pen fattening exercise. Factors affecting profit margins in a feedlot operation include:

- buying price of feeders
- cost of feed
- feed conversion efficiency/ratio (FCE/FCR) in pens

- Carcass price.
- Other costs : agents commission , slaughtering costs , carcass condemnations , transport , interest on capital ,salaries of management and labour , machinery costs , mortalities and veterinary costs (disease control, medicines, veterinarian) ,Pre-treatment costs (growth stimulants, dipping, dosing, vaccination)

Feedlotters can improve production profit by manipulating some expenses, but other costs are fixed. Mortalities must be monitored carefully to ensure that a high loss rate does not severely limit profits. A mortality rate of 1% to 2% is accepted as normal.

Important margins contributing to profitability include the price margin and feed margin. By far these two have the greatest effect on feedlot profit.

The rate of gain and feed conversion ratio

The rate of gain of pen-fattened animals is dependent on the amount of intake and the energy concentration of the diet assuming it is correctly balanced in other nutrients. Gains on high energy diets of standard roughage content of 20% have been recorded at 1.2 to 1.6kg per day and the feed conversion ratio (FCR) has a range of 7:1 to 8.5: 1 (Live mass) and 11.2: 1 to carcass mass. As the feeding period progresses the rate of gain decreases and the FCR deteriorates and a stage is reached where feeding costs equal and then exceed the value of gains.

Tip

Animals in lean condition with good conformation are usually the most efficient and the price per kg is critical consideration in the economics of fattening. The maximum price payable must be carefully calculated. It is easy to make a financial loss before fattening even starts by paying too much for the animals.

Profit Margins in Feedlotting

Factors affecting the profit margin of a feedlot operation include the price margin, feed margin, management, cost of feed, buying price of feeders and selling price, which is usually quoted as a carcass price.

Price margin

The profit or loss which the feedlotter makes as a result of an increase or decrease in price from the time the animal is bought (the cost price) to the time the animal is sold (sale price), is called the price margin and is calculated as follows:

$$\text{Price margin} = \text{Initial live mass} \times (\text{sale price/kg} - \text{cost price/kg})$$

Price margin includes the difference between purchase price and selling price resulting from beef price fluctuations as well as improvement in carcass quality due to feeding. The feedlotter cannot control price fluctuations and must therefore rely on a prediction (speculation) of what prices will be when stock are sold at a future date. Making use of a positive price margin is what is commonly called speculation. Although profits are potentially high, risk is high and people lacking experience often lose money with speculation.

When buying livestock, most feedlotter make use of the price per kg live mass for their calculations. They must therefore know the dressing percentage of the animal. Dressing percentage varies and feedlotter base the value they use on experience and knowledge of the type of animal and its body condition. Lean animals have a dressing percentage of 49%, which increases to as much as 60% at a high level of finish. However, at a fat score of 2 to 3, the mean dressing percentage varies from 54 to 56%.

Feed margin

The profit or loss a feedlotter makes as a result of live mass gain in relation to cost of feed consumed, is called the feed margin and is calculated as follows:

$$\text{Feed margin} = \text{Live mass gain} \times (\text{sale price/kg} - \text{cost/kg gained})$$

A feedlotter can influence feed margin by ensuring, through good management, that optimal growth rates are achieved and by taking steps to obtain the best feed at the best price.

Beef: Maize Price Ratio

The price paid for feedlot cattle or their initial value (cost/kg), is a critical factor affecting the profitability of a feedlot enterprise, especially when a small or negative feed margin exists.

A positive feed margin can only be realized with high mass gains and a relatively low cost of feed. The cost of the feedlot ration relative to the beef price and live mass gain thus exerts a major influence on the cost of gain. Because of the high proportion of energy required to ensure good feedlot performance, the cost of carbohydrate, which is usually included in most feedlot rations in the form of maize, snap corn, hominy chop or sorghum, in relation to the beef price, is a significant factor deciding profitability of a feedlot enterprise. This is usually expressed by the ratio beef: maize price, which experience has shown must be more than 13:1 for feedlotting to be profitable. Feedlotters can make substantial profits when the beef to feed cost price ratio is favourable. Generally, average daily gain declines toward the end of the feeding period, where animals are fed for too long a period of time (are over-finished), resulting in a negative feed margin and consequently reduced profit margins.

Feedlot profit margin

The feedlot profit margin is a function of price margin, feed margin and other expenses. Adding these three together, indicates profit or loss for the period of time over which the calculation is made. Feedlot managers need to keep a close watch on feedlot profit, which is a very sensitive measure of the efficiency of management.

*It is very important for you to understand these profit margins, before you go into this business. We shall use examples in the **Production Cycle** section of this business plan, to help you understand how these ratios are used.*

Feedlot Management

Management will have a major influence on the profitability of a feedlot enterprise. Management aspects that are important include:

- Ensuring that the right type of animal is bought at the right price and at the right time. In some larger feedlots, feedlot managers rely on the services of experienced buyers.
- The feedlot ration must be balanced in respect of nutrient content, must be matched to the type of animal fed and should be the most cost effective ration available at the time of feeding. In most feedlots the manager achieves these goals by keeping records of animal performance and monitoring results. A nutritionist is usually employed to do the ration

balancing because this is a highly specialized task requiring a great deal of time monitoring feed quality and costs of ingredients.

- The daily running of a feedlot is the major task of the feedlot manager. This includes care that feed bins are full all the time, that fresh water is available to the livestock continuously, that animals are processed and adapted on arrival and that animals are marketed when ready.
- Diseases can be a problem in a feedlot. The services of a veterinarian to advise on disease prevention and the treatment of sick animals is a cost well justified. The adage "prevention is better than the cure" is very true in feedlotting.

Risk

Starting a feedlot involves financial risk. Animal deaths, disease, poor weight gains, and unexpected changes in feed cost or beef market prices will affect the economic success of the venture. When budgeting, always include some risk factors, because problems are part of running a feedlot.

Marketing Strategy

Our company will attempt to rapidly achieve awareness in the city about its business in the first year. To be successful in this business, you should have many customers. Our marketing strategy is based upon the marketing mix, which are the 4 p's of marketing, which are product (service), price, promotion and place (distribution).

Product

Our fattened cattle will be of high quality, with super grade beef, and also healthy. The cattle's appearance will be very attractive. Customers will be pleasantly surprised at how attentive we are in regards to their needs. The business operates on the assumption that it will do whatever is reasonably necessary to keep the customer happy. This reflects the notion that if the customer is kept happy; long-term profits are ensured.

Price

We will try and minimize our production costs so that we can offer a more competitive price on the market. The price of the cattle will be determined by market forces. It will depend on the weight and grade of the beef.

Promotion

Word of Mouth

Word of mouth advertising via quality products will be used to market our company. We will give incentives to customers who refer others to our farm. We will spread the word of our cattle in our community. We will also use our personal networks to identify new customers. We will talk to family and friends; inform the local church community; showcase products at community functions. We will use word of mouth to advertise our cattle to the local butcheries and abattoirs.

Fliers

Our marketing strategy will include the use of fliers which are going to be distributed to butcheries, schools, churches, supermarkets, hotels and fast food outlets. These fliers will be well designed, attractive and very informative, containing our prices, contact details and products which we sell. We hope to get potential customers from the distribution of fliers. We will also offer monthly calendars to our customers.

Newspapers

We will place adverts in the daily and weekly newspapers so that more people can be aware of farm products. Placing our advert in the weekly newspaper will ensure that our advert will be read the whole week as it is a weekly newspaper. It will also ensure that we reach all age groups as it is a family newspaper. Weekly newspapers have a wide coverage in the country and are read by many people.

Public Transport Advertising

We will advertise our farm products on commuter omnibuses which commute from the CBD to different locations. This will make more people aware of our products.

Internet Marketing

The company's website will be a dynamic marketing tool for the company. The website will provide information about our products for target customers. As the company grows, its recruiting needs can be addressed by posting career opportunities and Frequently Asked Questions about the company.

Place/Distribution

Our farm will be located close to the city, which is our intended market. We will distribute our products in all parts of the city.

SWOT Analysis

Strengths

- A large market
- Experienced owner-operator
- Good quality feeders
- Access to cheap cattle
- Plenty of water supply

Weaknesses

- Limited Capital
- High feed costs
- Little negotiation power with customers

Opportunities

- Growing market
- Venture into poultry and pig rearing thus diversifying risk

- Export market opportunities
- Cheap labour in the market
- Economic growth

Threats

- Disease outbreak
- Decline in cattle demand
- Low market prices for beef and increase in feed cost

Start-up Costs

Item	Total
Land	80,000,000
Building 1: Feedlot Construction	100,000,000
Feeding Equipment	
Drinking Equipment	
Feed	75,000,000
Veterinary Supplies	
Feeders (Cattle for fattening)	
Transport To farm (After buying feeders)	5,000,000
EIA	25,000,000
Project Cost	
Site Development, Construction of Sheds, Office building, Warehouse, Accommodation, Generator room, Bio-gas plant, Electrical and water system	1,530,000,000
TOTAL	1,815,000,000

Laboratory and other Equipments: 50,000,000

Risk Analysis

These risks could materially adversely affect our business, financial condition or results of operations. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition or results of operations.

Fluctuations in the availability and price of raw materials, especially stock feeds, maize and soya meal and other inputs could negatively impact our earnings.

Our results of operations and financial condition, as well as the selling prices for our products, are dependent upon the cost and supply of commodities and raw materials such as stock feeds, maize and soya meal. Production and pricing of these commodities are determined by constantly changing market forces of supply and demand over which we have limited or no control. Such factors include, among other things, weather patterns throughout the world, outbreaks of disease, the global level of supply inventories and demand for grains and other feed ingredients, as well as agricultural and energy policies of domestic and foreign governments.

Volatility in our commodity and raw material costs directly impact our gross margin and profitability. The company's objective is to offset commodity price increases with pricing actions over time. However, we may not be able to increase our product prices enough to sufficiently offset increased raw material costs due to consumer price sensitivity or the pricing postures of our competitors. In addition, if we increase prices to offset higher costs, we could experience lower demand for our products and sales volumes. Conversely, decreases in our commodity and other input costs may create pressure on us to decrease our prices.

Outbreaks of livestock diseases can adversely impact our ability to conduct our operations and demand for our products.

Demand for our products can be adversely impacted by outbreaks of cattle diseases, which can have a significant impact on our financial results. Efforts are taken to control disease risks by adherence to good production practices and extensive precautionary measures designed to ensure the health of our cattle. However, outbreaks of disease and other events, which may be beyond our control, in our own cattle farm could significantly affect demand for our products, consumer perceptions of certain protein products, the availability of livestock for purchase by us and our

ability to conduct our operations. Outbreaks in our own cattle farm may lead to the death of all our cattle. Moreover, the outbreak of livestock diseases, particularly in our cattle segment, could have a significant effect on the livestock we own by requiring us to, among other things, destroy any affected livestock. Furthermore, an outbreak of disease could result in governmental restrictions on the import and export of our products to or from our suppliers, facilities or customers. This could also result in negative publicity that may have an adverse effect on our ability to market our products successfully and on our financial results.

Changes in consumer preference could negatively impact our business.

The food industry in general is subject to changing consumer trends, demands and preferences. Trends within the food industry change often, and failure to identify and react to changes in these trends could lead to, among other things, reduced demand and price reductions for our brands and products. We strive to respond to consumer preferences and social expectations, but we may not be successful in our efforts. We could be adversely affected if consumers lose confidence in the safety and quality of certain food products, or the food safety system generally. Prolonged negative perceptions concerning the health implications of certain food products or loss of confidence in the food safety system generally could influence consumer preferences and acceptance of some of our products and marketing programs. Continued negative perceptions and failure to satisfy consumer preferences could materially and adversely affect our product sales, financial condition and results of operations.

Deterioration of economic conditions could negatively impact our business.

Our business may be adversely affected by changes in economic conditions, including inflation, interest rates, consumer spending rates, energy availability and costs and the effects of governmental initiatives to manage economic conditions. Any such changes could adversely affect the demand for our products, or the cost and availability of our needed raw materials, and packaging materials, thereby negatively affecting our financial results.

The loss of one or more of our largest customers could negatively impact our business.

Our business could suffer significant setbacks in sales and operating income if our customers' plans and/or markets change significantly or if we lost one or more of our largest customers. Our retail customers typically do not enter into written contracts, and if they do sign contracts, they

generally are limited in scope and duration. There can be no assurance that significant customers will continue to purchase our products in the same mix or quantities or on the same terms as in the past. The loss of a significant customer or a material reduction in sales to, or adverse change to trade terms with, a significant customer could materially and adversely affect our product sales, financial condition and results of operations.

The prices we receive for our products may fluctuate due to season, demand & supply factors and competition from other food producers and processors.

The price for beef fluctuates throughout the year. There is a risk that the beef price might become low, and we might not be able to attain profitability.

Extreme factors or forces beyond our control could negatively impact our business. Our ability to make, move and sell products is critical to our success. Natural disasters, fire, theft, pandemic or extreme weather, including droughts, floods, excessive cold or heat, hurricanes or other storms, could impair the health or growth of cattle or interfere with our operations due to power outages, fuel shortages, damage to our production and processing facilities or disruption of transportation channels, among other things. Any of these factors could have an adverse effect on our financial results.

Theft & Vandalism

There is a risk that our cattle farm may be subject to theft and vandalism. This could have an adverse effect on our financial results, as we might end up losing our cattle.

Top reasons for failure of cattle pen fattening business

Buying expensive and inappropriate cattle (feeders)

One must be able to source an animal of the right breed, age, sex and conformation for optimum performance in the pens. As a general guide, if the animal cannot achieve a daily live mass gain of 1.2-1.6kg/day with a feed conversion ratio of at most 8:1 then it may make business sense not to pen fatten. If you buy expensive cattle, you may already be in a loss before you begin pen fattening. Calculate the profitability margins first.

Management Problem

An incompetent management may not be able to operate a profitable cattle farm. The managers of the farm must know what they are employed to do and possess the ability to do it. Some cattle managers fail to recognize the peculiarity of cattle fattening in their management style, thereby preparing good ground for losses in the venture. Many managers do not recognize the need for timely planning and control in running the farm.

Poor feeding condition and wastage of feed

The cattle need to be fed well in the pens in order to produce maximum meat. The cattle must be fed with the appropriate feed. Those who attempt to make home-made feeds without consulting experts are endangering their business.

Security

Your farm should be secure so that the cattle won't be stolen. Just imagine waking up on the 90th day and you find your feedlots empty.

Housing

Cattle need minimum space and convenient place to grow well and produce maximally meat. If they are overcrowded they won't do well, and some may die.

Inability to prevent, detect and control disease

It is often said that prevention is better than cure, as far as disease are concerned and this is a true statement and relevant one to cattle farming. A cattle farmer should know how to prevent cattle disease, as well as how to cure them. If he or she does know anything about preventive measures, the services of consultants in the field should be engaged for good result. And all cattle should be dipped first before the fattening operation.

Lack of Technical Know-how

It is regrettable that many people and organizations have ventured into pen-fattening without technical knowledge. Knowledge of pen-fattening techniques is required before anyone can operate the business profitably. Make sure you attend a workshop for pen-fattening before you start the business, or visit someone who is doing it.

Ignoring the role of livestock consultants

There are always practicing experts in every profession or occupation who function as consultants. They are there to proffer solutions to problems that exist in such professions at a minimum cost. Where a livestock farmer doesn't have adequate technical and managerial experience, he or she can consult experts for necessary advice to bridge the gap. Even where the farmer thinks he or she has all it takes to run a farm successfully, there may be need to seek the services of experts in the field, as it is usually said that two heads are better than one.