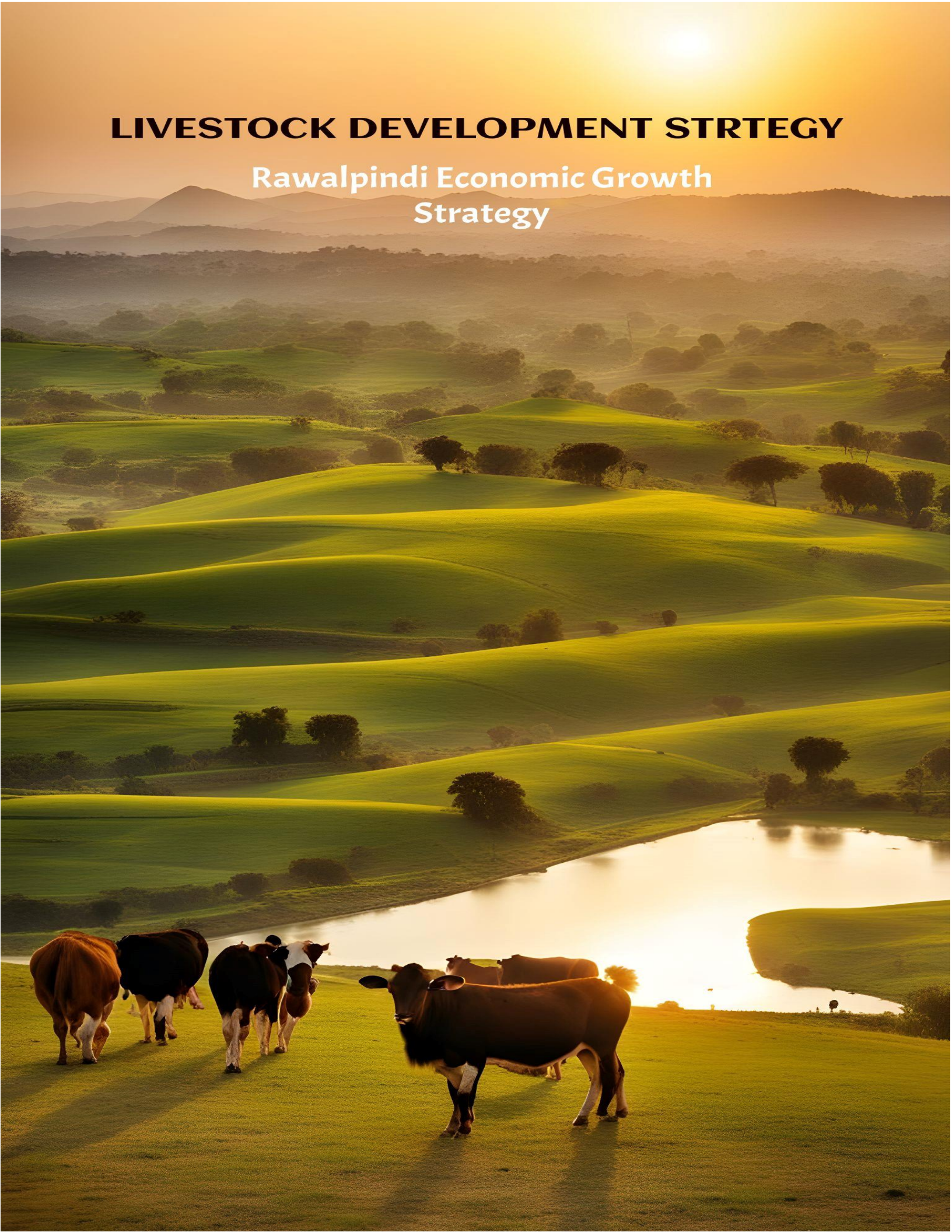
LIVESTOCK DEVELOPMENT STRTEGY

Rawalpindi Economic Growth Strategy



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INTRODUCTION

The livestock sector of Pakistan plays a pivotal role in the nation's economy, serving as a significant income source for a substantial portion of the population. It contributes 60.1% to the agricultural value addition and constitutes 11.5% of the GDP. Within this sector, a variety of activities, such as the breeding, rearing, and sale of animals like cattle, sheep, goats, and poultry, are conducted. It's a dynamic field that adapts to meet the increasing demand for livestock products. Nevertheless, it faces several challenges that require attention, including limited market access, outdated farming practices, and inadequate veterinary services.

The livestock industry operates through an extensive market chain and serves as a lifeline for small-scale farmers in developing nations. Approximately 8.0 million families are involved in livestock production, relying on it for over 40% of their income. The demand for livestock products differs significantly between developing and developed countries, creating a stark contrast. Several factors influence the cost of milk production, encompassing expenses related to feeding, heifers, labor, electricity, diesel, treatment, artificial insemination, equipment, machinery, and land or rent. Among these factors, feeding expenses carry the most significant weight. In peri-urban dairying, the cost of milk production is relatively high due to the adoption of a fully stall-feeding system.

When comparing Pakistan to developed countries, the per capita availability of meat and milk is notably lower. When projecting the per capita demand for animal products, there is an evident protein deficiency gap from animal sources across all Asian countries. Livestock production must consider consumer preferences for factors such as food safety, quality, the spread of zoonotic diseases, animal welfare, reduced use of treatments, and a sustainable environmental impact.

Approaching the year 2050, there's a looming projection of a global population swelling to 9.6 billion people, presenting a formidable challenge to the agricultural system. This challenge hinges on the need to enhance production and ensure the accessibility and affordability of food for everyone. In this pursuit, the livestock sector assumes a pivotal role in shaping the food system. It stands as a multifaceted and dynamic component of agriculture, contributing a significant one-third to the global agricultural GDP. This sector exerts its influence on various aspects, including animal health and nutrition, the demand for animal feed, supply chain integration in the market, farm-level production expansion, farm income, and land utilization.

In recent decades, livestock production has left an indelible mark on the agricultural landscape, taking up a primary position in the utilization of land resources, with 26% of grazing lands and one-third of arable land dedicated to feed crops. Livestock maintains close ties with the feed crop sector through the generation of by-products such as manure and draught power. In many developing countries, livestock functions as a means of wealth storage and a safety net, playing a role in preserving the cultural distinctiveness and traditional practices of various societies.

The changing demand for animal-based food has resulted in shifts in land use patterns and has placed substantial pressure on the livestock sector. Diverse livestock production systems coexist, encompassing extensive systems like grazing for ruminant animals, intensive systems characterized by a large number of animals fed concentrated feed in controlled environments, and intermediate systems that fall between these two extremes. It is of utmost importance to enhance the positive economic, social, and environmental contributions of the livestock sector while mitigating any adverse effects through the definition of appropriate pathways.

The livestock sector is poised for rapid growth in the future, particularly in emerging economies, as it strives to meet the projected demand for protein. In 2015, it was reported that 800 million people globally suffered from undernourishment due to insufficient access to both micro and macro nutrients, including protein, fats, and carbohydrates, resulting in hidden hunger characterized by micronutrient deficiencies like anemia and vitamin A deficiency (FAO, 2015). Livestock contributes 18 percent of dietary calories and accounts for 25 percent of protein supply (FAO, 2016). Beyond its role in providing high-quality protein, livestock plays a critical part in food security by supplying essential vitamins like vitamin A, B-12, riboflavin, calcium, iron, and zinc, which are challenging to obtain in significant quantities from other sources like plants. The impact of livestock extends beyond the production of meat and milk, positively contributing to food security through the supply of both macro and micronutrients, the utilization of draught power for agricultural tasks, and the generation of income for households and the national economy.

Recent research into the role of livestock in ensuring food security in countries like Morocco and Saudi Arabia has unveiled a growing demand for livestock-derived products. This increased demand can be attributed to factors such as population growth, urbanization, and rising affluence. However, in developing nations, the heightened reliance on pastoral livestock has heightened the vulnerability of rural households to food insecurity. This vulnerability primarily arises from shifting precipitation patterns and a greater dependence on imported products among urban consumers. In peri-urban areas, households engaged in livestock farming incorporate a higher proportion of animal-derived food into their diets compared to households without livestock. These households heavily rely on items like milk, meat, poultry, and eggs, which play a significant role in supporting their livelihoods. In the context of Pakistan, the province of Punjab stands out with the largest human and livestock populations. A considerable number of individuals, particularly women, rely on livestock not only for their livelihoods but also for ensuring their food security in this region.

LIVESTOCK RAWALPINDI

The livestock sector in Rawalpindi Division, Pakistan, plays a crucial role in the local economy, serving as a source of income for numerous small-scale farmers and breeders. Rawalpindi Division is home to a variety of livestock, including cattle, buffaloes, goats, sheep, and camels. Furthermore, this division hosts several medium and small-scale commercial dairies and meat processing facilities. Over recent years, the livestock industry in Rawalpindi Division has experienced significant expansion, driven primarily by the increasing demand for meat and dairy products. This demand is not only within the region but also notably in the neighboring city of Islamabad. The division's cattle population is estimated at approximately 1.2 million cattle and buffaloes. Additionally, milk production in Rawalpindi Division is relatively modest, with an estimated annual output of around 1.5 million tons. The accompanying chart provides a visual representation of the statistical data on the livestock population in Rawalpindi Division.

Figure 1: Livestock Population

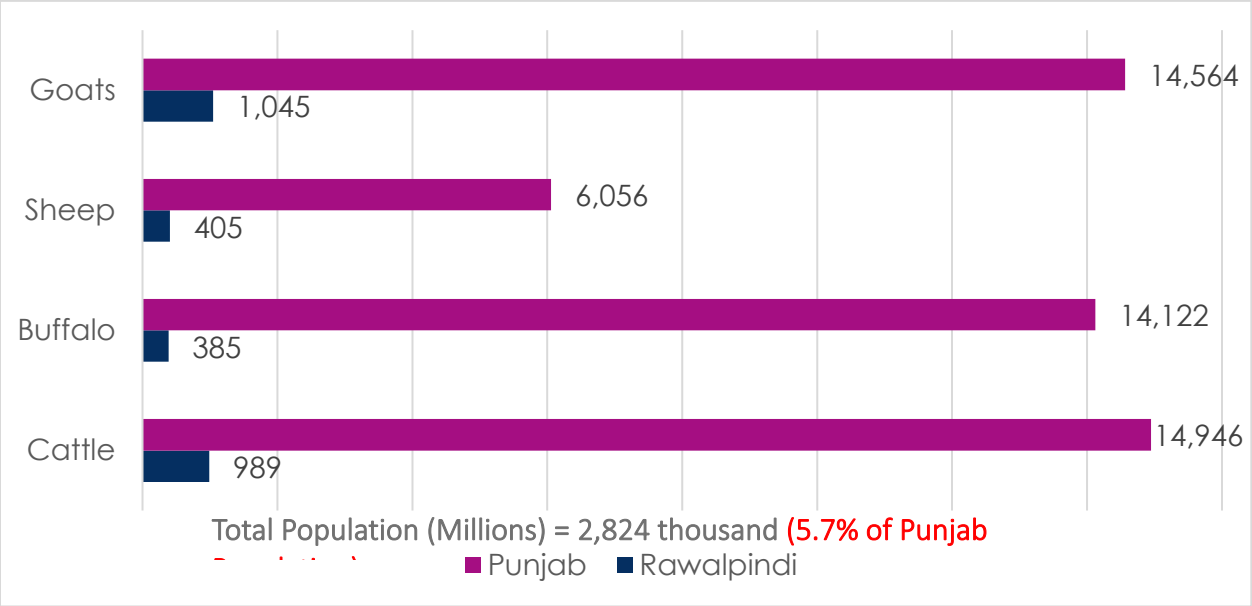


FIGURE 1: LIVESTOCK POPULATION RAWALPINDI DIVISION
SOURCE: **LIVESTOCK AND DAIRY DEVELOPMENT DEPARTMENT**

The data provided here concerns the livestock population in Rawalpindi Division, expressed in thousands, as opposed to the overall livestock population in Punjab. Rawalpindi Division houses 989,000 cattle, 385,000 buffalo, 405,000 sheep, and 1,045,000 goats, totaling 6,207,000 livestock animals. Analyzing the relative proportions offers insights into the significance of Rawalpindi Division's livestock population within the Punjab context. In this division, cattle constitute 6.6% of Punjab's total cattle population, buffalo makes up 2.7%, sheep comprises 6.7%, and goats represent 7.2%. In total, Rawalpindi Division's livestock population accounts for approximately 5.7% of the entire livestock population in Punjab. These statistics underscore the substantial contribution of Rawalpindi Division to Punjab's livestock sector.

The livestock sector in Rawalpindi faces several challenges, with fodder scarcity being a significant issue, particularly in the Potohar region. Grazing areas are limited and often situated at a considerable distance from farmers. Similar to other parts of Punjab, Rawalpindi grapples with challenges such as limited access to credit and technical assistance, inadequate infrastructure and services, and low livestock industry productivity. Many small-scale farmers and breeders in Rawalpindi Division find it challenging to compete with larger commercial operations. Moreover,

there is a noticeable deficiency in research and development investment aimed at improving breeding, feeding, and health management practices.

To address these issues, the Pakistani government has introduced various initiatives to bolster the livestock sector in Rawalpindi Division. These initiatives encompass extending credit, providing technical support, and offering training to small-scale farmers and breeders. The government has also allocated resources to enhance infrastructure and services, including the establishment of veterinary clinics, feed mills, and milk processing plants. Additionally, private sector organizations actively contribute to the development of the livestock sector in Rawalpindi by investing in research and development and promoting best practices in breeding, feeding, and health management. However, while these efforts are valuable, they may not be sufficient for comprehensive sector development in this region. Prioritizing interventions through a value chain approach and strategically implementing them across the area is essential for achieving more favorable outcomes.

PRODUCT SNAPSHOT

In Rawalpindi, the livestock sector offers a wide range of products that play diverse roles in human consumption and well-being. Livestock yields various products, including meat, dairy, eggs, and a multitude of by-products sourced from animals like leather, wool, and feathers. Meat, originating from animals such as cattle, sheep, goats, and poultry, serves as a crucial source of dietary protein, presenting an assortment of options like beef, mutton, lamb, chicken, and pork, catering to consumer preferences. Dairy items, predominantly derived from cows and buffaloes, encompass milk, butter, cheese, yogurt, and other dairy derivatives, providing essential nutrients like calcium and vitamins. Eggs, produced by poultry, serve as a versatile ingredient in cooking and offer a nutrient-rich food item.

Moreover, the livestock sector contributes to non-food products, with leather used for making footwear, garments, and accessories, while wool and feathers find applications in textiles and bedding. This overview of products underscores the extensive array of goods originating from livestock, underscoring the sector's significance in fulfilling diverse human needs and enhancing overall quality of life. The specific context of these products in Rawalpindi Division is detailed below.

DAIRY

Dairy products, rich in vital nutrients like protein, calcium, vitamins, and minerals, play a crucial role in promoting healthy growth and development, particularly in children, while supporting overall nutrition and well-being. Moreover, the dairy sector offers employment and income opportunities to millions worldwide, benefiting farmers, farm laborers, milk processors, distributors, and retailers, thus serving as a vital source of livelihood for rural communities and contributing to poverty reduction and economic stability. Additionally, dairy products serve as a valuable source of animal protein, especially in regions with limited access to alternative protein sources, ensuring food security by providing a stable and diverse diet for populations. Furthermore, sustainable dairy farming practices can enhance soil fertility, reduce greenhouse gas emissions, and promote biodiversity, making it an integral component of many agricultural systems that facilitate nutrient recycling through manure utilization and feed production.

High Nutrition

Milk produced in Pakistan have more nutritional value than other world having 8 to 12 percent of FAT and 10 to 15 percent of Calcium

Low-Cost Farming

Farming in Pakistan is mostly linked to the agriculture farmers who have their own inputs.

International Recognition

Neeli Ravi is considered the best buffalo breed in the world.

High Potential

Neeli-Ravi buffalo produced more than 47 liters in 3 milking sessions during a buffalo gala competition in April 2013 at BRI Pattoki.

Farmers in the area predominantly raise cattle, buffaloes, and goats to meet the demand for milk production. Rawalpindi Division, estimated to house only 1.2 million heads of cattle and buffaloes, makes a significant contribution to the dairy industry. The region exhibits low milk production, amounting to approximately 1.5 million tons annually. Dairy farming in Rawalpindi Division encompasses a mix of small-scale and large-scale operations. Small-scale dairy farming is prevalent, with individual farmers or households maintaining a few animals for milk production. Alongside these, there are large-scale commercial farms employing

Farmers Type

80% milk is produced at small scale

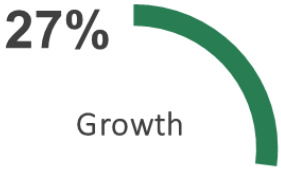
modern farming practices, housing a greater number of animals. Rawalpindi Division sustains a vibrant local market for dairy products, where dairy consumption holds a pivotal place in the regional diet. The population of Rawalpindi, as well as the surrounding areas, relies extensively on dairy products for daily consumption, cultural traditions, and religious

However, the dairy industry in Rawalpindi faces challenges common to most sectors, including fluctuating milk prices, insufficient modern infrastructure, and concerns regarding animal health and milk quality control. Nonetheless, there are abundant opportunities for growth and enhancement through the adoption of modern farming techniques, value addition to dairy products, and the establishment of more robust market connections. Additionally, the issue of unavailability of fodder in the area due to water scarcity presents a significant challenge that needs to be addressed.

MEAT

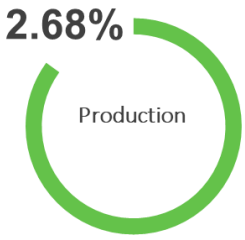
Meat is a valuable source of vital nutrients like protein, iron, zinc, and vitamin B12, which are essential for maintaining good health and preventing malnutrition, particularly among vulnerable groups such as children and pregnant women. Consuming meat as part of a diverse diet helps ensure a balanced intake of nutrients necessary for optimal well-being and meeting nutritional requirements. The livestock sector, including meat production, serves as a significant means of livelihood for numerous individuals in Pakistan, offering employment opportunities to farmers, herders, butchers, traders, and other related industries. Supporting the meat industry contributes to improved incomes and economic conditions,

thereby enhancing food security at both individual and community levels. Access to an adequate meat supply plays a crucial role in meeting the protein needs of the population, supporting growth, tissue repair, and overall maintenance of the body. Livestock, including animals raised for meat production like cattle, goats, and poultry, actively contributes to agricultural activities in Pakistan. Through utilizing agricultural by-products such as crop residues and agro-industrial by-products for animal feed, the integration of crop and livestock production enhances agricultural productivity, thereby promoting food security. With its abundant livestock resources, Pakistan holds significant potential for meat exports, offering an opportunity to boost the country's economy and foreign exchange earnings. This economic aspect further strengthens food security by stimulating trade and enhancing overall financial stability at the national level.



Pakistan's meat industry has grown at a annual rate of 27pc, from $14 million in 2002-03 to $339.93m in 2021. B

Livestock production is a significant part of the agricultural sector in Rawalpindi Division. The region is known for its sizable number of livestock farms, focusing on cattle, goats, and poultry. Annually, Rawalpindi Division slaughters approximately 250,000 large animals and 386,000 small animals (goats and sheep). The meat production amounts to around 50 thousand tons, contributing an estimated value of 28 billion rupees per year. Livestock serves as a crucial source of income for many farmers in the area. To meet the demand for meat products, Rawalpindi Division has multiple slaughterhouses that adhere to the required standards for proper slaughtering, processing, and meat storage. There are also numerous meat shops in the division where consumers can purchase fresh meat. Meat consumption in Rawalpindi Division is high, playing a significant role in the local cuisine and cultural practices. The consistent demand for meat products reflects the dietary preferences of the population. Meat prices



Pakistan is only 2.68% of the world total production, while having the 7th Largest population in the World

The country produced at least 4.9 million tones of meat in 2020-21 and Only 2 percent of that is exported.

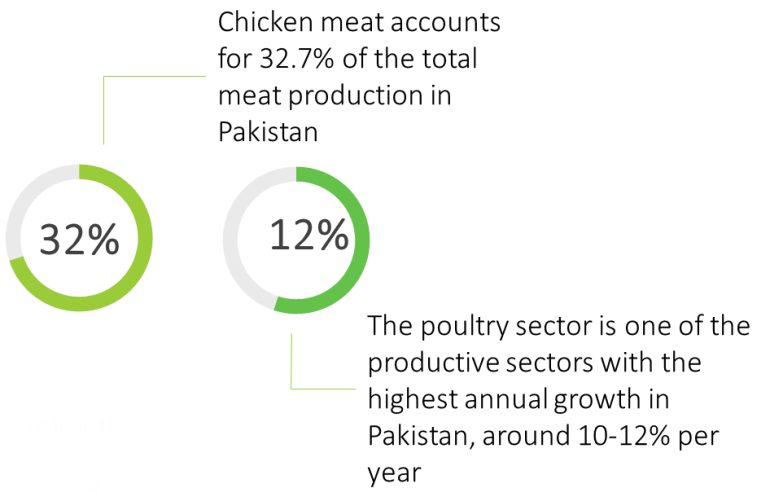
in the market can fluctuate due to various factors, including seasonal variations, supply, demand, and operational costs. Affordability may be a concern for certain segments of the population, considering these price fluctuations and market conditions. To ensure the quality and safety of meat products, the government of Pakistan, including provincial and local authorities, has implemented regulations and guidelines. These measures aim to maintain hygienic practices in slaughterhouses, transportation, and meat storage, prioritizing public health.

POULTRY

Poultry plays a vital role in ensuring food security in Pakistan. It is a major source of animal protein, providing affordable and accessible meat to a large portion of the population. Poultry products, such as chicken and eggs, are widely consumed across the country, making them an essential part of the Pakistani diet. Poultry farming has become a crucial source of livelihood for many people in Pakistan, particularly in rural areas. It offers employment opportunities for farmers, workers in hatcheries, feed mills, processing plants, and other related industries. Poultry farming provides income stability and economic growth, especially for small-scale farmers. The poultry industry contributes significantly to the national economy of Pakistan. It generates substantial revenue through poultry meat and egg production, as well as the sale of related products and services. The industry contributes to the country's GDP, foreign exchange earnings, and tax revenues. Poultry farming is relatively easier and quicker compared to other livestock sectors.

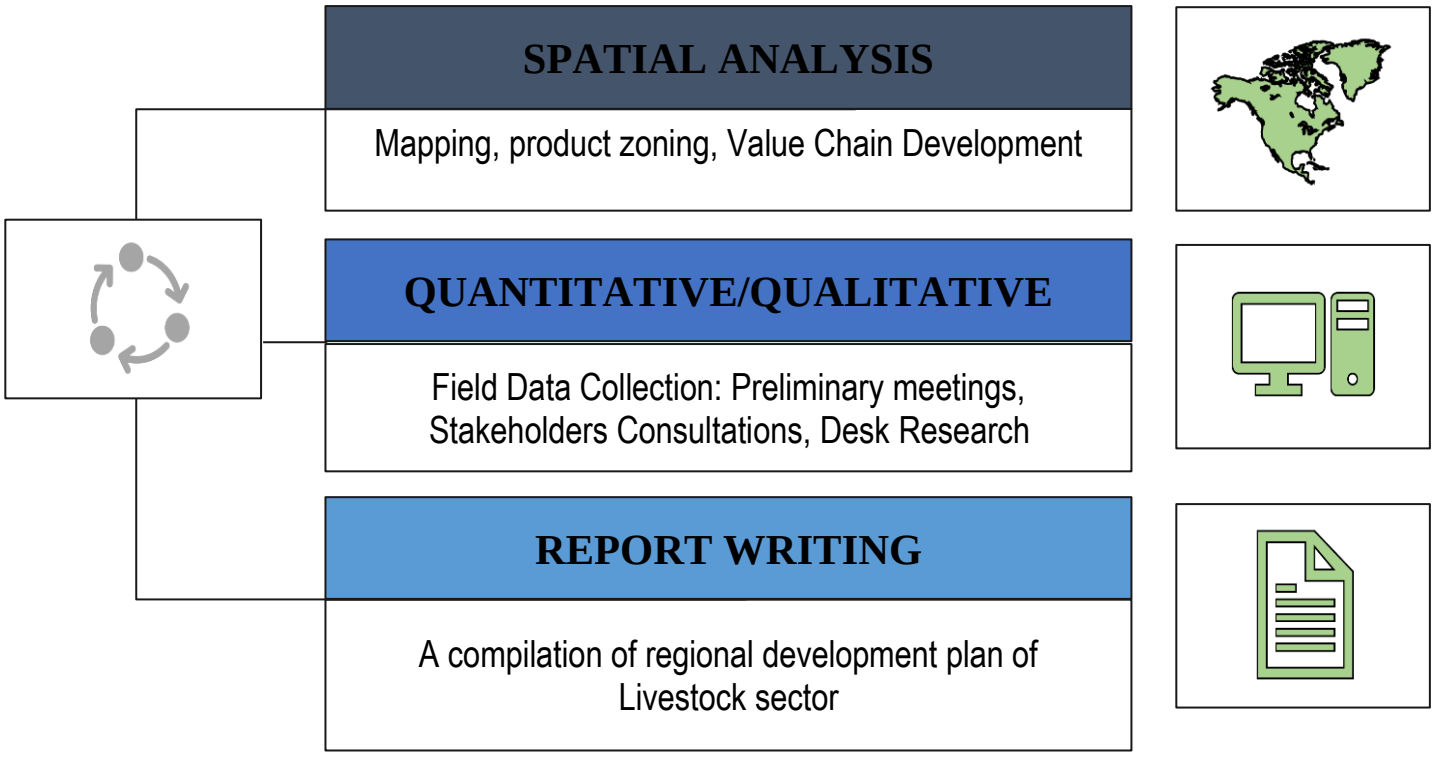
The production cycle for poultry is shorter, allowing farmers to achieve quicker returns on their investments. This factor makes poultry farming an attractive option for both small and large-scale farmers, contributing to agricultural development and rural prosperity.

Poultry farming provides employment opportunities for women and youth in Pakistan. It is a sector that requires relatively less physical labor and can be managed within smaller spaces. This makes it suitable for women entrepreneurs and young individuals seeking entrepreneurial opportunities and income generation. Pakistan has the potential to export poultry products to meet the global demand. Poultry exports can contribute to foreign exchange earnings and enhance the country's trade balance. Additionally, the export of poultry products helps in promoting the image of Pakistani products internationally. he poultry industry in Pakistan has seen technological advancements and modernization in recent years in the shape of controlled farming which has enhanced the production of poultry in Pakistan.



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 Rawalpindi division during the month of August for stakeholder sessions and ground truthing.

ISSUES AND CHALLENGES.

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

- Malnutrition: Malnutrition due to unavailability of fodder, the Potahar area is water stressed and dependent on rainwater so there is lack of fodder crop in the area. This can lead to poor growth, reduced immunity, and increased susceptibility to disease.
- Lack of proper infrastructure: Many farmers in Rawalpindi 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 Rawalpindi has difficulty accessing markets to sell their animals, which can lead to low prices and limited profits.
- Disease: Livestock in Rawalpindi are at risk of various diseases, such as foot and mouth disease, which can lead to significant losses for farmers.

- Lack of government support: Farmers in Rawalpindi 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 Rawalpindi, as it can affect pasture growth, water availability and increase the risk of diseases.
- Open grazing: Open grazing is another major problem in Rawalpindi, 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 Punjab, 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.

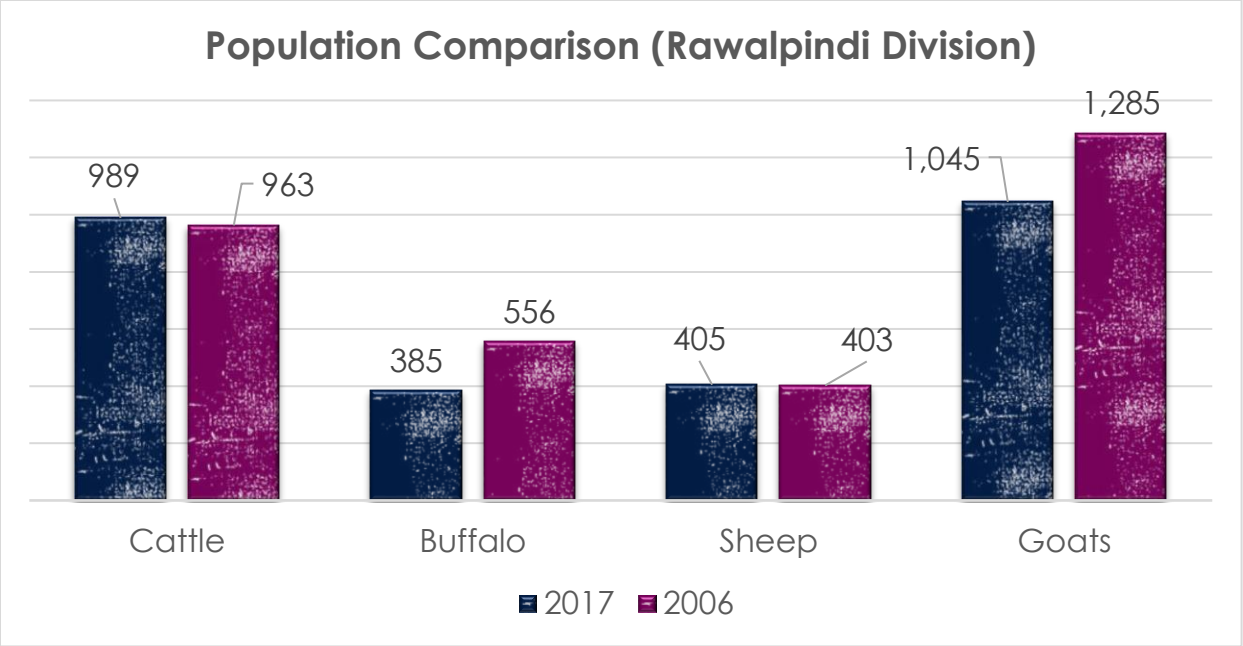


FIGURE 2: COMPARISON OF LIVESTOCK POPULATION
SOURCE: **URBAN UNIT**

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 Rawalpindi, Pakistan can be caused by several factors, the most prominent of them is the small farm holding, almost 70-80% of smallholder milk producers and it is accelerated through the unavailability of the required feed. The Rawalpindi division is considered the Potohar region of Punjab and mostly dependent on the rain fed irrigation system which cause low fodder cop. 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 Rawalpindi.

The figure below shows the productivity gap of some milking and meat animals in the Rawalpindi 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 Rawalpindi 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.

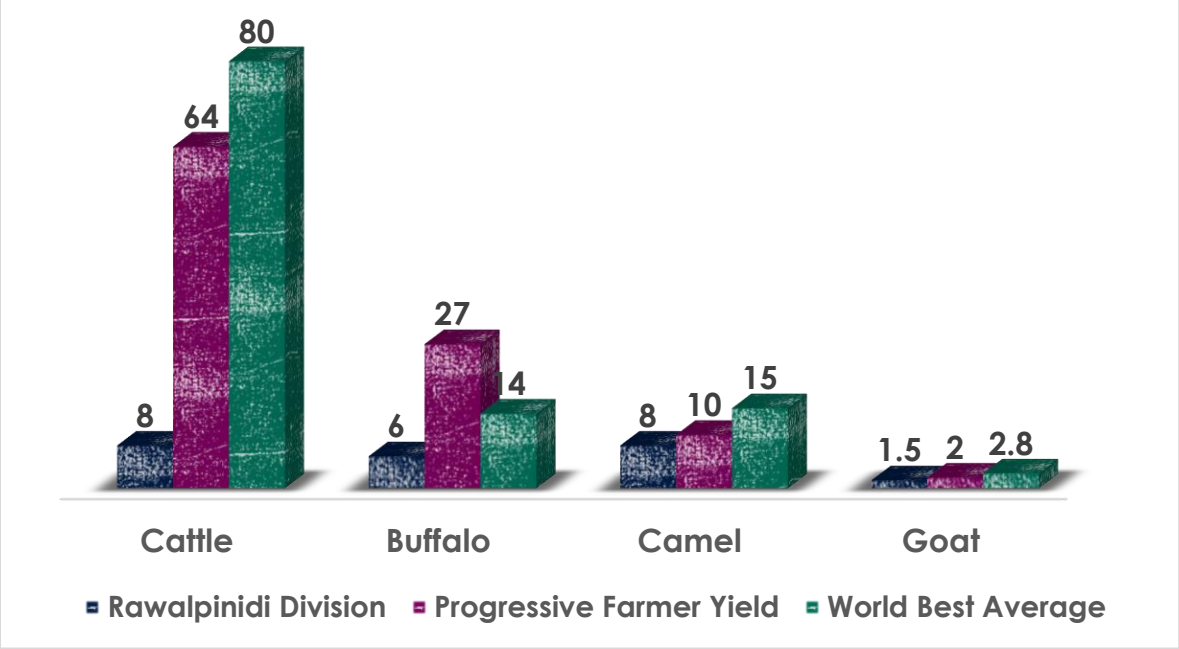


FIGURE 3: PRODUCTIVITY GAP OF MILKING & MEAT ANIMALS
SOURCE: **URBAN UNIT**

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
Rawalpindi	Na,	Zn	Zn, Co, Cu
Attock	Ca, Fe	P, k	Mn, Zn
Jhelum	Fe, K	Na, P	Mn, Zn, Cu
Chakwal	K	Na, K, Zn,	Zn,Co

DISEASE SPREAD

Livestock in Rawalpindi, 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 Rawalpindi, 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.

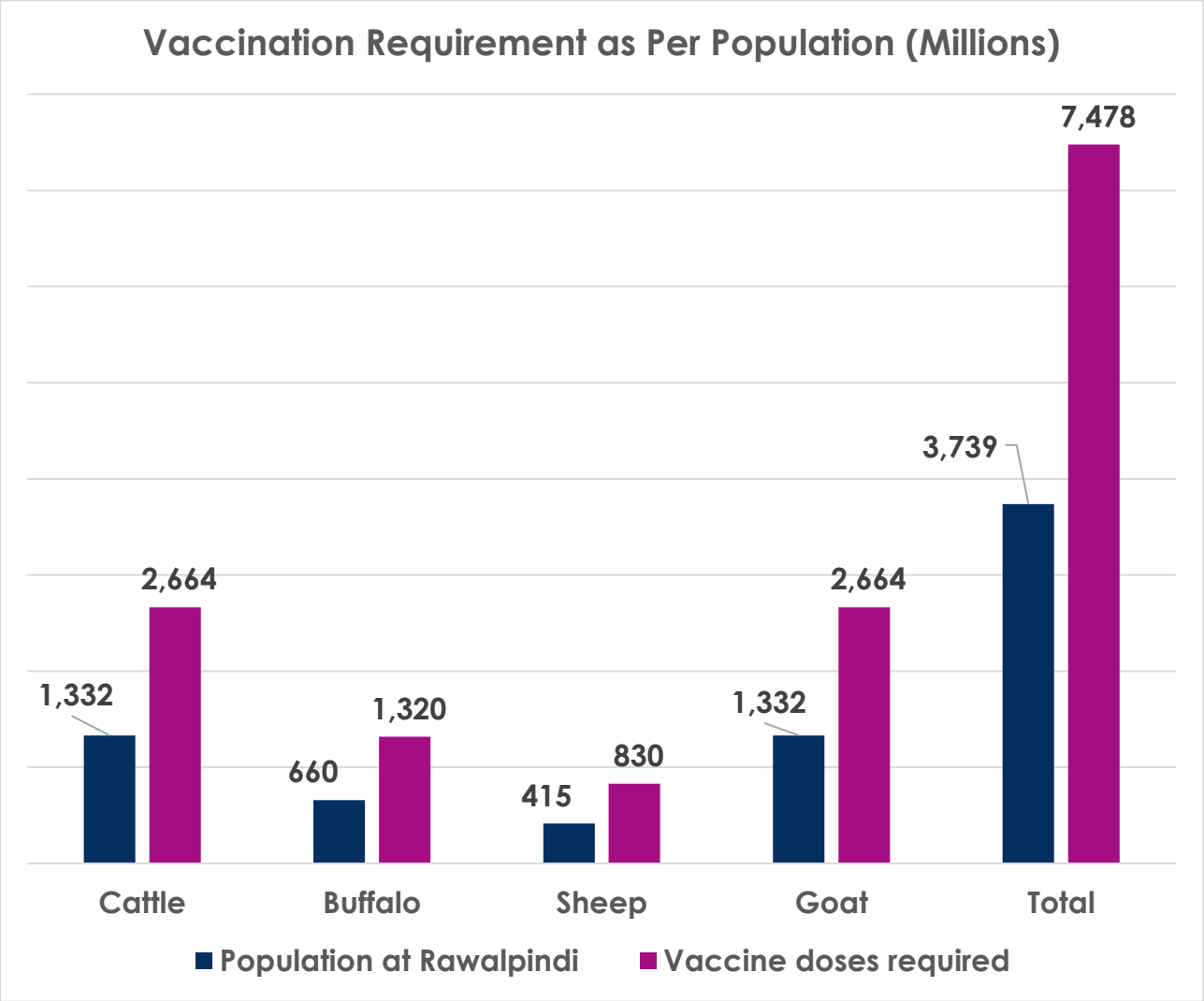


FIGURE 4: VACCINATION REQUIREMENT AS PER POPULATION
SOURCE: **LIVESTOCK AND DAIRY DEVELOPMENT DEPARTMENT**

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 Rawalpindi and other areas.

MARKETING PROBLEMS

Livestock marketing in Rawalpindi 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.

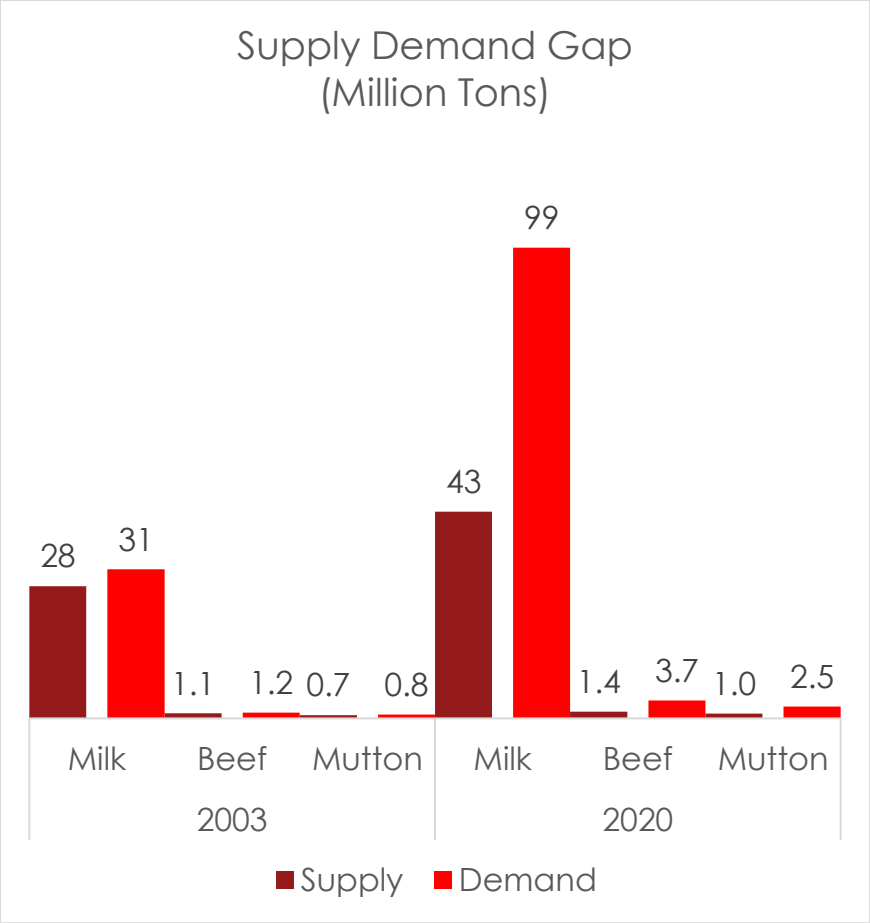


FIGURE 5: MARKET DEMAND & SUPPLY GAP
SOURCE: **LIVESTOCK AND DAIRY DEVELOPMENT DEPARTMENT**

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.

INSTITUTIONAL CAPACITY

The existing facilities are proving inadequate to meet the needs of the current population. With the growing number of residents, it has become essential to establish facilities in every Union Council (UC) to address the increasing demands. The data provided in the figure below represents the number of Veterinary Hospitals (VHs), Veterinary Dispensaries (VDs), Veterinary Clinics (VCs), and Slaughterhouses in the city of Rawalpindi. According to the data, Rawalpindi has a total of 57 Veterinary Hospitals, 78 Veterinary Dispensaries, 20 Veterinary Clinics, and 17 Slaughterhouses.

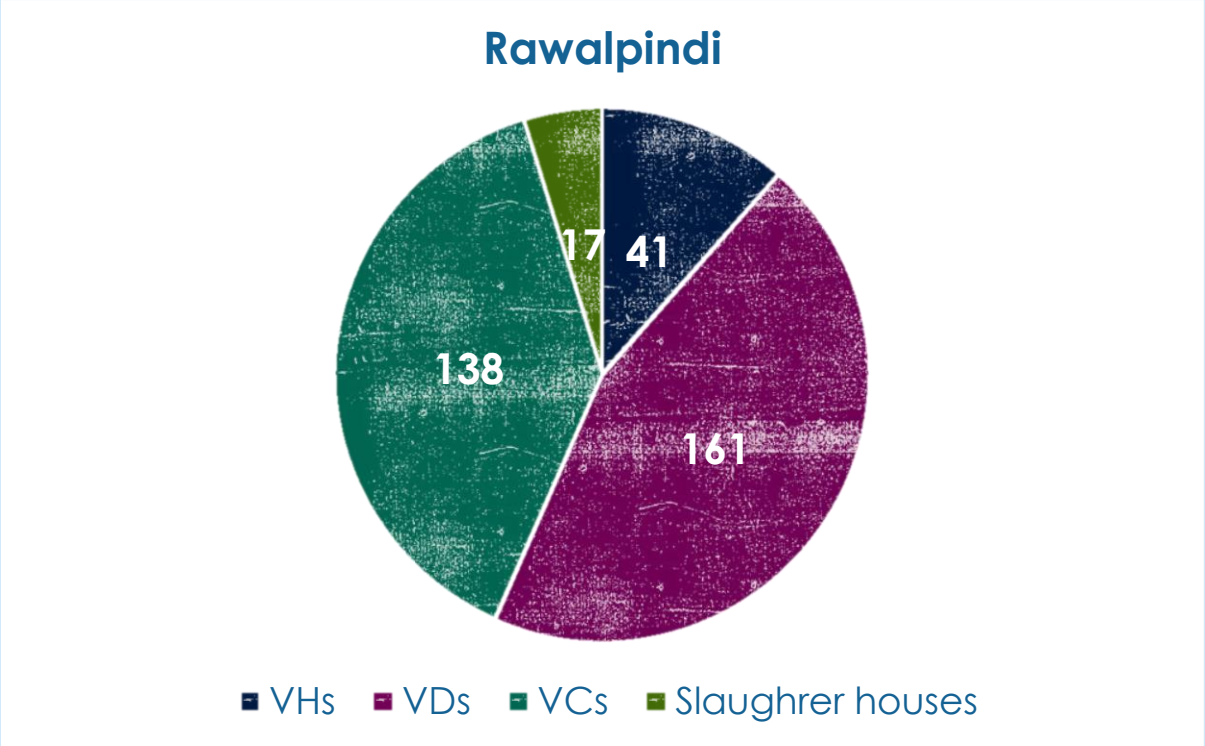


FIGURE 6: NUMBER OF LIVESTOCK FACILITIES
SOURCE: **LIVESTOCK AND DAIRY DEVELOPMENT DEPARTMENT**

This expansion is particularly crucial for ensuring the availability of veterinary services, which have received insufficient emphasis in the past. Moreover, while the focus has been primarily on veterinary services, the extension services have been neglected, creating a significant gap in the provision of comprehensive support. To address these shortcomings, it is imperative to revamp the departmental structure and implement necessary reforms that would enable the delivery of improved and holistic services to the population.

OTHER ISSUES AND CHALLENGES

FARM MANAGEMENT

Poor farm management is a major issue in the livestock industry in Rawalpindi 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 Rawalpindi division.

VALUE ADDITION

In Rawalpindi 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 Rawalpindi 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 Cross Breed	
2.	Cattle	Dhanni Cholistani Foreign / cross breed Thari	
3	Sheep	Salt range Kajli Thalli	
4	Goat	Teddy Beetal Damani	

LIVESTOCK DEVELOPMENT STRATEGY

INSTITUTIONAL AND HUMAN RESOURCE DEVELOPMENT

In the context of Rawalpindi Division's regional growth strategy, the Livestock Development in the region will be built upon strong institutional support and a well-qualified human resource capacity.

To establish this foundation, there is a need to identify and put into effect institutional modifications that focus on improving research, extension, and training capabilities. Within this framework, the government is committed to augmenting the capabilities of provincial livestock departments, suggesting a mechanism for implementing and coordinating Livestock Development, endorsing and reinforcing veterinary and livestock education and training, fortifying research facilities, and more. By equipping these institutions with the necessary capabilities, it is anticipated that all levels of these organizations will function at their best and play a role in fostering the advancement of the livestock sector. The strategy comprises the following strategic measures.

STRENGTHENING AND RESTRUCTURING LIVESTOCK INSTITUTIONS

With the enactment of the 18th constitutional amendment, provincial livestock departments are now tasked with an expanded role in backing the various elements set forth in the vision document. Several of these organizations, including those within the livestock department, grapple with

shortcomings like inadequate staffing, constrained budgets and resources, and a dearth of training prospects. To tackle these obstacles, it becomes imperative to enhance the capabilities of these institutions through a thorough institutional assessment and the execution of a robust plan for capacity and institutional development. This will empower them to make a meaningful contribution to the realization of the objectives.

CREATING A POOL OF ANIMAL HEALTH WORKERS

To address the limited presence of public veterinary staff across Division in relation to the growing livestock population, there is a need to establish a large pool of animal health workers who can effectively meet the needs of livestock farmers in their communities. These workers will serve as a crucial link between state-of-the-art research and on-ground livestock management practices. By providing first aid, regular vaccinations, and acting as liaisons between farmers and veterinary staff, and will contribute to improved husbandry practices and livestock productivity enhancement.

IN-SERVICE AND PRE-SERVICE TRAINING REGIME

Public sector universities across the country are currently providing training to undergraduate students in the DVM program, with graduates finding employment in both public and private sectors. However, there exists a capacity gap between these graduates and the sector's technological and research needs, except for a few universities that have improved their curricula recently. To address this, there is need to support veterinary and livestock faculties in public sector universities, enhancing their pre-service training programs and transforming them into centers of excellence. Collaboration with provincial livestock departments and extension staff will ensure the direct dissemination of the latest practices into the field. Additionally, international linkages, joint programs, study visits, and research projects could be facilitated.

COMPREHENSIVE CURRICULUM REVIEW AND IMPROVEMENT

To enhance in-service and pre-service training, a comprehensive review of all livestock training curricula is crucial, ensuring their alignment with the evolving needs of the sector. These curricula will encompass technical content as well as areas such as extension methodology, communication skills, small business management techniques, and participatory techniques for forming farmer organizations

TECHNOLOGY TRANSFER OFFICES AT LIVESTOCK UNIVERSITIES

Following advancements in livestock research infrastructure, the establishment of technology transfer offices in selected universities is crucial. These offices will facilitate effective coordination and synergy between research and technology development. This transfer will enable further development and utilization of technology, improving production, productivity, and value addition in the livestock sector.

STRENGTHENING LIVESTOCK RESEARCH AND ACADEMIA-INDUSTRY LINKAGES

Aim is to establish a connected research network among public sector institutes to overcome resource challenges and traditional management practices. A web-based platform will enable collaboration, while substantial government funding will upgrade infrastructure and align the research agenda with private sector needs, covering areas such as disease control, genetic improvement, feed resources, and value addition. Close coordination with farmers and extension services will ensure practical testing of research interventions.

DISEASE SURVEILLANCE, ANIMAL HEALTH AND EXTENSION SERVICES

The livestock sector in Rawalpindi is impacted by various livestock diseases, and the strength of preventive and curative veterinary services is crucial in managing these infectious and non-infectious diseases. To effectively monitor the health and productivity of animal populations, as well as the attributes of animal products and veterinary biologics, the widespread availability of quality veterinary services is necessary.

Therefore, ensuring easy and unrestricted access to high-quality animal healthcare services for farmers is a fundamental pillar of the livestock for Rawalpindi. The following interventions should be adopted to enhance animal health delivery across division.

IMPROVEMENT IN ANIMAL HEALTH SERVICES DELIVERY

The current field support animal health services fail to meet the increasing needs of livestock farmers, leading them to rely on unqualified private veterinarians. To address this issue, the establishment of a qualified animal health workforce, the enhancement of livestock assistants' skills, and the strengthening of provincial livestock departments. Monitoring mechanisms will be improved to ensure field staff delivers services at an acceptable quality level. To meet the growing demand, the government will involve the private sector in curative animal health services through the development of guidelines and accreditation for quality assurance.

IMPROVED DISEASE SURVEILLANCE AND ESTABLISHMENT OF DISEASE-FREE CLUSTERS

An important aspect is the creation of a knowledge base on disease prevalence in different regions and the maintenance of an updated disease map. This will enable the implementation of effective control measures, enhance disease surveillance capabilities, leverage ICT-based solutions, and establish a robust animal disease reporting and epidemiology system. Emphasis will be placed on controlling common infectious diseases such as Foot and Mouth disease, PPR, HS, enterotoxaemia in livestock. The government will also develop disease-free zones in selected regions to meet international market standards and facilitate the export of high-quality livestock products through improvements in vaccination, disease control, and investments in livestock breeding and marketing infrastructure.

INSTITUTIONAL MECHANISM FOR DISEASE OUTBREAK MANAGEMENT

Outbreaks of infectious diseases in livestock have severe consequences for food security, including the loss of livestock products, high-value genetic livestock, increased production costs, trade disruptions, and hindered investment. The government needs to establish a robust institutional mechanism to effectively manage and minimize economic losses during disease emergencies. This will involve early warning systems, contingency plans, training, and collaboration with relevant

stakeholders to ensure a comprehensive emergency response, as well as the establishment of legal and administrative structures to handle such situations.

IMPROVEMENT IN DIAGNOSTIC REGIME

To enhance disease surveillance, existing institutional structures such as divisional directorate of disease surveillance and district diagnostic laboratories need to be strengthened. These labs will not only have improved capacity for diagnosing livestock diseases but will also expand their scope to include testing the quality of feed, milk, meat, and poultry products. Special diagnostic facilities for poultry should be established in areas with high poultry concentrations. The government could also explore private sector participation in setting up diagnostic facilities to ensure better public health and increased exports.

STRENGTHENING EXTENSION AND OUTREACH SERVICES

A key aspect of this strategy involves enhancing and strengthening extension services to improve the education and awareness of livestock farmers, especially in rural areas, and facilitate the adoption of new technologies for livestock production and animal health. This will be achieved by establishing and reinforcing livestock farmers training centers, organizing regular farmer field schools, conducting model farming practice demonstrations, and providing capacity-building opportunities for extension staff. These initiatives aim to bridge knowledge gaps, address training needs, and ensure the availability of effective livestock extension services at the grassroots level.

ROBUST ICT-BASED FARMER COMMUNICATION PROGRAMS

Given the extensive livestock production and the widespread presence of millions of dispersed livestock farmers in Pakistan, it is essential to establish a strong communication program that complements formal extension services. This program will prioritize disease control, livestock nutrition, farming practices, and marketing. The government could collaborate with international donors to leverage information and communication technology, capitalizing on the country's high mobile phone usage and local radio channels, to develop a modern farmer communication program.

LIVESTOCK PRODUCTIVITY ENHANCEMENT & MARKET ACCESS

Enhancing livestock management and productivity, along with improving marketing systems, is a vital component of Livestock Development. Despite being among the top five countries in livestock population, the sector grapples with issues of low productivity and subpar yields. The aim is to optimize the genetic potential of local livestock breeds through effective management practices and a viable breed policy. Livestock department should give priority to nutrition, farm practices, and strengthening the connection between research and extension services to establish a modernized livestock sector. Additionally, a key objective is to enhance market access for livestock producers, ensuring they receive better value for their products. To get higher outputs throughout the division, the following measures should be implemented.

IMPROVING DOMESTIC FEED SUPPLY AND ANIMAL NUTRITION

Livestock's growth and reproductive efficiency are closely tied to their diet, making balanced nutrition crucial. A key initiative in this area is to enhance animal nutrition by ensuring the availability of quality fodders throughout the year, improving silage and hay production, and providing balanced concentrate feeds with proper mineral inputs. By meeting animals' nutritional needs, the expectation is to increase their yield by 20% to 25%, reduce calving intervals, and expedite puberty. To support this effort, livestock department should hire designated extension workers who will be trained in preparing balanced rations and disseminating this knowledge within their communities. This approach will be integrated into a dairy/meat hub model that combines yield improvement services with farm produce marketing.

BREED MANAGEMENT AND LIVESTOCK IDENTIFICATION AND TRACEABILITY SYSTEM

Pakistan possesses world-class dairy buffalo and tropical dairy cattle, but effective management and continuous improvement are necessary. Special emphasis on this area, implementing a national livestock breeding policy in collaboration with livestock research institutions to conserve

indigenous breeds. Priority will be given to buffalos, Sahiwal, Cholistani, Red Sindh, Thari cattle, Beetal, Kamori, Pateri, and Bari goats. Additionally, there is need to strengthen institutional infrastructure for breed improvement and AI services regulation, ensuring integrated collaboration among government agencies, calf raising centers, semen production units, and AI extension services. Furthermore, research will be conducted to address the challenge of lacking a well-defined beef breed for optimal feed conversion ratio and increased meat yield.

RURAL INFRASTRUCTURE DEVELOPMENT

An efficient and well-maintained rural infrastructure plays a crucial role in livestock development. Investments in rural roads, water supply, transportation, storage, markets, electrification, communication, water management schemes, auction markets, and abattoirs are essential for boosting livestock production. Currently, rural infrastructure is insufficient and unevenly distributed, hindering the development of the rural economy. This includes improving farm-to-market roads, market infrastructure, and promoting alternative energy sources such as solar and biogas.

ACCESS TO MARKET FOR SMALL FARMERS

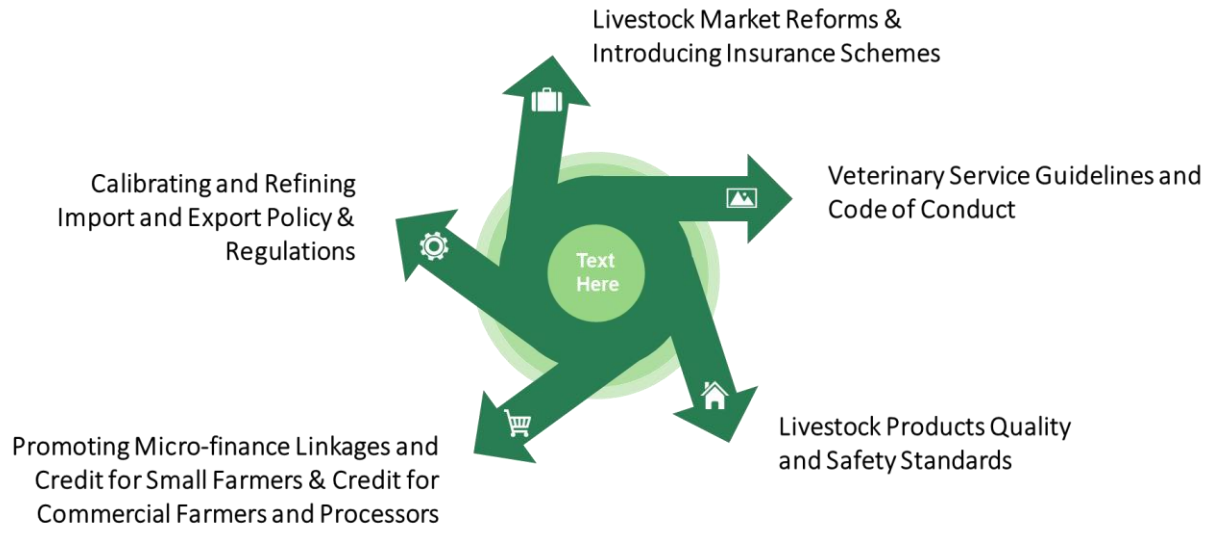
Efficient market access is a significant challenge for smallholder livestock farmers. In the dairy sector, the absence of milk cooling tank (Chillers) networks and limited presence of dairy cooperatives result in farmers selling their milk to informal middlemen at unfavorable prices. Livestock markets also face infrastructure issues and lack grading systems, affecting farmers' ability to obtain fair prices. To address these challenges, establishing systems for market information dissemination, fostering strong relationships between value chain players and farmers, implementing standards and grading mechanisms, and improving market infrastructure.

LIVESTOCK MARKET INFORMATION SYSTEM

Establishing livestock market information systems. These systems, potentially could be developed with private sector involvement, will deliver real-time market updates to farmers through SMS, radio, and digital displays within the markets. By collecting, analyzing, storing, and sharing livestock prices and volume information from multiple markets, including details on animal type, breed, age class, sex, and grade, these systems aim to empower farmers and traders to make informed decisions.

ACCESS TO FINANCE, SUSTAINABILITY, REGULATIONS & COMPLIANCE REGIME

The acknowledgment of the importance of certain prerequisites and cross-cutting considerations specific to the livestock sector in Rawalpindi Division, which are vital for achieving the goals of the livestock Development. These include ensuring easy access to affordable financing, promoting sustainable development with a focus on gender and environmental aspects, and establishing a supportive regulatory framework that encourages compliance.



The following intervention could help the farmer's sustainability and growth.

LIVESTOCK MARKET REFORMS & INTRODUCING INSURANCE SCHEMES

In addition to the development of livestock market infrastructure discussed earlier, effective regulation of livestock markets is crucial to ensure fair pricing based on accurate weight measurements. The current regulatory system fails to address the exploitation of livestock owners and byproduct producers by intermediaries and middlemen. To address these issues, establish a regulatory framework with guidelines and standards for livestock markets, including provisions for housing, feeding, water availability, and disease monitoring. Performance contracting and public-private partnerships will be introduced to improve the quality of market services.

VETERINARY SERVICE GUIDELINES AND CODE OF CONDUCT

The government should establish and enforce guidelines and a code of conduct for both public and private veterinary service practitioners and para-vets. These guidelines will set standards for

service quality and outline their responsibilities in disease surveillance and outbreak management. It should include clear definitions of negligence, misconduct, legal obligations, and principles of animal welfare, extending to existing private sector individuals and diagnostic facilities.

LIVESTOCK PRODUCTS QUALITY AND SAFETY STANDARDS

To ensure that improvements in the livestock sector benefit consumers, the government should enhance food safety standards in accordance with international norms for dairy and livestock products. This includes regulations for milk chilling, the prohibition of milk adulteration, minimum pasteurization requirements, quality standards for milk handling and manufacturing facilities, as well as regulations for loose and processed meat, byproducts, and poultry farms. Strengthening institutional capacity in local governments will be necessary to ensure compliance with these standards.

CALIBRATING AND REFINING IMPORT AND EXPORT POLICY & REGULATIONS

A thorough assessment should be conducted to review the import and export policies and regulations regarding livestock, livestock products, and input support such as live animals, dry milk, whey, etc. The aim is to ensure that the policy framework is strategically aligned for sustained growth in the medium and long term, while eliminating any distortions that may hinder progress. To facilitate the growth of the livestock sector, active engagement with relevant public and private stakeholders will be undertaken, encompassing a comprehensive policy review that encompasses the entire sector, including machinery, equipment, feed ingredients, feed additives, medicines, vaccines, and more.

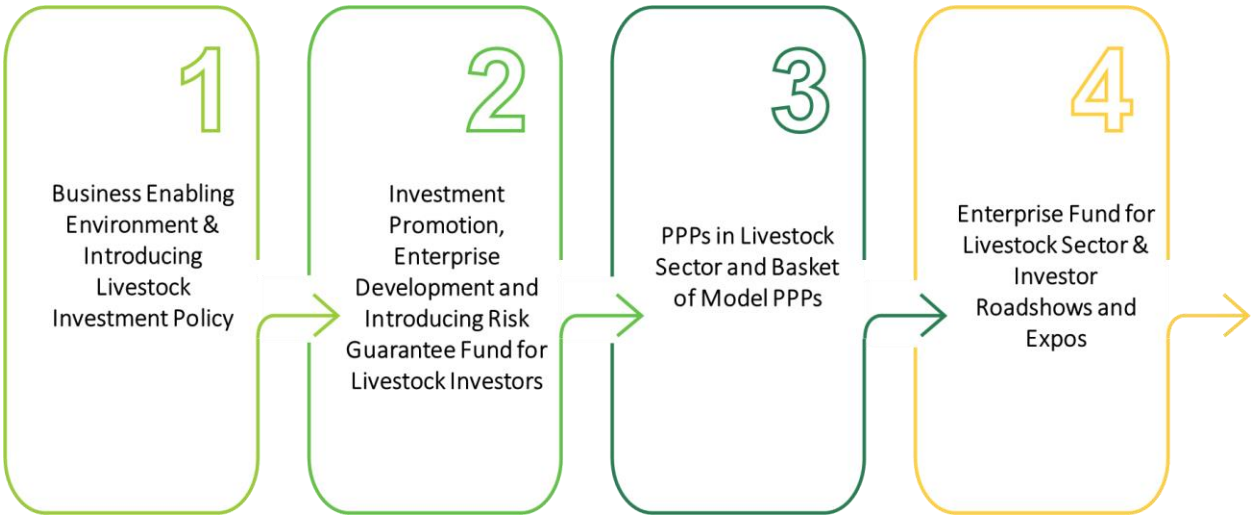
PROMOTING MICRO-FINANCE LINKAGES AND CREDIT FOR SMALL FARMERS & CREDIT FOR COMMERCIAL FARMERS AND PROCESSORS

In light of the livestock sector's structure, which involves numerous small farmers and lacks corporate farming, establishing connections with these farmers becomes crucial for private investors interested in the upstream value chain. To integrate them into modernization efforts and encourage investments, provincial governments should collaborate with microfinance organizations to ensure access to small loans. This approach not only relieves investors of the burden of supporting farmers but also promotes a seamless value chain and aligns livestock investments with the government's poverty alleviation agenda. Furthermore, a group-based

financing scheme for small farmers engaged in agri-related activities, and efforts should made to expand credit availability through drafted guidelines for livestock, fisheries, and poultry financing.

INVESTMENT PROMOTION AND ENTERPRISE DEVELOPMENT

The livestock sector's promotion and the successful realization rely heavily on adequate resources and investments. The government's role will be to act as a facilitator and catalyst, establishing a favorable environment that encourages the active and competitive involvement of the private sector in all aspects of livestock production, processing, and marketing at local, regional, and global levels.



Meanwhile, the private sector will capitalize on these enabling conditions by making strategic investments in the sector. The following steps needs to be taken for a better investment attracting sector.

BUSINESS ENABLING ENVIRONMENT & INTRODUCING LIVESTOCK INVESTMENT POLICY

Despite Pakistan's agricultural nature, there is currently no specific agricultural investment policy in place, including one for the livestock sector. So, there is need to develop a national livestock investment policy that encourages private investments in the sector. This policy will outline incentives for future investments in prioritized sub-sectors and strategic areas of the livestock value chain. Additionally, the government should make plans to collaborate with donors to establish supportive mechanisms for investment incentives and creating a business-friendly environment.

INTRODUCING RISK GUARANTEE FUND FOR LIVESTOCK INVESTORS

Investors often seek guarantees to mitigate risks associated with their investments. These guarantees provide reassurance and confidence to investors, reducing their potential downside. To effectively manage such risks, it is prudent for the government to only offer guarantees for risks it is well-equipped to handle. However, providing sovereign guarantees at this level can be complex and significantly increase the government's contingent liabilities. To address these concerns, the government, with the assistance of donors, could establish a guarantee fund that specifically offers risk coverage in selected areas for investments in the livestock sector.

PPPS IN LIVESTOCK SECTOR AND BASKET OF MODEL PPPS

Despite the existence of public-private partnership laws, and initiatives such as the IPDF at the federal level, Pakistan has seen limited success in implementing PPPs, particularly in productive sectors such as livestock and dairy. The main challenge lies in the absence of viable projects that the government can offer to the private sector through competitive processes. The government should produce more projects based on PPP model rather than implementing all on its own. This will also encourage the private sector investment in this sector.

ENTERPRISE FUND FOR LIVESTOCK SECTOR & INVESTOR ROADSHOWS AND EXPOS

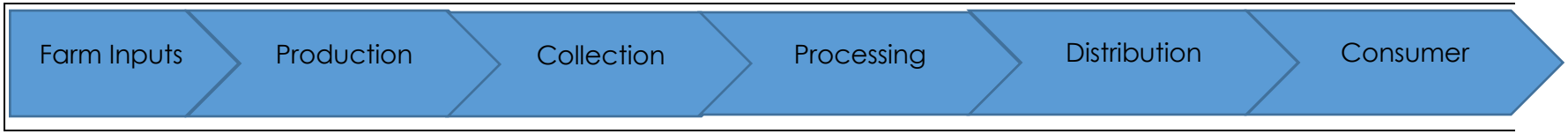
To generate national and international attention towards the livestock sector, organizing marketing roadshows and expos would be an effective approach. Some events would target specific national or international investors to attract private financing for selected projects, while others would create networking opportunities and foster linkages across the livestock value chain and different markets. Additionally, the government would establish an enterprise fund to encourage entrepreneurship among graduates by providing seed funding for selected students to start their own enterprises.

ECONOMIC IMPACT

Implementing the aforementioned interventions with dedication has the potential to create a thriving livestock sector and generate higher yields for progressive farmers. The expected outcome, as indicated in the table provided, is a significant increase in output from 139 billion to an estimated 304 billion. Moreover, these interventions have the capacity to raise farmers' income in the Livestock Sector from 68 thousand to 140 thousand per month.

Product	Population	Animal in Production	Yield	Output (tons)	Price	Value in PKR	Potential Yield	Potential Output (Tons)	Potential Value (Pkr)
Milking Cow	988,618	446,553	8	1,089,589	80	87,167,088,963	20	2,723,972	217,917,722,408
Milking Buffalo	385,479	174,119	6	261,178	90	23,505,998,703	12	522,356	47,011,997,406
Meat (Cow)	988,618	158,400	135	21,384	400	8,553,600,000	200	31,680	12,672,000,000
Meat (Buffalo)	385,479	90,600	157	14,224	400	5,689,680,000	180	16,308	6,523,200,000
Sheep	404,767	111,300	47	5,231	800	4,184,880,000	65	7,235	5,787,600,000
Goat	1,045,457	275,200	40	11,008	900	9,907,200,000	58	15,962	14,365,440,000
Total						**139,008,447,666**			**304,277,959,813**

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

Sector	Breed Improvement	Nutrition and Feed	Farm Management	Marketing	Value addition
Dairy	➢ Conservation and preservation of indigenous breed ➢ Provision of Stress-free environment ➢ Tagging, tracking and acquiring of elite male of Dhanni breed for Semen production	➢ Provision of Grazing spaces at community level with draught tolerant varieties ➢ 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	➢ DE capping or ensuring market competitive pricing of the milk ➢ Price flooring could be introduced 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,

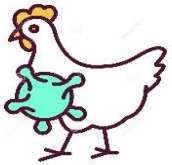
MEAT VALUE CHAIN

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	Breed Improvement	Nutrition and Feed	Farm Management	Marketing	Value addition
Meat	➢ A specialized breed development and semen production unit should be introduce for high meat yielders ➢ Goat breeding and AI should be introduced for indigenous breed I,e beetal	➢ Goat & Sheep fattening program should also be introduced for Rawalpindi 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	➢ 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.

KEY INTERVENTIONS

Sector	Breed Improvement	Nutrition and Feed	Disease Control and Prevention	Marketing	Value Addition
					
Poultry	**Breed Improvement**	**Nutrition and Feed**	**Disease Control and Prevention**	**Marketing**	**Value Addition**
	➢ 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	200
		Establishment of specialized breed and semen production unit for high milk yielders	25
		Provision of high yield breeder at community level for enhance breading	200
		Provision of Stress free environment to the animals	Soft
	Medium-term	Tagging, tracking and acquiring of elite male of Dhanni breed for Semen production	100
		Household poultry programs should be enhanced for provision of poultry units.	349
	Long term	R&D in the local breed and collaboration with international institutes	150
		Specialized R&D programs for Goat and sheep breed improvements	30
Nutrition and Feed	Short term	Provision of Grazing spaces at community level with draught tolerant varieties	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
		Ensuring an Adequate Supply of Raw Materials for the Commercial Poultry Industry to Mitigate Price Volatility, such as GMO Soybeans.	Soft

Area of Intervention	Category	Intervention	Cost (Million)
	Medium-term	Goat and Sheep fattening program should also be introduced for Rawalpindi division	100
		Specialized fodder crops relevant to local environment 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 disease-free zone, monitoring & warning and quarantine supervision and emergency treatment and disease-free certification system.	1200
Extension Services	Short term	Farmer training programs with the help of private sector to ensure proper livestock management	100
		Excluding extension services from veterinary services and establishing a separate Institute for extension services of farm management and nutritional enhancement	200
	Medium-term	Upgradation of the livestock directorate Rawalpindi	300

Area of Intervention	Category	Intervention	Cost (Million)
Marketing	Short term	Establishing milk collection points at community level (Bhains Colonies) 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
	Medium-term	Small cattle mandi could be introduced to increase farmer outreach in the market	100
	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

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