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www.ijhemp.comNASCENT RISE IN HALAL MEAT EXPORTS OF PAKISTAN:
CASE OF PUNJABMuhammad Abdus Salam^{1*}, Farida Ramza², Shazia Sarwer³, Saqib Mansoor Khan⁴, Ihsan Ali Jamali⁵¹ Stores and Purchase Department, Pakistan Railways, Pakistan

Email: m.abdussalam@gmail.com

² Pakistan Accounts & Audit Service, Pakistan

Email: faridarmzan@gmail.com

³ Police Service of Pakistan, Pakistan

Email: shazia10sarwer@gmail.com

⁴ Military Accounts Department, Pakistan

Email: saqiib@gmail.com

⁵ Pakistan Administrative Service, Pakistan

Email: ihsanjamali8@gmail.com

* Corresponding Author

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This work is licensed under [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)**Abstract:**

This research is focused and aimed on examining the issues and challenges faced in exporting Halal beef from the Punjab Province of Pakistan along with its growth potential. During this field research, we analyzed beef export potential of Punjab along with associated problems. These problems and issues include lack of traceability mechanism of animals, noncompliance of international standards, early age slaughtering of animals, high incidence of diseases like Foot and Mouth Disease (FMD), lumpy skin, poor feeding practices, inadequate feeding stuff and lack of technical expertise. We also examined various laws and concerned departments involved in export process which also creates hurdles in export enhancement. To conduct this field research, mixed-method approach was employed, combining qualitative and quantitative techniques. Qualitative technique involved interviews with representatives from different departments and organizations to gain insights into their operations and constraints. Quantitative data, such as charts, graphs, and reports from various departments and websites, were also analyzed. Additionally, a SWOT analysis of the Punjab Agriculture and Meat Company (PAMCO) and Fish Bone analysis were conducted to identify and scrutinize the major causes of low beef exports in detail. Pakistan Halal Authority (PHA) and Animal Husbandry Commissioner (AHC) are also explored for the analytical purpose. To gain a broader perspective and identify potential solutions, two international case studies of Brazil and India, both leading beef exporters, were investigated as a comparative study. Gaps were identified within the local system and the formulation of recommendations to address

these issues and enhance beef exports from Punjab. In nutshell, this research provides an in-depth exploration of the challenges faced in the Halal beef export industry in Punjab, Pakistan. By examining both local and international contexts. It also offers insights and recommendations along with detailed workable operation plan for improving the situation and increasing beef exports from the region.

Keywords:

Halal, Beef, Export, Lumpy skin, Foot and Mouth Disease (FMD)

Introduction

Meat is a major source of proteins, minerals and vitamins, which is important for the health of humans. There are 1.8 billion Muslims worldwide and expected to reach 2.5 billion by 2030, 85% of the Halal Food imports by OIC countries are from Non-Muslim Countries. The global halal meat market is US \$ 511.454 billion (Research, 2022), out of which halal beef market was valued at US\$162 billion in 2022 and is projected to attain a valuation of US\$ 296 billion by 2031. (Analytica, 2022). Pakistan has one of the largest livestock populations in the world estimated hundred million cattle and buffalo out of which Punjab has approximately 45 million. Overall Gross value addition of livestock has increased from Rs. 5,390 billion to Rs. 5,590 billion, showing an increase of 3.8 percent. (Economic Survey, 2023). Livestock is contributing approximately 62.68 percent of agriculture value added and 14.36 percent of the national GDP during FY-2022-23 (Economic Survey, 2023). It also contributes to national exports and 2.1% of total exports belong to this sector (TDAP, 2023). A total of US\$ 342.78 million of halal meat and meat related products were exported from Pakistan during FY-2022-23 from the registered export-oriented slaughterhouses in the private sectors (PBS, 2023). Currently, Pakistan exports about US\$ 250 million worth of cattle and buffalo meat to eight countries including the six GCC countries, Vietnam and Afghanistan. This constitutes 0.20 percent of the global market which is quite low despite of Pakistan's so much export potential in international market due to numerous reasons. (Analytica, 2022)

Statement of the Problem

The global halal meat market is US \$ 511.454 billion (Research, 2022), out of which halal beef, market was valued at US\$162 billion in 2022 and is projected to attain a valuation of US\$ 296 billion by 2031. (Analytica, 2022). According to the Economic Survey of Pakistan 2022 – 23, the total meat production of Pakistan is 5.504 million tons out of which beef accounts for 2.544 million tons. Pakistan has a very meager amount of 0.2 % in the global halal meat market (Asfia et. al., 2022). Despite, being 6th largest in terms of number of halal beef animals (Knoema, 2023), and 15th largest in terms of beef production (FAOSTAT, 2023) in the world, Pakistan has not been able to realize her true potential of halal beef production. Pakistan has failed to grab its fair share in the halal beef export market, due to a number of factors.

Research Question

What are the reasons of low exports of halal beef by Pakistan and how to increase the share of export of Halal meat (beef) to 5% of the production in five years along with increase in the share of processed meat, taking stock of the province of Punjab?

Scope

The scope of the study includes analysis of the existing legal and organizational regime responsible for assessment, production, processing and export of meat in general and beef in particular at the federal level with special focus on Punjab. Comparison with the meat production and export of Pakistan with two of the international best practices along with evaluation of the capacity and organizations; PAMCO, PHA, Livestock & Dairy Development Department (L&DDD), AHC and Halal Research Council (HRC), and All Pakistan Meat Exporters and Processors Association (APMEPA). The Federal departments relevant to the study includes AHC, APMEPA, Trade Development Authority of Pakistan (TDAP), Ministry of Commerce (MOC), Animal Quarantine Department (AQD) and PHA. On the provincial level L&DDD, LDDDB, HRC, and PAMCO are the relevant departments from Punjab. The rationale behind the selection of Punjab is that it contributes around 43% (largest share) in beef production. Overall conditions are conducive and favorable for animal farming.

Significance of the Study

The study is unique as it encompasses the issues of beef export comprehensively. The whole demand driven value chain concept is rare in such kind of studies. The number of departments consulted along with updated data and number of analytical tools used make it a useful work for the industry. Moreover, workable action plan has been proposed. The study once successfully implemented may be replicated in other regions as well.

Research Methodology

The study has been conducted through Mix Method (Qualitative + Quantitative). Different analytical techniques have been used including SWOT Analysis, Fish Bone, and Data Triangulation. The primary data sources consulted for the study includes but not limited to include L&DDD, APMEPA, PAMCO, HRC, PHA, and AHC. The secondary sources include different websites of relevant departments, Google Scholar and research sites.

Literature Review

A detailed literature review has been carried out for study of existing laws, practices, policies, gaps, opportunities, threats etc. Interestingly, out of 57 Muslim countries, only Bangladesh, Iran, Malaysia, Pakistan, Egypt, Jordan, Lebanon and the United Arab Emirates trade in halal meat, while other developed countries like the US, China, and India sell halal meat are net importers. Brazil, Argentina, Uruguay, Paraguay, Australia, Thailand, Kenya, France, Singapore, Spain, Philippines and Netherlands. The problem is that there is still no central body that defines the standards of halal. International Halal certification system is lacking. There are problems in some countries, including the Middle East, which has a significant share of halal meat import. Muslims are having higher meat consumption record in USA. Due to certain issues now Muslims are initiating management of the entire process in a more organized way through certification (Saifi, 2022). Many studies have reported high prevalence of infection in Pakistan, due to factors such as low socioeconomic development, poor health and living conditions of most people, non-standardized, lack of proper checks and balances, and inadequate handling of roaming. The global halal market value for the trade of halal foods is estimated at US\$ 547 billion annually. About 1.8 billion of the world's 6.5 billion population are Muslims. With the halal food market currently accounting for 12% of global trade in agro-food products, major growth will create growth opportunities for the agro-food industry. Being a Muslim country, Pakistan is in an advantageous position to gain a significant share in the Halal market if steps are taken in the right direction. But incidentally, it still has no presence in

the halal economy that primarily caters to the religious needs of Muslim consumers (Ahmed, 2022). International best practices of Brazil and India are studied and compared with the local industry. Themes, situational analysis and future road map has been prepared in the light of the said literature as well. However, the same is not included in final draft report.

Situational Analysis

Preliminary Details from Economic Survey of Pakistan 2022-23

Table 1: Estimated Livestock Population, 2020-23

Table 2.16: Estimated Livestock Population				(Million Numbers.)
Species	2020-21¹	2021-22¹	2022-23¹	
Cattle	51.5	53.4	55.5	
Buffalo	42.4	43.7	45.0	
Sheep	31.6	31.9	32.3	
Goat	80.3	82.5	84.7	
Camels	1.1	1.1	1.1	
Horses	0.4	0.4	0.4	
Asses	5.6	5.7	5.8	
Mules	0.2	0.2	0.2	

¹: Estimated figure based on inter census growth rate of Livestock Census 1996 & 2006

Source: Ministry of National Food Security & Research

Source: Reprinted from Ministry of National Food Security & Research, 2023

Table 2 Beef & Meat Production For The Year 2023

Item	Pakistan	Punjab	Punjab Share %
Beef (000 tons / annum)	2544	1,093	43
Total Meat Production = 5504 (000 Tons)			

Note: Data taken from L&DDD, by Janjua, 2023

Table 3 Beef Export Details For The Year 2023

Buyers	Suppliers	Export Shipments
1023	290	34778

Source: Retrieved from Export from Pakistan (from <https://www.volza.com/p/meat/export/export-from-pakistan>)

Pakistan's Meat Export to Gulf Countries and Central Asia

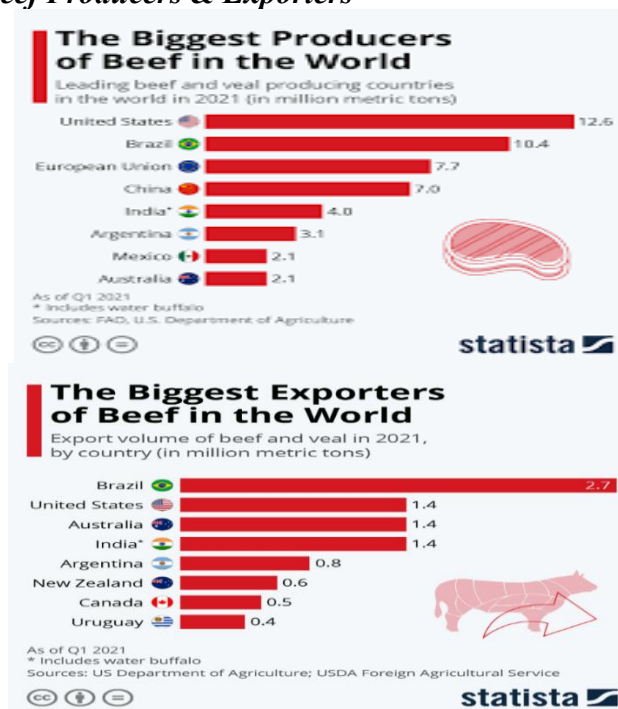
Pakistan is 14th in world with 0.65 % market share in halal beef export. At present, Pakistan exports chilled / fresh meat to; KSA, UAE, Kuwait, Qatar, Bahrain, Hong Kong, Maldives, Vietnam, Malaysia, Iran, Central Asian States, Afghanistan, Egypt, and Oman. China, and Indonesia are importing boiled meat from Pakistan. Animal casings are exporting to EU and Japan.

Table 4: Top 7 Countries Where Pakistan Exports Beef In 2021-2022

<i>Country</i>	<i>Quantity (M. tons)</i>	<i>Amount (USD million)</i>	<i>Demand (Metric tons)</i>
<i>Saudi Arabia</i>	<i>133,905</i>	<i>105.58</i>	<i>4.2 m</i>
<i>United Arab Emirates</i>	<i>56,333</i>	<i>42.84</i>	<i>2.5 m</i>
<i>Bahrain</i>	<i>12,629</i>	<i>9.38</i>	<i>0.5 m</i>
<i>Kuwait</i>	<i>10,176</i>	<i>7.64</i>	<i>1.2 m</i>
<i>Qatar</i>	<i>7,800</i>	<i>5.92</i>	<i>1.0 m</i>
<i>Oman</i>	<i>5,226</i>	<i>4.09</i>	
<i>Yemen</i>	<i>2,000</i>	<i>1.5</i>	
<i>Total</i>	<i>228,069</i>	<i>176.95</i>	<i>9.40 m</i>

Source: Interview with (Janjua, 2023)

Worldwide Largest Beef Producers & Exporters

**Figure 1: World Leaders in Beef Production and World Leaders in Beef Exports**

Source: Retrieved from (Statista, 2023)

Applicable Laws & Policies

The applicable laws are not only numerous but scattered and are of diversified nature. Besides, different departments deal with different areas and have a clear lack of coordination. The laws mentioned on the L&DDD are 17 that relates to beef export value chain whereas PHA also deals the beef export value chain.

Issues in Applicable Laws

The laws are old in most cases and scattered in nature. The overlapping laws creates problems and confusion among stakeholders. Besides, the high numbers decreases clarity and applicability of all these laws. The complexity further increases as the provinces are independent in policy formation on said issue after the 18th Amendment. Hence, there is no

uniformity at country level. The example of Pre – (Public Procurement Regulatory Authority) PPRA and Post – PPRA is notable in this regard, as there is a clear difference in the pre and post PPRA era. In similar manner, the mandate as per given 2016 act of PHA is with PHA and it is expected that a uniform nation policy for end to end Supply Chain Management for the beef export will be formulated in a comprehensive manner.

Halal Research Council (Parveen, S. 2023)

It is a private entity, having only one office in Lahore. The Halal Certificate issued by them is only recognized by few private organizations. At present only 8 members including CEO are in the organization. They do not issue halal certificate to raw meat producers and only for cooked or processed food at a limited scale. Hence, Pakistan Halal Authority is considered as the main forum for said certification, standardization, and associated matters.

Key Organizations

Pakistan Halal Authority (PHA) & Pakistan Agriculture and Meat Company (PAMCO)

From the farm to fork, the meat export mechanism deals with the following four steps. Each step has its peculiar requirements which have to be met in order to ascertain the true potential of the export industry. The main bodies authorized to work on the same include MOC, TDAP, AHC and PHA at federal government level, whereas at provincial level L&DD Department and PAMCO are concerned bodies which will be discussed in detail. The Animal Husbandry Commissioner, a part of Ministry of Food Security and Research is faced with myriad challenges including delayed animal census, absence of indigenous breeding program, lack of extensive vaccination program, limited range of land fields for grazing and insufficient disease control which needs intervention and implementation of workable solutions (Akram, 2023). However, due to absence of the coordinated efforts and a centralized agency to standardize the basics, the industry is suffering from indifference from the producers.

Pakistan Halal Authority (PHA)

Various organization deal with the subject with varying and often overlapping responsibilities. One of these organizations is the Pakistan Halal Authority, established under the act of Parliament in 2016. The basic purpose of the Authority is formulation, development and coordination of the strategic planning and Halal certification and standardization. The authority has been active after 2020 and Rules of Business etc. have been defined in 2021. Major functions include formulation, development and coordination of strategic plans related to halal food, arrange and coordinates public awareness campaigns, ascertain the halal status of the products, processes and services, recommend halal standards and develop articles, processes and services, to recognize and register local and foreign halal certification bodies (Ahmed, m. 2023) as per information received from PHA (Ahmed, 2023). The laws pertaining to beef export are mentioned in Annexure B.

Pakistan Agriculture and Meat Company. (PAMCO):

The entity that deals with the production, promotion and marketing of the halal meat in Punjab is the PAMCO. It is owned by Punjab government, and non-profit R&D organization, duly incorporated and registered under section 42 of Companies Ordinance, 1984. It was established in 2010. However, from 2014 they are operating as a private entity, generating its own revenue and managing its finances. The company has been aimed at formalizing horticulture and meat sector through interventions at each tier of value chain. It has a state-of-the-art meat processing

facility, Lahore meat processing complex (LMPC), which works to enhance beef production. Although, PAMCO was established with a clear mandate of enhancing exports of the meat through various process, it has not been able to achieve its objectives due to numerous factors detailed below.

Table 5: SWOT Analysis

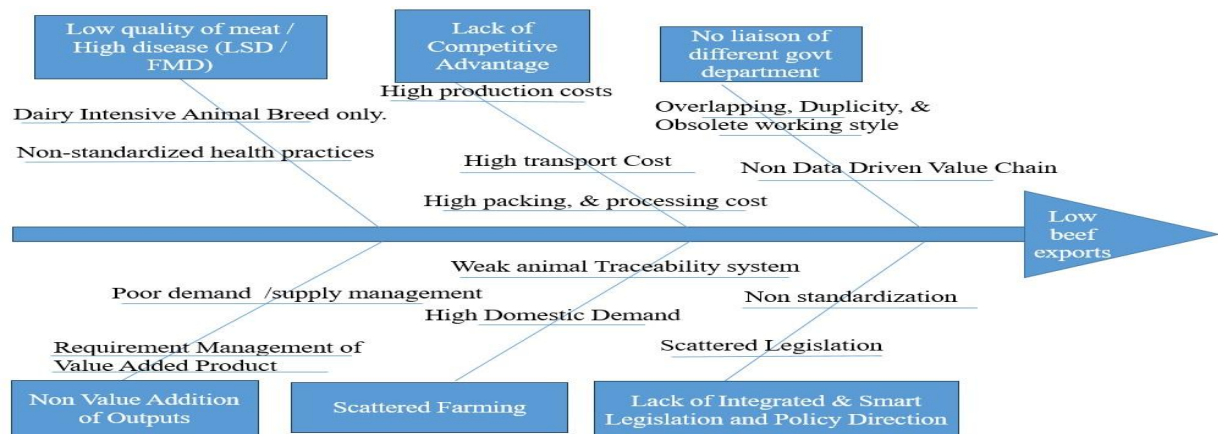
<i>Strengths</i>	<i>Weaknesses</i>
➤ Proactive and Progressive Approach in Execution of its initiatives ➤ PAMCO took initiative to deliver Halal Hygiene, Healthy and traceable meat supply in province. ➤ International recognition by foreign bodies. ➤ Capable of Organizing national and International Events ➤ Success story in developing each district's own agro-economy ➤ Government support and backing ➤ Technical expertise ➤ Rapid decision-making ability. ➤ Lacking legislative support of Government	➤ Almost no check and balance on illegal slaughtering by concerned government departments, which is seriously affecting PAMCO's business. ➤ No publicity and awareness ➤ Lack of finances and Low fee ➤ Nominal profit margins ➤ Overdependence on outsourced activities ➤ Conventional mindset and practices ➤ Weak linkages and networking on marketing, financial, technical and institutional issues. ➤ Flexibility in production and planning ➤ Limited capacity to undertake R&D.
<i>Opportunities</i>	<i>Threats</i>
➤ Growth in Halal sector, locally & internationally ➤ Un-tapped potential of halal trade ➤ Potential Buyers available in the country ➤ Value addition of By-products (the more meat cuts, the more it earns) ➤ Accreditation and approved by international bodies, easy exporting procedures ➤ Traceable Meat, (traceable around the globe) ➤ Expanding domestic markets. Increasing availability of ICT, product and Technological innovations. ➤ More market opportunities for processed products due to the change in lifestyle in cities (women working, less time for cooking)	➤ No check & balance on illegal slaughtering and illegal slaughterhouses are major causes of low business and revenue. ➤ Budget constraints causing concerns for sustainability ➤ Change in government priorities (shifts of initiatives in different governments) ➤ Climate change affecting raw meat ➤ Unreliable supply of raw materials. ➤ Very slow pace in adapting international pace of halal sector development ➤ Due to poor salaries PAMCO may lose professional staff leading to brain drain

- Growing consumer demand for quality improved food.

Source: Prepared From Field Research And Analysis

Challenges being faced by the Beef Sector in Punjab

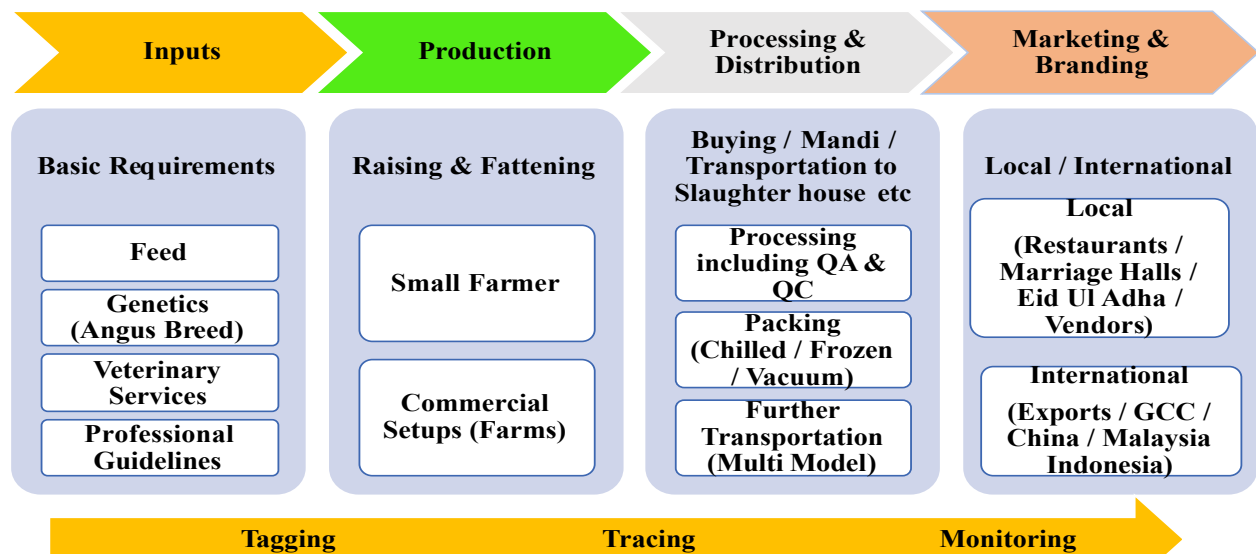
Figure 2: Fish Bone Analysis (Cause & Effect of Problem)



Source: Prepared After Field Research and Analysis

The major challenges being faced by exporters include inferior quality animals, noncompliance of international standards, early age slaughtering of animals, high incidence of diseases like Foot and Mouth Disease (FMD), Lumpy skin etc. Poor feeding practices inadequate feeding stuff, and lack of technical expertise. There is a lack of interdepartmental coordination and the concept of end to end data driven Supply Chain Value Chain is also missing.

Figure 3: Beef Export Value Chain of Punjab



10/27/2023

21

Source: Prepared By Authors After Analysis

Constraints / Issues hampering Meat Export Sector

After interview with the officials of the L&DDD and APMEPA, it was observed that the issues and constraints are considered at departmental level individually. Major issues are with L&DDD and initial ground work / interventions have been initiated by them. Some of the most relevant issues are fragmented livestock population, inferior quality beef animals (absence of beef breed), high incidence of diseases (especially FMD), trade barrier, non-compliance of international standards, early age slaughtering, limited exports due to high cost of production, packing, processing, minimal value addition of by-products, poor feeding practices, lack of Research & Development in the sector, and inadequate nutritional feedstuff and lack of animal traceability system (Janjua, 2023).

In addition to the requirement of redefinition and simplification of laws and procedures explained in above sections, there are number of other constraints. It includes lack of standardization, lack of macro level definition at national level. The subject is dealt by MOC, TDAP, PHA, L&DD Department, PFA, PAMCO etc. A clear demarcation and definition of roles and authorities with accountability etc. needs to be defined in a holistic manner. The concept of End to End Supply Chain or value chain is not even defined in a comprehensive manner. The Beef Export Promotion Policy is just an unrealistic approach without any detailed plan or defining the “How” part of the policy, indicating the gap in vision to achieve any concrete targets. There is no incentive for sector stakeholders (Raza, 2023). The role of PITB is limited and a Data Driven Supply Chain needs to be developed. The issue of vacuum packing was a major concern to make the product sea worth and market competitive as Per Kg Air Freight \$1 - \$2 vs. Sea Freight \$0.2 for GCC (TDAP, 2023). In addition the Iranian authorities are demanding G2G contracts whereas exporters are interested in B2B contracts.

Comparative Analysis with two International Best Practices

There are many best practices in the world in the field of beef exports. Australia and New Zealand are using specific breeds for beef production and using Feedlot fattening farms in order to ensure the comprehensive quality maintenance and monitoring of beef production. European Union (EU) is using a single certification for ensuring quality standards whereas different Muslim countries use different standards. A lot of money is spent on Research and Development (R&D) by the leading exporters whereas Pakistan is struggling on said account as well. The best trade practices of Brazil and India are explored. The rationale behind the selection of these two countries is that both are market leaders whereas Indian local conditions are similar to Pakistan.

Purchasing Power Biggest Meat Exporters in the World

Halal is an Arabic word, meaning “licit, allowed”. Along with the prescribed Muslim slaughtering mechanism of the animal, it also should not contain any composition or contact with any of the banned items such as pork, ethanol, glycerol, blood or long tusked animal. Owing to the sensitivity of the production, slaughtering and packaging mechanism (stamp on the meat be made from halal ingredients) of the companies exporting halal meat needs certification. (Abdala, 2021). In 2021, the expenditure of Muslim countries on halal food rose by 6.9% going from \$1.19 trillion to US \$1.27 trillion. As per future projections, the figure of expenditure on halal food is expected to reach US \$1.67 trillion in 2025 (SGIER 2022).

Factors Determining Import Preference

Distance From Export Destination

In terms of import, the farther the country, less likely it is that frozen meat is imported because of the high shipping cost involved. Most of the developed countries prefer low cost frozen meat therefore price is one of the second biggest factor in import considerations.

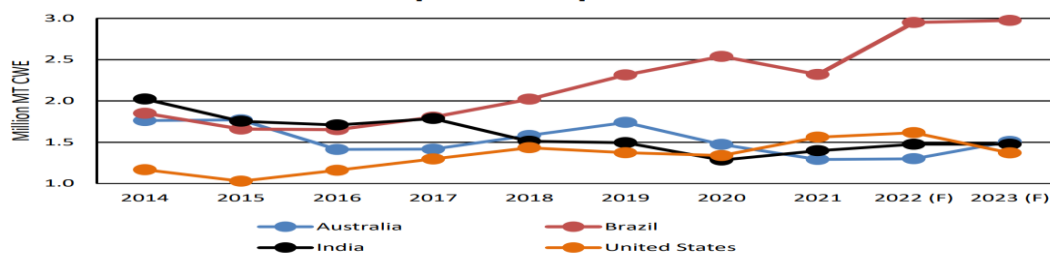
Availability of Air Space

The transportation of chilled meat requires controlled temperature in order to preserve its internal consistency therefore availability of the air space of the importing country is of utmost importance (PBC, 2021).

Comparative Study

Consumption of Halal meat has been on the rise in recent years however, none of the Muslim countries is in the top ten exporter of halal meat. There are approximately 2 billion Muslims in the world but 85% of the halal meat produced is in the countries where Muslims are in minority. The estimated value of Halal certified food and beverage industry of Brazil exporting is approximately \$16.2 billion while India's meat export is the second largest is at \$14.4 billion (Ahmed, 2022).

Figure 4: Top Beef Exporters
Top Beef Exporters



Source: USDA-FAS-PSD

Source: USDA-FAS-PSD

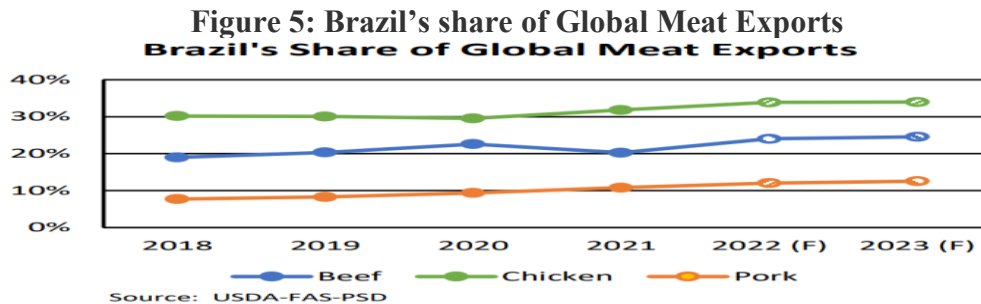
Brazil

Brazil known for its vibrant and thriving agriculture sector has now emerged as a significant global player being the largest halal meat exporter in the world (Lima, 2023). The country has a robust infrastructure that adhere to international halal guidelines through supply chain, starting from animal husbandry to processing and packaging. They have added variety to their halal meat exports however, their beef and poultry makes the most of the halal export. The size of Brazil herd (Cattle) was 196 million heads in 2021 showing an increasing trend in the past couple of years as per ABEIC Beef Report 2022.

Key Markets and Economic Significance

Brazil has been successful in gaining trust of the halal food market due to quality of halal meat coupled with meticulousness in production and legislation. According to Arab Brazilian Chamber of Commerce, Brazil exported halal meat to 22 Arab countries that amounted to US \$ 14 billion in 2021 as compared to US \$8.92 billion in 2020 thus showing an increase of 26% (BBM, 2022) whereas in 2022, it reached US \$17.7 billion (Lima, 2023). A study by the Ministry of Economy, Brazil, showed that in the first four months of 2022, Egypt alone imported around 54,888 thousand tons of halal beef, which showed an increase of 279.1% as

compared to last year. Similarly, countries like United Arab Emirates, Oman, Kuwait, Morocco and Mauritania are also amongst the highest importer of Brazilian halal meat. Almost 90% of the slaughterhouses in Brazil are certified halal beef producers. (Malheur's, 2022).



Source: USDA-FAS-PSD

Factors Contributing to the Expansion

Abundant Resources and Cost Competitiveness

Input feed cost in Brazil is comparatively lower due to expansive rangelands that are used by cattle farmers for grazing animals. As Brazil is one of the world's largest exporter of soybean, therefore farmers have access to cheap and readily available fodder as soybean for their herd. Over the years, Brazil has sizably increased pastoral and arable land for its cattle (PBC, 2021). This resulted in lower costs of production and hence lower prices for export, luring maximum importers across the globe.

Government Incentives

The Brazilian government initiated two programs MODERAGE and MODERINFRA for promotion of meat export. The aim of MODERAGE is to facilitate the provision of cost effective credit solutions for financing land preservations, purchase of versatile equipment needed for animal handling and storage and equipment needed for animal husbandry. The MODERINFRA program empowers producers to construct or renovate on-farm silos, with access to credit fund up to \$ 43,000 per producer. Brazilian exporters also capitalized on macro-economic realignments that resulted in favorable exchange rate for exporters (PBC, 2021). The Government also works in close coordination with the Brazilian Beef Processors and Exporters Association (ABIEC) to promote Brazilian beef brands. The ABIEC is responsible for 98% of the beef traded in the world market by following rigorous quality and safety standards (ABIEC, 2023). More focus is on innovation as per international standards such as inclination towards grass fed and free range natural beef as compared to the traditional grain fed animals. Another major step in robust expansion of the food industry was the Brazilian Government's initiative of investing in meat processing companies through 'National Champions' program and by ensuring fast provision of loans, company shares and purchasing debentures in collaboration with the Brazilian National Development Bank (BNDEB). Such initiatives have helped companies benefit from state's patronage for increasing exports by consistently providing meat in the international market (PBC, 2021).

Trade Agreements; Halal Brazil Project

The Halal Brazil Project, launched by the Brazilian Trade and Investment Promotion Agency, ApexBrasil, is seeking to expand the reach of its halal food products to 57 Muslim majority countries and Islamic communities in other countries. This will be done by encouraging and

supporting 500 small and medium-sized enterprises in seeking halal certification and aligning their production procedure with Islamic dietary requirements that will eventually lead them in entering Muslim markets. The project will have a two-and-a-half-year training of the understanding of Muslim Markets and technicalities of halal certification. The project organizers will also bear half of the cost in seeking halal certification. The biggest importer of halal meat is Kingdom of Saudi Arabia (Lima, 2023). In June 2022, Saudi Arabia and Brazil formed a Saudi-Brazilian Business Council, in line with Saudi Vision 2030, to enhance trade ties with major trade partners and Brazil being one of them having high trade potential (Saudi Press Agency, 2022).

Quality Assurance

Brazil's commitment to ensuring high quality meat production owing to its stringent control measures and certification process contributes to consumer trust. Most of the areas in Brazil meant for grazing of animals are declared Foot and Mouth Disease (FMD) free zones with the implementation of extensive vaccine campaigns round the year (PBC, 2021).

Halal Certification

The Halal certification requires regulation of farm to fork process and also keeping the integrity of each step. Halal certification in Brazil requires that the animal was butchered in a single cut as per Islamic guidelines and has not been in touch throughout the entire process of breeding and production, with any prohibited food ingredients such as pork, alcohol or its by-product.

The three steps involved in the acquisition of Halal certification in Brazil are:

1. Assessment of the company (Review of the information provided by the company)
2. Examination of the onsite plant, production, slaughterhouses, procedure (site registration certificate)
3. Authentication is done once the company qualifies through assessment and examination; authentication is done (CERTVALUE, 2023).

FAMBRAS HALAL Certification limited is the pioneering halal certification body and was formulated by Federation of Muslims Association of Brazil. It has formulated its certification criteria by following all the international halal standards and in line with the directives of the Islamic Chamber Halal Services (Aid, 2022).

India

India has religious restrictions for slaughtering and consumption of cow however no prohibition exists on buffalo meat also known as carabeef. As per the meat policy in India, export of meat without bone is allowed not only for beef but also for other animals such as goat, sheep etc. therefore only de-boned chunked meat is exported (Genius, 2017). In 2022, India was the second largest halal meat exporter to the Muslim countries amounting to \$14.4 billion (Ahmed, 2022). According to the United States Department of Agriculture, India exported 11% of the total world beef in 2020 (Cook, 2023). The top three importers of Indian frozen beef are Vietnam, Indonesia and Malaysia (PBC, 2021).

Factors Driving Substantial Export Performance

Robust and Expansive Cattle Herd

India has world's largest buffalo population due to its increased milk and dairy consumption over the years. India boasts an astonishing 55% of the entire global buffalo population that stands at 114 million. The state of Uttar Pradesh (UP) alone accommodates one fourth of the

buffalo herd and most of the meat processors and exporters of the country. Furthermore, UP contributes to 67% of India's total beef export (PBC, 2021).

Competitive Pricing

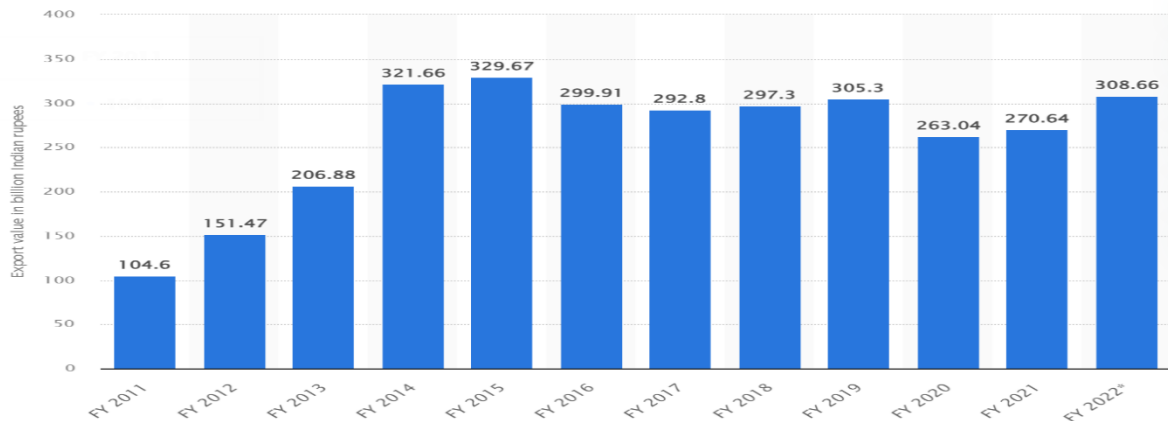
India has formed a niche for itself in beef export which is low priced carabeef that is a product of culled water buffalo used primarily for dairy products. Due to its taste and quality, it is rated low as compared to cow beef therefore is comparatively low priced. The top exporting destinations of India do not have high logistic cost because of close proximity and are transported via sea. These two reasons add to high export of India to nearby destinations. The low price benefit coupled with good binding feature of meat that can be further processed easily for mincemeat or patties also increases its export volume especially to countries such as Middle East, North America and Southeast Asia (PBC, 2021).

Quality and Sanitary Standards

India has invested enormously in improving the quality and safety standards of its meat products. The Food Safety and Standard Authority of India (FSSAI) is responsible for regulating and supervising meat production from farm to fork and as per law it is mandatory to get FSSAI registration for any business that has annual income turn over above 1.2 million. Food business in India cannot operated without the acquisition of FSSAI registration (FSSAI, 2023). The FSSAI standards of meat safety and hygiene in terms of microbiological criteria, physical, and chemical and cross contamination are very strict which involves regulation and strict at all levels of manufacturing, storing and exporting. They also ensure animal feed is free from prohibited ingredients as per the National Program for Organic Production (NPOP) to ensure safe meat production (Jahan, 2021). The FSSAI has provided set microbiological criteria for the presence of micros in the meat as well as the policy of non-addictive and non-heat treated cuts (India Filings, 2022). India's preference of export of boneless meat reduces the chances of Foot and Mouth Disease (FMD) since bones contains the following disease (PBC, 2021). A body provides halal certification namely Quality Council of India after due assessment and examination of meat companies (ET, 2023).

Diversity in Meat Exports

India has diversified its meat export by adding poultry, sheep and goat and that in turn opens new avenues for its export in terms of new destination. The poultry sector is also amongst the fastest growing sectors of Indian export along with dairy products. There has been a continuous increase in the export of not only meat but also of meat, poultry and dairy products (Statista, 2023).

Fig. 5: Value Of Meat, Dairy and Poultry Exports of India from 2011-2022

Source: Statista 2023

Figure 6: Comparative Analysis of Pakistan with Brazil and India

Country	Exports and Destination Markets	Agencies responsible for beef export value chain	Government Initiatives	Competitive advantage
Brazil	- Halal exports \$16.2 billion (2022) 22 Arab countries	- ABEIC - FAMBRAS HALAL Certification Ltd	- MODERAGE - MODERFINA - National Champions - Halal Brazil Project	- Competitive pricing with High quality meat - Abundant resources
India	- Halal exports \$14.4 billion - Vietnam, Malaysia, Indonesia, Bangladesh	- FSSAI - Quality Council of India	- National Programme for Organic Production - GatiShakti National Master Plan - FMD eradication	- Offers low-priced beef - Attractive to specific market
Pakistan	\$302.4 million - Saudi Arabia, UAE, Kuwait (GCC)	MOC, TDAP, PHA, PLDD, PLDDDB, PAMCO, PFA, APMEPA	Pakistan Meat Export Strategy 2023-27	Geographical advantage can be utilized

Source: Prepared by authors after comparative analysis

Existing Interventions and Steps by L&DDD

A lot of work needs to be done by TDAP on the said account. A 5 year beef export policy has been formulated with the help of external sources including UKaid. However, the system seems to miss the holistic picture and ground realities. PHA is also authorized to carry out the said work at national level but they are yet to establish themselves at national level. PAMCO was created with the mandate to take end-to-end value chain interventions at Punjab level, yet they consider themselves a sub-department /attached body of L&DDD. A lot of concern and working has been observed on part of L&DDD. They have initiated meetings with USA, Chinese and Iranian authorities on the subject of beef exports. They have also worked on Liaison between meat exporter association of Pakistan and Iranian consulate has been developed for fresh meat export to Iran (50,000 M.T / annual requirement). Special Economic Zones (feasibility to be done with regard to infrastructure available, required, road connectivity with Motorways, linkage to Airport, Slaughter House facility as per international standards). Livestock Farms in Cholistan, Jhangirabad, and Bahadurnagar etc. may be considered for

SEZs. Comprehensive vaccination plan and proactive approach to control disease is in process as per notified schedule. Initial trails completed by UVAS regarding Local Production of LSD under the guidelines of L&DDD. Moreover disease free compartments have also been proposed. In addition, L&DDD is successfully running “**Disease surveillance and reporting system, 9211**” duly endorsed by FAO. The major achievement of L&DD Department is the development of **Animal traceability system** “Pakistan Animal Identification & Traceability System, PAITS” through PITB with the help of FAO (Janjua, 2023).

Figure 7: Pakistan Animal Identification & Traceability System (PAITS)



Source: Interview with (Janjua, 2023)

Non Materialization Of Existing Interventions

The study along with data analysis and other analytical tools revealed that there is no governmental patronization and directives towards redressal of the problem. Different interventions have been initiated and carried out without taking into account the data driven end to end value chain concept. The number of outdated and newly framed laws, without simplification and unification of policies is another reason of non-materialization of any policy. Every organization visited by the group showed its inability to own the complete project and also indicated their incapacity due to given organizational scope. Lack of tangible targets and how to fund the projects portion is also neglected. The operational plan proposed by the research group focused on all these niches, and proposed plan encompassing a complete Demand driven Value Chain Concept with proposed hierarchy, responsibilities, targets, timelines and Result Based Management Systems.

Conclusion

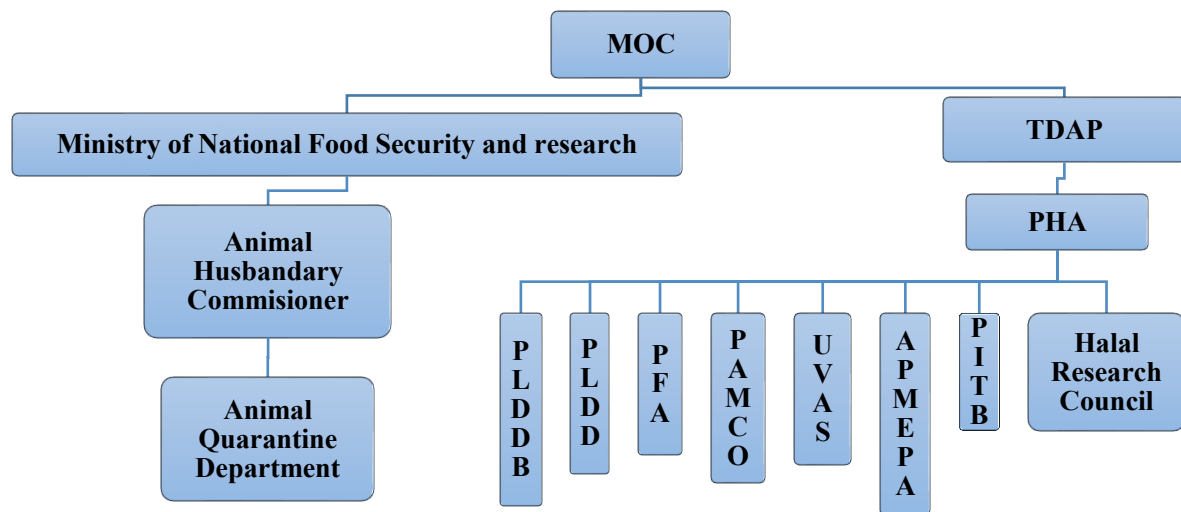
Pakistan, despite having huge beef export potential, has failed to realize its true potential. The major constraints on said account includes lack of government patronization, complication / overlapping of laws, regulations and procedures, absence of complete data driven end to end value chain concept and dearth of target based interventions. Resolution of these issues is critical for increasing the export of beef. Besides, the sector also needs incentives and interdepartmental coordination as per given operational plans in order to increase the exports as per target of the research and even beyond.

Recommendations

The foremost requirement is the introduction of Muslim Halal Quality Standards duly approved by Organization of Islamic Cooperation (OIC) which are acceptable by all the Muslim

countries. Moreover, Research and Development in the field needs to be focused especially in the breed development and process refinement in the beef export value chain. Moreover, the operational plan proposed by the research group focused on all other niches, and proposed plan encompassing a complete Demand driven Value Chain Concept with proposed hierarchy, responsibilities, targets, timelines and Result Based Management Systems. The transportation authorities are not included in the proposed hierarchy, however, their representatives will be part of the proposed hierarchy. Similarly, district management and police authorities will also liaison and assist the divisional authorized officer to ensure the success of the plan.

Proposed Hierarchy



Macro Level Operational Model

S. No.	Actions	Responsibilities	Resources	Timeline	KPIs
1.	National Export Action Plan (NEAP) Including FMD Control	• PHA, TDAP & MOC (PHA / Focal Department) • Ministry of National Food Security & Research • APMEPA	• Zero Cost Strategy for Federal. • Funds by provinces.	6 Months	• Increase in export as per target. • National Standards (Halal + Quality). • FMD Control Centers (1 center per year)
2.	Mobilize trade agreements through trade diplomacy	•GCC countries & China (Foreign Diplomats & Commercial Attaches) •PHA, TDAP & MOC	Zero Cost Strategy	1-5 years	•Targets Assigned with annual increase. •Quarterly Performance Reports. •RBM.

3.	Legislation Redesign / Restructure PAMCO	• Provincial (Punjab) Assembly	Zero Cost Strategy	6 Months	• Act and Legislation in the footsteps of PPRA & PHA for end to end SCM / Value Chain Management. • Export Targets • No. of Interventions
4.	Complete Value Chain Visibility	• Application development & improvement by PITB in PAITS	Financed through APMEPA	6 Months	• As per micro level KPIs

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