SLAUGHTER HOUSE AND CALF FATTENING FARM

A DETAILED ANALYSIS AND FEASIBILITY

**CSF**

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project Brief

The pre feasibility is about setting up a facility where calves will be kept from the age of 8-10 days old and they will be grown. They will then be slaughtered and processed into meat products. The animals that will be commonly slaughter for food are cattle (beef & veal).This slaughter house will be set on modern standards and promise to provide highly hygienic meat products for local sales as well as for export purpose.

The major aim of the project will be to increase the production of meat (beef) and improve the quality standards along with superior value addition.

The calves will not only be grown under complete supervision and efficient food supplements. They will also be slaughtered under highly waste reduction and efficient manner. Meat will be sold in a manner that it has the most efficient value addition.

The beef fattening farm that is being setup will be productive throughout the year. It will be operative in bathes. To the start with 3000 calves will be purchased and they will be retained on Milk Replacer for the first 75 days. The operation will be for approximately 1 year and in 3 batches a year.

After the first 75 days the calves will not be fed on Milk Replacer. They will be converted to green fodder. This is the most cost effective and health benefiting feeding mechanism.

In the first year of operation only 3000 calves will be slaughtered, as only the first batch will be ready after 225 days, in the remaining years 9000 calves each year will be available for slaughter.

They will be then be slaughtered in a fully furnished and equipped slaughter house and then the meat will be sold in open market.

Project Scope

The subject feasibility study provides information about the investment opportunity in an abattoir (Slaughterhouse). The abattoir will not only be a slaughtering facility but will have animal residence and rearing facility. It will also provide slaughtering and allied services to the local trader. However, some of its capacity will be utilized for slaughtering animals for own supply of meat in the local as well as in the international market, hence contributing towards earning foreign exchange for the country.

The proposed project will also have the potential for further development of animal by-products processing industry.

The slaughterhouse will be technically equipped for slaughtering calves; cows and buffaloes etc. will also have the potential for further operations such as by-product processing/utilization, meat preservation, meat processing butchering and development of meat market.

CURRENT INDUSTRY STRUCTURE

There is a huge shortage of slaughter animals for meat supply. The animal growth cycle needs a certain period to fill the gap made by slaughtered animals but rapid increase in daily use, change in consumption patterns, use of more meat in food table and economic up lift has increased the demand by many folds resulting in slaughtering of premature animals, poor carcass quality and quantity wise and increase in price. If this practice continued, there would be a huge gap between supply and demand, forcing the import of meat at large scale. At present small ruminant are mainly coming from the range/rain fed areas where feed resources are not sufficient to bear the animal production requirements. Most of the cases range areas are either overcrowded and mostly without grazing systems, resulting in poor nutrients supply to animals and damage to range lands themselves. The disappearance of desirable fodder species and propagation of unwanted plants make this situation worsened for future also.

The 3 slaughterhouses present in Pakistan (Kot Kumboh, Shahdrah and Baghbanpura) are meeting the only 75% of daily requirements and rest of meat is slaughtered at different areas illegally. Now it is need of time that if public sector can not meet the changing trade scenario and export standards (as evident from many reports), the private sector should be developed for this purpose. The loans to set modern abattoir with hygienic production facilities should be granted on easy terms. Furthermore, the Sanitary and phytosanitary (SPS, 1994) Agreement also demands under the Uruguay Agreement, to define rules for setting national standards and regulations relating to sanitary and phytosanitary measures to protect human or animal health from specific risks, including risks arising from animal diseases and food safety.

Under this act more stress was given on animal health than food safety.

Current market situation

In the Karachi market despite increase in local production of meat and livestock population, meat merchants are persistently jacking up prices by attributing the same to smuggling of live animals and surging meat exports.

They also term the official figures of increasing meat and livestock population as fictitious based on old census.

In absence of any check on rates, many meat merchants in areas like North Nazimabad, are demanding Rs250 per kg for beef (without bones) and Rs200 per kg with bones.

A year back, beef with and without bones was selling at Rs170 and Rs200 per kg, respectively.

There is also no uniformity in prices of beef and mutton in the city. Some retailers are charging Rs160 per kg for beef without bones in Nazimabad area claiming to be the main supplier of beef in the city. They also assure customers they are selling pure beef of high quality and not offering calf meat as beef meat.

In Water Pump market beef with and without bone is available at Rs190-200 per kg and Rs230 per kg, while mutton sells at Rs300 per kg. In Tariq Road area mutton sells at Rs320 per kg while beef with and without bones is available at Rs200 and Rs220-230 per kg, respectively.

As consumers are not aware of the quality, majority of them usually pay higher prices for low quality meat presented as high quality one.

**The Economic Survey of 2007-08** showed rising trend in both animal population and meat production from 2005-06. Cattle population has risen to 31.8 million in 2007-08 from 30.7 million in 2006-07 and 29.6 million in 2005-06. Buffalo population soared to 29 million in 2007-08 from 28.2 million in 2006-07 and 27.3 million in 2005-06.

Population of goats rose to 56.7 million in 2007-08 from 55.2 million in 2006-07 and 53.8 million in 2005-06.

Beef production in 2007-08 increased to 1,549,000 tons from 1,498,000 tons in 2005-06 and 1,449,000 tons in 2004-05. Mutton production in 2007-08 was recorded at 578,000 tons from 566,000 tons in 2006-07 and 554,000 tons in 2005-06.

According to the Federal Bureau of Statistics, export of meat and meat preparations during July-March 2008-09 surged to 19,647 tons ($53 million) as compared to 13,378 tons ($36 million) in the same period of last year. Meat is exported mainly to UAE, Saudi Arabia and Gulf countries. Around 2,200 tons of meat is being exported per month.

The basic reason of increase in meat prices were export of meat and smuggling of live animals to Iran and Afghanistan. As a result, the market is not getting the required livestock supply as per demand. For example, the per capita consumption of meat is 54 grams a day but only 22 gram is being supplied.

The weekly demand of goat slaughtering is 50,000 in Karachi but arrival from the interior Sindh and other sources is 38,000-40,000 while only 28,000-30,000 animals are being slaughtered. The demand of weekly slaughtering of veil (bachia) is 4,000 but only 2,800 are slaughtered.

Export of Meat

The export of meat from Pakistan is relatively a new segment of country’s trade, as the real commercial level export started in not before that. Thus, the export of meat and meat preparation is not so high; but the export growth rate is quite encouraging.

Pakistan owns a large inventory of livestock, which determines a large size of meat exports in future. So, meat export is bound to be a good contributor to Pakistan’s foreign exchange in the years ahead. In year 2000-01, the export of beef was 715 metric tons (value 1.1 Million US $) whereas 3303 metric tons of mutton (value 5.8 million US $).

Despite an increase in meat production, the prices have moved upward abnormally.

The recent increase in meat prices is attributed to the export of live animals or meat to the Middle East and Afghanistan. The country, though rich in livestock, rarely got a chance to export meat or meat products to earn foreign exchange. It was offered an opportunity when various Middle East states stopped importing meat from European countries due to the incidence of the mad cow disease. Meat export from Lahore started in the beginning of the year 2000 when carcasses of goats and large animals were airlifted. The meat was processed under a special arrangement between the exporters and the Metropolitan Corporation of Lahore, which runs four abattoirs in the city.

The exports of livestock such as cow, buffalo, sheep and goat are finding their way to the Gulf States, Iran and Afghanistan where there is a shortage of good quality meat, hence fetches a high price.

Meat Markets

Currently, meat sector in Pakistan is working on an informal basis from animal rising to meat selling. Animal traders purchase animals from the rural areas and sell them to the animal markets in the urban areas. Butchers purchase these animals from animal markets and slaughter them in the slaughterhouses. Butchers act as meat traders and dominate the meat market both in rural and urban areas. The animals sold in these markets are generally diseased and culled animals. Butchers/traders prefer to buy these cheap animals. Pakistan is one of the cheapest beef producers in the world as the live weight value per kilogram is lowest in the world because of the cheap raw materials available.

Opportunity Rationale

Pakistan is situated along both sides of the historic Indus River, following its course from the mountain valleys of the Himalayas down to the Arabian Sea. It shares borders with India, China, Afghanistan and Iran. Its 796,095 square kilometer territory includes a wide variety of landscapes, from arid deserts to lush green valley’s to stark mountain peaks. The estimated human population is 153. 96 million with annual growth rate of 2.9 %. Of the total population, 65.9 % live in rural areas.

Punjab is the most populated of the 4 provinces, having 56% of the country’s population while Sindh (23%), NWFP (16%) and Baluchistan (5%) provinces share the rest. Agriculture is the mainstay of Pakistan’s economy. Livestock sector contributes almost 50 percent to the value addition in the agriculture sector, and almost 11 % to Pakistan’s GDP, which is higher than the contribution made by the crop sector (47.4% in agriculture and 10.3 % in GDP). The role of livestock sector in the rural economy of Pakistan is very critical.

Per Capita Availability of Meat

Per capita availability of meat is 12 kg, most of which is from buffalo and cattle. It may, however, be mentioned that population statistics and statistics on the availability of products from various sources differ drastically. To meet the domestic demand of meat, the rate of growth must be at least 5-7 % per annum.

The demand of livestock food products is growing fast because Pakistan's human population is increasing at the rate of 2.9 per cent annually. If population pressure continues to grow and livestock production stays at the same level, then food deficit may become larger. According to one recent survey, in coming years, milk, red meat and poultry meat deficit will be 9.72, 0.17 and 0.14 million tons if our livestock production stays at the same level.

Therefore there is need of establishment of slaughterhouse facilities of a sufficiently high standard but still simple would improve the situation. Therefore, this prefeasibility study has been made of a medium size slaughterhouse equipped with medium level semi mechanized technology. By providing value added services, the slaughterhouse can utilize the abundant and unexplored resources of Pakistan.

current meat slaughtering market

A modern slaughterhouse had been a longstanding demand of the meat exporters since 2001.

Pakistani exporters have suffered due to lack of a modern meat processing plant in the country. The condition of slaughterhouses is bad. They are small and most are located in congested areas adding that they are unhygienic, old-fashioned and had insufficient transportation facilities.

Animals are slaughtered primitively, which affects the export of meat and meat by-products.

Around 200,000 goats or sheep and 20,000 buffaloes or cows are slaughtered every month to supply 160,000 kg of beef and 140,000 kg of mutton daily.

Pakistan could not penetrate Middle Eastern markets even when the “mad cow” disease broke out in Europe because the country had an unhygienic and conventional slaughtering system. Trade delegations from Saudi Arabia and United Arab Emirates visited government slaughterhouses five years ago and disallowed meat exports to their countries for lack of hygiene in Pakistani slaughterhouses.

Government had allocated Rs 51 million to upgrade and standardize the vaccination laboratories and for their ISO certification. The livestock director general for research was asked to inspect the laboratories.

The government also allocated Rs 96 million to the University of Veterinary Sciences to set up a reference laboratory.

Islam and slaughtering

Islam has introduced the concept of slaughter, whereby a naturally Halal animal would have to be properly slaughtered prior to consumption. The act of slaughtering is to ensure the quality of meat and to avoid any microbial contamination. For example, a dead but not slaughtered animal is normally associated with disease.

Therefore, slaughtering is mandatory to ensure the complete drainage of blood from the animal's body, thus minimizing the chance of microbial infection. This is compatible with the overall concept of cleanliness that is always emphasized in Islam.

To determine the Halal/Haram status of foodstuffs and other materials, Islam has laid general guidelines on this matter, namely:

1. All the raw materials and ingredients used must be Halal.
2. Naturally Halal animals, such as cattle, goats etc. must be slaughtered according to Islamic rites, the rituals specified.
3. The act must be performed by a mentally sound Muslim, to sever the blood and respiratory channels of the animal, using a very sharp cutting tool such as a knife.
4. The Halal ingredient must not be mixed, or even come into contact with Haram materials, during storage, transport, cooking, serving, etc.

The production of Halal food is not only beneficial to Muslims, but also to non-Muslim food producers, by means of an increased market acceptance of their products.

THE CURRENT SLAUGHTERING PRACTICES Public Sector

For carrying out study of present slaughtering practices Karachi market has been selected.

In Pakistan there are four slaughterhouses owned and managed by Municipal Corporation

Their capacity is sufficient for meeting only 75% meat requirement of the city. The remaining 25% is being supplied from outside the city, and by illegal slaughtering. Indeed the present premises are fairly old structures, had been built several years ago, and at when a time municipal engineering and public health requirements were less stringent and different from those prevailing now. These slaughterhouses handle the bulk of public slaughters, and as such, they are not slaughterhouse but can be referred to as slaughter slabs merely a place for slaughter with no proper arrangement of hygiene and sanitation. These premises merely make facilities available for use by butchers and traders (not licensed) for the slaughter of livestock at fee of Rs. 10 per small animal and Rs.20 per large animal.

No storage facility and sufficient quality control measures are available there. Most of the times, Meat gets rotten especially, in summer season. This problem is intensified while the meat is sold through the butcher’s shops to final customers. All the meat is not sold to customers in daytime, and not all the unsold meat is frozen to keep it in hygienic condition.

The primitive conventional fashion slaughtering results in wastage and damage to the by-products there is also lack of essential allied facilities. The prevailing conditions are discouraging for the export of meat and meat by-products.

Private Sector Modern Abattoirs

There are a few modern abattoirs working in private sector in Karachi. It is semi mechanized and has minimum required facilities for export of meat in Middle East countries.

**These slaughterhouses have insufficient capacity to fulfill the local and international demand for meat.**

Shortcomings cited in Asian slaughter houses

Severe shortcomings from violations of animal welfare to bacterial contamination have been found in some of Asia’s slaughterhouses, published data said in some of the major international newspapers.

“Lack of proper slaughtering and by-product handling facilities and careless slaughtering by workers,” according to the Straits Times report.

Slaughterhouse standards in Thailand, Malaysia, the Philippines and Myanmar appear relatively acceptable in terms of hygiene and practices. But conditions can range from acceptable to downright dangerous in India, Bangladesh, Bhutan, Cambodia, Laos, Nepal, Pakistan, Sri Lanka and Vietnam.

There is an increasing tendency toward producing good quality chilled meat for domestic sales in most Asian countries, especially Pakistan. But such production accounts for only around 15 per cent of the overall meat market.

The rest is still provided by small and medium-scale private-sector abattoirs, which supply warm meat to markets without refrigeration.

Some of this meat finds its way to modern supermarkets after being chilled. Contaminated to begin with by appalling hygiene at its origin, the meat then undergoes prolonged storage.

This is the sector where profound technical and hygienic improvements are needed in order to supply clean meat to consumers.

Increasingly more people are eating meat, particularly in formerly poor countries with vibrant economies. Between 1960 and the current decade, worldwide meat production has approximately quadrupled.

Unhygienic slaughter houses

A large number of small slaughterhouses are scattered all over the country, some are licensed and others are not. A majority of licensed places lack modern amenities which are built and controlled by the municipal committees providing anti-mortem and post-mortem facilities under qualified veterinary officer.

The unlicensed slaughterhouses are spread in the villages without any proper plan. They do not provide any facilities and are devoid of a qualified veterinary officer.

The slaughtering of livestock in cities like Karachi, Hyderabad, Lahore, Rawalpindi and Peshawar is done in the municipal slaughterhouses, and at times in the streets and at shops. Butchers prefer to slaughter animals at their convenience.

According to the West Pakistan Slaughter Control Act 1963, the slaughtering of small and large ruminants should be strictly by undertaken in the recognized places with ante-and-post-mortem veterinary inspection.

Presently, for small and large ruminants, it is done in the recognized areas, municipal and cantonment and private slaughterhouses, and in the backyards. Municipal corporations operate majority of such places with few operating in the private sector.

In general, the existing facilities are insufficient for the requirements. The problem is severe in Karachi, Lahore and Faisalabad. Due to the shortage of facilities, the number of animals slaughtered outside is much higher than those within the boundaries. Therefore, official statistics greatly understate the number of animals slaughtered.

**These houses can be referred to as mere slabs with no arrangement of hygiene and sanitation.** These premises facilitate butchers and traders (not licensed) for the slaughter of livestock at a fee of Rs10 for small and Rs20 for large animal. There are no storage and quality control measures available. Meat rots, especially in the summer season. The problem is intensified when meat is sold through butchers to consumers. If all meat is not sold in daytime, there arises the problem of freezing.

Slaughterhouses are situated in thickly populated localities and the present facilities are not reasonable due to congestion on roads. There is no space to examine the animals and the water, drainage and electric facilities too, are limited. The slaughterhouses have no roof but only walls and floor with no arrangements to dispose of the waste material. The place is not properly cleaned, washed, and disinfected.

The slaughtered meat is transported to retailers’ through horse-driven carts, auto rickshaws, or pickups. While in the case of small ruminants, butchers take the meat on foot to the shops located nearby.

Livestock slaughtering is an important part of meat marketing. Butchers buy animals for slaughtering. They convert them to edible and non-edible and other useful products in merchandising channels through which they move on to consumers.

As for the quality, only ante- and post-mortem examination is carried out by the inspectors and the carcass fit for human consumption are stamped as passed. While in rural areas there exists no such system. At retail level, the food committee representatives rarely visit the butcher shop for quality inspection.

In urban areas, the inspector does not have the authority to condemn the whole carcass; **only disease portions are rejected. It was also observed that all slaughter, carcass dressing and product handling are done in the same space.** In addition to this, the facilities of drainage system, waste disposal and handling of by-products are inadequate and sometimes non-existent, resulting in the contamination of the carcass.

**The quality of meat, particularly of cattle and buffaloes, is generally low but varies widely from locality to locality. The poor quality of beef is because of very old or young animals. Special breed for beef as evolved in other countries does not exist in Pakistan.**

As a result, the average dressed carcass weight of cattle in countries rearing meat animals is over 500kg, whereas in Pakistan it is about 300kg. Similarly, the average dresses carcass weight of goat and sheep in Pakistan is about 15.9 g and 12.3kg, respectively.

The livestock producers keep most of the stock on their own preferences. They never think of consumers whose choice reflects on the price of the stock. Fair prices can be assured by standardization and gradation. Cooperative associations play a positive role for the livestock sector development. Such associations can accelerate the standardization and gradation, improve the distributive process and maximize the producer’s income.

According to the Pakistan Slaughterhouse Act of 1983, the killing of animals outside the boundary of slaughterhouses is prohibited. Recognized slaughterhouses usually provide separate buildings for slaughtering large and small animals. A majority are now located in thickly populated areas. The slaughtering, carcass dressing and by-product handling are done in the same space.

There area also suffers from shortage of various equipments such as pulley hoists, hooks etc., for hanging the carcasses. A large portion of the by-products such as blood, glands, intestines, and bones are either wasted or poorly processed. One of the underlying reasons is that these facilities are not periodically updated because of various administrative procedures. **It can, therefore, be concluded that the slaughter facilities are obsolete, unclean, and poorly managed.**

There are two slaughterhouses, one in Karachi and the other in Islamabad that have modern facilities. One slaughterhouse with modern facilities has been recently constructed at new cattle colony at Tando Muhammad Khan road but it is not functional.

Primitive conventional facilities result in wastage and damage of the by-products. The conventional and unhygienic meat processing system is mainly responsible for the setback to the export of meat from Pakistan to the UAE and other Middle Eastern countries.

Meat export was started in the beginning of the year 2000 when carcasses of goat and large animals were airlifted. The meat was processed under a special arrangement between the exporters and the Metropolitan Corporation.

The slaughterhouses can target the needs of health conscious people through departmental stores, chain stores, other retail outlets, but in the initial stage, opening of own retail outlet is not recommended, because it will require investment and specialized skills of retailing business.

Foreign contracts can be obtained with the assistance of the Export Promotion Bureau (EPB). The management of the EPB are already working on it to facilitate the export of meat. The slaughterhouse can also serve the existing meat exporters.

**This is an investment opportunity in setting up an abattoir**. The abattoir can provide slaughtering and allied services to local traders and butchers. However, some of the capacity can be utilized for slaughtering animals for own supply of meat in local and international market.

The proposed action plan will have the potential for further development of animal by-products processing industry. The slaughterhouses, which are technically equipped for slaughtering cows and buffaloes etc., will also have the potential for further development of operations such as by-product processing/utilization, meat preservation, meat processing butchering and development of meat market.

**Lack of slaughtering techniques causes loss of meat and its by-products. Animals are slaughtered in places which are frequently polluted with blood, intestinal contents and dirty effluents. These are not well protected against insects and germs.**

Meat produced under such conditions quickly deteriorates due to bacterial infections and could cause food poisoning. In the absence of inspections, meat from sick or parasite infected animals may well be a vector for spreading diseases, affecting human beings as well as animals. Furthermore, meat quality is adversely affected by careless handling under unhygienic conditions in the slaughterhouses. The capacity utilization varies depending on the staff efficiency and availability of animals.

Such problem could be solved by establishing a system of regional slaughterhouses at central points from where meat supplies could come. There is risk that such system would create new problem such as the need for specially equipped transport. It is suggested that organized slaughtering, collection, handling, and marketing of meat and by-products, inspection and grading of meat would be easier and more effective.

MARKETING

The proposed slaughterhouse will identify and develop such services and products that will help to cater the unfulfilled market for quality meat and its by-products in an effective and efficient manner on the following grounds:

The slaughterhouse, duly equipped with modern facilities and hygienic standards, can carve a niche in the existing market through properly defined segments and create a competitive strength over municipality-owned and managed slaughterhouses. This unique marketing position can be attained through formulation an adequate marketing mix. The slaughterhouse can achieve differential competitive advantage by.

* Physical differentiation through distinguishing own product in quality and appearance
* Psychological differentiation through labeling, stamping, packing advertisement, salesmanship and sales promotion
* Differentiation through its distinctive environment of pleasant surroundings, personal attention and improved services
* Differentiation through physical distribution capabilities by making meat readily available at customers’ doorstep
* Differentiation through pricing and terms of sales and services

The decision of selecting the distribution channel will be based on the identification of target market.

For local market, the slaughterhouse can target the needs of health conscious people through departmental stores, chain stores, other retail outlets, but in the initial stage, opening of own retail outlet is not recommended, because it will require investment and specialized skills of retailing business.

CAPACITY

The capacity of the proposed slaughterhouse is 1500 cows and 1100 buffalo calves. They will be grown and kept till they reach to a certain age. Cow calves will be grown to 30 months and buffalo calves till the age of 15 – 18 months.

Product Mix

Following meat products will be offered to Lahore market (initially), Cattle (veal, beef) meat will be produced for local as well as for export purpose on 50:60 percent respectively.

No. Products Share in Percentage

**Table Products {Cattle (beef, Veal)}**

**Sr. No. Products Share in Percentage**

|  |  |  |
| --- | --- | --- |
| **1** |  **Veal meat(Bone less) 40%** | **40%** |
| **2** |  **Minced meat 35%** | **35%** |
| **3** |  **Mixed meat**  | **25%** |

Following by products can/will also serve as a revenue generating source.

**Table By Products**

**Sr. No. By Products**

|  |  |
| --- | --- |
| **1** | **Skin** |
| **2** | **Feet and Head** |
| **3** | **Intestines** |
| **4** | **Pluck** |
| **5** | **Dried Blood** |

**Table Services**

**Sr. No Services (Facility)**

|  |  |
| --- | --- |
| 1 | Cold Storage |
| 2 | Slaughtering Service |

Standard Operating Procedure (SOP's)

Keeping in view the specific requirement of the project on “Livestock production and development for meat production”, Standard Operating Procedures have been prepared including identifying animal resources, animal selection, procurement and transportation; handling of newly arrived animals at fattening farm; their adaptability to fattening feeds and feeding practices and animal performance monitoring. The details of the SOP's are given in the proceeding paragraphs.

Animal Resources, Selection and Procurement

In Pakistan, the beef resources are usually the male and female buffalo and cows, male and female calves/yearlings and sick, emaciated and old animals. However, the potential large ruminants which can be used for feedlot fattening are:

1. **Male buffalo and cow calves/yearling**
2. **Old and out of work bullocks**
3. **Infertile, old and emaciated buffalo and cows**

However, during the project activities, buffalo and cow calves/yearling will be involved in feedlot fattening. Selection of proper animal at the time of procurement is a key to success for supervision of animals should be done during transportation to avoid any untoward incident.

During long distance transportation, water should be provided to the animals periodically.

Handling Newly Arrived Animals

Most critical period for incoming animals at the farm is almost first two weeks. Following guidelines pertaining to new incoming animals will minimize diseases and death losses and maximize performance and profitability.

1. Make sure that information is given to farm management about the expected number of animals, date and approximate time of their arrival, so that all necessary preparations can be made well in time.
2. Make sure that prior to the arrival of new animals, housing premises are properly cleaned and disinfected; water stations are functioning and feeding troughs repaired, disinfected and thoroughly cleaned.
3. Rest, fresh water, good feed, proper medication and Tender Loving Care (TLC) are essential for preventing shipping fever and death losses·
4. Give the animals’ easy access to clean fresh water because they are usually dehydrated and thirsty upon arrival and will drink water before they eat feed.
5. Open water tanks are preferable for this purpose.
6. Provide palatable ration so that animals should start eating soon after they are unloaded at the fattening place to reduce the transportation stress and to make the animal recover their weight loss more rapidly.
7. Make sure that animals get 24 - 48 hours rest and only after that they should be carefully transferred to handling yard for treatment against internal and external parasites. All weak animals should be injected with vitamin A and a combination of other fat and water soluble vitamins.
8. The animals that show clinical signs of disorders i.e., sunken eyes, runny nose, labored breathing; dry mouth should be isolated in a separate sick pen and treated accordingly.

**Therefore, attention should be paid for proper and effective procurement of the calves/yearlings and for this purpose following are the general guidelines:**

1. It is important that the purchase of the animals should preferably be made by using the weighing scale. In the absence of the weighing scale, assistance of the experienced person should be acquired to estimate the weight of animals.
2. Before purchasing the animals, their health status should be monitored and examination of mouth (buckle cavity) should be performed. Eyes of the animal should also be examined to identify the diseased and anemic conditions. Examination of nostrils for running nose should also be undertaken.
3. General view of the skin should be taken to judge whether the animal is suffering from warble fly or other infectious diseases.
4. Male buffalo and cow calves/yearlings should preferably be used for feedlot fattening as they produce more beef than females of the same age.
5. The calves/yearlings should be healthy, vigorous, active and non-emaciated.
6. The calves/yearlings should be of normal built up, almost uniform in weight, size and age. Slightly underweight calves/yearlings will perform better for weight gain purposes as they have the ability to catch the compensatory growth.

Transportation of Animals

Following points should be kept in mind to minimize the stress and risks during the transportation of the animals.

1. Before loading the purchased calves/yearlings in the truck, they should be given anti-pyretic and terramycine injection to avoid stress during transportation.
2. Proper bedding of the truck either with dried grass or wheat straw/rice straw should be provided to avoid injury.
3. Loading of the calves/yearlings should be done according to the available space in the truck to avoid suffocation and injury.
4. Initially, a palatable Transit Ration having high fibre should be introduced and then gradually shift to feedlot fattening ration. This will help to avoid any digestive problem.
5. Make sure that all animals are weighed on arrival and given some kind of identity (neck tags, ear tags, etc.).
6. Consult the veterinarian or feedlot fattening officer to know the vaccination schedule and source of good vaccine. Ensure that all the animals are vaccinated as per recommended vaccination schedule.
7. Ensure that animals are grouped according to their specie (buffalo or cow), weight, category, sex.
8. Incoming animals for fattening are usually deficient for minerals, especially if they have been on dry roughage or grazing. Therefore, mineral mixture should be offered free choice.
9. Feed should be offered daily in the morning and evening almost on fixed time.
10. Generally, fattening animals will consume daily an average amount (on air dry basis) equal to 3 percent of their body weight. Therefore, the animals should be offered feed at the rate of slightly more than 3 percent of their body weight.

Feed Adaptability and Feeding Schedule

The feed given to the animals kept and reared for the purpose of slaughtering is milk replacer formulae. It is almost half the cost of growing calves on fresh milk. It is cost efficient and readily available and most suitable for meat fattening.

Animals to be fattened should be gradually introduced to a high concentrate fattening ration to avoid lactic acidosis. It is always advisable to start feeding animals on a high roughage ration “Transit Ration” and then shifting them gradually to fattening feed (high concentrate ration). This is essential to avoid bloat and diarrhoea. However, new animals for feedlot fattening should be put on fattening feed as rapidly as possible.

Overfeeding and underfeeding is undesirable and thus should be avoided. Overfeeding usually result in wasteful of feed and health hazard.

Under feeding generally decrease the rate of gain, adversely affects feed efficiency, and increases cost of gains. Therefore, daily feeds intake should be mentioned and quantity of feed to be offered be adjusted accordingly.

Animal Performance Monitoring

Complete and well-kept record is an essential element to monitor the financial and biological performance of animals under feedlot fattening operation. Therefore, record book or computer should be used to maintain and facilitate record keeping.

Following are the key points for the record keeping:

**Basic Record**

- Date of purchase of animals

- Purchase price of animals

- Purchase weight of animals

- Cost of transportation of animals

- Sale weight of animals

- Sale price of animals

**Fattening Performance Record**

- Date of starting feedlot fattening

- Initial body weight of each animal

- Daily feed offered

- Fortnightly weight of each animal

- Final weight of each animal

- Feed to gain ratio

- Date of de-worming

- Date of vaccinations

- Maintenance of health record.

**Other Record**

- Feed cost per kg

- Mortality

- Maintenance and repair costs

The slaughter house design

The Slaughtering facility will be located in the agricultural area near Karachi. The plant, build on **12** acres of land, comprises of two abattoirs, Cold Storage units, Lairage, Offal Area, Management Offices and Canteen and Residence for staff.

Lairage

The lairage area is covered providing protections against adverse weather conditions for cattle waiting for slaughtering. It is constructed of suitable impervious material so as to facilitate easy and thorough cleaning. Facilities have also been provided for the ante-mortem inspection to take place and detention facilities of animals that requires further inspection and evaluation. The floors and passage ways are impervious and properly sloped to ensure the satisfactory drainage. The floor has been surfaced to ensure that the animals have a safe foothold. Furthermore the lairage also contains feed trough (only when the Cattles are kept twenty four hours at slaughterhouse before slaughtering) and water troughs in each pen or stall. There is a facility for washing and disinfecting for all types of cattle transport vehicles. These facilities and equipment are maintained in good working order.

Production

It will have state of the art slaughtering and storage facility. The fully automated Slaughtering plant has been imported from Australia which is the third largest meat processing country in the world. The plant has capacity of 40 heads per hour the plant is the largest private slaughtering house in Pakistan. Foreign technicians and experts were involved in setting up of the plant and in the training of the staff.

The plant has been developed keeping international standards of food safety and hygiene. The entire construction and design has been made to prevent contamination and bacteria from affecting the food.

All floors, walls, covings, doors, windows, ceilings / over head fixture and stairs, in the production area, are constructed of material that is durable easy to clean and suitable for arduous nature of slaughter house.

In order to prevent contamination the plant also comprises of laboratory where our food technicians and microbiologist perform and evaluate several tests for potential microbiological and bacterial growth that may harm the meat. Appropriate proactive measures are taken to prevent any potential contamination.

Furthermore our Quality Assurance team comprises of food technicians and Veterinary doctors who insure that all SOPs related to food safety, hygiene and meat quality are implemented at fullest. The veterinary doctors perform ante-mortem and post-mortem inspection of animals and meat in order to ensure that the animal that is to be slaughtered is in good health and free from diseases and the animals’ meat that is eventually obtained is fit and healthy for human consumption.

Laboratory and Quality Assurance

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Chillers and Cold Storage

Due to perishable nature of our product and to increase its shelf life chillers, freezers and Cold storage rooms have been developed. The total freezing capacity is around 40 tons at a time.

Managing temperature effectively is very critical for food safety. The temperature is reduced so as to retard the microbial growth and increase the shelf life of the meat. Thus trained and qualified staff has been appointed to ensure that each of the chiller, freezer and cold storage so as to ensure appropriate temperature is achieved before the product is eventually shipped.

Transportation

The facility has several refrigerated trucks to carry its products from the plant to the port. The product rapped in cotton cloth is placed in refrigerated trucks. The refrigerator in trucks are deigned to maintain the temperature of the meat so as to avoid any bacterial growth.

These refrigerated trucks are cleaned every time a new shipment is prepared so as to avoid any cross contamination prior to loading of the product.

OPERATIONAL PROCESSES

**Lairage**

The animal should be given rest for at least 12-18 hours before slaughtering and only water should be given to it in this process.

**Slaughtering**

Slaughters are done manually. The animal being cast down is laid on its back, while the neck vessels and passages (esophagus and trachea) are severed by a single slash of a sharp knife. Bleeding proceeds to completion.

2 *Req. Area per small animal is 15 sq.ft, per large animal is 50 sq.ft,( 2 days animals in stock)*

**Bleeding**

Slaughtered animals must be positioned first for bleeding. A vertical or hanging position is achieved by shackling below the hock of one hind leg and hoisting the animal (head down) to a convenient height. Alternatively, the animal can be placed horizontally on a concrete slab or a sturdy plastic pallet for bleeding.

Hoist bleeding is more hygienic and is recommended. It also facilitates collection of blood for further use.

**Skinning**

It is removing the skin of animals. Skinning will be done in hanging position with facilities/equipment of railing, the individual carcasses one after another.

**Eviscerating**

The next step is to cut open the animal body to dislodge the contents and produce the carcass. It is important that the carcass remains or is placed in the hanging position on railing.

**Post-mortem Inspection**

Inspection will be carried out by professional veterinarians and public health inspectors are to be employed, as it is required by the MCL. (Provision of their salaries has been provided in the financial analysis). Their duty is to examine the slaughter products for evidence of disease and abnormality and reject/eliminate them from the public meat supply.

**Rigor Mortis process**

Before chilling, for at least 2-4 hours, air is provided by fans to carcasses in a separate room.

HUMAN RESOURCE REQUIREMENTS

To improve slaughter hygiene and meat quality, reduce raw material losses, increase utilization of by-products, and thereby increase profitability. To meet this objective, proper training is required for the meat workers who are to operate these facilities.

FACILITIES, EQUIPMENTS AND TOOLS

**Water and Drainage**

The slaughterhouse must have a dependable source of clean water, preferably pipeborne, to maintain hygienic and sanitary services in the plant. The water must be well distributed in terms of point-location inside the premises and must be hot, if possible, for hygienic washing of products and facilities.

It would be useful, to install a reservoir or tank on the premises as a security against shortages and breakdown of pumps.

Drainage of water is one of the main considerations in any slaughterhouse. All washings or wet cleaning must course over the slaughter floor into a collecting drainage and empty eventually outside the building. The floor should be designed to slope toward the main collecting drain, the latter in turn to slope toward exterior connecting pipes. The walls must have a hard smooth surface to prevent staining with blood and fat and hence facilitate cleaning; on the other hand, the floor must be rough or grooved to forestall slipping.

**Lighting and Ventilation**

Lighting is another important requirement of the slaughterhouse. Electricity connection will be obtained from WAPDA, but a diesel generator is provided for emergency supply of electricity. Transparent insets can also be made in the roofing at vantage points to provide natural lighting or sky lighting. Wide lintel windows (e.g. aluminum frame), covered with gauze to exclude insects, also serve the same purpose, as well as provide ventilation.

**Equipment**

The standard installation and equipment required in modern slaughterhouse are those necessary to effect a rapid and hygienic conversion of livestock into meat.

Machinery & Equipment

1. Weighing scale
2. Lab equipment
3. Tube lights
4. Sorting tables
5. Conveyor/hooks
6. Trolleys
7. S.S hooks with bearing
8. Over head mobile hook
9. Chiller Hooks
10. Slaughtering kit& equipment
11. Mincing machines
12. Booring

Slaughtering Tools

Relatively fewer tools are required for the slaughter and some can be made by local metal workshops or blacksmiths. The most commonly used slaughtering tools are;

 ***Skinning Knife***

As the name implies, this knife is used for the removal of the animal's skin. Also with a six-inch blade and characteristically curved backwards to allow for ease of operation, it can be used to scrape off burned hair from carcasses being dressed with the skin-on.

 ***Meat Saw***

A replaceable blade handsaw, which is used in sawing through bone

***Meat Chop****:*

Also called thecleaver, the meat chop is a heavy axe used for separating heavy structures, e.g. the head from the neck or the shanks from the leg.

***Spreader:***

A metal device for suspending the animal body and spreading out the legs for dressing and inspection

***Grinding and Honing Stones:***

Grinding stones are coarse grained and used for the initial sharpening of knives into thin edges, and then finished with the homer, which is of fine-grain to provide extra thinness. Either oil or water may be used in sharpening knives to prevent the stone from heating the knives.

***Steel:***

A long, tapering rounded and smooth metal rod on which knives is smoothened from time to time to improve keenness

***Meat Tree/Hooks:***

Metal devices with bent-out curved ends for holding or displaying parts of the slaughtered meat and offal for washing and inspection

**Van**

A chiller van which includes reefer container and refrigeration systems will be required for delivery of meat, especially for the delivery to airport for export of meat.

**Raw Material**

The following is the material used for cleaning purposes.

 Sulfuric Acid

 Caustic Soda

 Ferric Chloride

 Sodium Hypochlorite

 Coagulation Material (Alum)

 Anion & Cation Resins

THE ANIMALS SLAUGHTER CONTROL ACT, 1963

(W.P. Act III of 1963)

[17 April 1963]

An Act to prohibit the slaughter of useful animals and to regulate the slaughter of other animals

Preamble.— WHEREAS it is expedient to prohibit the slaughter of useful animals and to regulate the slaughter of other animals;

It is hereby enacted as follows:-

(f) “prescribed” means prescribed by rules made under this Act;

(ff) “Rules” mean rules made under this Act;

(g) “Slaughter” means to kill animals by any means;

(h) “slaughter-house” means any building or premises used for slaughtering animals and approved by the local authority concerned;

(i) “stock yard” means any enclosure, approved by a local authority where animals are assembled for examination by the Veterinary Officer to determine whether they are suitable for slaughter or not, or where animals approved for slaughtering are housed until they are removed to the slaughter-house;

(j) “Area” means an area which the Government may, by notification in the official Gazette, declare to be an area for the purposes of this Act;

**(k) “Useful animal” means—**

(i) a female sheep or goat below the age of one year and six months;

(ii) a female sheep or goat of the age exceeding one year and six months but not exceeding four years, which is pregnant or fit for breeding purposes;

(iii) Any female animal, other than sheep, or goat below three years of age;

(iv) Any female animal, other than sheep, or goat which is pregnant or in milk or fit for breeding purposes;

(v) Any female animal, other than sheep or goat between three to ten years of age, which is fit for draught purposes; but does not include any such animal which on account of culling, injury, illness or other cause, is certified in writing by a Veterinary Officer or any gazetted officer of the Livestock and Dairy Development Department] as not likely to live or as no longer a useful animal for the purposes of this Act; and

(vi) any male sheep or goat below the age of two months;

(l) “Veterinary Officer” means an officer of the Livestock and Dairy Development Department], not below the rank of a Veterinary Assistant Surgeon, and includes an Officer-in-charge of a slaughter-house, provided that such officer-incharge possesses a degree or diploma from a recognised Veterinary or Animal Husbandry College.

**Restriction on slaughter of animals.— (1) No person shall slaughter a useful animal.**

(2) No person shall slaughter an animal—

(a) Unless such animal has been approved as hereinafter provided, for slaughter;

(b) Except in a slaughter-house and during the hours prescribed therefore and

(c) Tuesday and Wednesday or on such other day or days as Government may by notification in the official Gazette, specify in this behalf: Provided that nothing contained in this section shall apply to the slaughter of any animal—

(i) By a Muslim on the day of Eid-ul-Azha and the two succeeding days; or

(ii) Which on account of illness, injury or other cause is likely to die before it can be presented to the officer-in-charge of slaughter-house.

(3) No person shall, directly or indirectly,—

(a) sell, keep, store, transport, offer or expose for sale, or hawk any meat or carcass of any animal which has not been slaughtered in a slaughter-house and does not bear the stamp or mark of the slaughter-house prescribed by the local authority in this behalf; or

(b) Sell or cause to be sold any meat at a place other than that set apart or approved for this purpose by the local authority.

3-A Presumptions.— In every prosecution under this Act, the court shall presume—

(a) that any meat or carcass found in possession of any person who is, or has been, habitually selling, keeping, storing, transporting, offering or exposing for sale, or hawking the meat or carcass, was being sold, kept, stored, transported, offered or exposed for sale, or hawked, as the case may be, by such person;

(b) That any meat or carcass which does not bear the stamp or mark of a slaughter-house has not been slaughtered in a slaughter-house or during the hours prescribed therefore

(c) that any person who is in possession of the premises where an offence under this Act has been or is being committed by another person has abetted that offence.

4. Examination in stock-yard.— (1) Any person intending to slaughter an animal in slaughter-house shall produce the animal in the stock yard for examination at any time during the hours fixed by the local authority concerned for inspection.

(2) After examination of any such animal, the Veterinary Officer may approve it for slaughter: Provided that no useful animal shall be so approved.

(3) Any person aggrieved by a decision of the Veterinary Officer may, within twenty-four hours of such decision, prefer an appeal from such decision, to such authority as may be prescribed.

(4) Subject to the decision of the appellate authority the decision of the Veterinary Officer shall be final.

 (a) enter and search a slaughter-house or any other premises where he has reason to believe that an offence under this Act or rules has been, is being or is about to be committed, and may seize any animal, carcass or meat, in respect of which such offence has been, is being or is about to be committed, as the case may be; and

(b) Arrest or cause to be arrested any person who, in his view, commits any offence under the provisions of this Act or the rules.

 (3) An attempt to contravene any provision of this Act or the rules and an abetment of such contravention shall be punished as an offence under this Act.

Costing

**Land Requirement:**

|  |  |
| --- | --- |
| **Land required** | **15Acres** |
| **Total** | **15 Acre** |

**Cost of Land**

|  |  |  |
| --- | --- | --- |
| **Land Required** | **Cost per Acre** | **Land Cost** |
| 15 Acre | 1,000,000 | **15,000,000** |

**Cost of Calve (10 – 15 days old)**

|  |  |  |
| --- | --- | --- |
| **No. of Animals** | **Cost Per Animal** | **Total Animal Cost** |
| 9000 | 1500 | **13,500,000/-** |

**Cost of Abattoir:**

**Cost of Abattoir = Rs. 60,000,000/-**

**Feeding cost:**

Milk Replacer (432 grams) = Rs. 100 / day / calf

Cost of feed (Dry & Green) / day = Rs.100 / day / calf

Feeding Cost for 225 days = 100 \* 225 = Rs 22,500 / calf

**Feeding Cost for 9000 calves for the entire 225 days = 22500 \* 9000 = Rs. 202,500,000/-**

*Assuming 9000 calf will be fed for 225 days*

**Cost of Housing Sheds & Slaughter House Building:**

**Cost of Housing Sheds = Rs. 30,000,000/-**

**Cost of Housing Sheds = Rs. 30,000,000/-**

**Total Housing & Slaughter House Building Cost = Rs. 33,000,000/-**

**Cost of labor**

Labor required for 9000 animal = 60

Salary per person = Rs 4000 / month

**Labor cost = 60 \* 4000 \* 12 = Rs 2,880,000/- per year**

**Cost of Doctor = 50000/- per month**

**2 Doctors = Rs. 120,000 / year**

**Total Labor Cost = 2880000 + 120000 = 3,000,000/- per year**

**Misc. Cost :**

**Misc. Cost = Rs. 660,000/-**

**Project Cost :**

|  |  |
| --- | --- |
| **Account Head** | **Cost** |
| Land | 15,000,000.00 |
| Calve | 13,500,000.00 |
| Abbatoir | 60,000,000.00 |
| Feed | 202,500,000.00 |
| Building | 33,000,000.00 |
| labor | 3,000,000.00 |
| Misc | 660,000.00 |
| **Total** | **327,660,000.00** |



|  |
| --- |
| **Profit And Loss account**  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|   |   |  **Y 1**  |  **Y 2**  |  **Y3**  |  **Y4**  |  **Y5**  |
|  Sales  |   |  121,500,000  |  381,150,000  |  397,800,000  |  414,450,000  |  431,100,000  |
|  Less:  |   |  |  |  |  |  |
|  Cost of Sales  |  165,126,000  |  245,415,000  |  257,244,000  |  269,073,000  |  280,902,000  |
|   |   |  |  |  |  |  |
|  Gross Profit  |  (43,626,000) |  135,735,000  |  140,556,000  |  145,377,000  |  150,198,000  |
|  Less:  |   |  |  |  |  |  |
|  Finance cost  |  |  |  |  |  |
|   |   |   |   |   |   |   |
|  Net Profit  |   |  (43,626,000) |  135,735,000  |  140,556,000  |  145,377,000  |  150,198,000  |
|   |   |  |  |  |  |  |
|  Un-appropriated profit B/F  |  -  |  (43,626,000) |  92,109,000  |  232,665,000  |  378,042,000  |
|  Un-appropriated profit C/F  |  (43,626,000) |  92,109,000  |  232,665,000  |  378,042,000  |  528,240,000  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  **Sales**  |   |  |  |  |  |  |
|   |   |  **Y 1**  |  **Y 2**  |  **Y3**  |  **Y4**  |  **Y5**  |
|  Number of Calve  |  3,000  |  9,000  |  9,000  |  9,000  |  9,000  |
|  Average Selling Price / Calf  |  37,500  |  39,000  |  40,500  |  42,000  |  43,500  |
|  Selling Price  |  112,500,000  |  351,000,000  |  364,500,000  |  378,000,000  |  391,500,000  |
|  Skin  |   |  7,500,000  |  24,750,000  |  27,000,000  |  29,250,000  |  31,500,000  |
|  Misc  |   |  1,500,000  |  5,400,000  |  6,300,000  |  7,200,000  |  8,100,000  |
|  Total Revenue  |  121,500,000  |  381,150,000  |  397,800,000  |  414,450,000  |  431,100,000  |
|  |  |  |  |  |  |  |
|  It is assumed that 1st year calf will be sale 3000  |  |  |  |  |
|  Calf weight after 3 months is 100kg approx. and after 1 year Calf weight will be 300kg approx.  |  |
|  Meet weight price is Rs. 125 / kg. So the selling price would be Rs. 37,500 in first year.  |  |
|  Skin price Rs. 2500 per calf and the Misc 500  |  |  |  |  |
|  Increase of Calf Sale Rs. 5/Kg, Skin 250 and Misc. 100  |  |  |  |
|  |  |  |  |  |  |  |
|  **Cost of Feed**  |  |  |  |  |  |
|   |   |  **Y 1**  |  **Y 2**  |  **Y3**  |  **Y4**  |  **Y5**  |
|  |   |  |  |  |  |  |
|  Number of Animals / Year  |  9,000  |  9,000  |  9,000  |  9,000  |  9,000  |
|  MP Cost per calf / day  |  100  |  105  |  110  |  115  |  120  |
|  MP Cost per calf  |  7,500  |  23,625  |  24,750  |  25,875  |  27,000  |
|  Total cost  |   |   |  212,625,000  |  222,750,000  |  232,875,000  |  243,000,000  |
|   |   |  135,000,000  |  |  |  |  |
|  Total Feeding Cost  |  135,000,000  |  212,625,000  |  222,750,000  |  232,875,000  |  243,000,000  |
|  |  |  |  |  |  |  |
|  **Year 1**  |  3000 calve for 225 days  |  |  |  |  |
|   |  3000 calve for 150 days  |  |  |  |  |
|   |  3000 calve for 75 days  |  |  |  |  |
|  It is assumed that the calf will be on Milk Replacer first 3 months and the rest of on Green and Dry feed  |
|  It is assume the cost of feed is for 3 cycles. Total 225 days / Year  |  |  |
|  Price of Milk Replacer and the Green & Dry feed per calf is Rs.100 / day  |  |  |
|  Assumed that increase in the price of Feed is Rs. 5 / Year  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  **Labor Cost**  |  **Y 1**  |  **Y 2**  |  **Y3**  |  **Y4**  |  **Y5**  |
|  Labor required for 3000 Calve  |  20  |  20  |  20  |  20  |  20  |
|  Labor required for 9000 Calve  |  60  |  60  |  60  |  60  |  60  |
|  Labor cost per month  |  4,000  |  4,200  |  4,400  |  4,600  |  4,800  |
|  Total annual labour  |  1,920,000  |  3,024,000  |  3,168,000  |  3,312,000  |  3,456,000  |
|  |  |  |  |  |  |  |
|  **Year 1**  |  60 people for 4 months  |  |  |  |  |
|   |  40 people for 8 months  |  |  |  |  |
|   |  20 people for 12 months  |  |  |  |  |
|  |  |  |  |  |  |  |
|  Labor rate is Rs.4000 per month  |  |  |  |  |
|  |  |  |  |  |  |  |
|  **Utilities**  |   |  **Y 1**  |  **Y 2**  |  **Y3**  |  **Y4**  |  **Y5**  |
|  Cost per month  |  345,000  |  390,000  |  435,000  |  480,000  |  525,000  |
|  Annual cost  |  4,140,000  |  4,680,000  |  5,220,000  |  5,760,000  |  6,300,000  |
|  |  |  |  |  |  |  |
|  It is assumed that utilities expenses are Rs.300,000 per month  |  |  |  |
|  Utilities expenses have been increased by Rs.1,500 per day  |  |  |  |
|  |  |  |  |  |  |  |
|  **Doctor Cost**  |  **Y 1**  |  **Y 2**  |  **Y3**  |  **Y4**  |  **Y5**  |
|  Cost per month  |  100,000  |  110,000  |  120,000  |  130,000  |  140,000  |
|  Annual cost  |  1,200,000  |  1,320,000  |  1,440,000  |  1,560,000  |  1,680,000  |
|  Assuming there will be 2 Doctors  |  |  |  |  |
|  |  |  |  |  |  |  |
|  **Calf Cost**  |   |  **Y 1**  |  **Y 2**  |  **Y3**  |  **Y4**  |  **Y5**  |
|   |   |  |  |  |  |  |
|  Total Calve  |  9,000  |  9,000  |  9,000  |  9,000  |  9,000  |
|  Cost per Calf  |  1,500  |  1,600  |  1,700  |  1,800  |  1,900  |
|  Total Annual cost  |  13,500,000  |  14,400,000  |  15,300,000  |  16,200,000  |  17,100,000  |
|  |  |  |  |  |  |  |
|  **Depreciation Cost**  |  **Y 1**  |  **Y 2**  |  **Y3**  |  **Y4**  |  **Y5**  |
|   |   |  |  |  |  |  |
|  Building and Structure  |  3,300,000  |  3,300,000  |  3,300,000  |  3,300,000  |  3,300,000  |
|  Abattoir  |   |  6,000,000  |  6,000,000  |  6,000,000  |  6,000,000  |  6,000,000  |
|  Generator  |   |  50,000  |  50,000  |  50,000  |  50,000  |  50,000  |
|  Digital Weight Scales  |  6,000  |  6,000  |  6,000  |  6,000  |  6,000  |
|  Refrigerator  |   |  10,000  |  10,000  |  10,000  |  10,000  |  10,000  |
|  Total  |   |  9,366,000  |  9,366,000  |  9,366,000  |  9,366,000  |  9,366,000  |
|  |  |  |  |  |  |  |
|  **Total Cost Of Sale**  |  **Y 1**  |  **Y 2**  |  **Y3**  |  **Y4**  |  **Y5**  |
|   |   |  |  |  |  |  |
|  Milking Replacer  |  135,000,000  |  212,625,000  |  222,750,000  |  232,875,000  |  243,000,000  |
|  Labor Cost  |  1,920,000  |  3,024,000  |  3,168,000  |  3,312,000  |  3,456,000  |
|  Utilities  |   |  4,140,000  |  4,680,000  |  5,220,000  |  5,760,000  |  6,300,000  |
|  Doctor Cost  |  1,200,000  |  1,320,000  |  1,440,000  |  1,560,000  |  1,680,000  |
|  Calf Cost  |  13,500,000  |  14,400,000  |  15,300,000  |  16,200,000  |  17,100,000  |
|  Depreciation Cost  |  9,366,000  |  9,366,000  |  9,366,000  |  9,366,000  |  9,366,000  |
|   |   |  165,126,000  |  245,415,000  |  257,244,000  |  269,073,000  |  280,902,000  |
|  |  |  |  |  |  |  |
| **BALANCE SHEET**  |
|  |  |  |  |  |  |  |
|   |  **Y 0**  |  **Y 1**  |  **Y 2**  |  **Y 3**  |  **Y 4**  |  **Y 5**  |
|  **Non current assets**  |  |  |  |  |  |  |
|  Land  |  15,000,000  |  15,000,000  |  15,000,000  |  15,000,000  |  15,000,000  |  15,000,000  |
|  Building and Structure  |  33,000,000  |  29,700,000  |  26,400,000  |  23,100,000  |  19,800,000  |  16,500,000  |
|  Abattoir  |  60,000,000  |  54,000,000  |  48,000,000  |  42,000,000  |  36,000,000  |  30,000,000  |
|  Generator  |  500,000  |  450,000  |  400,000  |  350,000  |  300,000  |  250,000  |
|  Digital Weight Scales  |  60,000  |  54,000  |  48,000  |  42,000  |  36,000  |  30,000  |
|  Refrigerator  |  100,000  |  90,000  |  80,000  |  70,000  |  60,000  |  50,000  |
|   |  108,660,000  |  99,294,000  |  89,928,000  |  80,562,000  |  71,196,000  |  61,830,000  |
|   |  |  |  |  |  |  |
|  **Current Assets**  |  |  |  |  |  |  |
|  Other current assets  |  200,000  |  400,000  |  350,000  |  500,000  |  400,000  |  600,000  |
|  Cash in hand  |  400,000  |  (143,120,000) |  2,031,000  |  151,853,000  |  306,746,000  |  466,210,000  |
|   |  600,000  |  (142,720,000) |  2,381,000  |  152,353,000  |  307,146,000  |  466,810,000  |
|  Total assets  |  **109,260,000**  |  **(43,426,000)** |  **92,309,000**  |  **232,915,000**  |  **378,342,000**  |  **528,640,000**  |
|   |  |  |  |  |  |  |
|  **Noncurrent liabilities**  |  |  |  |  |  |  |
|  Loan  |  |  |  |  |  |  |
|  **Current liabilities**  |  |  |  |  |  |  |
|  other current liabilities  |  100,000  |  200,000  |  200,000  |  250,000  |  300,000  |  400,000  |
|   |  100,000  |  200,000  |  200,000  |  250,000  |  300,000  |  400,000  |
|   |  |  |  |  |  |  |
|  **Capital**  |  |  |  |  |  |  |
|  Share capital  |  54,580,000  |  |  |  |  |  |
|  Unappropriated profit  |  -  |  (43,626,000) |  92,109,000  |  232,665,000  |  378,042,000  |  528,240,000  |
|  Revaluation  |   |   |   |   |   |   |
|   |  54,580,000  |  (43,626,000) |  92,109,000  |  232,665,000  |  378,042,000  |  528,240,000  |
|  |  **54,680,000**  |  **(43,426,000)** |  **92,309,000**  |  **232,915,000**  |  **378,342,000**  |  **528,640,000**  |
|  |  |  |  |  |  |  |
|  |  |  -  |  -  |  -  |  -  |  -  |
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|  |  |  |  |  |  |  |
|  **Cash Flow Statement**  |
|  |  |  |  |  |  |  |
|   |  **Y 0**  |  **Y 1**  |  **Y 2**  |  **Y 3**  |  **Y 4**  |  **Y 5**  |
|  operative Activities  |  |  |  |  |  |  |
|  Net Profit  |  |  (43,626,000) |  135,735,000  |  140,556,000  |  145,377,000  |  150,198,000  |
|  add: depreciation expense  |  |  9,366,000  |  9,366,000  |  9,366,000  |  9,366,000  |  9,366,000  |
|  other current assets  |  (200,000) |  (200,000) |  50,000  |  (150,000) |  100,000  |  (200,000) |
|  Current liabilities  |  100,000  |  100,000  |  -  |  50,000  |  50,000  |  100,000  |
|  **cash Provided by operation**  |  (100,000) |  (34,360,000) |  145,151,000  |  149,822,000  |  154,893,000  |  159,464,000  |
|   |  |  |  |  |  |  |
|  financing activities’  |  |  |  |  |  |  |
|  change in long term loan  |  -  |  |  |  |  |  |
|  issuance of shares  |   |  -  |  -  |  -  |  -  |  -  |
|  **cash provided/used by financing**  |  -  |  -  |  -  |  -  |  -  |  -  |
|   |  |  |  |  |  |  |
|  investing activities  |  |  |  |  |  |  |
|   |  |  |  |  |  |  |
|  capital expenditure  |  (108,660,000) |  |  |  |  |  |
|   |   |   |   |   |   |   |
|  **cash provided by /used for investing**  |  (108,660,000) |  -  |  -  |  -  |  -  |  -  |
|   |  |  |  |  |  |  |
|   |  |  |  |  |  |  |
|  **Net cash**  |  (108,760,000) |  (34,360,000) |  145,151,000  |  149,822,000  |  154,893,000  |  159,464,000  |
|  |  |  |  |  |  |  |
|  |  (143,120,000) |  2,031,000  |  151,853,000  |  306,746,000  |  466,210,000  |  |
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|  **Notes**  |
|  |  |  |  |  |  |  |
|  **Land**  |  |  |  |  |  |  |
|   |   |  **Y 1**  |  **Y 2**  |  **Y 3**  |  **Y 4**  |  **Y 5**  |
|  Cost of land  |  |  15,000,000  |  15,000,000  |  15,000,000  |  15,000,000  |  15,000,000  |
|  Land requirement (acres)  |  |  15  |  15  |  15  |  15  |  15  |
|  Cost per acre  |  |  1,000,000  |  1,000,000  |  1,000,000  |  1,000,000  |  1,000,000  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  -  |  -  |
|  |  |  |  |  |  |  |
| **Building And Structure** |  |  |  |  |  |  |
|   |  |  |  |  |  |  |
|  Housing Sheds  |   |  **Y 1**  |  **Y 2**  |  **Y 3**  |  **Y 4**  |  **Y 5**  |
|  Total cost of Housing sheds  |  |  30,000,000  |  30,000,000  |  30,000,000  |  30,000,000  |  30,000,000  |
|   |  |  |  |  |  |  |
|  Cost Slaughter House building  |  |  |  |  |  |  |
|  Building Cost  |  |  3,000,000  |  3,000,000  |  3,000,000  |  3,000,000  |  3,000,000  |
|  Addition during the year  |  |  -  |  -  |  -  |  -  |  -  |
|   |  |  |  |  |  |  |
|  Opening Balance  |  |  33,000,000  |  29,700,000  |  26,400,000  |  23,100,000  |  19,800,000  |
|  Addition during the year  |  |  -  |   |   |   |   |
|  Closing Balance  |  |  33,000,000  |  29,700,000  |  26,400,000  |  23,100,000  |  19,800,000  |
|  Depreciatable amount  |  |  33,000,000  |  33,000,000  |  33,000,000  |  33,000,000  |  33,000,000  |
|  Dep rate (%)  |  |  10  |  10  |  10  |  10  |  10  |
|  Depreciation Cost  |  |  3,300,000  |  3,300,000  |  3,300,000  |  3,300,000  |  3,300,000  |
|  Book value  |  |  29,700,000  |  26,400,000  |  23,100,000  |  19,800,000  |  16,500,000  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  **Abattoir**  |   |  **Y 1**  |  **Y 2**  |  **Y 3**  |  **Y 4**  |  **Y 5**  |
|  Abattoir  |  |  |  |  |  |  |
|  Cost Of Abattoir  |  |  60,000,000  |  60,000,000  |  60,000,000  |  60,000,000  |  60,000,000  |
|  Addition during the year  |  |  -  |  -  |  -  |  -  |  -  |
|   |  |  |  |  |  |  |
|   |  |  |  |  |  |  |
|   |  |  -  |  -  |  -  |  -  |  -  |
|  |  |  |  |  |  |  |
|  Opening Balance  |  |  60,000,000  |  54,000,000  |  48,000,000  |  42,000,000  |  36,000,000  |
|  Addition during the year  |  |  -  |  -  |  -  |  -  |  -  |
|  Closing Balance  |  |  60,000,000  |  54,000,000  |  48,000,000  |  42,000,000  |  36,000,000  |
|  Depreciatable amount  |  |  60,000,000  |  60,000,000  |  60,000,000  |  60,000,000  |  60,000,000  |
|  Dep rate (%)  |  |  10  |  10  |  10  |  10  |  10  |
|  Depreciation Cost  |  |  6,000,000  |  6,000,000  |  6,000,000  |  6,000,000  |  6,000,000  |
|  Book value  |  |  54,000,000  |  48,000,000  |  42,000,000  |  36,000,000  |  30,000,000  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  1 Abattoir can slaughter 100 calves/day and 250 sheep/day  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  **Generator**  |   |  **Y 1**  |  **Y 2**  |  **Y 3**  |  **Y 4**  |  **Y 5**  |
|   |  |  |  |  |  |  |
|  Opening Balance  |  |  500,000  |  450,000  |  400,000  |  350,000  |  300,000  |
|  Depreciatable amount  |  |  500,000  |  500,000  |  500,000  |  500,000  |  500,000  |
|  Dep rate (%)  |  |  10  |  10  |  10  |  10  |  10  |
|  Depreciation Cost  |  |  50,000  |  50,000  |  50,000  |  50,000  |  50,000  |
|  Book value  |  |  450,000  |  400,000  |  350,000  |  300,000  |  250,000  |
|  |  |  |  |  |  |  |
|  **Digital Weight Scales**  |   |  **Y 1**  |  **Y 2**  |  **Y 3**  |  **Y 4**  |  **Y 5**  |
|   |  |  |  |  |  |  |
|  Opening Balance  |  |  60,000  |  54,000  |  48,000  |  42,000  |  36,000  |
|  Depreciatable amount  |  |  60,000  |  60,000  |  60,000  |  60,000  |  60,000  |
|  Dep rate (%)  |  |  10  |  10  |  10  |  10  |  10  |
|  Depreciation Cost  |  |  6,000  |  6,000  |  6,000  |  6,000  |  6,000  |
|  Book value  |  |  54,000  |  48,000  |  42,000  |  36,000  |  30,000  |
|  |  |  |  |  |  |  |
|  **Refrigerator**  |   |  **Y 1**  |  **Y 2**  |  **Y 3**  |  **Y 4**  |  **Y 5**  |
|   |  |  |  |  |  |  |
|  Opening Balance  |  |  100,000  |  90,000  |  80,000  |  70,000  |  60,000  |
|  Depreciatable amount  |  |  100,000  |  100,000  |  100,000  |  100,000  |  100,000  |
|  Dep rate (%)  |  |  10  |  10  |  10  |  10  |  10  |
|  Depreciation Cost  |  |  10,000  |  10,000  |  10,000  |  10,000  |  10,000  |
|  Book value  |  |  90,000  |  80,000  |  70,000  |  60,000  |  50,000  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |