The Urban Unit

Livestock

Faisalabad Regional Development Plan

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

Chapter 2: Livestock Development Strategy

INTRODUCTION

The livestock sector in Pakistan is a major contributor to the country's economy, with a significant portion of the population relying on it for their livelihoods. The sector is responsible for 60.1% of agricultural value addition and 11.5% of the GDP. It includes a wide range of activities such as breeding, raising and selling various types of animals like cattle, sheep, goats and poultry. The sector is highly dynamic and responds to the increasing demand for livestock products. However, there are challenges such as limited access to markets, lack of modern farming practices, and inadequate veterinary services. The sector is organized in the long market chain and supports the livelihoods of smallholders in the developing world. Around 8.0 million families are engaged in livestock production, supplementing more than 40% of their income from this sector. The demand for livestock products is characterized by a dichotomy between developing and developed countries. The factors influencing the cost of milk production are feeding, heifer cost, labor cost, electricity & diesel, treatment & A.I. cost, equipment & machinery cost in addition to land/rent cost. Out of all mentioned, feeding cost is the predominant factor. The milk production cost in Peri-urban dairying is relatively high due to the fully stall-feeding system. Per capita availability of meat and milk in Pakistan is far below compared to developed nations. While forecasting per capita demand of animal products, it has been indicated even a wider gap in protein deficiency from animal origin in all Asian countries. The livestock production has to consider consumers' demands such as food safety & quality, zoonotic disease transmissions, animal welfare, reduction of the use of treatments, and an acceptable environmental impact of livestock production.

The world's population will reach 9.6 billion by the end of 2050, challenging the agricultural system to raise production to ensure accessible and affordable food for all. The livestock sector is core of food system development. Being the complex and dynamic agriculture sector, it has a one-third contribution of global agricultural GDP with inference for animal health and nutrition, animal feed demand, market integration in the supply chain, amplification of production at the form level, farm income, and land use. Livestock has frequently changed the dynamics of agriculture in recent decades. It is the principal client of land resources having 26% under grazing lands and one-third of arable land under feed crops. The strong link of livestock with the feed crop sector is through the generation of by-products like manure and draught power. In many developing countries,

livestock serves as the store of wealth and a safety network. It is a landscape of cultural distinctiveness and traditional practices in many societies of humans. The evolution in demand for animal-sourced food has put pressure on the sector through diversification in land use patterns. A wide range of livestock productions system exist like extensive (e.g., grazing in ruminant animals), intensive (which includes a large number of animals fed through concentrated feed contents in a controlled environment), and intermediate systems between the two. It is quite essential to enhance beneficial economic, social and environmental impacts and minimize the harmful impacts by defining the pathways. Based on the assumption that the livestock sector can sever as an appealing vehicle to achieve nutritional and food security through the exploration of the potential pathways of sustainable agriculture development.

The importance of the livestock sector in accelerating socio-economic prosperity in Pakistan's economy. It is a source of income for more than eight million families (30 million people) who directly draw 35 percent of their income. Its contribution to providing dietary nutrients, poverty alleviation, and earning foreign exchange has lime lighted this sector (GOP, 2020). In the future, livestock will be one of the fastest-growing sectors, especially in emerging economies,, to meet such a projected demand for protein. 800 million of the world's population was found undernourished in 2015 due to an insufficient supply of micro and macro nutrients (protein, fats, and carbohydrates) especially having hidden hunger, i.e., poor intake of micro nutrients causing different kinds of food deficiencies like anemia and vitamin A, etc. (FAO, 2015). Livestock has an 18 percent contribution in providing calories and a 25 percent contribution in the provision of protein (FAO, 2016). Apart from its share in high-quality protein, it also has a share in food security through the provision of high-quality vitamins like vita men A, B-12, riboflavin, calcium, iron, and zinc, which are impossible to get from other sources like plants in such a huge quantity. Livestock's role is beyond its contribution to meat and milk. It affects food security in multiple ways (Gerber et al., 2015). The positive contribution of livestock includes i) Provision of micro and macro nutrients, ii) Drought power for agricultural operations, and iii) Income generation for household and national economy. In a study exploring the role of livestock in food security in Morocco and Saudi Arabia, demand for livestock-derived products was found to increase due to population growth, urbanization, and growing wealth. While in developing countries, the region's dependence on pastoral livestock has raised the food insecurity risk for rural households due to changes in precipitation patterns and increased reliance of urban consumers on imported content.

In Peri Urban areas, households with livestock contribute more to animal-sourced food in their menu than households without livestock. They have significant use of milk, meat, poultry, and egg in their diet and are extracting a significant portion of their livelihood. In Pakistan, Punjab is the largest province in human and livestock populations. A large number of the population has adopted livestock as a source of livelihood and food security, especially women.

LIVESTOCK FAISALABAD

The livestock sector in Faisalabad, Pakistan is a significant contributor to the local economy and provides livelihoods for many small-scale farmers and breeders. is well-known for its high-quality livestock, including cows, buffaloes, goats, sheep, and camels. The district is also home to several large-scale commercial dairy and meat processing facilities. The livestock industry in Faisalabad has been growing rapidly in recent years, driven by increasing demand for meat and dairy products both locally and internationally. The district has a large population of cattle, with an estimated 2.5 million heads of cattle and buffaloes. The milk production in Faisalabad is also very high, with an estimated daily production of about 5.5 million liters. The following graph represents the statistical representation of the livestock population in Faisalabad Division.

Figure 1: Livestock Population

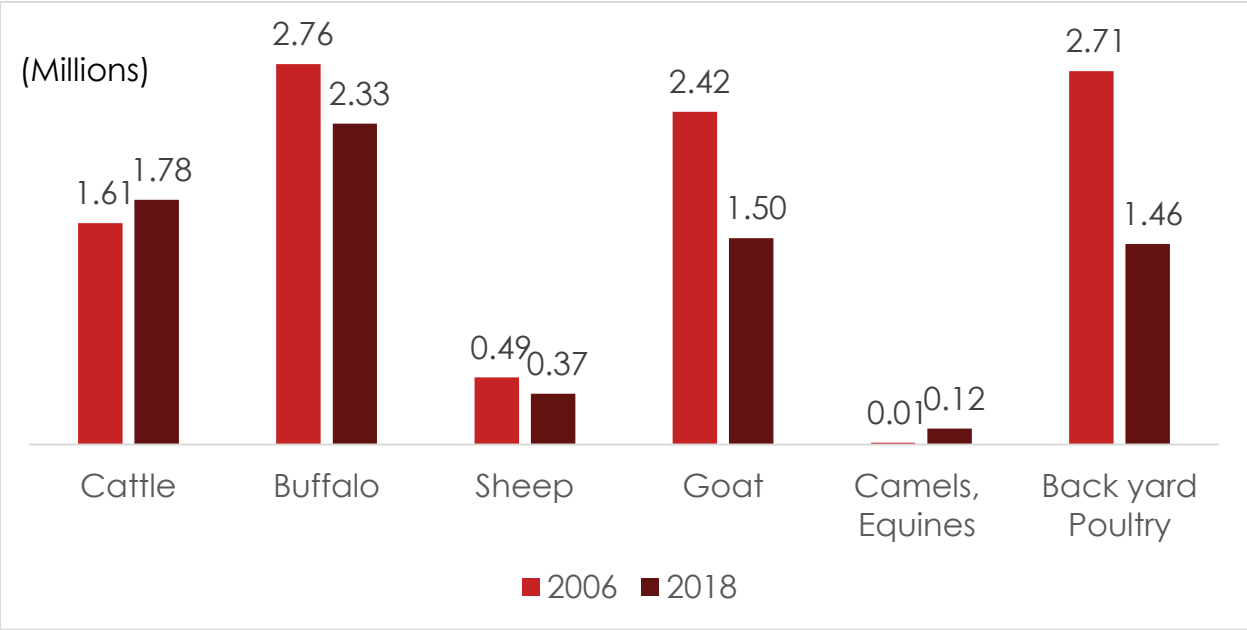


Figure 1: Livestock Population Faisalabad Division

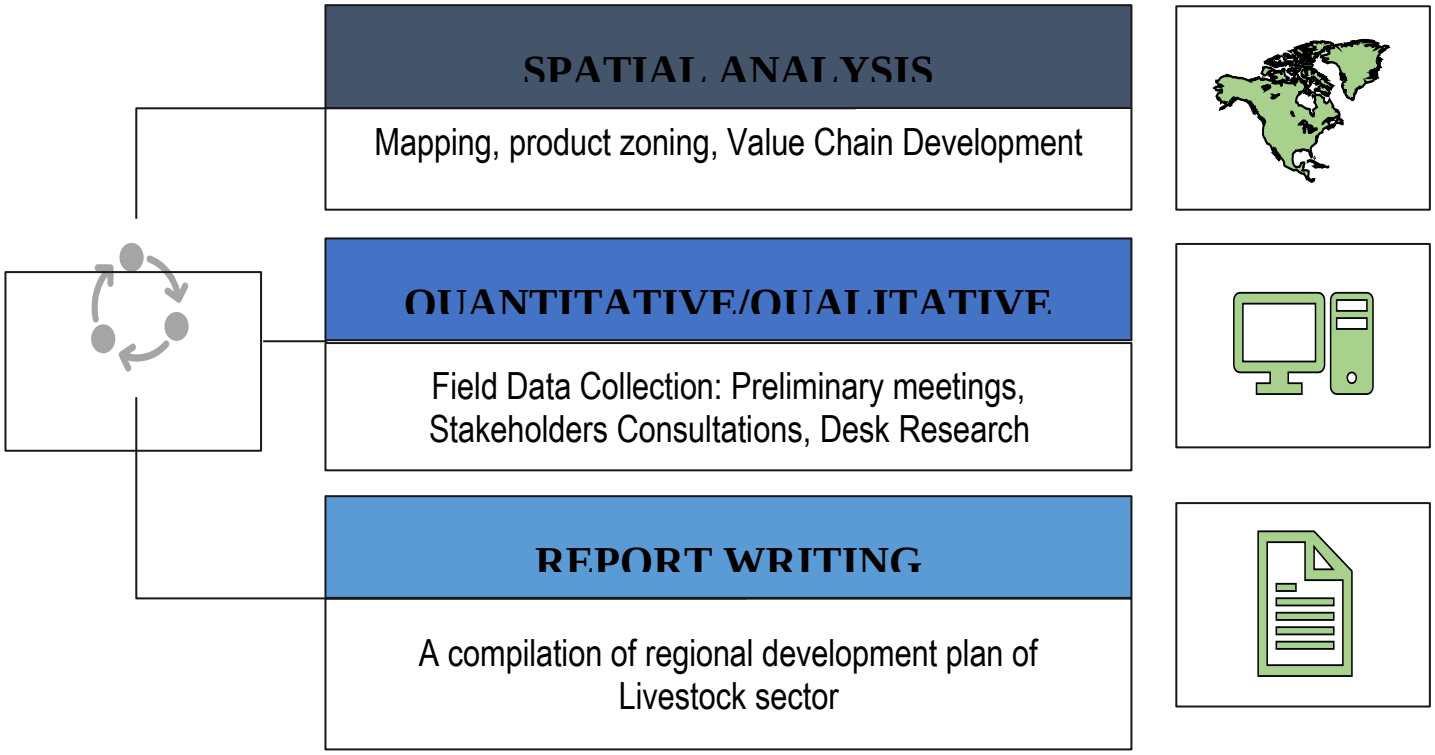
Source: **Livestock and Dairy Development Department**

This figure shows the numbers of different types of livestock in the Faisalabad region of Pakistan for the years 2006 and 2018. The livestock types listed in the figure include cattle, buffalo, sheep, goat, camels, equines, and backyard poultry. The numbers are given in millions of units. The figure shows that the number of cattle and camels/equines increased between 2006 and 2018, while the numbers of buffalo, sheep, goat, and backyard poultry decreased. For example, the number of cattle went from 1.61 million in 2006 to 1.78 million in 2018, while the number of sheep went from 0.49 million in 2006 to 0.37 million in 2018. Although there is a huge gap between the figures published in the Economic survey of Pakistan and the actual census performed in 2018 although that census data was not published publicly but it is still used in the books of the livestock debarment Punjab and the above data mentioned is also collected form the livestock directorate.

However, the livestock sector in Faisalabad also faces several challenges, including limited access to credit and technical assistance, inadequate infrastructure and services, and low productivity. Many small-scale farmers and breeders struggle to compete with larger commercial operations, and there is a lack of investment in research and development to improve breeding, feeding, and health management practices. To address these challenges, the government of Pakistan has implemented several initiatives to support the livestock sector in Faisalabad, including the provision of credit, technical assistance, and training to small-scale farmers and breeders, as well as investment in infrastructure and services such as veterinary clinics, feed mills, and milk processing plants. Additionally, private sector organizations are also actively working to promote the development of the livestock sector in Faisalabad, through investment in research and development, and the promotion of best practices in breeding, feeding and health management. But these initiatives are not enough for the development of the sector in this region. Moreover, these interventions need to be prioritized according to the value chain approach and should be implemented spatially to get a better outcome.

METHODOLOGY

This section provides detail about the methodology used for the analysis.



DATA ANALYSIS

After collecting the data, the team proceeded to analyze and discuss all of the information. They ensured that any gaps in the collected data were addressed by cleaning, integrating, and reviewing the data. The Livestock departments were also contacted through email and telephone to gather additional information. Through a field assessment, the team was able to identify the issues and challenges and propose an intervention that focuses on developing a specialized value chain.

RAPID ASSESSMENTS – FIELD VISITS

The Urban Unit Livestock sector team visited the Faisalabad division during two visits in November & December 2022

Visiting Cattle Farms

Visiting Livestock farms

Visiting Feed Testing Lab

Meeting with feed mill owner

Visiting Buffalo Farm

Visiting Goat Farm

ISSUES AND CHALLENGES.

There are several issues and challenges facing the livestock sector in Faisalabad, Punjab, Pakistan. Some of these include:

- Lack of proper infrastructure: Many farmers in Faisalabad lack access to proper facilities, such as veterinary clinics, feed mills, and modern barns, which can limit the productivity and health of their animals.
- Limited access to markets: Many small-scale farmers in Faisalabad has difficulty accessing markets to sell their animals, which can lead to low prices and limited profits.
- Disease: Livestock in Faisalabad are at risk of various diseases, such as foot and mouth disease, which can lead to significant losses for farmers.
- Malnutrition: Malnutrition can occur when animals are not receiving the proper balance of nutrients, such as protein, energy, minerals and vitamins. This can lead to poor growth, reduced immunity, and increased susceptibility to disease.

- Lack of government support: Farmers in Faisalabad often lack access to government programs and subsidies, which can make it difficult for them to compete with larger, more established farmers.
- Climate change: Climate change and variability can have a significant impact on the livestock sector in Faisalabad, as it can affect pasture growth, water availability and increase the risk of diseases.
- Open grazing: Open grazing is another major problem in Faisalabad, as it can lead to land degradation, loss of vegetation and soil erosion.

These issues are explained thoroughly in separately below.

LIVESTOCK STATISTICS

The figure provided is a comparison of livestock population statistics in Faisalabad, Pakistan, from 2006 to 2018. These figures are based on the 2006 census and an estimate from the 2018 Economic Survey of Pakistan. However, there have been no official livestock censuses conducted in Pakistan since 2006, and the 2018 census statistics have not been published due to a significant discrepancy between the actual figures and the figures published in the economic survey. Experts argue that the estimate used in the economic survey is based on a growth rate from 1996-2006 and may not accurately represent the current animal population growth in Pakistan. This highlights the issue of a lack of accurate and up-to-date statistics on the livestock population in Pakistan, particularly in the Punjab region. There is a need for another census to accurately analyze the actual statistics of the livestock population and its representation in the country's economy.

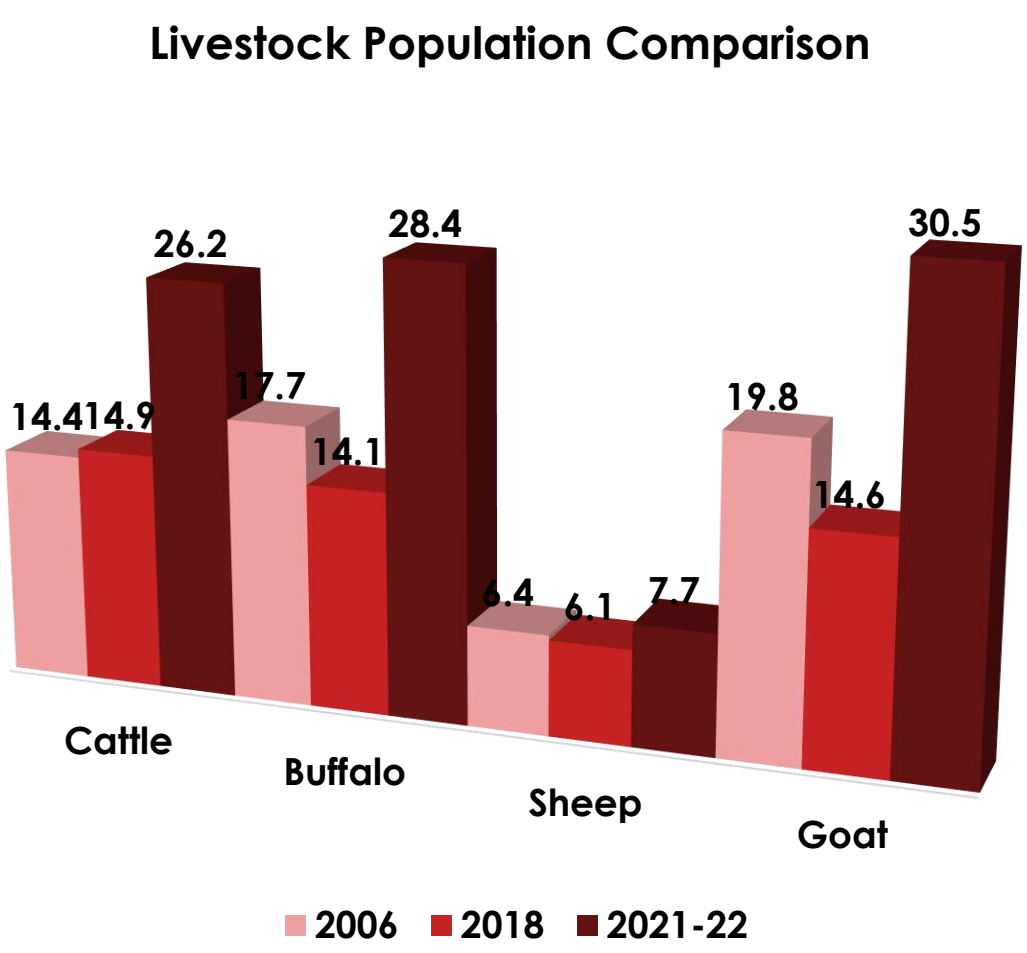


Figure 1: Comparison of Livestock Population
Source: **Urban Unit**

The unavailability of accurate and up-to-date livestock statistics in the province of Punjab, Pakistan is a major issue for the livestock sector. Without reliable data, it is difficult for policymakers, researchers, and industry stakeholders to make informed decisions, and to effectively plan and implement development initiatives. One of the consequences of the lack of data is the use of unreliable growth rate for the livestock population. Without accurate data on the number of livestock growth rate estimates are often based on extrapolations and assumptions, which can lead to inaccuracies and inconsistencies. This can affect the allocation of resources and the design of development programs, as they may not be based on a realistic understanding of the current state of the livestock population. Furthermore, The lack of livestock data also makes it difficult to monitor and assess the impact of development initiatives. Without a livestock database, it is impossible to measure the success of policies and programs aimed at increasing livestock

numbers. Overall, the unavailability of reliable statistics and the use of unreliable growth rate estimates for the livestock population in Punjab, Pakistan is a major issue that needs to be addressed to ensure the sustainable development of the livestock sector.

LOW PRODUCTIVITY

Low productivity in livestock production in Faisalabad, Pakistan can be caused by several factors, the most prominent of them is the small farm holding, almost 70-80% of smallholder milk producers. These Smallholders produce milk to meet family requirements at minimal cost and have limited access to substantial milk market. Moreover, the small farmer lacks the approach of breed improvement and have no progeny tracks and record. More than 80 percent of animals are non-descriptive. This cross breeding without knowledge causing the genetic mixture of animals and have reduced the milk productivity in general. The basic reason of undescriptive breeding is that the smallholders produce milk to meet family requirements at minimal cost and have limited access to substantial milk market, so they don't really bother the yield of the animals they mostly do farming as part of their life style. There are other factors that are also affecting the productivity in livestock given as follows;

- Lack of proper nutrition: Poor quality feed and inadequate quantity of feed can lead to low productivity in livestock.
- Poor genetics: Use of low-quality breeding stock can lead to low productivity and reduced offspring quality.
- Lack of veterinary care: Inadequate veterinary care, such as lack of vaccines and treatments for diseases, can lead to reduced productivity and high mortality rates.
- Unfavorable environmental conditions: Exposure to extreme temperatures, poor ventilation, and poor sanitation can negatively impact the health and productivity of livestock.
- Inefficient management practices: Poor management practices, such as overcrowding and inadequate waste management, can lead to reduced productivity and increased disease transmission.
- Economic constraints: Lack of financial resources to invest in proper infrastructure, feed, and veterinary care can also lead to low productivity in the livestock industry in Faisalabad.

The figure below shows the productivity gap of some milking and meat animals in the Faisalabad division as compared to progressive and international best yields. Milking animals, as well as milk yield, play an important role in enhancing milk production. It is also observed that milking buffaloes yield have a greater potential of a liter per day while the exotic cattle show the maximum productivity respectively. In short, the cattle milk and meat potential are higher internationally. In contrast to the international market, camel milk and buffalo meat show the maximum productivity gap in the Faisalabad Division. This sheds a light on the past when milk yield augmentation had been practiced through artificial insemination, which had a very diminutive impact on milk production. Milk yield can be raised only through genetic advancement and cross-breeding of cattle with high-yielding exotic breeds.

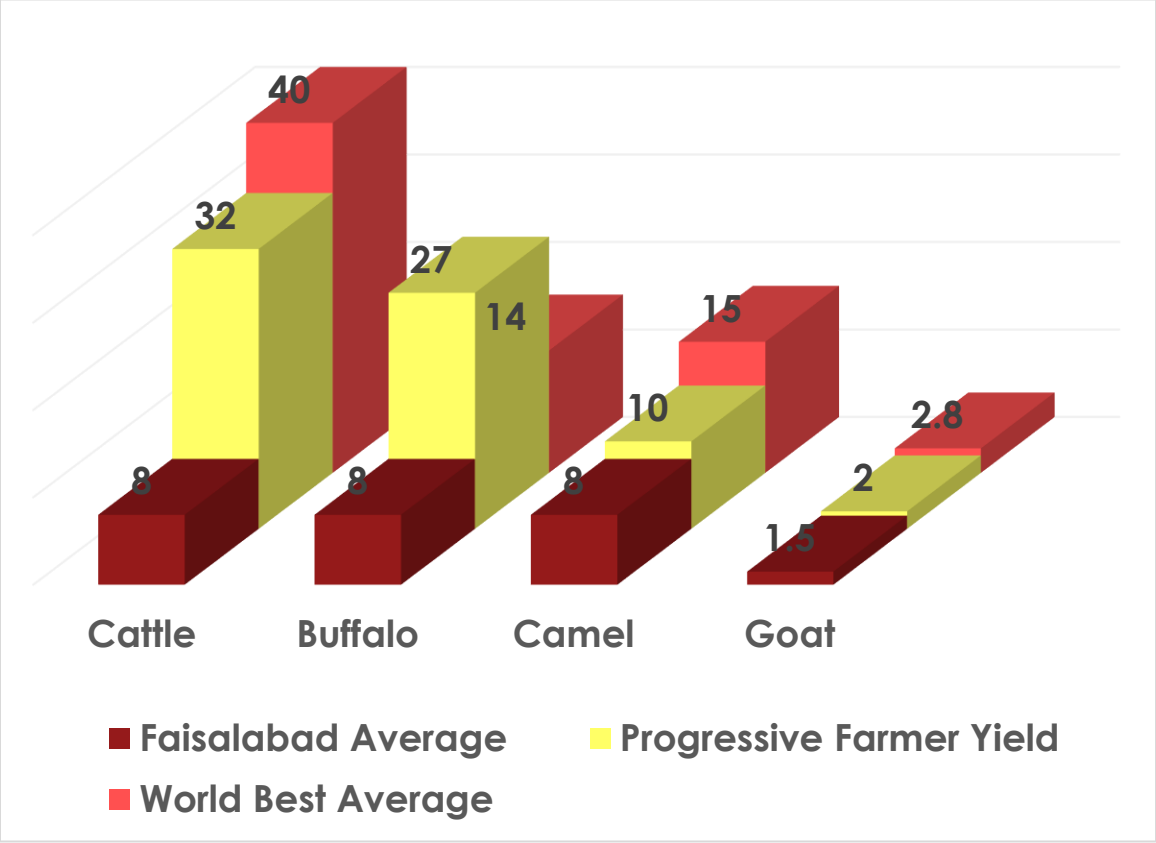


Figure 2: Productivity Gap of Milking & Meat Animals
Source: **Urban Unit**

INEFFICIENT NUTRITION

This region is one of great providers of ruminant milk and meat in the country. However indigenous farmers or shepherds of rural areas still rely on traditional fodders in order to raise their animals. Diversified range of plants such as trees, shrubs, herbs and grasses are traditionally significant for their fodder value1. Though all kind of floras are in use as fodders, the regional grasses are considered to be a more reliable fodder source for ruminant animals. This preference may be due to the fact that grasses are more palatable than other shrubby fodders for ruminants. As grasses are able to grow massively in various seasons around the year, their accessibility for ruminant feeding is more convenient. It is reported that 53% of total ruminant feed is composed of grasses. There are several factors that have been mentioned as below.

- There is gap between the required and availability of feed and fodder for livestock
- The fodder domain is under the Agriculture department while the livestock nutrition requirement varies by area and there is no integration between these departments.
- There is huge deficiency of required minerals in the animals causing low productivity and also low strain to the disease.
- Almost 50–60% of the feed requirements of these animals are fulfilled from grazing along with wheat straw and some green fodder which could not fulfilled the nutritional requirements

Table 1: Mineral Status of Blood, Soil and Fodder

Districts	Deficiency in Blood	Deficiency in Soil	Deficiency in Fodder
	Fe, Na,	Na, P	Mn, Zn, Cu, Co
Jhang	Ca	K, Zn	Co, Cu
T. T. Singh		P, Zn	Zn, Co
Chiniot	Fe	Na, K, Zn,	Mn, Zn

DISEASE SPREAD

Livestock in Faisalabad, Pakistan, are vulnerable to a variety of diseases, including infectious and non-infectious diseases. Some of the common diseases include Foot and Mouth Disease (FMD), Peste des Petits Ruminants (PPR), Brucellosis, and Mastitis. These diseases can have significant impacts on the health and productivity of livestock, leading to reduced income for farmers and decreased food security for communities. Effective disease control measures, such as vaccination, biosecurity, and early detection and reporting, are crucial in preventing and managing disease outbreaks.

The availability of vaccines for livestock diseases, including Foot and Mouth Disease (FMD), in Faisalabad, Pakistan, have many challenges such as a huge gap exists between FMD vaccine demand/requirement and local vaccine production is not enough to meet the required demand, FMDRC currently producing 8 million of doses per Annum which is not event 5 percent of the total 180 million requirement as shown in the graph below.

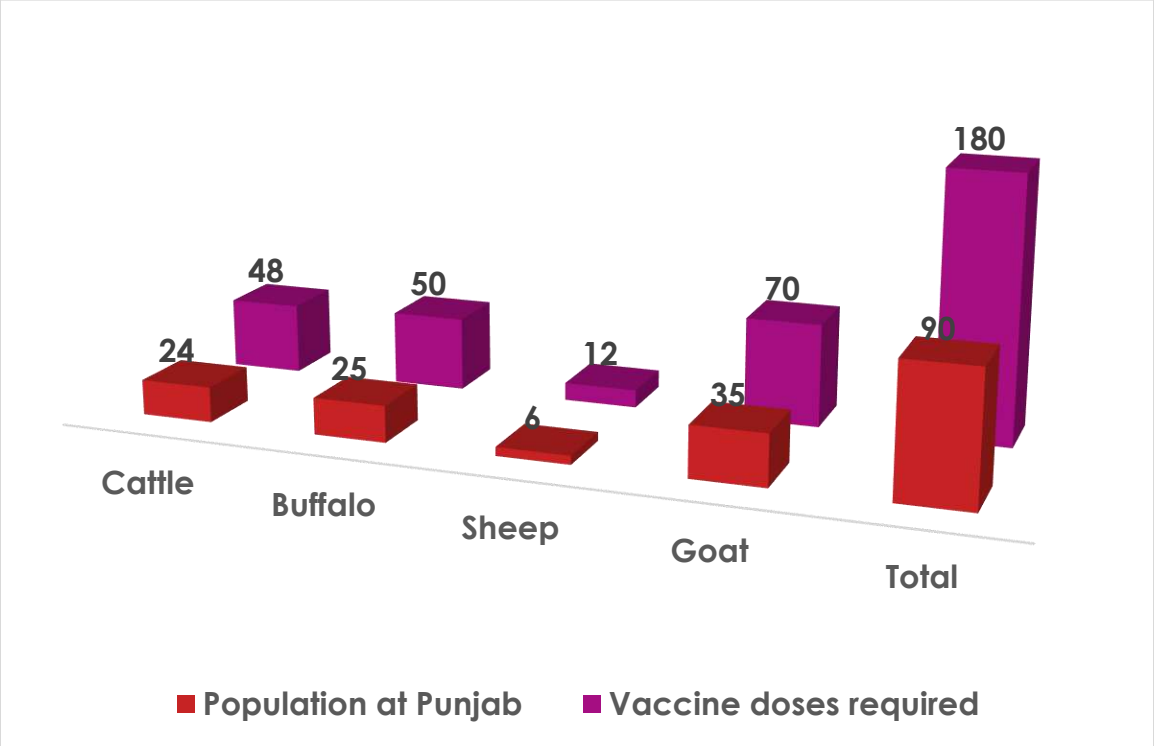


Figure 3: Vaccination Requirement as Per Population
Source: **Livestock and Dairy Development Department**

The government import 54 million doses per year which is 25 to 30 percent of the total demand so, there is a huge gap exist in the vaccine requirement and availability although L&DD spending 1.8 B Rs per annum for vaccine import which is a huge pressure on the local exchequer. Moreover, there are certain other factors affecting the vaccination process and causing disease spread, including:

- Supply chain disruptions: Interruptions in the supply chain, such as production shutdowns or shipping delays, can affect the availability of vaccines.
- Financial constraints: The cost of vaccines may be a barrier for some farmers, particularly small-scale and low-income farmers.
- Lack of awareness: Some farmers may not be aware of the importance of vaccination or may not have access to information on available vaccines.
- Limited veterinary services: In some areas, there may be a shortage of trained veterinary professionals to provide vaccine administration and related services.
- Political and social instability: Political or social instability in the region can also affect the availability of vaccines, as well as the delivery of veterinary services.

It is important for the government and veterinary authorities to provide support and resources for disease control and to educate farmers on best practices for preventing the spread of disease. Additionally, international cooperation and exchange of information and best practices can help in addressing the issue of diseases in livestock in Faisalabad and other areas.

MARKETING PROBLEMS

Livestock marketing in Faisalabad division, like in other regions, faces several challenges. Most prominent of them is the contribution of the corporate sector is very restricted in the livestock sector, which is almost 1%, and Contribution of the commercial sector in the livestock sector is around 4%, due to this poor value chain linkages and low value addition and processing of the meat and dairy products as shown in the graph below.

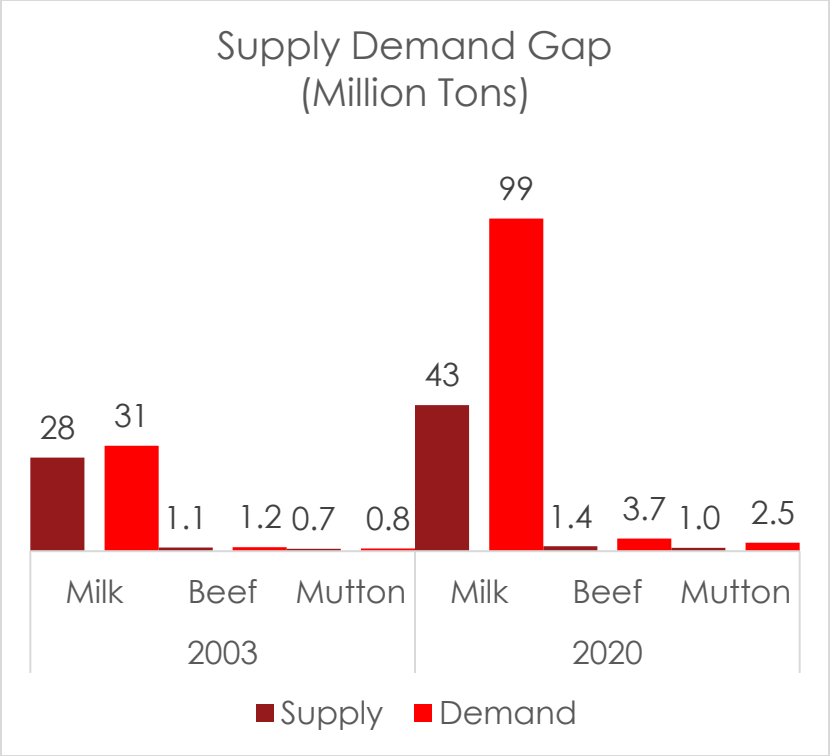


Figure 4: Market Demand & Supply Gap
Source: **Livestock and Dairy Development Department**

Many other factors are also affecting as given below:

- Lack of proper infrastructure: A lack of proper facilities for the storage, transportation, and sale of livestock can create bottlenecks in the marketing chain and lead to price reductions for farmers.
- Information asymmetry: Farmers may not have access to current market information and prices, making it difficult for them to make informed decisions about when and where to sell their livestock.
- Middleman exploitation: Intermediaries, such as traders and commission agents, often play a significant role in livestock marketing and can exploit farmers by offering low prices.
- Health and disease management: Poor health management of livestock can lead to disease outbreaks and reduce the quality and price of animals.
- Regulations and policies: The existence of complex regulations and policies can create barriers to entry and restrict competition in the livestock market.

Addressing these issues requires a multi-stakeholder approach, including the development of better infrastructure, increasing access to market information, promoting competition, and improving health management practices.

OTHER ISSUES AND CHALLENGES

FARM MANAGEMENT

Poor farm management is a major issue in the livestock industry in Faisalabad division. It can lead to a range of problems, such as low productivity, reduced animal health and welfare, and decreased profitability. One of the key factors contributing to poor farm management is a lack of training and education for farmers. This can result in improper feeding and nutrition practices, insufficient animal health management, and inadequate housing and facilities. Furthermore, many farmers in the region struggle with limited access to credit and other resources, making it difficult for them to invest in their farms and improve management practices. Addressing these challenges requires a combination of education and training programs, access to financial resources, and government support in the form of policies and infrastructure development. Improving farm management in the region will not only benefit farmers but also contribute to the overall growth and development of the livestock industry in Faisalabad division.

VALUE ADDITION

In Faisalabad division, there is a significant lack of value addition in livestock products, which results in lower prices for farmers and reduced competitiveness in the market. One of the key reasons for this is the absence of processing and packaging facilities for meat, dairy, and other livestock products. This results in a low-quality product that is often sold at a discount, and farmers receive a lower return for their efforts. Additionally, the lack of awareness about the benefits of value-added products and limited access to markets for these products can also contribute to the problem. To address this issue, there is a need for investment in processing and packaging facilities, along with training and education programs for farmers to improve their understanding of the value-added product market. This will not only increase the profitability of farmers but also help to develop a more sustainable and competitive livestock industry in Faisalabad division.

OBJECTIVES

01 Improving breed development, on-farm mechanisms, medical facilities and providing high-quality nutritional feed for enhanced productivity.

02 Contribute towards poverty alleviation and economic development of the province through the provision of an enabling environment and farmer support services in the livestock sector

03 Incorporating modern processing technologies to move towards high value-added meat and dairy products.

04 Strengthen local markets and price mechanism and increase accessibility to the international market by adopting international standards and certification

POTENTIAL BREEDS

Sr.	Animal	Potential Breed	
1.	Buffalo	Nili / ravi Kundhi Azakhale	
2.	Cattle	Sahiwal Cholistani Foreign / cross breed Thari	
3	Sheep	Kajli Lohi Buchi Thalli	
4	Goat	Beetal Teddy Barbery Damani	

BUFFALO MILK DEVELOPMENT

Faisalabad, Pakistan is a hub for dairy production, and buffalo milk plays a significant role in the dairy industry. Buffalo milk is in high demand due to its high fat and protein content, making it an ideal choice for various dairy products such as ghee, cheese, and butter. With the growing demand for dairy products, the potential for buffalo milk production in Faisalabad is immense. The dairy sector of Faisalabad, despite its economic importance, suffers a lot in the form of several constraints i.e., marketing distortion, supply constraints and distribution inefficiencies Not only this, Dairy sector in Faisalabad also faces several challenges which include:

PRICING AND GRADING:

The pricing of buffalo milk in Faisalabad is determined by several factors such as quality, seasonality, and demand. Buffalo milk is generally sold at a higher price than cow milk due to its higher fat and protein content. To ensure fair pricing, the milk is graded based on several criteria including fat content, protein content, and bacterial count. Higher-quality milk is sold at a premium price, while lower-quality milk is sold at a lower price. This system of grading helps in ensuring that the farmers get a fair price for their produce and that the consumers get high-quality products.

BREEDING:

Buffalo breeding is an important aspect of buffalo milk production in Faisalabad. The genetic improvement of buffalo herds is essential for increasing milk production and improving the quality of milk. In Faisalabad, buffalo breeding is carried out through artificial insemination (AI) using high-quality buffalo semen from elite buffalo bulls. AI has been found to be an effective method for improving the genetic makeup of buffalo herds and increasing milk production. **Nutrition:**

Nutrition is a critical factor in buffalo milk production. Buffaloes require a balanced diet that includes adequate amounts of energy, protein, minerals, and vitamins. The diet should be formulated to meet the specific nutritional requirements of the buffalo at different stages of life, including gestation, lactation, and growth. In Faisalabad, buffalo farmers provide their animals with a balanced diet that includes a combination of roughages and concentrates. Adequate feed and water are essential for maintaining the health and productivity of buffaloes. Proper nutrition management helps in increasing the yield and quality of buffalo milk.

MARKETING:

Marketing plays a crucial role in the success of buffalo milk production in Faisalabad. To reach a larger market, buffalo farmers need to adopt modern marketing techniques such as branding and packaging. By branding their products, buffalo farmers can differentiate their products from those of other farmers and create a reputation for high-quality buffalo milk. Packaging helps in ensuring the safety and quality of the milk during transportation and storage. The government and private organizations could offer support and training to buffalo farmers to help them adopt modern marketing techniques.

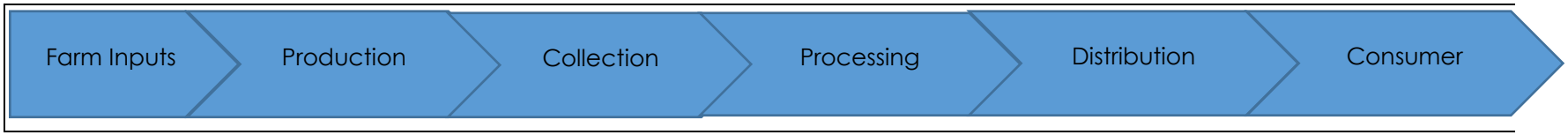
EXPORT:

The export of buffalo milk and its products has great potential in Faisalabad. Buffalo milk is in high demand in several countries due to its high fat and protein content. The export of buffalo milk and its products can help buffalo farmers in Faisalabad increase their income and reach a larger market. However, to export buffalo milk and its products, buffalo farmers need to meet the export standards set by the importing countries.

Also, it has been observed that variation in the quality of milk and loss of milk during transportation reduces the quantity of high quality milk required by the dairy producers and also cost to the consumers in general, these dairy issues and their inappropriate handling of animals and sustainability issues in Cholistan region have made it difficult to achieve desirable growth and to set out targets unless some policy measures are taken to make better dairy and livestock sectors in Cholistan, very recently, there has been a slight rise in milk production in private farms from imported and mix bred cows with high yield which fetch more value, But these imported cows are raised in suitable and more structured and balanced-nutrition environment. While, much of the production from these centers is purchased by private industries for commercial sales after processing and packaging.

This trend has become popular with the passage of time and now cows from Denmark and Sweden are also being imported besides imports of cows from Australia which were found less compatible with local feed and possess lesser yield than the other imported breeds (Danish and Swedish). The Dairy value chain is divided into five segments namely;

DAIRY VALUE CHAIN



Farm Inputs	Production	Collection	Processing	Consumer
• *Land* • *Livestock Feed* • *Herd Mix* • *Machinery* • *Labor* • *Medication*	•*Informal: 95%* •*Formal: 5%*	**Informal** •*Katcha Dodhis* •*Pucca Dodhis* •*Contractors* •**Formal** •*Dodhis* •*Contractors* •*Direct Farmer Procurement* •*Commercial & Corporate Farming*	**Informal** •Producers •Processing Agents •Confectioners •Products Include: *Yogurt, Lassi, Ghee, Sweetmeats, Butter, Cream* •**Formal** •*Large Enterprises* •*Bakers & Confectioners* •*Products Include: UHT and Pasteurized Milk and Milk Products*	•**Informal:** •Direct Selling •Local Retail Shops & Confectioners •**Formal:** •Retail Stores •Company Owned Outlets •Home Delivery

KEY INTERVENTIONS

Sectors	Breed Improvement	Nutrition and Feed	Farm Management	Marketing	Value addition
Dairy	➢ Conservation and preservation of indigenous breed I,e Nili Ravi ➢ Tagging, tracking and acquiring of elite male of Nili Ravi breed for Semen production ➢ Research and Development in the embryo transfer technology for breed improvement	➢ Provision of silage making machine at community level ➢ Providing feed (wanda) at subsidized rate at village level to ensure nutritional level in the animals	➢ Farmer training programs with the help of private sector to ensure proper livestock management ➢ Excluding extension services from veterinary services and establishing a separate Institute for extension services of farm management and nutritional	➢ DE capping or ensuring market competitive pricing of the milk ➢ Price flooring could be introducing for milk famers to sustain ➢ Grading and Packing facilities and acts for buffalo milk	➢ Establishing milk collection points at community level for farmers to eliminate middle man from milk sale ➢ Incentivize private sector to introduce value addition and exports in Dairy Sector I,e Cheese,

MUTTON AND BEEF MEAT DEVELOPMENT

FAO defines meat as the flesh of animals used for food. In production data, meat is normally reported inclusive of bone and exclusive of meat that is unfit for human consumption. As reported by individual countries, meat production data may refer either to commercial production (meat entering marketing channels), inspected production (from animals slaughtered under sanitary inspection), or total production (the total of the above- mentioned categories plus slaughter for personal consumption. In 2020, total production of meat for Pakistan was 4.74 million tons. Total production of meat of Pakistan increased from 476,696 tons in 1971 to 4.74 million tons in 2020 growing at an average annual rate of 4.90%.

Faisalabad is considered to be a hub for livestock production, and beef and mutton play a significant role in the meat industry. Beef and mutton are in high demand due to their taste and nutritional value, making them an important source of protein for the population. With the growing demand for meat products, the potential for beef and mutton production in Faisalabad is immense.

FOOT AND MOUTH DISEASE (FMD):

Foot and Mouth Disease (FMD) is a highly contagious viral disease that affects cloven-hoofed animals, including cattle and sheep. The disease can cause significant economic losses in the meat industry due to decreased meat production, reduced fertility, and death of infected animals. In Faisalabad, the government need to have implement measures to control the spread of FMD, including vaccination and quarantine. Regular monitoring and surveillance of the disease are essential for ensuring the health of the livestock population and the sustainability of beef and mutton production in the region.

BREEDING:

Livestock breeding is an important aspect of beef and mutton production in Faisalabad. The genetic improvement of herds is essential for increasing meat production and improving the quality of the meat. In Faisalabad, livestock breeding is carried out through artificial insemination (AI) using high-quality semen from elite bulls and rams. AI has been found to be an effective method for improving the genetic makeup of herds and increasing meat production. The government and private organizations need to offer training and support to livestock farmers to ensure them adopt modern breeding techniques.

NUTRITION:

Nutrition is a critical factor in beef and mutton production. Cattle and sheep require a balanced diet that includes adequate amounts of energy, protein, minerals, and vitamins. The diet should be formulated to meet the specific nutritional requirements of the animals at different stages of life, including gestation, lactation, and growth. In Faisalabad, livestock farmers provide their animals with a balanced diet that includes high-quality feed and forage. The use of supplements and minerals, such as calcium and phosphorus, can also improve the quality of the meat.

MARKETING:

Marketing is an important aspect of beef and mutton production in Faisalabad. The meat is sold through various channels, including local markets, supermarkets, and online platforms. To increase the visibility of the products, the government must establish marketing networks that connect producers with consumers. This will help in ensuring that the farmers get a fair price for their produce and that the consumers get high-quality products.

EXPORT:

Pakistan is a major exporter of beef and mutton, and Faisalabad plays a significant role in the export of these products. The meat is exported to various countries, including the Middle East, Europe, and Southeast Asia. There is need to establish quality control institute to develop export protocols to ensure the quality and safety of the products. The export of beef and mutton from Faisalabad will provide an opportunity for farmers to increase their income and contribute to the local and national economy.

The meat value chain is divided into five segments namely;

a. Inputs, used in breeding of the livestock

b. Breeding of live animals meant for procuring meat and meat products

c. Marketing of animals bred for obtaining meat and meat products

d. Processing of meat products and value addition

e. Marketing of meat in Domestic and International markets

DAIRY VALUE CHAIN

Livestock Input	Production	Marketing	Processing of Meat	Meat Market
• Land • Feed and Nutrition • Herd Mix • Farm and Infrastructure • Farm Labor • Veterinary Care and Services	• Production Systems • Large Ruminants: • Rural Subsistence Small Holdings –55-60% • Rural Market oriented Small Holdings 20-25% • Rural Commercial Medium-Sized Farming 10-15% • Peri-Urban Commercial Large-Seized Farming – 6-8% • Small Ruminants: • Nomadic • Transhumant • Sedentary Household • Occasion-specific (Eid-ul-Adha)	• Rural Farmers • Village Beoparis • Live-animal Market • Wholesales • Retailers • traders	• Recognized slaughterhouse • Unrecognized slaughterhouse • Formal-Meat Processors	• Recognized slaughterhouse • Rural Butchers • Urban Butchers • Wholesalers • Traders • Retailers • Export Market • Company related outlets

KEY INTERVENTIONS					
Sector					
Meat	**Breed Improvement**	**Nutrition and Feed**	**Farm Management**	**Marketing**	**Value addition**
	➢ A specialized breed development and semen production unit should be introducing for high meat yielders ➢ Goat breeding and AI should be introduced for indigenous breed I,e beetal	➢ Goat fattening program should also be introduced for Faisalabad division ➢ Feed subsidy program for goat farmers could be introduced ➢ specialized fodder crops could be introduced to fulfill nutritional requirement of the livestock	➢ Farmer training programs with the help of private sector to ensure proper livestock management ➢ Excluding extension services from veterinary services and establishing a separate Institute for extension services of farm management and nutritional enhancement	➢ Small cattle mandi could be introduced to increase farmer outreach in the market ➢ Price De capping or quality grading should be introduced ➢ Modern slaughter houses with packing facilities needs to be introduced	➢ Incentivize private sector to introduce value addition and exports in meat Sector.

POULTRY (EGGS AND MEAT)

The poultry industry in Faisalabad division is a crucial sector in the local economy, with a focus on both egg and chicken production. The poultry sector is one of the productive sectors with the highest annual growth in Pakistan, around 10-12% per year as chicken meat accounts for 32.7% of the total meat production in Pakistan. Poultry is considered to be the most important and cheapest form of nutrition in food items, it is the highest consumed commodity in Pakistan's food basket. 1.94 million tons of chicken are currently produced and 2 million tons of eggs annually. Despite its importance, the industry is faced with a range of challenges, including issues with raw materials, price control by mafia groups, and a lack of value addition, as well as limited export potential. However, despite these challenges, the poultry industry in Faisalabad division has significant potential for growth and development.

AVAILABILITY OF INPUTS

One of the key challenges facing the poultry industry in Faisalabad division is the availability of quality raw materials, such as feed and vaccines. Feed is the largest component of the cost of egg and chicken production, and farmers often struggle to find affordable and high-quality feed ingredients. In addition, the limited availability of vaccines and other health management inputs can result in disease outbreaks, which can have a significant impact on production and profitability. To address this challenge, the industry needs to invest in the development of a reliable and consistent supply chain for feed ingredients and other inputs.

PRICE AND QUALITY CONTROL

Another major challenge facing the poultry industry in Faisalabad division is price control by mafia groups. These groups, made up of intermediaries such as traders and commission agents, dominate the market and dictate prices, often offering low prices to farmers. This results in price variation and supply and demand gap in high demand season to get higher profits. The influence of these mafia groups can also prevent the introduction of new technologies and practices, stifling innovation and progress in the poultry industry.

MARKETING AND VALUE ADDITION

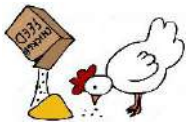
Despite these challenges, the poultry industry in Faisalabad division has significant potential for value addition. This can be achieved through the processing and packaging of eggs and chicken

meat, which can increase the product's value and competitiveness in the market. Currently, however, there is a lack of processing and packaging facilities in the region, which limits the ability of farmers to add value to their products. In addition, farmers may also lack the knowledge and resources needed to effectively market their value-added products.

EXPORT POTENTIAL

Finally, the export potential of the poultry industry in Faisalabad division is currently limited, due in part to the absence of processing and packaging facilities, as well as health and safety concerns. To tap into international markets, it is essential that the poultry industry in Faisalabad division improves its competitiveness by addressing the challenges of raw materials, price control by mafia groups, and value addition. This can be achieved through investments in processing and packaging facilities, training and education programs for farmers, and the development of export-oriented policies and infrastructure

KEY INTERVENTIONS

Sectors	 Breed Improvement	 Nutrition and Feed	 Disease Control and Prevention	 Marketing	 Value Addition
Poultry	➢ Poultry research center should be introduced in the division to enhance poultry breed ➢ Household poultry programs should be introduced and increased units in the existing programs	➢ Availability of Raw materials for commercial poultry should be ensured to cope price shocks in the poultry market I.e. GMO Soybean	➢ Strict enforcement of control measures such as biosecurity and vaccination at the national level to control and manage farm level endemic H9N2 AI outbreaks successfully.	➢ Involve private sector to introduce poultry meat packing and slaughtering units to ensure end level consumer health	➢ Incentivize private sector to introduce value addition and exports in poultry sector.

PROPOSED PROJECTS

Area of Intervention	Category	Intervention	Cost (Million)
Breed Improvement	Short term	Conservation and preservation of indigenous breed I,e Nili Ravi	200
		A specialized breed development and semen production unit should be introducing for high meat yielders	25
		Poultry research centre should be introduced in the division to enhance poultry breed	20
	Medium-term	Tagging, tracking and acquiring of elite male of Nili Ravi breed for Semen production	100
		Household poultry programs should be introduced and increased units in the existing programs	349
	Long term	Research and Development in the ambrio transfer technology for breed improvement	150
		Goat breeding and AI should be introduced for indigenous breed I,e beetal	30

Area of Intervention	Category	Intervention	Cost (Million)
Nutrition and Feed	Short term	provision of sillage making machine at community level	200
		Providing feed (wanda) at subsidized rate at village level to ensure nutritional level in the animals	150
		Feed subsidy program for goat farmers could be introduced	100
		Availability of Raw materials for commercial poultry should be ensured to cope price shocks in the poultry market I,e GMO Soybean	Soft
	Medium-term	Goat fattening program should also be introduced for Faisalabad division	100
		specialized fodder crops could be introduced to fulfil nutritional requirement of the livestock	200
Disease Control and Prevention	Short term	Strengthening of Disease Diagnosis, Reporting, Surveillance System, and ISO Certification of Diagnostic Labs	200
		Enhancement of vaccine production for Livestock & Poultry.	350
	Long term	Establishment of Research Center for Molecular investigations of field strains of the FMD, HS, ETV, PPR, Mycoplasma, Brucella, ND, and Avian Influenza.	250
		Establishing technical route epidemiological survey, compulsory immunization, barrier system for controlling livestock movement from high-risk area to	1200

Area of Intervention	Category	Intervention	Cost (Million)
		disease-free zone, monitoring & warning and quarantine supervision and emergency treatment and disease-free certification system.	
Extension Services	Short term	Farmer training programs with the help of private sector to ensure proper livestock management	100
		Excluding extension services from veterniary services and establishing a separate Institute for extension services of farm managenment and nutrional enhancement	200
	Medium-term	Upgradation of the livestock directorate Faisalabad	300
Marketing	Short term	Establishing milk collection points at community level for farmers to eliminate middle man from milk sale	300
		Grading and Packing facilities and acts for buffalo milk	150
		DE capping or ensuring market competitive pricing of the milk	soft
		Price flooring could be introduce for milk famers to sustain	Soft
		Small cattle mandi could be introduced to increase farmer outreach in the market	100

Area of Intervention	Category	Intervention	Cost (Million)
	Long term	Modern slaughter houses with packing facilities needs to be introduced	800
		Involve private sector to introduce poultry meat packing and slaughtering units to ensure end level consumer health	200
Value addition	Long term	Incentivize private sector to introduce value addition and exports in Dairy Sector I,e Cheese,	200
		Incentivize private sector to introduce value addition and exports in meat Sector.	200
		Incentivize private sector to introduce value addition and exports in poultry sector.	200
Total			6,374 (Million)