

MEAT STUDY REPORT

Draft for Public Consultation

DISCLAIMER

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FOREWORD

The Competition Commission of Pakistan undertakes market studies to assess the nature of competition in various markets. The studies conducted include important sectors of the economy such as polyester, fertiliser, staple fibre, sugar, cooking oil, aviation and banking. These market studies examine competition issues and government interventions that may distort incentives; information asymmetries and anti-competitive practices prevailing in the sectors. Efficient and competitive markets benefit both consumers and producers as prices are more competitive and there is enhanced quality of goods and services.

This particular study is on the meat sector (mutton and beef). Meat is an essential food item and has inelastic demand. The meat value chain and the meat market in Pakistan are underdeveloped. This sector study on meat is intended to provide valuable information about how mutton and beef production takes place and how the meat market functions. The report focuses on broad competition issues comprising such as market dominance, deceptive marketing, entry barriers etc. The report also looks at the regulation of meat sector in Pakistan, the current policies and processes, and identifies recommendations to foster competition in meat sector.

This report will provide useful insight to policymakers including both the legislative and the executive branches. The recommendations of the report particularly the enforcement of regulated meat prices and reducing the information asymmetries need attention of the policymakers.

Comments on this report may be sent to email advocacy@cc.gov.pk until Friday, 30 September 2016.

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Acronyms

APMEPA	All Pakistan Meat Exporters and Processors Association
CPI	Consumer Price Index
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
KPK	Khyber Pakhtunkhwa
LDDDB	Livestock and Dairy Development Board
MNFSR	Ministry of National Food Security and Research

PAMCO	Punjab Agriculture and Meat Company
PARC	Pakistan Agricultural Research Council
PPR	Peste des Petits Ruminants
PSQCA	Pakistan Standards and Quality Control Authority
SMEDA	Small and Medium Enterprise Development Authority
TADs	Transboundary Animal Diseases
TRTA	Trade-Related Technical Assistance Programme (European Union)
USDA	United States Department of Agriculture
ZTBL	Zarai Taraqiati Bank Limited

EXECUTIVE SUMMARY

Agriculture plays a significant role in Pakistan's economy. It contributes not only to the GDP but also plays a vital role in food security and employment creation. Livestock is an important sub sector of agriculture and a major contributor to the GDP of Pakistan. Sub sectors of agriculture include (a) Crops (b) Livestock (c) Forestry (d) Fishing. Agriculture growth rate during 2014-2015 was recorded at 2.9 percent however during 2015-2016 the agricultural performance slipped and showed a negative growth rate of 0.19 percent. During 2014-2015 crops recorded a growth of 1 percent, forestry 3.2 percent, livestock 4.1 percent and fisheries recorded a growth of 5.8 percent. During 2015-2016 the growth of crops declined by 6.25 percent but livestock, fisheries and forestry showed a positive growth of 3.63 percent, 3.25 percent and 8.84 percent respectively. Share of livestock in agriculture is during 2015-2016 has been 58.55 percent as compared to 56.4 percent in the previous year and 8 million rural populations are engaged in raising livestock. Livestock contributed 11.61 percent to the GDP during the fiscal year 2015-2016 which is highest compared to other sub sectors. Livestock sector meets the demand of meat, milk, eggs and is an important source of income generation in the country.

Meat is an essential food item consisting of essential vitamins, proteins, and fats and is one of the heaviest weighed food item in the Consumer Price Index (CPI) basket. Pakistan is a country blessed with high population of livestock but lacks behind in the international market due to lack of infrastructure, standardization, and informal farming system and facilities. The meat industry from livestock farming/production to the marketing of beef and mutton is done in the informal sector in Pakistan.¹ Out of the total meat produced in the country, almost 80% is the contribution of small subsistence farmers and the remaining is the contribution of commercial and semi-commercial farmers. Demand of meat in the local as well as in the international market has been growing tremendously in recent decade owing to increase in the population, income of households, dietary patterns and export opportunities. Meat sector has a great potential in terms of growth, income generation, foreign exchange earnings and poverty reduction.² The focus of the current report is on meat (mutton and beef) production system and the meat market structure in Pakistan (not including milk production and animal skins market).

Meat production in the informal sector is unregulated. In the informal sector, breeders are often exploited at the hands of middlemen due to lack of information about the meat market and the demand-and-supply of meat. Despite having large number of animals, Pakistan has low per animal yield, mainly due to the absence of right animal varieties. Smuggling and lack of disease control are also affecting the meat sector. Transboundary Animal Diseases (TADs) are prevalent in the country and constitute a notable barrier for Pakistan to register itself as a meat export country. On the supply side, smuggling of animals and meat to neighbouring Afghanistan and Iran creates shortage of animals for

¹ <http://www.pakissan.com/english/advisory/clave.fattening.farm.shtml>

² H. Steinfeld, T. Wassenaar & S. Jutzi, *Livestock Production Systems in Developing Countries: Status, Drivers, Trends* (2006)

domestic consumption and raises the price of meat. Meat animal production is adversely affected in Pakistan by many factors that lead to higher cost of doing business such as higher prices of fodder as a result of decreased cultivation of fodder crops, lack of skills and training, and higher transportation cost.

The mechanism for controlling the meat prices in Pakistan at district and provincial level is ineffective and weak. Market lacks checks and balances which allow local retailers and butchers to sell meat at high prices. Health and hygiene standards for meat exports are met but the domestic meat market lacks standardization. Low quality meat is sold by the retailers and butchers in the local market. Animals are slaughtered without keeping in mind their health and age. Moreover, butchers prefer slaughtering at shops or areas other than slaughterhouses. This shows the lack of control by municipal and district level authorities.

Pakistan's meat sector has great potential given the rising demand in both domestic and international markets.³ The demand for halal meat has been growing globally but to take advantage of this, high standards of quality have to be met. There is also the need to develop complete meat value chain and move towards value addition in meat market this will benefit both consumers and farmers/producers.

With government support and proper regulations, the meat sector can be an important source of foreign exchange earnings. Large breeding farms can serve as a primary source of sale of genetically superior animals. Feedlot fattening should be adopted since cattle are generally raised using conventional methods yielding low weight and per animal meat production thus depleting the potential meat resources⁴. Implementation of health and hygiene standards at all levels of meat production must be insured and modern slaughterhouses and butchereries equipped with facilities for grading and commercial cuts also need to be established.

Objectives and Scope of Study: The objectives of this research are to have a detailed understanding of meat industry in Pakistan. It includes:

- To identify market structure of meat animals (cattle, buffalo, sheep, goat).
- To identify market structure of meat (mutton, beef).
- To analyse the nature of competition in the meat industry.
- To identify various factors and issues affecting meat industry.
- Regulatory barriers in meat industry.
- Export potential of halal meat in global halal meat market.

³ Rutherford, A. S. (1999). Meat and milk self-sufficiency in Asia: forecast trends and implications. *Agricultural Economics*, 21(1), 21-39.

⁴ 'Feedlot Fattening for Beef Production: Techno-Economic Feasibility', by Dr. Abdul Ghaffar Khan, Livestock & Dairy Development Board, Ministry of Livestock and Dairy Development, January, 2009. available at: <http://www.lddb.org.pk/forms/BEEF%20BOOK.pdf>

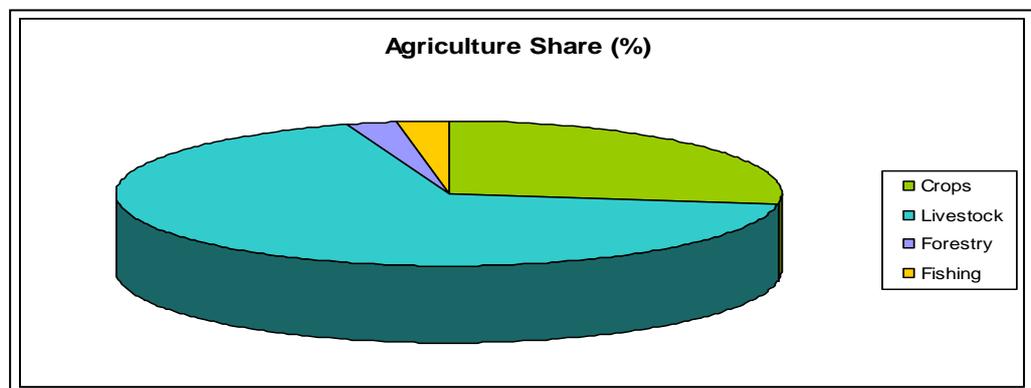
Methodology: The data gathered for this report is both primary and secondary in nature. The primary data has been gathered through meetings with various stakeholders including farmers, cattle experts, informal meat retailers, and government agencies and through team visits to District Food Controller Office, All Pakistan Jamiat ul Qureish Meat Welfare Association, Rawalpindi Islamabad Slaughterhouse, Metro Cash and Carry, various formal meat retail shops including Meat One, Meat Pro, Zenith Associates and some others. Secondary data has been gathered from the official web sites of Pakistan Bureau of Statistics, State Bank of Pakistan, Planning Commission, Ministry of National Food Security and Research, Livestock Wing, Trade Development Authority of Pakistan, Economic Survey 2015-2016 and scholarly articles on meat sector in Pakistan.

Limitations: Livestock consists of cattle, buffalos, sheep, goat, camel, horses, asses, mules, and poultry. This particular study is on the meat sector which includes the meat of cattle, buffalo, goat, and sheep since the factors relating to their farming, breeding and meat production are similar and together represents the meat market in Pakistan. Whereas the Poultry though represents a significant portion of the livestock industry but are non-ruminants fed on grains and the dynamics associated to its production are different when compared to the reference group under study. Most of the poultry trade is based on the system of formal farming and improved methodologies in terms of feed, vaccination and farm level care. Focus of the current study has been limited to the factors associated with cattle, buffalo, goat, and sheep meat.

CHAPTER 1: INTRODUCTION

Background and Overview of Meat Industry: Agriculture accounts for 19.8 percent of the GDP during the fiscal year 2015-2016 and 42.3 percent of labour force are associated with the agriculture sector. Agriculture has four subsectors: crops, livestock, fisheries and forestry. Livestock has the major contribution in agriculture sector and it alone contributes 11.61 percent to the GDP which is more than the combined contribution of other subsectors. Gross value addition of livestock at constant cost of 2005-06 has increased from Rs. 1,247 billion in 2014-2015 to Rs. 1,292 billion during fiscal year 2015-2016 and it recorded an increase of 3.63 percent. Crops contribution has been 23.55 percent, livestock 58.5 percent, forestry 2.06 percent and fisheries 2.1 percent respectively in the agriculture sector.⁵

Figure 1: Agriculture Share (%) in 2015 - 16



Twenty-five percent of livestock owners in Pakistan are landless, with high poverty incidence.⁶ In the rural areas animals are fed cheap raw foods available domestically, making livestock an attractive source of livelihood. Livestock represent financial security during crop failure and an alternative source of income generation in Pakistani rural society. In Pakistan buffalos and cows are mainly kept for milk production with beef as an important by-product. Sheep and Goat are raised for meat production with wool and milk as by-product. Practice of 'nomadic herding' is common and people migrate along with their animals from one place to another in search of food for their animals.

Forty-three percent of cattle and buffaloes in the world are in Asia and Pakistan ranks 4th in the world in terms of the number of cattle and buffaloes.⁷ Historically, livestock sector has remained a subsistence sector where animals have been utilised by the small farmers for their own meat and milk consumption. There is an inadequate number of large ruminants (cattle, buffaloes, sheep and goats) in the country to meet the meat requirements of the domestic economy.⁸ Sheep and goat farming for mutton production in Pakistan is mainly a small-scale rural activity that forms an integral part of an age-old

⁵ Economic Survey of Pakistan 2015-16

⁶ Project Performance Audit Report on the livestock Development Project (Loan 973- PAK (SF)

⁷ FAO STAT (<http://faostat.fao.org>)

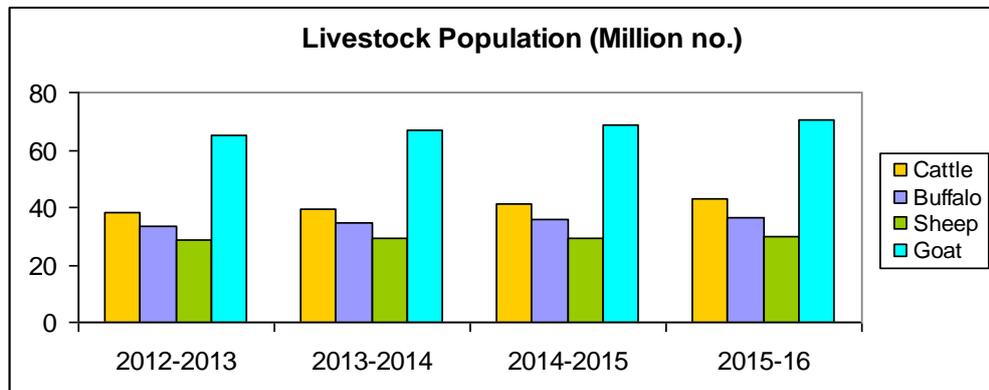
⁸ TRTA II programme, Enhancing Livestock Sector Export Competitiveness, Pakistan

system of mixed farming. Currently, Pakistan’s meat sector is working on an informal basis from animal rising to meat selling.

Table 1: Livestock Population (million no.) (Source: Ministry of National Food Security and Research).

Species	2012-13	2013-14	2014-15	2015-16
Cattle	38.3	39.7	41.2	42.8
Buffalo	33.7	34.6	35.6	36.6
Sheep	28.8	29.1	29.4	29.8
Goat	64.9	66.6	68.4	70.3

Figure 1: Livestock Population (million no.)



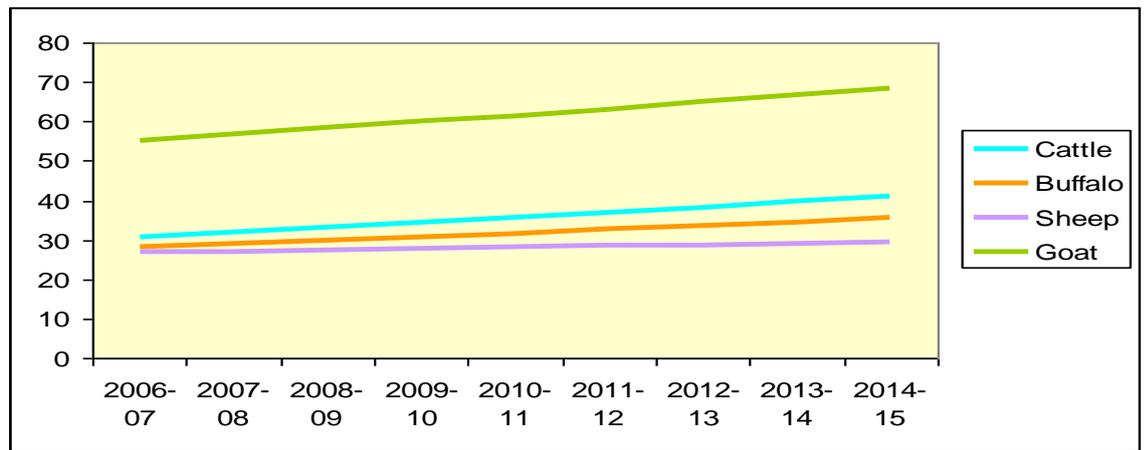
In Pakistan, the Livestock Department, of the Ministry of National Food Security and Research makes projections for the annual livestock population. A livestock census is conducted every 10 years. Last livestock population census in Pakistan was conducted in the year 2006. The above figures are estimated based on the inter-census growth rate of the livestock census 1996-2006.

Table 1: Livestock Population Growth in Pakistan (million no.) (Source: Ministry of National Food Security and Research)

Species	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	GR %

Cattle	30.7	31.8	33.0	34.3	35.6	36.9	38.3	39.7	41.2	3.8
Buffalo	28.2	29.0	29.9	30.8	31.7	32.7	33.7	34.6	35.6	3.0
Sheep	26.8	27.1	27.4	27.8	28.1	28.4	28.8	29.1	29.4	0.7
Goat	55.3	56.7	58.3	59.9	61.5	63.2	64.9	66.6	68.4	2.3

Figure 2: Livestock Population (million no.)

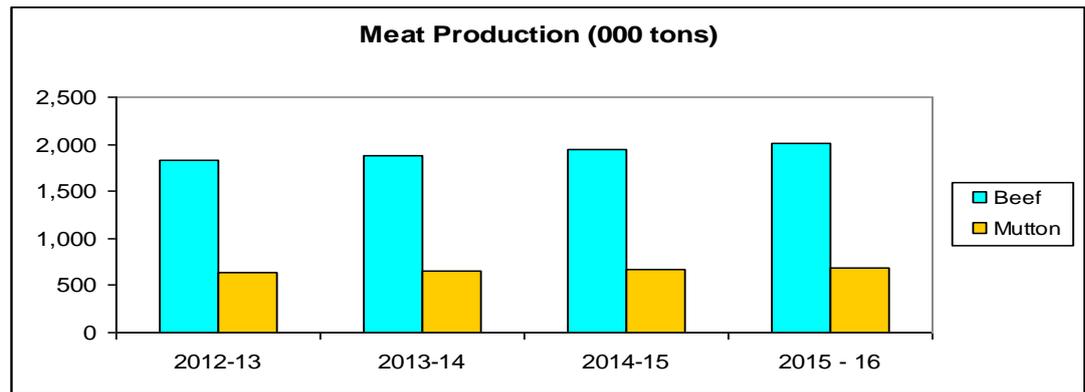


Meat produced from cattle, buffalo, goats and sheep has increased because of the growth in the number of livestock. The following table shows the production of red meat, including beef and mutton (it does not include edible offal).

Table 2: Meat Production (000' tones) (Source: Ministry of National Food Security and Research)

Species	2012 - 13	2013 - 14	2014 - 15	2015 - 16
Beef	1,829	1,887	1,951	2,017
Mutton	643	657	671	686

Figure 3: Meat Production (000' tones)



The demand of meat has been growing both in the domestic and the international markets. The main factors responsible for this demand are increase in population, consumer preference for meat, and higher per capita income. Pakistan is geographically divided into five provinces namely Punjab, Sindh, Baluchistan, Khyber Pakhtunkhwa (KPK) and Gilgit-Baltistan. Pakistan's population is over 190 million and the population growth rate is 1.55%⁹. Population wise Punjab is the largest province and area wise Baluchistan is the largest province. 62% of the population lives in rural areas and they supply livestock through various organised or unorganised markets mechanism.¹⁰ Geographic conditions and availability of fodder and water make Punjab more suitable for production and breeding of buffaloes and cattle. Much of the livestock population is therefore located in Punjab followed by Sindh. Punjab contains 65 percent of buffaloes and 49 percent of cattle in the country. Sindh contains 30 percent of camels, 27 percent of buffalo and 23 percent of goat's population; KPK contains 20 percent cattle and 18 percent goats of the national population. Baluchistan, with its major production of sheep and goats, contains about 48 percent of sheep and 22 percent of goat population in the country according to the livestock census 2006.

⁹ CIA Fact book on Pakistan, 2015

¹⁰ http://faostat.fao.org/CountryProfiles/Country_Profile/Direct.aspx?lang=en&area=165

Table 3: Province Wise Distribution of Livestock (000' heads) (Source: Economic Survey of Pakistan 2011-12 (Table 120), and Livestock Census 2006)

Census	1960	1972	1976	1986	1996	2006
PUNJAB						
Cattle	9,673	8,226	8,108	8,817	9,382	14,412
Buffalo	6,129	7,413	7,979	11,150	13,101	17,747
Sheep	5,583	6,280	8,037	6,686	6,142	6,362
Goat	2,973	5,943	7,767	10,755	15,301	19,831
SINDH						
Cattle	2,936	2,800	2,854	3,874	5,464	6,925
Buffalo	1,353	1,522	1,834	3,220	5,615	7,340
Sheep	1,590	840	1,829	2,616	3,710	3,959
Goat	2,201	2,275	4,237	6,755	9,734	12,572
KHYBER PAKHTUNKHWA (KPK)						
Cattle	3,206	2,962	3,000	3,285	4,237	5,968
Buffalo	651	791	762	1,271	1,395	1,928
Sheep	2,432	2,455	3,675	1,599	2,821	3,363
Goat	5,035	3,737	4,868	2,899	6,764	9,599
BALUCHISTAN						
Cattle	643	482	684	1,157	1,341	2,254
Buffalo	26	22	33	63	161	320
Sheep	2,564	3,859	5,075	11,111	10,841	12,804
Goat	1,596	3,238	4,441	7,299	9,369	11,785
NORTHERN AREAS						
Cattle	236	204	209	408	N/A	N/A
Buffalo	2	3	3	1	N/A	N/A
Sheep	208	233	321	643	N/A	N/A

Goat	241	388	562	939	N/A	N/A
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Livestock Production Systems - Cattle and Buffaloes: Research studies on livestock generally classify livestock production system on the basis of location and size of herd. In Pakistan most of the livestock farming is integrated with agricultural activity. There are four production systems of cattle and buffaloes in Pakistan which are as follows¹¹.

- Rural small holdings (subsistence) 55-60%.
- Rural small holdings (market oriented) 20-25%.
- Rural medium sized holding (commercial) 10-15%.
- Urban large sized farming (commercial) 6-8%.

Rural small holdings (subsistence) 55-60%: The first system is the largest system in Pakistan albeit it is the most inefficient and ineffective system for the supply of meat animals. These subsistence rural farmers keep on average two to three animals and obtain milk from them to meet the family needs. These animals are considered income security when their primary source of income crops - are affected due to drought or other reasons.

Rural small holdings (market oriented) 20-25%: In the second system of livestock production, an average of five animals is kept. This system has a better linkage with the consumer market as farmers produce a surplus of animals for sale. As a result, animals raised by these farmers are fed better quality fodder. Male calves are sold after lactation and females are retained for milk and reproductive purposes.

Rural medium sized holding (commercial) 10-15%: The third system of production consists of more than forty animals. The farms have better market access and are more organised. Workers on the farm are also better trained in animal care. Fodder is either grown in these farms or purchased from the market. Generally, animals on these farms are healthier and better nourished. Appropriate breeding techniques such as artificial insemination are also adopted. This production system, however, represents only 10 to 15% of the total production in Pakistan and the quantity of meat from these farms remains low as compared to the first two systems.

Urban large sized farming (commercial) 6-8%: The fourth system of livestock production is mainly located in the outskirts of big cities. These farms are very small in number and they maintain up to 2,500 animals. Compared to small farms these farms have efficient linkages to the market and breeding of animals is done on modern lines. These farms maintain trained workers and veterinary staff for animal care which results in high produce of meat and milk.

¹¹ Food and Agriculture Organization, 2006

Livestock Production System - Sheep and Goats: Majority of the flock owners of sheep and goats are small scale rural farmers. Some of these farmers lead a nomadic life and are landless. In Pakistan different breed of animals are maintained in this livestock production system and the farmers also keep different flocks of sheep and goats. Sheep and goats' production system is of four types;¹²

Nomadic production of sheep and goats consists of nomads who have small herds of sheep and goats and travel from one place to another in search of water, food and temporary shelter. This movement helps these nomads to use freely available lands for grazing and breeding. These nomads are found mainly in the provinces of Sindh and Baluchistan and the herds consist of very few animals to over hundred in some cases. Male animals are sold in the market for meat purpose typically around one year of age while the females are kept for milk and reproductive purposes.

Seasonal Transhumant production of sheep and goats is fixed base in nature but there is movement of the flock within the flock owner's families to other grazing areas during a certain time period in a year. This production system can be observed in the Northern Areas of Pakistan and parts of KPK, Sindh and Baluchistan. The flock consists of less than 100 animals and the animals are free to graze on graze lands and crop residue and sometimes on rented areas. These sheep and goats flock owners have improved access to the markets and results in the sale of male animals whereas the females are kept for milk purposes for family consumption and the excess is sold in the market.

Sedentary sheep and goats' production system where households own 20 to 40 animals in their flock and there is no movement of households in this system. During the day animals are taken for grazing to nearby areas and are brought back in the evening. Animals are fed on rangelands, roadsides, grass and food scraps etc.

Occasion specific production system provides animals for sale at the time of Eid-ul-Adha where entrepreneurs procure 50 - 100 small male sheep and goats. Animals are fed quality fodder and sold at soaring profits.

¹² Afzal, M., 1998; Pakistan Country Paper in: Thomson, E.F.,R. von Kaufmann, H. L. Pun, T. Treacher and H. von Houton (Eds.) Global Agenda for Livestock Research.

CHAPTER 2: ANIMALS AND MEAT MARKETING

Marketing of Small and Large Ruminants: PARC – Pakistan Agricultural Research Council has identified five channels through which marketing of these ruminants takes place. These channels are differentiated from each other on the basis of the stakeholders in meat marketing and their quantitative significance.¹³ These five channels can be explained through the following channels which explain the meat value chain.

- **Channel 1:** Rural farmers sell 80 percent of meat animals to the village middlemen, 15 percent to the rural butchers and 5 percent in the live animal mandis.
- **Channel 2:** Village middlemen sell 2 percent of the meat animals to rural butchers and 98 percent animals in the live animal mandis.
- **Channel 3:** Of the meat animals purchased from the mandis, 52 percent are bought by contractors, 31 percent are bought by urban butchers, 15 percent are bought by animal traders and whole sellers and 2 percent are bought by rural butchers.
- **Channel 4:** Contractors buy meat animals and sell 72 percent of them to urban butchers, 27 percent to traders and whole sellers and 1 percent to exporters.
- **Channel 5:** The traders and whole sellers then sell 84 percent of the meat animals they have to urban butchers and remaining animals are sold to the slaughter houses.

Although livestock markets (mandi's) have been established by the local municipal authorities in Pakistan, these markets are largely managed by the private sector (contractor). Meat animals are brought for sale to these privately managed animal mandis and a contracting fee per animal is collected. These markets lack amenities for animals such as water, shelter, fodder etc. Attention is not given to provision of facilities for animals such as loading/unloading, weighing of animals and veterinary care. Sale of animals is based on per head basis instead of the live weight of animals.¹⁴

Processing of Meat: Animal slaughtering is part of the meat processing stage in the meat value chain. In Pakistan animal slaughtering is done at registered and unregistered slaughterhouses and also it is commonly done at private premises. However, slaughtering of animals at unregistered slaughterhouses is illegal under The West Pakistan Slaughter Control Act, 1963. According to this Act, animals, including both large and small ruminants, must be slaughtered at the government registered slaughterhouses and before slaughtering all animals need to be examined by a Veterinarian to check health and age of animals. In Pakistan more than 300 registered slaughterhouses are established by the public sector across the country and a few more are established by the private sector. Many unregistered slaughterhouses are also operating in the country selling unhygienic meat not fit for human consumption. On the other hand, most of the registered slaughterhouses lack basic facilities like electricity and water supply.

¹³ Pakistan Agricultural Research Council, PARC

¹⁴Primary information collected through visit to All Pakistan Jamiat-ul Quresh Meat Welfare Association, interview with Mr. Ehtesham Shahzad, Public relations officer, Aabpara.

Animals are slaughtered in unhygienic conditions and there is a lack of inspection of slaughterhouses by the municipal authorities¹⁵. However, slaughterhouses which provide services for meat export insure quality standards and hygiene.

Processed meat industry consists of operations ranging from slaughtering of animals to processing meat into cooked, preserved and fermented forms that serve different consumers. Most of the slaughterhouses are only engaged in butchering of animals then supply to processors and meat retail shops in the country.

The comprehensive processing of meat includes¹⁶;

- Meat Animal Delivery to Slaughterhouses.
- Slaughtering of Meat Animals.
- Removal of Hide.
- Cleaning of Stomach and Intestines.
- Washing of Carcass.
- Meat De-Boning.
- Meat Chilling.
- Meat Packaging.
- Cold Storage Facility

Meat Products Marketing: Pakistan Agricultural Research Council (PARC) has identified the following marketing channels for meat products and can be observed in the formal meat industry in Pakistan. These marketing channels are similar to the marketing of meat animals given above. These are as follows;

Meat Sold by Recognised Slaughter Houses

- 30% is sold to wholesalers.
- 70% is sold to retailers.

Meat Sold by Wholesalers

- 90% is sold to retailers.
- 5% to hotels and restaurants.
- 3% to food service and supplier.
- 2% to super markets

Meat Sold by Retailers

- 100% is sold to final consumers.

Meat Sold by Urban Butchers

- 93% is sold to final consumers.
- 3% to food suppliers.

¹⁵ Primary information/data collected through visit to Islamabad-Rawalpindi slaughterhouse

¹⁶ TRTA II programme, Enhancing Livestock Sector Export Competitiveness, Pakistan

- 4% to hotels and restaurants.

Meat Sold by Rural Butchers

- 100% is sold to final consumers in rural areas.

Meat Sold by Hotels, Restaurants, Super Markets, Food Supplier

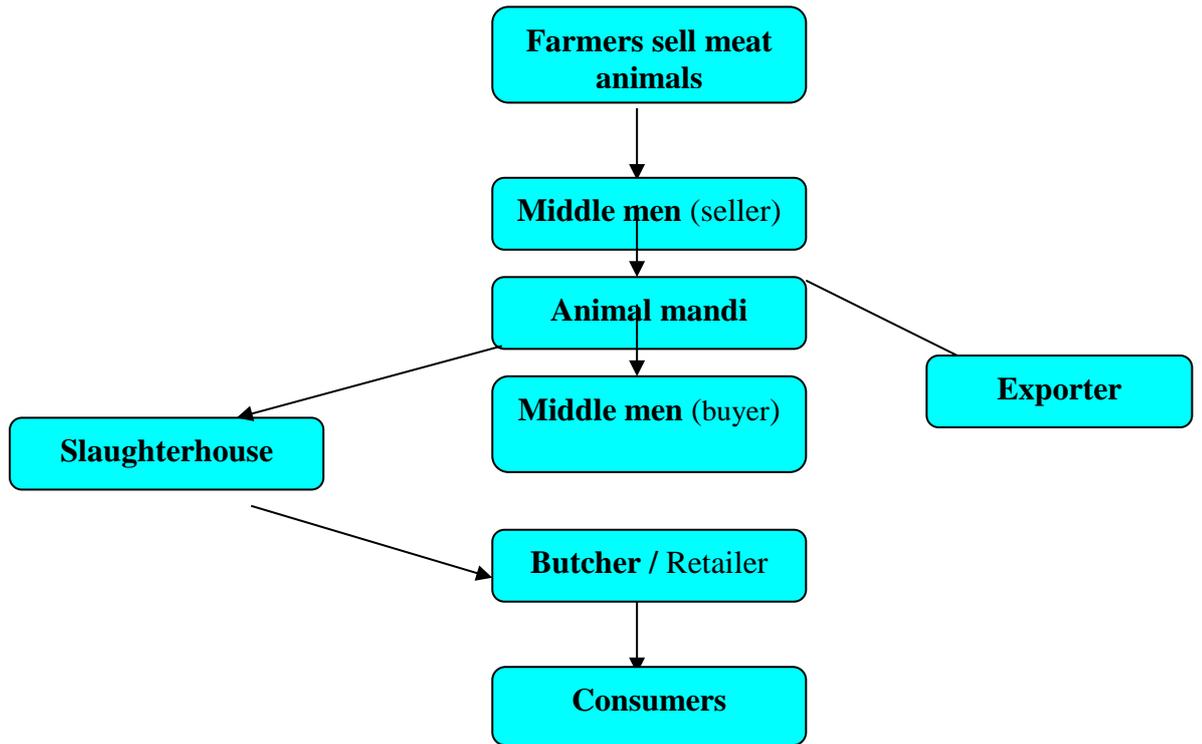
- 100% meat procured is sold to final consumers.

Some meat processors in the formal sector like Zenith Associates, Meat One and PK livestock also have retail outlets along with meat processing units for export and are successfully marketing their meat products to local consumers.¹⁷

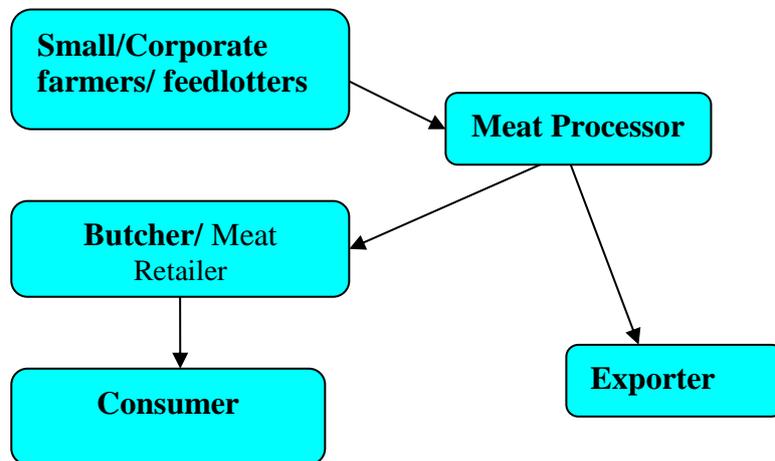
CHAPTER-3: MEAT MARKET STRUCTURE

Informal Meat Value Chain

¹⁷ All Pakistan Meat Exporters and Processors Association (APMEPA), <http://www.apmepa.com/members-2/>



Formal Meat Value Chain



Meat Market Structure: Market structure of any industry is defined by the nature of goods sold in the market, availability of substitutes, number of buyers and sellers in the market and entry and exit barriers. Relevant market of meat

is composed of relevant product market, relevant geographic market and relevant temporal market.

This study is on the market of meat (cattle, buffalo, goat and sheep) therefore the relevant product market is composed of beef and mutton which can be substituted with each other.

The relevant geographic market where meat is being sold and the competition is homogenous is the urban and rural areas of Pakistan.

Relevant temporal market of meat when the demand changes with time and therefore effects the competition in the meat market is the religious occasions such as Eid-ul-Azha. Since meat market in Pakistan is a regulated market therefore the relevant market analysis will not be applicable to assess competition in meat market.

Meat market is unorganised and under-developed. Most of it falls in the informal sector as 80 percent of meat animals are produced by small farmers having a herd size of less than 6 animals.¹⁸ The formal sector, on the other hand, is well organised, small and corporate farmers adopt feedlotting and supply meat to retailers and meat processors who sell meat in retail in domestic market and export it also.

Entry Barriers: Entry barriers are one of the main determinants of a market structure and can exist in various forms. These entry barriers can be easy, relatively easy, or stringent. These entry barriers can be natural, strategic or regulatory in nature. In the meat industry, there are no entry barriers in case of small animal production (<6 animals). Farmers in rural areas keep these meat animals as a means of income security against crop failure. In case of capital farming, which requires more capital, entry barriers do exist in the form of capital requirements and government regulations.¹⁹

Price Control: In Pakistan essential commodities prices are regulated through a federal legislation, the Price Control and Prevention of Profiteering and Hoarding Act, 1977 (PCPPHA). According to §6 of this Act, the Controller General, also known as Chief Commissioner, may fix specific maximum prices of essential commodities and different prices may be fixed for different localities or different class or categories of any essential commodity. There is no formal meat policy which governs matters pertaining to quality and price. The Act delegates the power to the Chief Commissioner of the district to fix prices according to the categories, localities, and different classes. Urban areas are priced according to their area and overheads.

Chief Commissioners have executive powers in the district and essential food prices regulation and control comes under their ambit according to the PCPPHA. Under the Commissioner the Deputy Commissioner in the district along with other responsibilities also holds the office of district magistrate. Essential food prices are controlled by the DC office in Islamabad. However, after the 18th Amendment, the District Administration headed by District

¹⁸Bradfield, M., & Ismail, T. (2012). Meat Value Chain Assessment of the Livestock Sector in Pakistan.

¹⁹ Ministry of National Food Security and Research (MNFSR), Livestock Wing

Controller Office (DCO) controls the prices of essential food prices in the districts.²⁰ At the district level District price control committees are operating which set the meat price in consultation with stakeholders and establish a price ceiling. It includes district food officials, health officials and meat traders. There are two different prices of meat set by the district magistrate one for the city area and another for the rural area in the district²¹.

Meat sold in rural areas is generally priced less. The cost of each category depends on factors such as whether the meat is with or without bones, chilling system in shops, transportation cost with chiller, slaughterhouses, Halal certification schemes, Veterinary doctors, and age of the animal. Also, sellers have to keep overheads into consideration when determining the price e.g., employees' wages, and shop rent.

However, from the numerous market surveys conducted, it was found out that all the stores involved in selling of meat have different models, different costs, and therefore different prices and not selling meat at the regulated meat price set by the district magistrate for urban area. Within the urban area the retailers in different sub-areas have different meat prices. The informal sector in comparison with formal sector, differs in terms of its cost structure, hygiene, quality, chilled meat, packaging and customer services. The high end stores have added cost for instance, cost for refrigeration, ready packed meat to save time and quality of meat, trained butchers for improved customer's services. On contrary, informal meat shops usually have meat that hangs from the hook from where butcher cuts the meat as per order. They do not have any refrigeration, high labour cost, lack standardised quality of meat and no check and balance on hygiene.

Market Survey was conducted in Aabpara market, Islamabad to check meat prices in Islamabad and in retail shops visited the official price list and the prices charged by the retailers/ butchers were different. The official rate list was at least six months old and prices on the rate list were Rs. 680/kg for mutton, Rs. 400/kg for beef without bone and beef with bone Rs. 300/kg, however prices at shops for beef were Rs. 450/kg and Rs. 350/kg, for mutton Rs. 700/kg for goat and Rs. 750/kg for sheep in the month of January 2016. During the visit it was also learnt that meat prices are set once a year where the stakeholders and the district government decide the price however later on the price is increased without the government's knowledge. This clearly shows that government is unsuccessful in regulating the prices of meat mainly due to weak enforcement mechanism.

In Pakistan mutton (goat meat) is preferred meat and has a higher consumer demand as compared to beef, which is considered secondary meat for its taste and quality. Another reason for lower price of beef in comparison to mutton is feedlot fattening. Feedlot fattening is where calves and buffaloes are fed protein-rich diet to increase their weight and enhance their meat quality. These meat animals are kept on a farm and not let to graze in open fields²².

²⁰District Food Controller Office, Islamabad

²¹ An Interview was conducted with Public Relations Officer of All Pakistan Jamiat-ul-Quresh Meat Welfare Association.

²² 'Focus on feedlot fattening' available at: <http://www.dawn.com/news/1162331>

Internationally, feedlot fattening in animals is adopted that allows charging a high price of beef. However, in Pakistan, there is lack of interest in stakeholders to adopt feedlot fattening of animals and lack of investment initiatives that results in a lower price of beef. Meat production has increased gradually in the country which is evident in tables above. However, the prices of meat have shown a sharp rise in recent years owing to many factors. On the demand side, higher consumer demand, export of meat to the Gulf countries, and smuggling of live animals to Afghanistan and Iran creates a shortage of meat in the country. On the supply side, higher cost of doing business, increasing transportation costs, and feed and fodder prices.

Current prices of meat and beef are given in the table below;

Table 5: Average Monthly Price of Meat for the Month of April and May 2016 (Source: Federal Bureau of Statistics)

Month	Beef with bone Average Quality (1kg)	Mutton, Average quality (1kg)	%change Beef May 2016 over	%change Mutton Nov 2015 over
May'16	318.96	639.43		
April'16	318.01	636.78	0.30	0.42
May'15	304.22	599.53	4.85	6.66

Major determinants of meat prices – Local: In Pakistan the livestock sector consists of three types of producers (1) small farmers (2) medium sized farmers/producers (3) large scale producers. On the supply side, the price of fodder has increased significantly in the last few years, which has raised the cost of breeding animals and hampered farmers' ability to keep big herds. Factors such as price of fertiliser, seed required to grow fodder and transportation cost are the factors that have inflated the price of raising meat animals. On the demand side, increase in population has led to higher demand of meat. The buyers of meat in the domestic market compete at various points of sale against export buyers, processors and marketers of meat.

Major determinants of meat prices - International: Currently, in the private sector there are 31 export oriented registered abattoirs established in the private sector²³ exporting quality Halal chilled/frozen meat to countries like Saudi Arabia, Gulf States, Iran, Afghanistan, Thailand, Vietnam, Azerbaijan, China etc. Apart from the existing facilities new meat processing plants are also being set-up in the country.

Meat price in the international meat market is affected by international demand of meat, meat quality and quantity exported. Pakistan's meat export to other countries is of good quality and fetches a high price when compared with other meat-exporting countries of the region. However, when compared to top

²³ Economic Survey 2015-2016, Agriculture

exporters of meat, standardization methods need to be adopted at farm as well as in the process of meat production. Unlike Pakistan, countries like Australia, America, New Zealand and many others have animal breeds particularly designated to meat production and have large network of formal farming system. This technique enables these countries to export more and fetch higher profits while remaining competitive in the market. Other factors that affect international meat price are;

- Exchange rate relativity and volatility.
- Trade policy issues such as import quotas and tariffs which affect market access for exports.
- Disease outbreaks and general consumer health and safety concerns.
- Overall economic conditions in consumer markets.

International market requires standardised meat that the local market has been unable to supply due to under-developed and weak production processes.

CHAPTER 4: MEAT INDUSTRY REGULATIONS AND POLICY MEASURES

Meat Industry Regulation: Following the 18th Amendment, most of the functions of the Livestock Department have been devolved to the provinces. The Ministry of Food and Agriculture and the Ministry of Livestock and Dairy Development have both been devolved and the power has been delegated to the provinces. Marketing, registration and maintenance of farms and slaughterhouses are the responsibility of the provinces. The price of meat is established by the district government, often in co-operation with the local sellers. The quality check of meat being sold in the market is the responsibility of the District Health Officer.

Slaughterhouses have to be registered with the municipal authorities and animal slaughtering at unregistered slaughterhouses is illegal under the West Pakistan Slaughter Control Act, 1963. There are 300 registered slaughter houses which are run by the municipal authorities and a small number is being operated by the private sector.²⁴

For export and import of meat animals and meat, the Animal Quarantine Department is working under the Ministry of National Food Security and Research. The key responsibilities of the Animal Quarantine Department is to regulate the import, export of animals and animal products and quarantine of animals to ensure the prevention of animal diseases. The control of disease is an important function of this department as there are a number of viral, parasitic and bacterial diseases which are transmissible from animals and meat to humans. The Animal Quarantine Department has offices and laboratories throughout Pakistan to ensure quality check of animals and animal products. Since Pakistan's advantage is in exporting Halal meat to international markets, the Quarantine Department also certifies the Halal meat.²⁵ Besides, there are other Halal certification institutions present as well, which are recognised in the international market. These include Moody, Halal Research Council, Jamea Markaz Uloom Islamia Mansoorah (JMUIM).

A 'Livestock Wing' operates under the Ministry of National Food Security and Research and is responsible for the following functions;

- Maintaining animal quarantine facilities/ departments.
- Veterinary medicines, drugs and animal feed import, export and procurement for federal and provincial levels.
- Export and import of livestock animals/poultry/livestock products.
- Laying down national grades for livestock and grading for export.

Government Policy Measures and Incentives for Meat Industry: The Livestock Wing of the Ministry of National Food Security and Research

²⁴ http://www.fao.org/docrep/010/ai410e/ai410e04.htm#_ftn24

²⁵ Small and Medium Enterprise Development Authority (SMEDA) Report

(MNFSR) has been given the mandate to undertake regulatory measures to advance development in the livestock sector with a focus on value addition. The following policy measures and incentives have been undertaken²⁶;

- Import of livestock farming machinery and equipment allowed at zero tariffs.
- Import of high yielding meat animals and allowing the import of semen/embryo.
- Private sector has been allowed establishment of temporary quarantine stations and the facilities can be utilised by other importers of livestock.
- Import of feed inputs and vaccines at zero rates and certain sales tax exemptions made in order to reduce input costs and to encourage investment in livestock sector.

The Meat industry in Pakistan is mostly operating in the informal sector and the above policy measures are to promote growth and domestic/foreign investment in livestock sector in Pakistan. The livestock strategy of MNFSR is ‘to encourage private sector led development with public sector providing an enabling environment through policy intervention and through capacity building to improve livestock husbandry practices. However, since the meat industry is not well developed as yet, the measures will benefit only the large farmers. It is believed that as the sector develops the measures adopted will have spillover benefits for small farmers and the overall meat industry will grow.’²⁷

Project for Meat Industry Production and Development: Punjab Agriculture and Meat Company (PAMCO) is a government of Punjab, non-profit research and development organization. The company aims at developing the meat industry through interventions at each stage from meat animal production to slaughtering, processing and marketing under international quality standards compliance. PAMCO is running the following projects for meat production and development;²⁸

- **Lahore Meat Processing Complex:** Halal meat demand is growing in global markets and there is a supply-demand gap. This project aims at increasing halal meat exports through R&D initiatives.

State-of-the-Art Meat Processing Facilities at the complex including mechanical slaughtering lines for beef and mutton, meat processing facilities for value addition, waste water treatment plant, compost plant, chilling and freezing system, and compliance with international standards at all levels of meat value chain. It has a capacity of 500 large animals and 6,000 small animals /8 hrs shift.

- **Enhancing Beef Production:** There are two main projects under this initiative; (a) save the calf and (b) feedlot fattening

²⁶ Ministry of National Food Security and Research (MNFSR), Livestock Wing

²⁷ USAID Agri-Business Project, Meat Value Chain Assessment of the Livestock Sector in Pakistan

²⁸ Punjab Agriculture and Meat Company (PAMCO), Company profile

Save the calf scheme is one in which calves are reared on mothers' feed. In the commercial dairy production system, farmers usually sell calves within 2-3 days of birth resulting in early slaughtering. It is estimated that 5-6 million male calves are slaughtered before they are one month old. PAMCO took the initiative to save these calves by providing monetary payment of Rs. 3,200 per month to the farmer for each calf saved. Farmers who save minimum 10 and maximum 100 calves for a maximum of six weeks can participate in this scheme.

Feedlot fattening addresses one of the factors responsible for low meat production i.e., lack of knowledge on feedlot fattening among farmers. To avail this scheme, farmers with minimum of 10 and maximum of 100 animals per farm can get registered and receive technical training and vaccination/treatment services. Financial support to the amount of Rs. 1,500 per animal is provided.

Another project associated with feedlot animals was initiated by the Ministry of National Food Security and Research. The project consisted of 163,977 large ruminants and 217,701 small ruminants (a total of 381,678 animals). These animals were tagged, vaccinated, de-wormed and fattened throughout the country. Total beef production was 35,255 tons worth Rs. 5.3 billion and total mutton production was 4,427 tons worth Rs. 1.5494 billion. Private investment of farmers on large ruminants was Rs. 1.025 billion and on small ruminants was Rs. 522.72 million. In this project the mortality rate significantly reduced to 1% due to project immunization, de-worming, and better farm management. Farmers earned a profit of Rs. 4,000-5,000 and Rs. 1,500-2,000 per fattened calf and sheep/goat respectively. This project allowed for the export of disease-free quality meat to the Gulf. It generated self-employment opportunities for small farmers, which constituted a larger segment of farmers, thus helping poverty reduction in rural areas. The project has also generated large scale commercial entrepreneurship that is providing employment to unskilled rural youth.

Vision 2030: According to Pakistan Vision 2030 of Planning Commission, Ministry of Planning, Development & Reform the agriculture sector employs 42 percent of labour force and is a key driver towards achieving Pakistan Vision 2025 goals. Private sector is encouraged to develop the livestock sector with government providing an enabling environment and capacity building of farmers²⁹. The focus is on improving the service delivery to farmers and introducing support mechanism for timely access to essential inputs through the establishment of Rural Business Hubs (RBHs).

²⁹ Planning Commission Report, Pakistan Vision 2025

CHAPTER 5: CHALLENGES AND POTENTIAL

Meat Industry Challenges

Meat Production as Secondary Activity: In Pakistan meat production is considered a secondary activity and a by-product compared to crops and milk production. Much of the livestock farming is in the informal sector where 80 percent of the livestock farmers own less than five animals. These farmers do not pay much attention to the health and feed of animals. Farmers use primitive techniques for animal breeding and there is underutilization of farmland. Farmers are uneducated, unskilled, and lack expertise. As a result, meat production per animal is low. Access to the markets is difficult due to poor infrastructure as many of these farmers are based in remote areas and lack information about the markets.

Lack of Awareness and Training: Since much of the meat industry is informal in character, the farmers do not have the knowledge about:

- Potential and profitable meat animal farming on commercial basis.
- Lack of awareness about feed availability and feedlot fattening of these animals.
- Lack of knowledge about hygiene and veterinary care for the meat animals by the farmers.
- Lack of knowledge about meat specific breeds and their development through natural mating and cross breeding.

Animal Slaughtering in Pakistan: The slaughtering of animals (cattle, buffalo, goat and sheep) is being regulated under the West Pakistan Animals Slaughter Control Act, 1963 and Rules, 1965. Under this Act, only healthy and fit animals are allowed for slaughter in the abattoirs. Useful animals i.e., underage or those that can be used for reproductive purposes are prohibited from being slaughtered.

While animal slaughter meant for exports operate under strict health and hygiene standards, the condition of slaughterhouses established to serve local market is not satisfactory. Animals are slaughtered without regard to their health and age. Sick and injured animals are also slaughtered by the butchers for sale in the local market. Moreover, butchers prefer slaughtering at shops or areas other than slaughterhouses and there is lack of control by Municipal and district level authorities. Young calves are slaughtered quickly as it is difficult to raise them on feed. The young calves are given a restricted amount of milk. However, these young calves through feed and fattening can become an economic asset for the farmers/ breeders.

Feed and Fodder Availability: Despite large population of animals, meat per animal ratio is low due to low-calorie fodder and there is little or no focus towards animal fattening.

Price of fodder in the last few years has increased significantly which, in turn, has raised the cost of breeding animals and lowered farmers' ability to keep big

herds. Factors such as price of fertiliser, seed required to grow fodder and transportation cost are some other factors that affect the price of fodder.

Feed shortage has been identified as one of the most important factor responsible for low livestock productivity. Many research studies have shown a huge gap between per unit meat production at large farms and at small farmer level which can be explained through economies of large scale production. Studies suggest that male population of small and large ruminants can potentially be reared for high quality meat production on early weaning and fattening diets. Adoption of rearing of male calves and growing male sheep and goats on early weaning and fattening diets will result in substantial increase in veal, beef, and mutton production in the country.³⁰

Breed Improvement: In Pakistan, farmers commonly keep animals of local breed and take no initiatives to improve or bring new animal breeds. Main reason for keeping the animals of local breed is that they are resistant to diseases and can live in harsh weather conditions when compared to the genetically improved breeds. Many small farmers who took the initiative of breeding the animals of known/high quality breeds suffered losses due to high mortality rates and increased cost of doing business. The calves require a controlled environment that cannot be provided by small farmers. Pakistan's livestock sector requires breeds that are genetically resistant and adapt to the harsh weather conditions.

Calf rearing is considered un-economical in view of the high cost of milk and non-availability of milk-replacer³¹.

Middlemen: Bargaining power of animal breeders is usually very low when compared to the large scale animal breeders and middlemen. Livestock market in Pakistan is not developed and animals are bought in different ways. Traditionally, middlemen provide the opportunity to buy animals and this is where breeders get exploited. Small-scale farmers rely on the middlemen due to lack of integration between livestock value chain and weak farm-to-market linkages. Middlemen exploit the farmers as they buy meat animals at lower prices from them and later sell them at higher profits at the animal mandis. In the meat industry there is 15-20 percent increase in price at each stage from the meat animal bought from rural farmer to the retail price of meat paid by a consumer. Low price paid to farmers also discourages them to pay attention towards animal feed and disease control. There is no comparable measure used to decide prices, and often the prices are set on negotiation basis and the physical appearance of animals.

Slaughterhouse Conditions: The condition of registered slaughterhouses is not satisfactory. Meat is cut in unhygienic conditions and quality is often missing. Livestock are slaughtered in registered/unregistered slaughterhouses and on private premises. They are subject to only limited official control by the municipality staff. Majority of such slaughterhouses, except a few in the

³⁰ Feedlot Fattening for beef production
<http://dddb.org.pk/forms/BEEF%20BOOK.pdf>

³¹ USAID prefeasibility Report- Animal Fattening Project. (Year?)

provincial capital cities, consist of simple sheds without temperature control with little or no water supply and electricity. Cold storage and chiller facility is not available in most of the slaughterhouses. Floors are normally damaged, drainage is poor, and cleaning and maintenance is virtually non-existent. Meat is sold at room temperature and exposure to parasites and bacteria often makes this meat unfit for human consumption particularly in summer months. Lack of suitable slaughtering facilities and unsatisfactory slaughtering techniques cause considerable losses in meat as well as invaluable by-products like offal, hides, and skins, which are not properly handled and utilised.

In the absence of inspection, meat from sick or parasitic- infected animals may well be a vector for spreading diseases, affecting human beings as well as animals. However, there are some private slaughterhouses that are also meat exporters and have latest equipment and meet international standards of slaughtering³².

Price Control Mechanism: As with the other essential commodities, the price of meat is regulated by the Provincial and District Governments and price control committees, including magistrates, have the authority of monitoring, checking, and enforcing prices fixed by the government. The price at which meat is sold in the market is generally higher than the price announced by the government. Lack of price checks at retail level provides seller the opportunity to earn more profits and an understanding between butchers on the price leads to the possibility of higher meat prices. In the formal meat sector there is a lot of variation between the meat prices sold by different retailers. Nonetheless, consumers lack information about the quality of meat being sold. Consumer courts have been established throughout the country but oftentimes immediate actions need to be taken upon consumer complaints and rapid response teams in this regard need to be more effective to ensure consumer protection.

Meat Price Ceiling: Price ceiling is set in case of essential commodities to protect consumers from the high prices charged by sellers. In case of meat government sets ceiling price of meat at different times such as during religious festivals and other high days however this price control stifles the meat market (value chain) and creates a shortage of meat at the ceiling price and thus meat gets sold in the market illegally at higher than ceiling price.

Cold storage facilities: Most of the meat sold across the country is in the informal sector. This meat is sold fresh without chilling. When animals are slaughtered, meat temperature is around 30°C which has to be brought under 20°C for which chilling is required. There is no temperature control in most of these slaughterhouses. Moreover, cold storage facilities and transportation chillers are not available in general and, as a result, hot meat is sold to consumers. Where cold storage facilities are available in the formal sector, meat sellers are earning good profits and help contribute significantly to the well-being and health of the population.

³² Primary Data collected from both Rawalpindi-Islamabad Slaughterhouse and private slaughterhouse Chishti Farms at Sawan, Rawalpindi.

Disease control: Animal breeders in general try themselves to treat the disease infected animal with conventional methods as a consequence mortality rate of calves and other animals in Pakistan is very high. Other factors include inadequate veterinary coverage, lack of facilities in controlling the animal diseases and lack of knowledge by farmers about animal diseases. There is also lack of disease reporting system in the country as well.

Transboundary Animal Diseases (TADs) such as Foot-and-Mouth Disease, Pest Des Petits Ruminant (PPR), Avian Influenza commonly known as Bird Flu are prevalent in the country and create a technical barrier for Pakistan to be registered as a meat export country. Recently in an outbreak of Pest Des Petits Ruminant in Sindh has caused deaths of thousands of sheep and goats.

Lack of Meat Grading, Quality and Value Addition: In Pakistan, the local livestock markets have been established by municipal and local authorities but the right to manage the market is given by tender to a contractor. Stock is brought to the local markets by flock owners or by small traders who sell meat animals without any animal grading and quality. Animals are generally sold underage before the age of 1.5 years.

To earn more profit, butchers only consider lower price and ignore other factors of health, age, and weight of animal. This practice discourages other animal and meat sellers who follow strict procedures for sale of meat in the local and export market.

There is no focus on value addition of meat where meat is converted into finished or semi-finished form to increase its economic value and to meet different consumers demand. Value addition increases value of meat and expands meat market and consumer choice.

Smuggling of Meat Animals: According to an estimate around one million live animals are smuggled to Afghanistan and Iran from border areas of Baluchistan and Khyber Pakhtunkhwa annually. Meat prices in Iran and Afghanistan are higher than Pakistan which encourage smuggling and create shortage of animals thereby raising price of meat and its products. Baluchistan government has already passed a resolution in this regard to curb the smuggling of live animals from the province but low monitoring and checks on the border areas permit smuggling.

Halal Certification: In Pakistan halal certification exists but it is not properly implemented and supported. Pakistan Standards & Quality Control Authority (PSQCA) is working under the Ministry of Science & Technology to check the quality of food and non-food items that are imported and exported. Recently a halal authority bill has been passed and is called Halal Authority Act, 2015 which will be responsible for the issuance of halal certificates, halal logo, and halal standard of meat both for the domestic market and the export market. Federal Government has made Halal Food Authority which is working under Ministry of Science and Technology for the export and import of halal meat. At the provincial level only Punjab government has made Halal Food Authority to ensure the availability of halal meat in the markets. The halal certification committees are not functional at the moment. Halal meat market is growing in

the world and Pakistan has the potential to benefit tremendously by exporting halal meat in the international market provided these halal committees function properly.

Lack of Financial Resources: There is lack of financial resources to enhance animal and meat production by small farmers. Banks in Pakistan including ZTBL does not give soft loans to small farmers who keep a herd of 1-6 animals and constitute 50 percent of the total meat animal production in the country. The benefits and grants given by Livestock and Dairy Development Board (LDDDB) are for farmers who keep minimum of 20 sheep/goats and minimum 10 cattle/buffalos in their farms. Small farmers/ breeders do not meet their criteria. Credit provision and establishment of an enabling business environment is essential for the growth of the meat sector.

Meat Sector Potential: The global demand of meat continues to grow as the world income and population has been growing. Meat is an essential food item and therefore its demand remains stable. Pakistan is a country which is blessed with natural resources and it is an ideal country for livestock production. There is 100 percent halal production and Pakistan has important geographic location which gives it access to 470 million consumers across Central Asia, Middle East and Europe³³. Pakistan has a great potential in halal meat export and during the year 2015 Pakistan's meat export was \$243.5 million³⁴ and this can be increased many folds provided stricter checks are in place to monitor smuggling of meat animals to the neighbouring countries.³⁵

The livestock development strategy adopted by government is a private sector led growth with government providing an enabling environment and capacity building to enhance animal husbandry practices.³⁶ The development strategy is to improve per unit animal productivity, shift away from subsistence livestock farming to market-oriented and then towards commercial farming to meet domestic demand of meat animals, meat and meat products and export the surplus. To encourage livestock production in private sector, the Livestock Wing, Ministry of National Food Security and Research has under taken certain regulatory measures to encourage livestock sector and for the establishment of value added meat market in the country. These are,³⁷

- Allowing import of agro-based machinery and equipment including machinery and equipment related to livestock farming and dairy processing units at zero tariffs.
- Import of high yielding exotic dairy and beef animals and their semen/embryo are allowed.
- Establishment of temporary quarantine stations has been allowed in the private sector. These facilities can be utilised by any other livestock importer.

Meat Export: Meat export is an important source of foreign exchange and thus plays an important role in diversifying Pakistan's exports. Meat animals and

³³ 'Demand grows for Pakistani halal meat', foodjournal.pk, <http://www.foodjournal.pk/2015/July-August-2015/PDF-July-August-2015/Dr-Noor-halal-meat.pdf>

³⁴ 'Meat export industry growing with ratio of 30 percent' Pakistan Observer, <http://pakobserver.net/2016/02/29/meat-export-industry-growing-with-ratio-of-30pc/>

³⁵ All Pakistan Meat Exporters and Processors Association (APMEPA)

³⁶ Ministry of National Food Security and Research (MNFSR)

³⁷ Livestock Wing, Ministry of National Food Security and Research

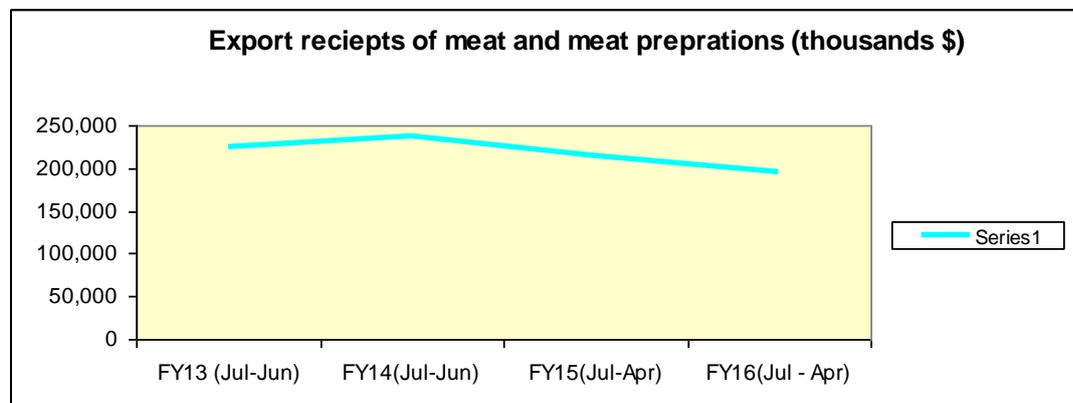
meat export have been growing in Pakistan due to the continuous increase in global meat demand at a rate of 3-4 percent per annum. The import and export of livestock products and livestock is regulated by Pakistan Animal Quarantine Act, 1979 and rules 1980. The Animal Quarantine Department working under Ministry of Livestock handles all import and export of livestock.

The following table shows export of meat and meat preparations.

Table 6: Export receipts of Meat and Meat Preparations (US \$ 000) (Source: Statistics and Data Warehouse Department, State Bank of Pakistan)

FY13 (Jul-Jun)	FY14 (Jul-Jun)	FY15 (Jul-Apr)	FY16 (Jul - Apr)
224,432	237,120	215,190	196,371

Figure 5: Export receipts of meat and meat preparations (US \$ 000)



Major importers of Pakistani mutton and beef include Saudi Arabia, UAE, Iran, Afghanistan, Kuwait, Qatar, Oman, and some East Asian countries. The Livestock Wing, Ministry of National Food Security and Research, provides the facilities for red meat export. From July-March 2015-16, a total of 46.242 thousand tons of meat were exported, fetching US\$ 144.864 million. This meat export was from 31 private slaughterhouses.³⁸

The table below shows export of beef and mutton comparison, change in value and the share in total exports between 2012-13 and 2013-14 in US\$.

Table 6: Beef and Mutton Export from Pakistan (US \$ 000) (Source: Trade Development Authority of Pakistan)

Commodity	July-June 2013-14	July-June 2012-13	Change (Value)	Change (%)	July-June (%share of exports) 2013-14	July-June (% share of exports) 2012-13

³⁸ Pakistan Economic Survey, 2014-15.

Beef	133,519	111,219	22,300	20.05	0.53	0.45
Mutton	58,924	79,401	20,477	25.79	0.23	0.32

Table 7: Pakistan Beef Export in selected countries (US \$ 000) (Source: Trade Development Authority of Pakistan)

COUNTRIES	2013 - 14	2014 - 15	2015 - 16
U.A.E	41,577	47,669	57407
SAUDI ARABIA	28,157	36,474	24238
KUWAIT	18,502	21,364	18788
BAHRAIN	11,528	12,203	9485
OMAN	9,980	8,053	6069
VIETNAM	8,519	19924	15127
IRAN	6948	30	-
QATAR	3,996	3,592	2138
THAILAND	1,685	995	804
UNITED KINGDOM	10	16	-
OTHER COUNTRIES	1	1	103

Figure 6: Pakistan's Beef Exports to selected countries (US \$ 000)

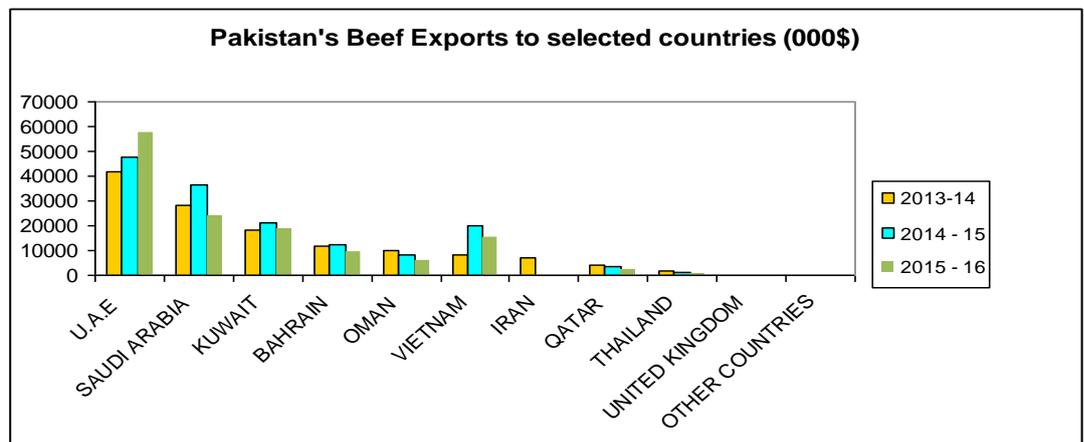
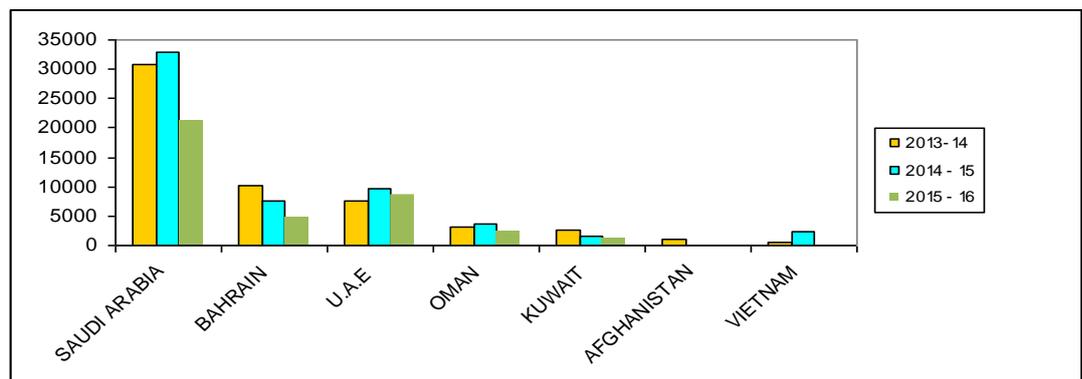


Table 8: Pakistan Mutton Export in selected countries (US \$ 000) (Source: Trade Development Authority of Pakistan)

COUNTRIES	2013 - 14	2014 – 15	2015 - 16
SAUDI ARABIA	30,814	32,959	21,223
BAHRAIN	10,166	7,628	4,718
U.A.E	7,674	9,768	8502
OMAN	3,174	3,782	2,268
KUWAIT	2,483	1,685	1,045
AFGHANISTAN	1,135	90	-
VIETNAM	535	2,383	-

Figure 6: Pakistan's Mutton Exports to selected countries (U.S \$ 000)



A review of tables 8 and 9 show that beef and mutton export has increased in some countries and decreased in other countries. The factors responsible for this variation are higher domestic demand of meat due to rise in population and income and also because Pakistan experienced livestock losses due to floods in 2014, where Punjab was the most affected province.

To increase meat and meat products export globally Livestock Wing, Ministry of National Food Security and Research plans to shift meat production from subsistence to commercial farming with emphasis on value addition and to cover the entire meat value chain from ‘farm to fork’. The targets and goals are as follows

Increase in meat animal productivity – encourage and promote the use of modern technology, allowing import of improved quality semen and embryo and expand artificial insemination services in both public and private sector.

Promotion of meat animals and meat products and by products – by establishing export oriented abattoirs and livestock by products (animal casing, gelatine, bone products etc.) processing units.

Control of trans boundary animal diseases - provincial livestock departments will be encouraged to initiate programs for disease control and foreign assistance is also sought through aid and funding in animal disease control.

Improvement of animal quarantine stations – new animal quarantine offices will be initiated to build the capacity and facilities of quarantine stations³⁹

Halal Meat Market: Halal meat is a large, growing, and global market. The demand for halal meat is growing in the international market due to the scientific and hygienic slaughtering and processing of meat. Muslims generally avoid food that does not meet Halal standards, regardless of where they are situated. Today Muslims are making their presence felt socially and politically. To cater to this burgeoning demand, countries are offering services and co-operating with producers. The Halal logo, thus, has become a global symbol of quality and compliance.

Pakistan is one of the largest Muslim countries which have an immense potential due to 100 percent halal meat production in the global halal meat market. The halal meat market amounts \$635 billion and the total halal product market is \$3 trillion globally. Halal products are used by over 2 billion Muslim consumers and it is expected that by year 2030 Muslim consumers are expected to reach 26% of the world population. However, at present Pakistan's share in the global halal meat market is negligible as it produces only 2.9 percent of global halal meat. Pakistan is ranked 22nd in the world export of halal meat and more than half of Pakistan's meat exports consist of beef, which constitutes 2.85 percent of the global beef market.⁴⁰ Pakistan is the 9th largest producer and consumer of beef.⁴¹ Halal meat demand is inelastic for Muslims and it is growing driven by the world's 1.8 billion Muslims, representing close to 25% of the world's population, who are becoming better educated, more discerning and with a higher household income⁴². Europe has an estimated Halal meat market of over \$66 billion annually and American Muslims spend over \$13 billion on halal foods annually.⁴³

More than 80 percent of halal meat export is by Non-Muslim countries. Major exporters of halal meat in the world include India, Brazil, USA, Canada, Australia, and New Zealand. In the East, Thailand, Philippines, Malaysia, and

³⁹ Livestock Wing, Ministry of National Food Security and Research, available at: <http://www.mnfsr.gov.pk/gop/index.php?q=aHR0cDovLzE5Mi4xNjguNzAuMTM2L21uZnNyLy4vZnJtRGV0YWlscy5hc3B4P29wdD1taXNjbGlua3MmaWQ9MzY%3D>

⁴⁰ United States is the largest producer of beef in the world followed by Brazil and EU. United States produces around 19 percent of the world's beef, Brazil 17%.

⁴¹ <http://www.foodjournal.pk/2015/July-August-2015/PDF-July-August-2015/Dr-Noor-halal-meat.pdf>

⁴² Anwar ul Haq, M., & Zafar-uz-Zaman, M. U. Global Halal Food Market and opportunities for Pakistan.

⁴³ <http://www.foodjournal.pk/Nov-Dec-2013/Nov-Dec-2013-PDF/Dr-Noor-halal-meat.pdf>

Indonesia are the largest sellers of halal meat. United States is one of the biggest exporters of halal beef and 80 percent of its export of frozen beef is halal. This is a big opportunity for Pakistan to focus on Halal meat export.

Pakistan is ranked 18th in the production of Halal meat. Pakistan has a competitive advantage in meat trade due to lower cost to produce meat and its geographic location. Pakistan's neighbouring countries include Afghanistan, Iran, and China where meat demand has been growing. In 2014, China alone had meat import of US \$6.1 billion and Chinese meat market is estimated to grow at 14 percent over the next five years. The recent activity on the China-Pakistan Economic Corridor can be the impetus for tapping into China's markets. It is estimated that around a population of 80 million Muslim⁴⁴ lives on the proposed route, Chinese Xinjiang province to Central Asia and Pakistan.⁴⁵ The entire region would be connected through a network of roads and rails, making regional trade the most efficient option — for being swift and low on freight. Pakistan's geographic proximity to the Gulf countries, which has a growing demand for meat, is also advantageous.⁴⁶ Malaysia has a free-trade agreement with Pakistan since 2007, which is encouraging and offers a lucrative export market as well.

Pakistan's biggest meat export global rivals include Australia, Brazil, and India. However, these competitors have comparatively higher shipping costs to export meat to Asian markets compared to Pakistan. Pakistan has the ability to displace these rival countries in terms of export of meat due to lower transportation costs.

Some other key Halal food/meat importing countries are: Algeria, Iran, Lebanon, Qatar, Turkey, Bahrain, Iraq, Malaysia, Saudi Arabia, United Arab Emirates, Egypt, Jordan, Morocco, Syria, Yemen, Indonesia, Kuwait, Oman, Tunisia and the UK.⁴⁷

There are 31 modern export oriented registered slaughterhouse companies working in this industry. Among these, PK Livestock, a Karachi-based abattoir, remains one of the oldest and most successful company which has been exporting red meat to the Middle East for over two decades. Another major exporter is Zenith, which is based in Lahore and became the first Pakistani company to sell beef to Malaysia, after the Malaysian government relaxed its regulatory requirements for Pakistani exporters.⁴⁸ New companies such as OMC and Al Shaheer Corporation have successfully started exporting to the Middle East, and are aggressively seeking regulatory approvals for markets further in Southeast Asia. Halal Meat Processors is another enterprise that has a modern slaughterhouse at Fateh Jang, meat retail shops for domestic consumers, and meat exports to various Gulf countries.

⁴⁴ <http://www.qran.org/a/a-world.htm>

⁴⁵ Impetus for halal meat export, Dawn, 18 July 2016; <http://www.dawn.com/news/1271385/impetus-for-halal-meat-export>

⁴⁶ Euro monitor report (please add any additional details; not clear what year this is from)

⁴⁷ Pre-feasibility study (Modern Slaughterhouse) - Sindh Board of Investment

<http://www.sbi.gos.pk/pdf/modern-slaughter-house.pdf>

⁴⁸ See fn 44

Pakistan is benefitting from the assistance of international agencies in helping exporters in slaughtering and building their capacity in marketing and packaging.⁴⁹

Figure 7: Global Beef Production and Export
 (Source: United States Department of Agriculture, Foreign Agricultural Service, 2015)

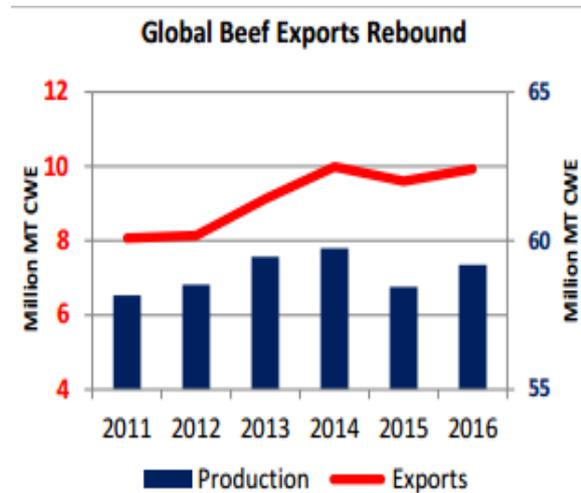
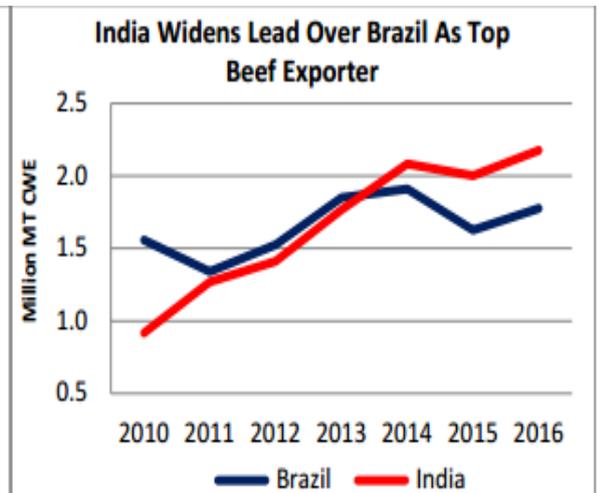


Figure 8: Top Global Beef Exporter
 (Source: United States Department of Agriculture, Foreign Agricultural Service, 2015)



Meat Export Challenges: Meat sector in Pakistan remains underdeveloped, despite huge domestic consumption and export opportunities. Pakistan has not been able to capture a significant global market share in meat due to weakness in its supply chain management and underdeveloped meat market. The world livestock industry is expected to grow by 85 percent by the year 2030.⁵⁰ For Pakistan to become a global player in the meat industry, there is a need to enhance commercial production of meat animals and strengthen animal health and hygiene protocols in the domestic meat market. The industry needs modern slaughterhouses equipped with latest machines and equipment to meet international export standards. Value addition in meat is generally neglected whereas globally, demand of meat in various forms is growing. Setting up by-product processing plants could lead to enhanced profitability. Compliance with environmental certification and extensive marketing through participating in various trade fairs, strict monitoring of animal diseases and their effects on human health are critical issues which need to be addressed.

Meat export potential is contingent on strong breeding and animal feeding. Investment in improved animal genetics and feed intervention through feedlot fattening should be encouraged. Feedlot fattening should be adopted because

⁴⁹ See fn 44.

⁵⁰United States Department of Agriculture (USDA), Foreign Agricultural Service, Livestock and Poultry: World markets and Trade, October 2015

cattle are generally raised using conventional methods that yield low weight and per unit animal meat production, thus depleting the potential meat resources.⁵¹

Private sector investment in livestock sector should be encouraged and government should provide an enabling environment by giving credit facilities, lower tariffs, and through provision of modern infrastructure. Corporate farming should be adopted to exploit the export potential. At present 80 percent of meat production is in the informal sector.⁵² Large breeding farms can serve as a primary source of sale of genetically superior animals both for domestic consumption and for export. Cattle feed mills should be established as demand for livestock feed of various types is increasing and as domestic feed/fodder production increases it will reduce the input cost of farmers.

Although the above measures will not benefit the small subsistence farmers with a herd size of 1-6 animals however these farmers will gain from the spillover benefits that will be achieved as the industry will grow.

⁵¹*Feedlot Fattening for Beef Production: Techno-Economic Feasibility*, by Dr. Abdul Ghaffar Khan, Livestock & Dairy Development Board, Ministry of Livestock and Dairy Development, January, 2009. available at: <http://www.lddb.org.pk/forms/BEEF%20BOOK.pdf>

⁵²Source: SMEDA Sectoral brief, http://www.smeda.org/index.php?option=com_phocadownload&view=category&id=28&Itemid=139

CHAPTER 6: CONCLUSION & RECOMMENDATIONS

Conclusion: Meat is an essential food item and has an inelastic demand. In Pakistan meat industry is considered a by-product of Dairy industry. Most of the meat production takes place in the informal sector. The current meat production system is traditional, inefficient, and in poor state, generally. The meat industry has great prospects however not much attention has been given to enhance livestock production and meat quality. Most of the farmers maintain a herd size of 1-6 animals and do not have means to adopt feedlot fattening to enhance per animal meat production. Government of Pakistan has given various incentives to promote meat value chain, measures to promote production of meat and meat animals and meat processing however these facilities are only available to medium and large scale producers. The small farmers are expected to gain from spillover effects of meat industry development. Meat industry is beset with issues such as no meat grading system, breeding of inferior animals, lack of meat animal breeding farms, lack of proper slaughterhouses especially for the domestic supply of meat, ineffectiveness of district government to regulate meat prices, financial constraints on the farmers, and poor infrastructure for farmers to access urban meat markets.

Meat prices are regulated by the district authorities who set the prices by market survey and consultations with the stakeholders. The mechanism of price control of meat is ineffective and inadequate. Market lacks the check and balance due to which meat retailer and butchers sell the meat at increased prices and exploit the consumer interest by enticing excessive profit which ultimately results in increase of meat prices. The packaged meat prices are monitored but not regulated. In the domestic market meat animals are sold by their apparent health and quality and not on the basis of live weight which causes losses to farmers. At most of the slaughterhouses animal slaughtering is done under unhygienic conditions, there is use of unsterilized instruments and no temperature control. Slaughtered animals are transported without transportation chillers, no check on hygiene and often the meat is not fit for human consumption.

Halal meat demand is growing all over the world and Pakistan has the potential to become one of the top meat exporters because of its lower meat production cost per animal and good taste/quality of meat. Pakistan is one of the largest Muslim country which has an immense potential in global halal meat market. However, at present Pakistan's share in the \$3 trillion halal food market is negligible and it has not been able to capture a significant global market share in meat due to weakness in its supply chain management. According to United Nations Food and Agriculture Organisation (FAO) the world livestock industry will grow by 85 percent by the year 2030.

Recommendations: In the light of this study conducted on meat industry the following recommendations are proposed to improve meat value chain.

1. Food prices of essential items are regulated and meat is one of them. However, the meat price control mechanism is not effective. If the government decides to deregulate meat prices the problem of profiteering and hoarding will increase so meat price regulation is used as deterrence against this practice. This price control mechanism, however, needs to be made more effective and efficient. The price

control mechanism to regulate meat prices at district level is ineffective and inefficient. Since meat is an essential commodity the government regulates its prices. Meat prices are set every six months or 12 months, but remain unregulated in the interim period. It is recommended that the regulatory mechanism for both price and quality should be improved and pricing of meat should be on the basis of meat quality and grading.

2. Meat prices for urban and rural apply to all retailers whether in the formal or informal sector. These prices however in the formal and the informal sector differ by a large scale. The district food authorities have a mechanism of fining where the retailers of meat charge exorbitant profits. These fines range from Rs. 1000 to Rs. 100,000 however charging higher than the regulated meat price by the district authorities is a common practice by the meat retailers. The price regulation of the meat sold in formal sector is weak as a result the meat prices are higher. Meat quality is improved nonetheless to make the meat industry more efficient and competitive price monitoring, as a consequence, needs to be more vigorous to ensure availability of quality meat at affordable prices for the consumers.
3. Government run slaughterhouses are in dilapidated condition and animal slaughtering is manually done under unhygienic conditions which pose severe consequences to human health. Conditions of slaughterhouses in the private sector are better therefore it is recommended there should be public-private partnership to run the government slaughterhouses. This will bring efficiency as well as improve animal slaughtering.
4. There is no slaughterhouse in Islamabad and the meat butchers/retailers use the local government slaughterhouses of Rawalpindi which are overburdened and unable to meet the growing animal slaughtering of the two cities. These slaughterhouses of Rawalpindi are understaffed⁵³ to check the health of animals before animal slaughtering and to ensure hygiene while handling the meat animals and the animal waste. It is therefore recommended that Islamabad should have an independent slaughterhouse to meet the growing needs of the capital city.
5. There are financial constraints to enter this sector therefore easy access to credit must be available to farmers at small as well as at corporate level to improve livestock production and enhance quality meat availability in the meat market.
6. Training of farmers is vital to increase per animal meat production. The government should train farmers at grassroots level where most of the meat production takes place. Small workshops should be conducted in villages to train rural farmers about animal breeding, disease control, feed and fodder and animal sale.

⁵³ Survey to Rawalpindi-Islamabad Slaughterhouse, one veterinary doctor also working as General Manager of the slaughterhouse, to check the health of around 500-600 animals before slaughtering. The Rawalpindi-Islamabad Slaughterhouse at Sihala built in 1967 over 17-acre land is in a dilapidated condition and has total staff of 13.

7. One main issue in the meat sector still remains the accessibility of farmers to the mandis. Animal mandis across Pakistan are limited in number and located at extended distances from the farmers who are discouraged to bring their animals to these mandis. Farmers therefore sell their animals at low prices to the middlemen who in turn bring them to animal mandis for sale and sell them at high profit margins. To make meat market more competitive the numbers of animal mandis need to be increased so that farmers can easily access them and get their due reward from the sale of these meat animals. This will result in lower profits of the middlemen and higher rewards for the farmers and at the same time meat prices will become more competitive as increased number of farmers will bring their animals for sale to mandis.
8. Export of animals including live animals and animal meat is done and its permit is given by the Ministry of National Food Security and Research (MNFSR). However, smuggling of animals to neighbouring Afghanistan is a common problem. Export of animals should be limited as meat is an essential food item and the government must ensure its availability at affordable price to domestic consumers. This is an issue highlighted by the association of meat retailers for higher domestic meat prices.
9. Meat quality which is sold in domestic market is a key issue that needs attention of the district livestock office comprising of veterinary doctors and health officials. They have the technical expertise to check the problems of water mixing, meat of under age, dead and haram animals. Meat is an essential food item and therefore much attention is needed to enforce quality meat availability. The district livestock departments therefore need to be more efficient and become more effective.
10. The research on the meat industry shows that consumers lack access of information about meat quality and meat prices. And as a result they cannot make informed choices. There is no information to consumers in the informal meat market about animal health, its slaughtering, meat quality, its expiry and variation in price compared to the regulated price by district government. It is recommended that district governments address this issue by monitoring informal meat sector more robustly and through advocacy measures in print and electronic media. This will enable consumers to make better choices and as a result improve meat production, slaughtering and its pricing mechanism.
11. It has been found from our research that information failure exists in informal meat sector and, as a result, consumers cannot make rational decisions. There is efficiency loss in the market as there is misallocation of scarce resources due to which consumers pay more and farmers get less in the market. In meat market information failure exists in the form of asymmetric information and moral hazard⁵⁴. It is therefore

⁵⁴ Asymmetric information occurs when one participant knows more than the other in an economic transaction. Moral hazard is another type of information failure when participants in economic exchange behave carelessly because they think their behaviour will not be found or maybe they are encouraged to behave carelessly due to some support which protects them from the adverse effects of their careless

recommended that the government should ensure that information failure is reduced or eliminated in meat market. The supply of information in meat market can be increased if the government asks the meat retailers to provide accurate information about their meat products. Information can also be improved through public broadcasts on meat market so consumers can make rational decisions.

decision. In the informal meat market there is asymmetric information as producers know more about meat quality and meat prices compared to consumers and there is the problem of moral hazard as the meat producers and retailers act carelessly because they know their behaviour cannot be found.

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