

# Calf farming in pakistan – smeda report

[Business](#), [Industries](#)



## **Disclaimer**

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In depth research was conducted and comprehensive development plans were formulated after identification of impediments and retardants. The all-encompassing sectoral development strategy involved recommending changes in the regulatory environment by taking into consideration other important aspects including finance, marketing, technology and human resource development. SMEDA has so far successfully formulated strategies for sectors including, fruits and vegetables, marble and granite, gems and jewelry, marine fisheries, leather and footwear, textiles, surgical instruments, transport and dairy.

Whereas the task of SME development at a broader scale still requires more coverage and enhanced reach in terms of SMEDA's areas of operation. Along

with the sectoral focus a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of viable business opportunities for potential SME investors. In order to facilitate these investors, SMEDA provides business guidance through its help desk services as well as development of project specific documents. These documents consist of information required to make well-researched investment decisions.

Pre-feasibility studies and business plan development are some of the services provided to enhance the capacity of individual SMEs to exploit viable business opportunities in a better way. This document is in the continuation of this effort to enable potential investors to make well-informed investment decisions.

## **Purpose of the Document**

The objective of the pre-feasibility study is primarily to facilitate potential entrepreneurs to facilitate investment and provide an overview about dairy and livestock farming.

The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document covers various aspects of dairy and livestock concept development, start-up, production, finance and business management. The document also provides sectoral information, brief on government policies and international scenario, which have some bearing on the project itself. This particular pre-feasibility is regarding “ Calf Fattening Farm” which comes under “ Livestock and Agriculture” sector.

Before studying the whole document one must consider following critical aspects, which form the basis of any investment decision.

## **Crucial Factors & Steps in Decision Making for Investment**

Calf fattening is all-inclusive activity, related to meet animal's care, housing, medication, feeding and management. It is defined as all those aspects and activities relating to raising of calves for meat purpose. Before making the decision, whether to invest in the livestock farming or not, one should carefully analyze the associated risk factors.

A SWOT analysis can help in analyzing these factors, which can play important role in making the decision.

### **Strengths**

- Back bone and main stay of economy
- Provides raw material for food & Leather industry
- Concentrated production
- Favorable breeding backgrounds
- Relatively cheap farmland
- High domestic consumption
- Low cost living standard
- Full family involvement, devoted & hardworking Sector
- Major source of food, i. e. Meat. Source of Farmyard Manure (FYM)
- Sizeable foreign exchanges earning through exports. Ample human resource employment sector.
- Stationed, permanently located secured loaning sector.

**Weaknesses**

- High production costs
- Low levels of bulk feed production
- Poor management level in quite a few cases
- No or low application of research work and pedigree record keeping
- Animals are kept for social rather than commercial reasons
- There is no registered beef breed in Pakistan
- Low or lack of interaction with farmers
- Poor information about each other
- Lack of extension services
- Lack of education and initiative in farmer, traditional approach due to lack of skills and management
- Unorganized sector, unaware of basic farm management practices.
- Remote area, lack of farm to market approach & transportation
- Non-availability of communication services
- Lack of farm/ market infra structures & marketing information
- Management of livestock farm is a challenging job
- Nutrition is still a problem hampering the livestock productivity in general and meat production in particular

**Opportunities**

- Govt. of Pakistan & Sate Bank of Pakistan priority sector
- Vast range of area of operation, more needs and scope of development.
- Value added dairy products are in demand
- Meat and meat products needs are much higher than supply

- Commercially viable sector with great credit potential and absorption capacity
- Vast range of area of operation, more needs and scope of development
- Value added meat products are in demand
- If the government lifts the price fixing taboo, then there are bright chances for the flourishing of meat market
- Customers are ready to pay prices for the good quality meat
- Massive migration of labour to cities can be checked/stopped. Corporate financing will become a niche in lending market.
- Progressive meat retailing firms can promote the sale of processed and quality meat cuts to consumers, which is packed and labeled at a price, including the cost of processing, packaging and quality
- Development of slaughtering and processing operations can help in obtaining maximum value
- Improving the control of external parasites may enhance the value of hide or skin.

### **Threats**

- Rising trend of cost of production with higher rate of interest as compared to profit ratio
- Implementation of WTO will result in open & competitive commodity pricing. Due to fear of default, banker community has reluctance for lending loans.
- High risks of diseases in live stock. Animals are subject to serious diseases that may lead to mortality

- The formal meat market not growing due to the government regulation of price fixing as Municipal Corporation fixes the meat prices in the urban markets. The fixed prices are not likely to be viable for selling the quality meat. Butcher market not ready to pay the premium prices for the fattened animal.
- Defective and unorganized markets. Imbalance between prices of inputs & outputs. Rising trend of cost of production with higher rate of interest as compared to profit ratio.
- Lack of media projection, non-recognition of problems and monopoly of multinationals
- Lack of community organizations and out dated farm practices
- Lack of coordination towards common causes & goals
- Lack of awareness about economics, demand & supply in market
- Low saving, low holding capacity & increasing level of poverty
- Non-availability of subsidy & tax holidays.

## **Project Profile**

Opportunity Rationale Livestock production is an integral part of Pakistan's agriculture sector and plays a vital role in national economy.

At present, livestock is contributing about 52% to the agricultural sector and 10.9% to the GDP. Pakistan is geographically located close to the Middle East and South-East Asia. Both of these regions are deficient in livestock products and depend upon import from other countries. The livestock industry in most of the developed world is highly subsidized. With reduction of subsidies in the wake of WTO, the local livestock sector should have better opportunities to compete. Livestock registered a strong growth of 4.30%

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over the last year's impressive growth of 7.5% due to increase in the livestock and poultry products.

The role of livestock in rural economy may be assessed by the fact that 30 to 35 million of the total rural population is engaged in livestock farming, having 2 to 3 cattle/buffalo and 5 to 6 sheep/goats per family deriving 30% to 40% of income from it. During year 2007-08, the total red meat production was 1.55 and 0.58 million tons for beef and mutton, respectively. The per capita consumption indicates a growing demand of meat in the years to come. Calves for fattening may come from the dairy herd. Livestock production is growing rapidly as a result of the increasing demand for animal products. In a Food & Agriculture Organization (FAO) study: Livestock to 2020: The Next Food Revolution, it is suggested that global meat production and consumption will rise from 233 million tones (2000) to 300 million tones (2020), and milk from 568 to 700 million tones over the same period. Egg production will also increase by 30%.

Calf fattening enterprise is an agro-based project. The calves, preferably males, 8-9 months of age are fed on concentrated feed and fodder produced from the agricultural land. Balanced feed is given to calves for a period of 120 days to get higher weight gain. Live weight of these calves is between 80-90 kg.

If these calves are fed properly on the formulated fattening feed, their weight can be raised up to 180-200 kg during the fattening period. The daily weight gain of fattened calves varies between 600-800 grams depending on the quality of feed given to them. There is a shortage of beef in the country. This shortage is being observed through meat-less days. If the calf fattening

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projects are carried out in the country then the domestic demand of beef could be fulfilled. As the fattened animals have higher meat contents (55%) as compared to grazing animals (48%).

### **Market Entry Timing**

Since beef demand is increasing day by day, therefore, the demand of fattened calves is also higher. The demand increases especially before occasions like Eid-ul-Fitr and Eidul-Azha. That's why the animals in such occasions are sold at a bit higher prices as compared to other days. The proposed business can be started before these occasions or any time through out the year. At the commencement of the proposed business, it is important that the entrepreneur must have good knowledge of the production and have contacts with the livestock breeders and farmers.

The ability to work with people/ animals and efficient use of resources are important aspects in modern and commercial calf fattening farm.

### **Proposed Business Legal Status**

The proposed legal structure of the business entity is either sole proprietorship or partnership. Although selection totally depends upon the choice of the entrepreneur but this financial feasibility is based on Sole Proprietorship.

### **Proposed Capacity**

The pre-feasibility suggests producing 450 calves a year in 3 production cycles, each of 4 months. This size of a farm justifies the recurring costs of this project. 4. 5 Project Investment The total cost of the project is Rs. 4, 933, 113 out of which capital cost of the project is Rs. 4, 439, 944 for purchasing the animals and constructing the building and the rest is used to meet the

working capital requirement. The development of urban or peri-urban commercial calf fattening farms is something new in livestock production. Metropolitan cities like Lahore, Karachi, Multan, Faisalabad, Rawalpindi, etc are the major markets of meat. Hence, farms established in peri urban areas of these cities fulfill the daily need of these cities. The other locations may be around the bigger cities e. g. Sialkot, Jhang, Rahim Yar Khan, Bahawalnagar, Bahawalpur, Sahiwal, Okara etc.

### **Key Success Factors/Practical Tips for Success**

The livestock production research institutes and universities have conducted many studies to ascertain the beef production potential of indigenous livestock under the feedlot fattening regimes. Weight, growth and efficiency are major factors influencing the economical meat production. The carcass yield depends upon several factors such as breed, age, sex and degree of finishing. The studies suggest substantial live weight gain and carcass yield from the buffalo and different indigenous breeds of cow calves. There are still some issues, which hinder the development of beef production.

The thrust in calf fattening farm is on the increased use of capital and management. Successful farming harnesses all available resources into productive and profitable unit. Calf fattening is highly complex as it includes farm management, feeding, housing, disease control and hygienic production of milk on farm. The judicious use of means and resources to achieve clearly defined goals is the key success factor i. e. the art of maximization and optimal utilization of resources and means for maximizing productivity and profits. Feeding meat animals on nutritious compound feed along with green fodder can be adopted.

Other farm management practices include comfortable and ventilated barns, drinking water and feed according to the requirements. Timely vaccination against Rinderpest, Black Quarter and Foot & Mouth Disease. The prevention of internal and external parasites will also improve the over all performance of herd. The absence of calf weaning program is a shortcoming to the development of beef industry. Too many young male calves are slaughtered quite young due to high cost of milk required to feed them. Those left are generally underfed and stunted thus unable to achieve the normal growth.

A suitable plan could provide animals of 100-150 kgs of weight, which could be raised to the desired market demand. An efficient program aim at moving the calves from liquid to dry feed as quickly as possible if calf fattening is integrated with dairy farming. High quality calf starter feed with digestibility, palatability and composition should be fed free of choice from the third day of birth. Quality of diet is the key to a successful early weaning system. Weaning could be started once the consumption reaches 800 grams a day, which would provide healthy and thrifty calves.

The changing of this system by small farmers and peri-urban dairy farm entrepreneurs will be a long and difficult process to which some incentives are essential. Another option is to buy feeder calves from the cattle markets. Attention must be given to the selection of animals. Once the calves are purchased and placed in pens, farmers would face many technical problems affecting the success of their operation. It will be worthwhile to get technical assistance from the livestock professionals and experts. It is advisable to purchase fattening rations initially from the public or private sector feed mills.

Once the experience is gained and practices are established, feed processing equipment, such as the grinder-mixers can be installed as per capacity of the farm.

## **Sector & Industry Analysis**

### **Major Players**

Though livestock production is fragmented and most units in Punjab are small with 10 percent holding around 10 to 20 buffalo cows, and only five percent over 20 heads each. Such units are often run by capable and business-oriented farmers who are open to change and eager to adopt improved production practices.

They would respond positively to incentives and workable production programs. In mid 90's the US Feed Grain Council introduced commercial meat production. A number of farmers from Punjab and Sindh participated in the program. They produced many 'lots' of fattened animals but felt difficulty in selling the animals at proper price. Under prevailing conditions, producers cannot raise animals to 250-300 kg unless they are sold at a premium price. Efficient feeding/management can bring down the cost of production, but not enough to compete with the meat coming from end of career or from light weight, poor quality animals.

A positive measure could be to terminate the ceiling price policy and create integrated production-distribution projects.

### **Hubs of Calf Fattening Farming**

Karachi is a big market for good quality meat. The Karachi market is expanding, as daily requirement of meat is about 1, 000 metric tons. Meat

farming integrated with dairy business if done on scientific basis is very profitable. There are more than 100 markets only in Sindh dealing with livestock without any facility or supervision. The major markets are Tharparkar, Mirpurkhas, Sanghar, Dadu and Badin. All this will facilitate farmers in rearing their livestock in a more healthy way.

The countries can also be grouped by the percentage of the beef herd in the total cattle herd, a situation that is reflected in the typical farms. Milk Countries: with the beef herd as ; 25 percent of the total are Poland, Pakistan, Hungary, Czech Republic and Germany. Mix Countries: with a share between 25 and 75 percent of the beef herd of the total are Austria, France, Ireland and Spain. Beef Countries: with ; 75 percent of the beef herd of the total are U. S. , Brazil, Australia, Argentina and Uruguay.

### **Sector Characteristics**

Currently, meat sector in Pakistan is working on an informal basis from animal raising 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.

The current red meat production system is both traditional and inefficient. Beef mostly comes from the end of career, or emergency slaughtered animals. A lot of baby buffaloes and calves are slaughtered when these are only 1-2 weeks old. Few calves are raised to 60-80kg but on extremely poor

and unbalanced diets. Lack of commercial, on-farm livestock feeding could be blamed for existing price ceiling, which is fixed too low to recover the production cost. Traditional and unhygienic slaughtering techniques are major constraints, which are not acceptable to those who believe in health and hygiene.

The livestock resources hold potential for increasing the production of meat. It is estimated that about 6-7 million buffalo/cattle male calves if raised on balanced diet could double the production. Sheep and goats can also be raised for quality meat production. The meat industry as a whole, from livestock farming to marketing of meat is in a poor state at the moment. General crop farming has progressed from the 'subsistence level farming' to 'commercial farming', at least in major crops in the country because of research, extension focus and 'market pull factors'.

Whereas the livestock farming has remained least commercialized and survives under subsistence farming conditions. Despite immense potential, breeding has not been done for increasing productivity. Feeding methods are primitive with hardly any feed management. Despite abundant fodder production, there is always a shortage between seasons. This shortage is met by " bhoosa" (wheat straw) which has very low nutritional value. Quality feed concentrates from existing by-products is not being used efficiently.

Large-scale livestock farming has not been practiced due to the total manual procedures adopted in feeding and herd management. Reliability of manual labour is severe especially in view of illiteracy and poor farmer education on the subject.

**Market Potential**

In Pakistan, the beef industry is an important segment of livestock production. The increasing population and the rising consumer buying power have together contributed to an increase in demand resulting in relatively favorable prices for beef. Worldwide consumption of meat during 1983 for developed world was 74 kg compared to 14 kg for developing countries and 11 kg for Pakistan.

The data for 1993 indicates 76kg, 21 kg and 16kg for the three, respectively. The challenge for Pakistan now is to achieve 47 kg per capita consumption by 2020. According to statistics there is a gap in demand and supply of beef in the market. This gap is met through meatless days and through poultry meat. 12 PREF-24/March, 2009/Rev 3 Pre-Feasibility Study Calf Fattening Farm (Feedlot System) Figure 6-1: Market Value of Dairy & Livestock in Pakistan (Source: Agricultural Statistics of Pakistan, 2003-04) 6. 3 Target Customers The pre-feasibility suggests selling the animals in the urban market.

The buyers could be the corporate buyers e. g. hotels and exporters. The animal mandies of big metropolitan cities can also be considered for selling the animals in bulk. The animals will be sold on live weight basis. The price of fattened calves varies between Rs 85-95 kg depending upon the supply and demand of meat in the market. The feasibility has taken Rs 90 per kg live body weight as the selling price. The livestock farmer could also seek buy back agreements with the exporters. Following are some of the target clients for a calffattening farmer: 1. 2. 3. 4.

## **Farm Inputs**

### **Land**

Around 1 acre of land would be required which cost Rs. 506, 944 for a calf-fattening project of 450 animals in a period of one year. It is assumed that the Total Mixed Ration (TMR) will be purchased from market @ Rs. 11 per Kg. Around 6, 000 sq. ft. area would be used for building a shed for the animals to protect them from severity of the weather.

Lease is a better option for a new investor. Land on lease is available in rural areas for a period of 5-15 years. Advance rent for a few years will be charged initially. Good agriculture land is available with an annual rent of Rs 8, 000-10, 000 per acre. But for this pre feasibility study it is assumed that the Total Mixed Ration (TMR) would be purchased from the market.

### **Suitable Locations**

Peri urban and rural areas in the neighboring areas of Lahore, Karachi, Islamabad, Faisalabad & Multan etc. where water, electricity is available to irrigate the crops are suitable locations for establishing a calf-fattening farm.

### **Herd Mix**

Some breeds of cattle are known as 'dual purpose' because they are suitable for producing milk and beef. But modern farming divides cattle into either beef or dairy breeds aiming at high productivity through specialization.

British beef breeds include Hereford, Galloway, Beef Shorthorn, Aberdeen Angus and South Devon. A recent trend in the UK has been the introduction of large Continental breeds such as Charolais, Limousin and Simmental. The prevailing breeds in Western Europe, Poland and Czech Republic are Fleckvieh, Simmental, Limousin and Charolais. In Hungary, Ireland, the U. S.



and the Southern Hemisphere, breeds of British origin (mainly Hereford, Angus and their crosses) dominate. Particular cases are Brazil (Nelore, coming from India) and Pakistan where the local buffalo breed is used for both milk and beef production<sup>5</sup>.

The Calves of different breeds (7-8 months of age) can be used for fattening purpose at an average body weight of 80-100 kgs for 90-120 days. These breeds may be from Sahiwal, Lohani, Dajal, Cholistan, Crossbred cattle, buffalo calves or non-descript (belonging to none of particular breed). Experiments carried out on Livestock Production Research Institute, Bahadurnagar, Okara shows that cost of meat production for Cholistani and Crossbred calves is relatively cheaper than Sahiwal, Dajal, Non-descript and buffalo calves fed on the same Total Mixed Ration (TMR).

### **Animal Markets**

The feasibility suggests purchasing calves on live weight basis from the rural areas or animal mandies. The animals are being traded across the country in animal mandies round the year. Most of which operate on weekly basis. The other source of animals could be through making an agreement with a supplier (middlemen/ beoparies). Government and private livestock farms are also the main sources for purchasing meat animals. Animal markets are situated in different places in Punjab, which includes Sheikupura, Okara, Sahiwal, Arifwala, Muridke and Jhelum.

These markets operate on rotational basis in a week, or once a month. There are different contractors available in the markets that would help in locating the proper animals. These contractors work on commission basis for

supplying calves on live weight basis. Commission rate charged may vary from some %age of the animal price.

### **Animal Housing**

There is a general trend to keep the fattened calves in semi-confinement in order to control waste production, where these calves are confined and housed over slatted floors.

All faeces and urine can be collected, thus eliminating the need for using bedding material. At present most of the cattle in feedlots are still kept on concrete floors, or in dry regions, on an unpaved area. More efficient growth rates will be achieved if shade is provided. Solids from manure are either collected daily and stored, or allowed to dry in the feedlot and removed periodically before spreading on fields. Collection of urine is limited to feedlots with a slatted floor. Sheds of the animals should be airy with protection of the animals from extreme temperatures and strong winds.

The animal housing should be facilitated with drinking water for animals. There should be proper drainage system to keep hygiene at the farm. It consists of a built up animal shed, a brick soling paddock for animals, one room for storing farm equipment and one for compound feed storage. But the pre-feasibility has taken feeding manger, open paddock and water trough as the major housing requirement for the calves. Animal sheds should be located with long axis north to south, to get direct sunlight and yet face away from the direction of prevailing winds, whenever possible.

Tree plantation can be carried outside the sheds to provide natural shades and these trees will also act as windbreakers. Dimensions of water troughs

will be the same as that of feeding mangers and water will be available round the clock. Generally all the animals feed at the same time in a shed, but not all animals drink water simultaneously.

### **Farm Machinery**

The pre-feasibility suggests, hiring tractor for land preparation to grow fodder crops. Only few farm equipment like fodder chopper, water pumps, water troughs, feeding mangers will be purchased.

### **Feed Ration for Calf Fattening**

The ration is allowance of nutritionally balanced Total Mixed Ration (TMR) in 24 hours to increase animal productivity. Wheat straw<sup>6</sup> is also used as dry roughage in TMR. The cost of TMR will be lowered if feed ingredients are mixed on farm.

The composition of the rations fed in the finishing operations depends largely on the types of feed produced local availability and on weights and grades of calves to be fattened. Rations can range from high-roughage low energy rations to high-energy rations composed almost entirely of concentrates. Examples of ingredients in rations are: Maize and maize silage with Soya bean meal and urea Barley, maize silage, by-products feeding large feed lots (e. g. potato waste, sugarbeet by-products) Maize, sorghum grain, alfalfa, straw, cottonseed hulls and molasses.

Some hormone-like growth stimulators, antibiotic feed additives and ionophores (rumen altering factors) are legalized to be included in the feed and are very commonly used.

Due to increased demand, improved forage crops such as multi-cut oats, berseem, lucerne, Sorghum- Sudan grass hybrids, mott grass, sorghum, maize and millet have been developed. These have become very popular in irrigated areas such as Kasur, Sheikhpura, Gujranwala, Faisalabad, Sargodha, and Renala Khurd (Punjab), Nowshera, Charsada, Mardan, and Peshawar (North West Frontier Province), and Hyderabad, Sukkur, Larkana and Nawabshah in Sindh for peri-urban dairies. Details of fodder cultivars released by Research Institutions in Pakistan are given in Annex 2.

Average forage yields in Pakistan are extremely low compared to yields obtained on research institutes and from well-managed farms and fields. These are very low as compared to their potential, with 22.8 tons per hectare a recent estimate. A byproduct of wheat harvesting used as dry roughage for livestock and dairy animals.

Recent medium scale on-farm work has indicated that yields can be enhanced two to three fold by using available improved varieties and appropriate agronomic techniques. In an area where land and irrigation are the major limiting factors to enhancing fodder production, intensification is the only way to meet the needs for forage. Intensive and economical forage production per unit area per season would be the best choice. Also efforts should be made to produce and provide sufficient quantities of seed of multicut forage varieties and hybrids like Mott grass to commercial dairy farms.

The fodder yield (except multi cut Mott Grass which yields 100-150 tones/acre in 4 to 6 cuttings per year) varies between 10 tons to 40 tons per acre

depending upon the fertility of land, quality of seed and application of fertilizer.

According to these estimates, one calf of 80 Kgs body weight will consume 8-10 kgs fodder daily for 120 days (preferred if fed free of choice i. e. ad libitum). 7. 5. 5 Daily Total Mixed Ration Requirement Since an animal needs daily feed equal to 4. 5% of its live body weight on Dry Matter (DM) Basis. The 2/3 rd of this DM will be supplemented by TMR. For an animal of 80 kgs body weight, it will be 8-10 kgs per day (Preferred if fed free of choice i. e. ad libitum)

#### **Total Mixed Ration (TMR) Formula for calves**

Calves can also be fed on TMR in feed lot system.

The Crude Protein (CP) value of this ration should be 12-13 % with 65-70 % Total Digestible Nutrients (TDN). These feed ingredients when mixed according to feed formula will provide adequate energy according to energy and protein requirements of animal. Table 7-7 Details of Raw Material

Material	Cottonseed cake/	Maize grain	Corn gluten meal (20%)	Rice Polish	Wheat bran	Wheat Straw	Molasses	Urea	Salt	DCP	Total Crude Protein (CP)	Total Digestible Nutrient (TDN).
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It includes a mix of minerals (magnesium, iron, sodium and salts). Mineral mixtures are good source of energy and increase the animal productivity to produce more lean meat. Urea Molasses Blocks can also be used to supplement the mineral

**Wheat Straw (Bhoosa or Turi)**

Wheat straw is a major, typical, and very popular feed, it is always chaffed, and is the main or even only major dry roughage used on almost all the farms. Traditional threshing methods break the straw into short pieces.

Modern mechanical threshers have been designed to break the straw. In places where it is produced, it is available at Rs. 1. 0 per kilo. In recent years baling units have been installed in central Punjab; bales are transported to major cities, even to Gilgit, Skardu, and Chitral.

**Vaccination & Medication**

Vaccination & medication is required to prevent any disease outbreak in the animal herd. Each new animal will be vaccinated before putting into the farm. Anthelmintics are used to treat the animals for internal parasites where as spraying and dipping with some disinfecting solution is used to eradicate external parasites. The total cost will be Rs. 200 per animal. Vaccines are produced at Veterinary Research Institute, Ghazi Road, Lahore. The vaccines are provided to the Government Farms and Hospitals on payment. Farmers can also obtain these vaccines on payment according to prescribed schedule from the Institute. Technical guidance is also provided to the farmers.

Farmers can have their animals vaccinated from the field Veterinary Hospitals and Centres.

**Calf Quarantine**

A quarantine yard will be made for new animal handling, dipping, weighing, and vaccination etc. The newly purchased animals will be dewormed and

medicated with proper and necessary vaccinations in this yard. Only the disease free animals will proceed to the feedlot from the quarantine sheds. Quarantine arrangements will minimize the chances of disease spread in the farm by ensuring that the new animals do not carry any disease before they are taken to the main sheds.

This seven-day period will also be helpful in acclimatizing the new animals before they enter the main feedlot sheds. The behavior of the animal will be recorded during these seven days and then its requirement of feed will be calculated accordingly before sending it to the main feedlot.

### **Labor Requirement**

For a calf-fattening farm, manpower is required for performing different animal husbandry practices at the farm e. g. housing, feeding, watering, medication and care of animals etc. One person can handle 25 calves easily for feeding and other management.

Five persons will be required to look after the fattening farm. The monthly salary of each attendant is taken as Rs 6, 500. A supervisor cum farm manager can be hired to supervise all the farm activities. The supervisor with a B. Sc. (Honors) degree in Animal Husbandry (AH) may be hired as a farm manager so that he can handle the farm practices, administration & account matters at the dairy farm.

### **Farm Output**

#### **Fattening Period**

The fattening period is the period during which the animal puts on weight. These animals are called fattened animals. Generally the period is 90-120

days. Following are the desirable size and thickness of fattened animals. Large frame size with no. 1 thickness is desirable. Figure 8-1 Frame size and Thickness Grades of Fattened Animals 8. 2 Meat Composition Like all meat, beef is also very high in protein. It also contains significant quantities of 'B' vitamins and minerals such as sodium, potassium and phosphorus.

Offal, particularly liver, is rich in Vitamin B12, A, C and D, folic acid, iron and riboflavin. The moisture content of lean meat is 75-79 % where as the crude protein content is 18-22 %. There is a 5-6. 5 % mineral content in it.

### **Sale Price**

Selling price is another limiting factor for the determination of the profitability of this business. In Pakistan, the beef business is controlled by the informal sector. There are no organized markets for the beef sale and purchase. The meat business is in the hands of a community called butchers or Kassab. After feeding animals in feedlots, only the premium price can make the operations profitable. In this pre feasibility study, the animals will be sold on farm at Rs. 90 per Kg live body weight. Only fetching good price can justify the costs incurred on rearing animal in feed lots.

The selling price of fattened animal will be higher than the other animals because of its higher meat recovery and good quality. To avoid the risk of price fluctuations, certain buy back agreements with institutional buyers will be a good approach for the success of this business. Linking the project with the live animal export or beef exports will assure good returns on the business. Near the urban market and especially around Eid-ul-Azha, the selling price of beef is Rs. 130-140 per kg live body weight.