



GOVERNMENT OF PAKISTAN

Pakistan Export Strategy Meat

2023-2027



This Meat sector strategy is part of the National Priority Sectors Export Strategy (NPSES) initiative which contributes to the implementation of Pakistan's Strategic Trade Policy Framework (STPF) 2020-2025.

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This document has been developed as part of the Revenue Mobilisation, Investment and Trade project (ReMIT) funded by the Government of the United Kingdom and implemented by ITC.

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The International Trade Centre

Street address: ITC, 54–56, Rue de Montbrillant, 1202 Geneva, Switzerland

Postal address: ITC, Palais des Nations, 1211 Geneva, Switzerland

Telephone: (41-22) 730 01 11

E-mail: itcreg@intracen.org

Internet: <http://www.intracen.org>

Layout: Jesús Alés / www.sputnix.es



The background of the page is a light green world map. Overlaid on the map are several thin, white, curved lines that suggest global connectivity or trade routes. The text is centered on the map.

Pakistan Export Strategy Meat

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Forewords

Message from the Ministry of Commerce

Increasing international trade is not only a means of boosting economic growth and the nation's welfare, but also contributing to strengthening international relations. The stabilization of economic and political affairs paves the way for reinforcing friendly relations based on mutual interests with a wide range of trade partners. Trade is thus one of the most important forms of exchange between countries and fostering this will lead to connections such as foreign investments, better employment opportunities, and scientific and technical exchanges, all of which will contribute to Pakistan's growth and prosperity.

The Government of Pakistan has taken a series of initiatives to promote exports to achieve sustainable and inclusive economic growth, poverty reduction and improvement in the living standard of Pakistani people. This is also aligned with the government's vision of the Strategic Trade Policy Framework (STPF) 2020-25 for 'Pakistan to become a dynamic and efficient domestic market as well as a globally competitive export-driven economy'. In this context, the Ministry of Commerce supported the preparation of the Meat Export Strategy, a priority export sector under the STPF, which will contribute to export diversification of Pakistan. This sector export strategy has been formulated in close consultation with all the stakeholders; and the Ministry of Commerce appreciates all those involved in the process, particularly the private sector.

As a priority export product within the framework of the STPF 2020-25, Meat sector presents a new export avenue and an opportunity for Pakistan. The strategy encompasses trade-related factors such as ensuring export quality, greater market access and product diversification. In addition, substantial investment to expand export potential and grow foreign trade requires strategic targeting. All activities in the strategy design framework have outlined a detailed five-year plan of action to tackle issues and facilitate export procedures, and

as identified by all the stakeholders of the Meat sector in Pakistan.

Despite challenges in the international trade scenario and the global business environment, I am confident that this initiative will serve as an action-oriented blueprint to enhance trade performance and to develop a coordinated mechanism with participation from both the public and private sector, increasing its competitiveness in the international market.

To maintain the momentum sparked by the consultations, the Ministry of Commerce is committed to play a constructive and facilitative role, while making it our top priority to execute the activities and reforms requested of both our ministries in the plan of action. We are particularly committed to continue keeping the private sector in the driving seat for the implementation process through the Sector Specific Council on Meat & Dairy. The Government of Pakistan is fully committed to promoting export-led economic growth and encourages all to join hands and would encourage all to join hands and work together in making the vision of a flourishing Meat sector a reality.

Message from All Pakistan Meat Exporters & Processors of Pakistan (APMEPA)

As the representatives of the Islamic Republic of Pakistan's meat industry, we were pleased to see that the Strategic Trade Policy Framework (STPF) 2020-25 has identified the meat industry as a priority focus export sector for growth and development for the next five years. Being an agrarian economy, approximately 70% of Pakistan's population is dependent on agriculture for their livelihood. Within agriculture, livestock is the most important subsector, contributing more than 60% to the total agricultural economy, 11.5% towards the country's overall gross domestic product (GDP) in 2020-21, and 0.9% of total exports. Given its high employment and spillovers potential, a thriving meat sector would have a profound socioeconomic impact, contributing to rural development and job creation for Pakistan's women and youth.

Our industry faces challenges regarding animal sourcing, low carcass yields, and the prevalence of foot and mouth disease (FMD), which limits exports from the country to a few geographical destinations. This high concentration of Pakistan's export basket in terms of products and markets leaves the industry exposed to product- and partner-specific shocks.

In this regard, the strategy shines a light on the direction that we must take to stay ahead of the global challenges of environmental responsibility, animal care, production technology, the nurturing of our people and our ongoing battle for market share around the world. This strategy's plan of action focuses on three strategic themes (raw material supply, quality of livestock and market access) indicative of all the steps of the meat and livestock industry domestically and internationally.

As the global meat sector continues to grow – especially in the regions neighbouring

Pakistan – and rising middle-class incomes drive changing food consumption patterns, this strategy will focus on capitalizing on emerging growth trends, while continuing to strengthen current competencies.

Our association is keen to make the industry more technology-oriented and innovative. While we have begun initiatives to improve production, we are encouraged by the activities envisaged in the strategy that will support overall sector development. This is important particularly due to the predominant small and medium-sized enterprises (SME) presence in the sector, who need tailored support for improvement. We see growth prospects in new segments, including building skills for value-added beef products, strengthening branding and packaging, setting up disease-free zones and implementing a tagging system to cater to international demand. These will require concerted and consistent steps towards upgrading the industry throughout all aspects of the value chain.

As the sector's apex industry stakeholders, we stand behind this strategy and look forward to working with the industry and relevant public bodies on the implementation of the plan. We are committed to making Pakistan an emerging leader in the meat sector to cater to regional and global markets while meeting domestic demand.

Finally, I would like to thank all stakeholders who played an important role in preparing this strategy. The Meat Export Strategy's recommendations are a combined effort of the public and private sector to optimize strengths and overcome constraints to achieve the vision of developing the Pakistani meat industry to have the highest food safety standards for international markets.




Syed Hassan Raza
Secretary General, APMEPA

Acknowledgments

The Meat Export Strategy forms an integral part of Pakistan's Strategic Trade Policy Framework (STPF). It was developed under the aegis of the Government of Pakistan and the leadership of the Ministry of Commerce (MoC) and the Trade Development Authority of Pakistan (TDAP), in close collaboration with Ministry of National Food Security & Research (MNFSR) and the All Pakistan Meat Exporters & Processors of Pakistan (APMEPA).

The document benefited particularly from the inputs and guidance provided by the sector stakeholders that steered the strategy's formulation, namely the following key sector institutions:¹

Institutions
Animal Quarantine Department
Anis Associates (Pvt) Ltd, Lahore
Big Bird Group
Hilal Meat Processing
K&Ns
Livestock and Dairy Development Board
Ministry of National Food Security & Research
Pakistan Agricultural Research Council
Pakistan Standards & Quality Control Authority (PSQCA)
Punjab Agriculture & Meat Company
Small and Medium Enterprises Development Authority (SMEDA)
Syed Traders
Tata Best Foods Ltd
Tazij Meats & Food
The Organic Meat Company Limited
University of Veterinary and Animal Sciences, Lahore

Technical support and guidance from ITC was rendered by the following people:

Name	Designation
Syed Tauqir Shah	Revenue Mobilization, Investment and Trade project (ReMIT) project coordinator
Muhammad Shoaib Zafar	Project advisor
Tariq Humal	National sector consultant
Charles Roberge	Senior Officer Export Strategy
Alexandra Golovko	Advisor, Export Strategy and Competitiveness
Victor Deleplancque	Agriculture strategy specialist
Aishwarya Nahata	International consultant

1.– The full list of public–private stakeholders that participated in the consultations and their names is available in Annex I.

Note for the reader

In order to boost export growth, the Ministry of Commerce (MoC) has developed the Strategic Trade Policy Framework (STPF) 2020-25, which was approved in November 2021. ITC provided technical support to MoC and the Trade Development Authority of Pakistan (TDAP) to design selected sector export strategies of the STPF priority sectors. This initiative, called the National Priority Sectors Export Strategy (NPSES), focused on 10 of the 18 STPF priority sectors through a consultative process.

The Meat Export Strategy was developed on the basis of a participatory approach, during which more than 30 Pakistani industry leaders, small business owners and public sector representatives held consultations to reach consensus on key sector competitiveness issues and priority activities. These inclusive consultations were held in a hybrid model owing to the travel restrictions imposed due to the COVID-19 pandemic.

Besides in-depth qualitative and quantitative research and value chain analysis, these consultations were complemented by visits and interviews by the national consultants with domestic firms to guide the strategy with insights and market intelligence as well as buyers' requirements in terms of quality standards, food safety, packaging, distribution channels and prices, etc.

The Meat Export Strategy builds on the ongoing initiatives in the areas of private sector development, regional integration, investment and economic empowerment of youth. Equally importantly, the sector strategy is complemented by an effort to establish the proper implementation responsibilities among key stakeholders early on to ensure timely implementation of activities, whether by the public sector, private sector or international development agencies. This strategy's principal output is an endorsed, coherent and comprehensive document with a five-year detailed plan of action (PoA) and implementation management frameworks.

This document was approved as the official export strategy for the Meat Sector 2023-2027 by the Sector Specific Council on Meat & Dairy and endorsed by the Ministry of Commerce of Pakistan.

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Acronyms and abbreviations

Unless otherwise specified, all references to dollars (\$) are to United States dollars, and all references to tons are to metric tons.

AQD	Animal Quarantine Department	OIE	World Organisation for Animal Health (Office International des Epizooties)
CAGR	Compound annual growth rate	PARC	Pakistan Agricultural Research Council
EU	European Union	PCP-FMD	Progressive Control Pathway for Foot and Mouth Disease
FAO	Food and Agriculture Organization	APMEPA	All Pakistan Meat Exporters & Processors of Pakistan
FMD	Foot and mouth disease	PoA	Plan of action
GCC	Gulf Cooperation Council	PSQCA	Pakistan Standards & Quality Control Authority
HS	Harmonized System	STPF	Strategic Trade Policy Framework
ITC	International Trade Centre	TDAP	Trade Development Authority of Pakistan
LDDB	Livestock and Dairy Development Board		
MNFSR	Ministry of National Food Security & Research		
MoC	Ministry of Commerce		

EXECUTIVE SUMMARY

The present strategy outlines a proposed path for the development of Pakistan's meat sector. It is a five-year endeavour that was defined through a consultative process between public and private sector stakeholders. The strategy addresses constraints in a comprehensive manner and defines concrete opportunities that can be realized through the specific steps detailed in its plan of action (PoA). The Meat Export Strategy is an integral part of Pakistan's Strategic Trade Policy Framework (STPF).

A VIBRANT GLOBAL MARKET FOR MEAT PRODUCTS DOMINATED BY THE FROZEN MARKET SEGMENT

World imports of bovine meat amounted to \$54 billion in 2020, growing at an average robust annual growth rate of 6.3% in 2016-20 (UN Comtrade, 2020). Under the impetus of the booming demand for frozen meat emerging from the Chinese market and other developing countries in Asia, the global market for bovine meat is shifting from fresh or chilled meat to the frozen market segment. This upward trend is notably driven by population growth and the expanding urban middle class with rising disposable incomes in these countries. Consumers in high-income countries, on the other hand, have a preference for fresh or chilled meat, and are willing to pay a premium for better-quality products. In both the fresh or chilled and frozen market segments, the global demand for bovine meat products is concentrated in the boneless meat category. Following the same trends, the fast-growing global market for sheep and goat meat reached \$7.2 billion in 2020 (UN Comtrade, 2020), boosted by its frozen market segment, and dominated by the demand for 'sheep cuts with bone in'.

The global trade of bovine meat is dominated by a handful of highly competitive players. These include the Federative Republic of Brazil (capturing 15% of world exports of bovine meat in 2020), Australia (14%) and the United States of America (13%) (UN Comtrade, 2020). Interestingly, while the largest suppliers of

beef are non-Muslim countries, they have nevertheless become leaders in the main halal meat markets and possess halal certifications.

THE MEAT INDUSTRY IN PAKISTAN: A PROMISING SECTOR FOR EXPORT GROWTH THAT PLAYS AN IMPORTANT SOCIOECONOMIC ROLE

Pakistan is endowed with one of the largest livestock populations in the world, from which an immense export potential for meat products is yet to be derived. An estimated population of 94 million bovine animals and 112 million goats and sheep are currently present on the Pakistani territory. Livestock in Pakistan is mainly reared by smallholder farmers for dairy production, with an estimated 35 million people and more than 8 million families engaged in rural subsistence livestock production. Livestock is by far the most important sub-sector of agriculture, contributing more than 60% of the total agricultural economy in 2020-21. The country is also one of the largest meat producers in the world, mainly catering for the domestic market needs, with less than 3% of the 2.2 million tons of cattle meat produced being destined to international markets (Food and Agriculture Organization, 2019).

Though from a relatively low basis, Pakistan was one of the fastest-growing meat exporters in the past decade, capitalizing on the country's competitive advantage to

supply meat to the Gulf Cooperation Council (GCC) countries. With approximately \$300 of export revenues generated in 2020, of which \$245 million worth of bovine meat exports, meat – and beef in particular – has progressively emerged as a leading agricultural export product. Despite this recent surge in meat exports, Pakistan is still a minor player on the global scene, only capturing a market share of approximately 0.5% in the bovine meat market in 2020 (UN Comtrade, 2020).

Meat exports from Pakistan are largely concentrated in the fresh or chilled market segment, and more particularly in the carcasses and half carcasses category. This is in direct contrast with the global trends and the increasing demand for frozen meat cuts. Pakistan's exports from the sector are primarily limited to GCC countries, taking advantage of its capacity to supply these markets with affordable halal chilled meat at relatively competitive transportation costs. Pakistani meat has a lot of acceptance in Gulf countries due to a large expatriate population, in particular in the Kingdom of Saudi Arabia and the United Arab Emirates. This analysis is valid for both the bovine meat and the sheep and goat meat markets. The concentration, in terms of both products and markets, of Pakistan's export bundle is, however, leaving the country exposed to exogenous economic shocks in this market.

A NUMBER OF LIMITING FACTORS ALONG THE VALUE CHAIN ARE IMPEDING EXPORT GROWTH

While Pakistan is well poised to become a major supplier of red meat to international markets, a number of bottlenecks and challenges are preventing the meat industry from fully exploiting its productive potential. In this regard, various sources estimate that Pakistan

export-oriented meat processors are currently operating at 25%–40% of their maximum capacity. The sector's competitiveness in international markets is particularly affected by the high costs of sourcing animals and the low yields observed in the livestock sector. This is due to the lack of meat breeds, the high costs and limited availability of quality fodder, the insufficient adoption of good husbandry practices as well as inefficient and outdated methods and technologies used in aggregating and selling animals, among other factors. At the moment, high costs of livestock make it difficult for local processors to compete with the largest exporters in a global marketplace that is highly price competitive, particularly in the frozen market segment. Another – and perhaps the most – critical issue impeding Pakistan's export growth is limited market access for locally processed meat, mainly due to the prevalence of foot and mouth disease in Pakistan. This concern, coupled with the lack of traceability of livestock and the incapacity of a number of meat processors to comply with quality and food safety requirements, result in restricted access of Pakistani meat in most importing countries.

In order to unlock the Pakistani meat industry's tremendous export potential and move up the global value chain through greater product and market diversification, the sector will need to work collectively to achieve the necessary structural improvements at all stages of the value chain, starting at farm level.

THE STRATEGIC FRAMEWORK

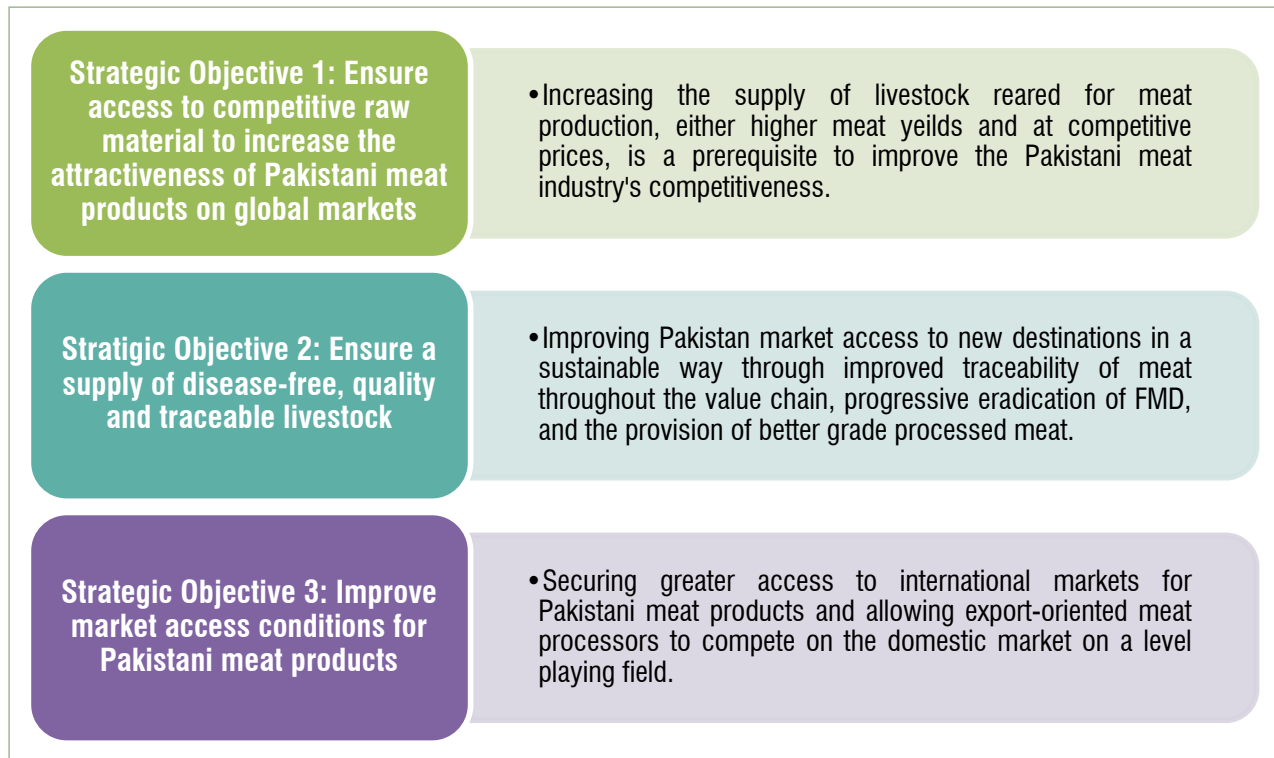
To achieve the Pakistani meat sector's development, the present strategy provides a roadmap and a plan of action (PoA) geared at achieving the following overall vision.

“ To develop the Pakistani meat industry with the highest food safety and halal standards to serve international markets with value-added products. ”

This vision statement, which was agreed on by all meat value chain stakeholders in Pakistan, delineates this strategy's proposed vision and strategic objectives. The strategy's plan of action (PoA) responds to this vision by addressing the sector's constraints and

leveraging opportunities comprehensively. To this end, specific efforts will be made in the following strategic directions.

THE STRATEGIC OBJECTIVES



IMPLEMENTATION MANAGEMENT

The strategy process considered current capabilities, constraints, and future shifts and opportunities for Pakistan's meat sector, and industry stakeholders extensively evaluated future orientations and upgrading trajectories. The strategy presents a pragmatic and forward-looking roadmap for upgrading and internationalization, and can be driven successfully through timely and appropriate resource allocation and effective public-private collaboration for implementation.

Accordingly, a public-private sector specific council for the meat sector is established, operationalized and empowered. The meat sector specific council is responsible for overall coordination, provision for rapid and viable solutions to regulatory and procedural bottlenecks, policy guidance and the monitoring of industry development against the strategy's objectives.

The following key areas of intervention are priorities to facilitate the strategy's implementation:

- Implement a cross-breeding programme to develop high-meat-yielding beef breeds, including through importing high-yielding breeds and semen for artificial insemination;
- Build small-scale farmers' skills on good farming practices for animal production food safety and orient them towards rearing cost-efficient animals exclusively for meat production through back-grounding of beef calves;
- Work towards improving the traceability of the animals through the introduction of a basic tagging system for animal identification that is accessible to all farmers, the conduct of a national census and the development of a national livestock database;
- Enforce regulations allowing export-oriented meat processors to sell leftovers from exports in the domestic market. This should be implemented hand in hand with comprehensive meat industry regulations;
- Negotiate market access for Pakistani meat and meat products in previously identified key target markets that are readily accessible to Pakistani meat processors.

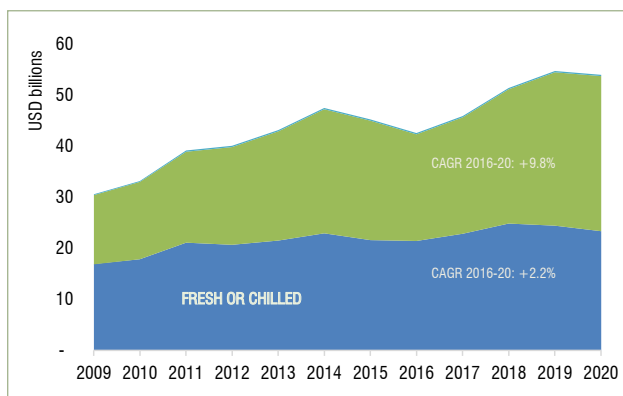


A GLOBAL MEAT INDUSTRY THAT KEEPS GROWING AND EVOLVING

A booming global market dominated by the frozen meat segment

The booming global market for bovine meat is shifting from fresh or chilled beef to the frozen market segment. The size of the global market for trade in bovine meat amounted to \$54 billion in 2020 (UN Comtrade, 2020). The industry has shown dynamism in recent years, growing at a healthy compound annual growth rate (CAGR) of 6.3% in 2016–20. This upward trend is notably driven by the rapid developments in the frozen bovine meat segment (the other segment being the fresh or chilled one), which has witnessed a formidable average annual growth in international sales, exceeding 10% in 2016–20. In 2009–2020 (see Figure 2), frozen beef indeed emerged as the largest imported category, outperforming the chilled or fresh market segment, and accounting for 56% of total global bovine meat imports in 2020.

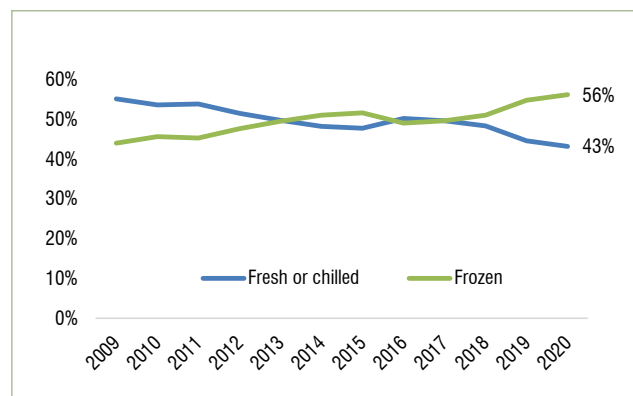
Figure 1: Global imports of fresh or chilled and frozen bovine meat (HS 0201 and HS 0202)



Source: ITC calculations based on UN Comtrade statistics.

The global demand for bovine meat products is concentrated in the boneless meat category, in both the fresh or chilled and frozen market segments. Among the three main product categories, namely carcasses (including half carcasses), cuts with bone in and boneless meat, the latter accounts for 92% and 73% of the world's imports of frozen and chilled bovine meat respectively (see Figure 3 and Figure 4). On the other hand, the global demand for carcasses, which currently account for the bulk of Pakistan's beef exports, is fairly limited, only constituting a mere 9% of chilled beef imports in 2020 (UN Comtrade, 2020).

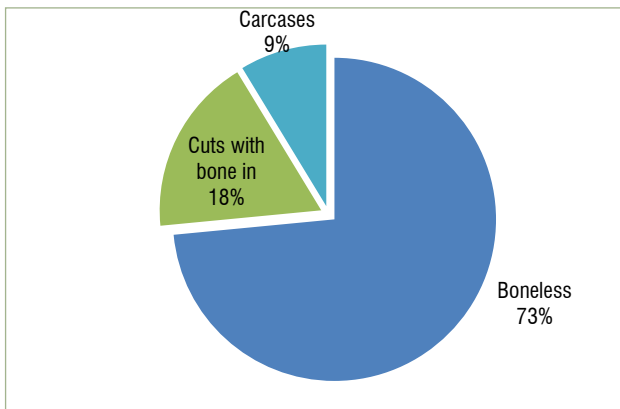
Figure 2: Share of fresh or chilled and frozen beef in global bovine meat imports, in value



Note: The remaining 1% consists of 'meat, salted or in brine' as well as sub-categories that do not specify whether the meat is frozen or chilled. This category, being very marginal, is not mentioned here.

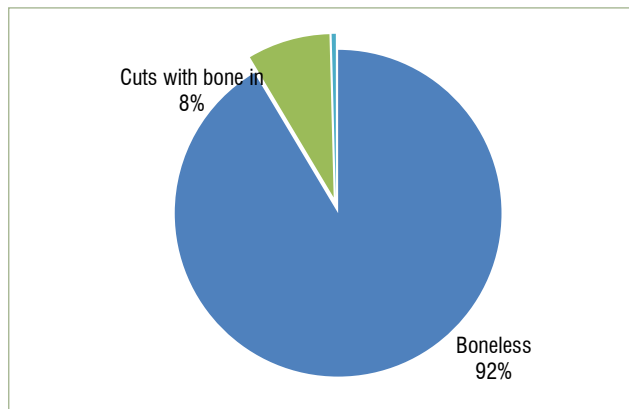
Source: ITC calculations based on UN Comtrade statistics.

Figure 3: World imports of fresh or chilled bovine meat, by product category, in value (2020)



Source: ITC calculations based on UN Comtrade statistics.

Figure 4: World imports of frozen bovine meat, by product category, in value (2020)



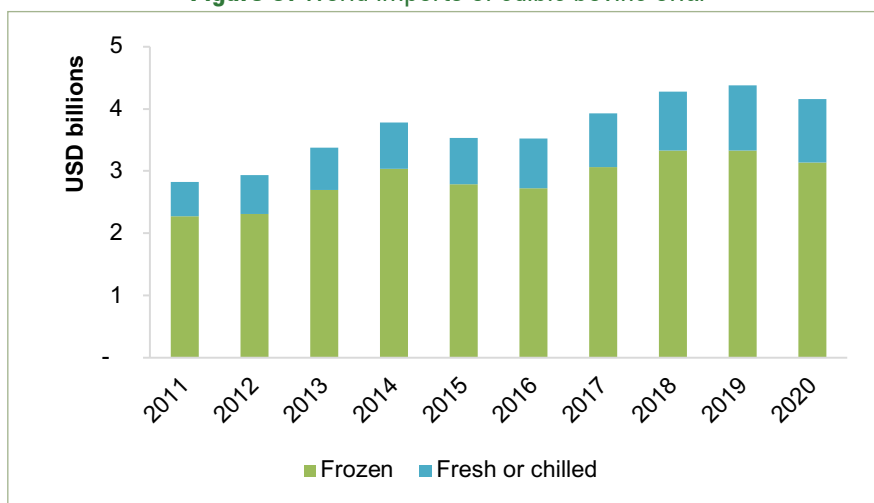
Source: ITC calculations based on UN Comtrade statistics.

In addition to the main fresh and frozen meat market segments that dominate the world market, niche markets exist for bovine offal and further processed, value-added, bovine meat products. Along with the consumption of meat, the international demand for edible entrails and internal organs (offal) of bovine animals has followed an upward trend in the past decade to reach approximately \$4.2 billion in 2020 (UN Comtrade, 2020).¹ This demand is largely dominated by bovine offal in its frozen state (76%) (Figure 5). Hong Kong, China, and Japan are the world's largest importers in the frozen and fresh/chilled market segments.

A niche market also exists for processed bovine meat. Global imports for these products (excluding sausages) reached \$2.2 million in 2020. World imports of processed beef categorized under HS160250 'prepared or preserved meat or offal of bovine animals

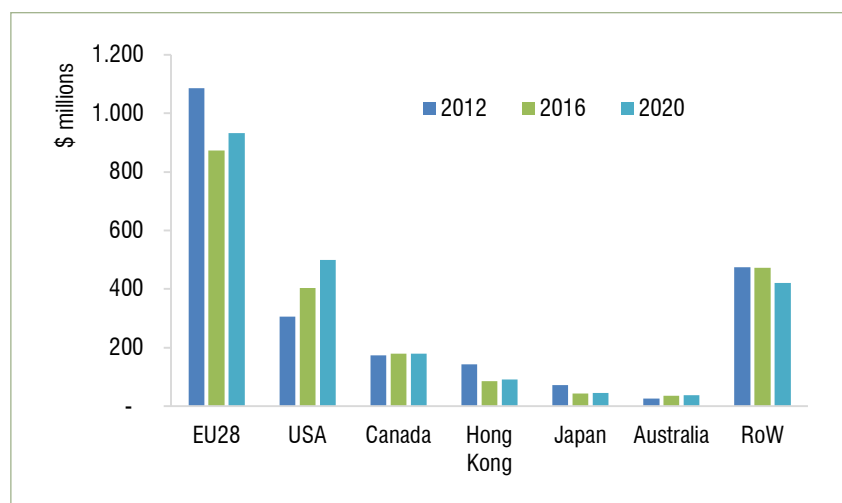
(excluding sausages) amounted \$2.5 billion in 2021 (UNComtrade). This market segment has been growing at a dynamic CAGR of almost 5% over the period 2017-2022. It is primarily dominated by North American and European markets, chief among them the United States of America (accounting for 27.7% of the world's imports in 2021), the United Kingdom (8.6%), Canada (7.6%) and Germany (5.6%). Sausages imports traded under HS 1601 amounted to about \$6 billion in 2021, also growing at a dynamic growth rate exceeding 6% per annum, on average, between 2017 and 2022. However, the analysis does not make it possible to know from which animal the meat comes. (see Figure 6). Opportunities for Pakistani bovine meat exporters in this particular market segment are discussed in Orientation 4 (medium to long term): Promote product diversification into higher-value-added products' of the present strategy.

Figure 5: World imports of edible bovine offal



Source: ITC calculations based on UN Comtrade statistics.

1.— Considering products classified under HS Codes 020629 'Frozen edible bovine offal (excluding tongues and livers)'; 020610 'Fresh or chilled edible offal of bovine animals'; 020622 'Frozen edible bovine livers'; and 020621 'Frozen edible bovine tongues'.

Figure 6: Main importers of prepared or preserved bovine meat or offal (excluding sausages) (HS 160250)

Source: ITC calculations based on UN Comtrade statistics.

KEY DRIVERS OF CHANGE PUSHING THE GLOBAL DEMAND FOR MEAT

The global demand for meat products has evolved in recent years, driven by population growth, urbanization and rising per capita income in developing countries. This has translated into an increasing demand for frozen meat, in particular in developing Asian markets, as this source of protein is becoming more affordable and accessible. Frozen products have a longer shelf life than chilled meat, and also fetch lower prices for these highly price-sensitive markets, as they offer the possibility to be transported by sea at relatively low costs. The increasing demand for frozen meat emanating from developing economies is largely concentrated in the boneless meat category.

In high-income countries, the demand for meat remains high and relatively stable, dominated by the consumption of chilled boneless beef, and in particular superior-quality cuts, which fetch higher prices. In these markets, consumers are becoming increasingly demanding in terms of quality and safety, with a growing health consciousness resulting in changing consumption patterns. This translates to an increasing demand for traceability of meat products and the progressive introduction of standardized labelling rules and standards for the meat industry.

A more detailed analysis of the key drivers of changes in the global meat industry is presented in *The way forward* section of the present strategy.

Increasing demand for frozen meat in developing countries is driving the market

International sales of bovine meat have been boosted by the spectacular increase in demand for frozen products from the Chinese market. The People's Republic of China, the United States and Japan are the largest importers of bovine meat globally, with market shares of 21%, 13% and 7% respectively. Chinese imports, consisting almost exclusively of frozen beef, grew four-fold in 2016–20 to exceed \$10 billion in 2020. It is anticipated that this demand will continue to progress in the

short to medium term as the propensity to consume beef is set to increase as per capita incomes rise.

A strong demand for frozen beef is emerging from East Asia and South-East Asia. In addition to China alone capturing 36% of the world imports in this market segment (adding up to 45%, also considering Greater China²), a rapidly increasing demand from Association of Southeast Asian Nations (ASEAN) member States

2.— Greater China encompasses mainland China, Hong Kong, China, Macao Special Administrative Region and Taiwan Province of China.

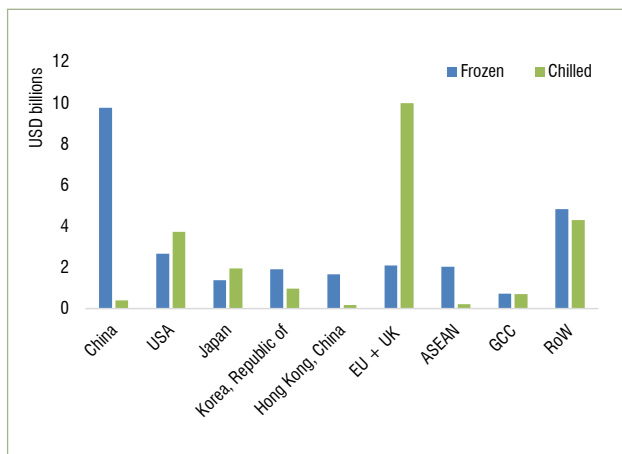
was observed in recent years, chief among them Malaysia, the Republic of Indonesia and the Socialist Republic of Viet Nam. As a group, ASEAN emerged as the second-largest importer of frozen bovine meat, with imports exceeding \$2 billion in 2020, representing 7.5% of global trade. Other Asian economies are among the main importers of frozen beef, including the Republic of Korea, and Japan, with market shares of 7% and 5% respectively.

Consumers in high-income countries have a preference for fresh or chilled beef, which is significantly more expensive due to higher transportation (often by air cargo for long distances) and wastage costs. EU member States and the United Kingdom together captured approximately 44% of the world imports of chilled beef in 2020, suggesting consumer preferences for premium, superior-quality cuts. EU imports are,

however, showing signs of exhaustion, with a negative CAGR of -1.7% reported in 2016–20 due to the progressive decline in per capita intake of bovine meat in a number of European countries as a result of growing environmental concerns and the progressive shift towards more sustainable consumption patterns.

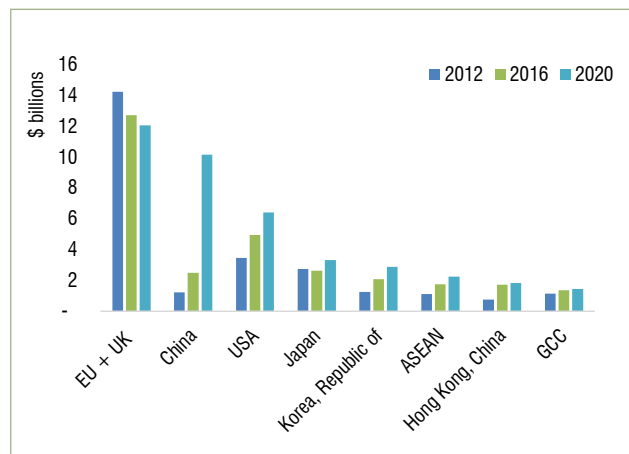
By contrast, the international demand from the United States, the largest single importer of fresh or chilled beef in the world, progressed at an average dynamic annual growth rate of 8.2% in the same period. A strong demand also comes from Japan and, more significantly, from the Republic of Korea, with a dynamic CAGR of 4.3% and 15.7% respectively in 2016–20 respectively. Together, the EU (including the United Kingdom), the United States and Japan are responsible for 70% of the global demand for fresh or chilled bovine meat.

Figure 7: Main importers of bovine meat, in value (2020)



Source: ITC calculations based on UN Comtrade statistics.

Figure 8: Evolution of bovine meat imports by main importing markets, in value



Source: ITC calculations based on UN Comtrade statistics.

Global trade of bovine meat is dominated by a handful of players

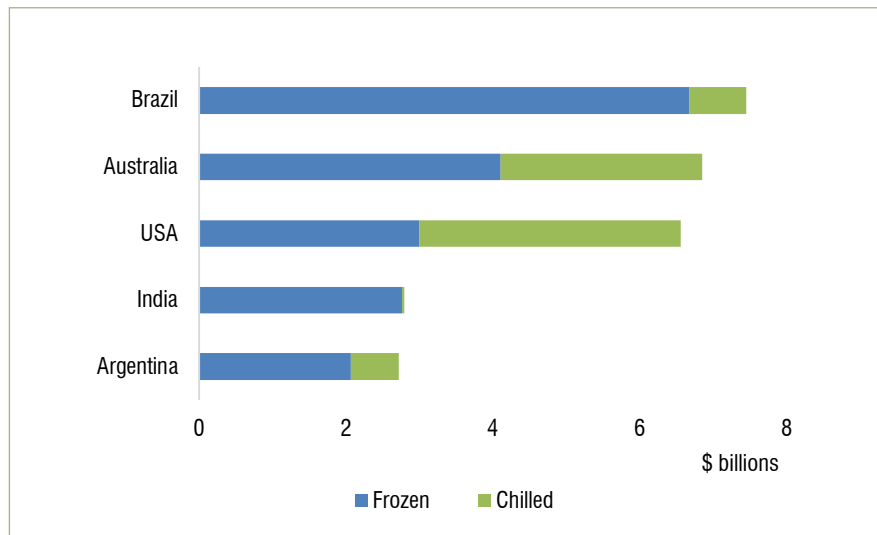
Three major players largely dominate the global bovine meat market, namely Brazil (capturing 15% of world exports of bovine meat in 2020), Australia (14%) and the United States (13%), together capturing a market share of approximately 42% in 2020 (UN Comtrade, 2020).

The frozen bovine meat segment is particularly concentrated in Brazil, Australia, the United States, India and the Argentine Republic capturing approximately 70% of global exports in 2020 (UN Comtrade, 2020). In fact, exports of four out of the five largest bovine meat exporting countries are dominated by the frozen beef category, the United States being an exception

(chilled products account for 54% of the United States' total beef exports) (see Figure 9 below). In Brazil, the largest exporter of bovine meat in the world, 90% of the sector's export revenues are generated from the frozen

meat segment. The beef industry in India has adopted a similar strategy, as Indian bovine meat exports consist almost exclusively of frozen products.

Figure 9: Exports of bovine meat from the Top 5 exporters, by category (2020)



Source: ITC calculations based on UN Comtrade statistics.

Together, the 27 EU member States are the largest international suppliers of bovine meat in the world, with more than \$11.6 billion worth of bovine meat exported in 2020 (UN Comtrade, 2020). The particularity of the beef industry in the EU is that it mainly caters for other EU member States. Intra-EU trade accounted for 96% of the transactions in 2020, mainly consisting of fresh or chilled meat (84%), especially in the form of bovine cuts or boneless meat.

Non-Muslim suppliers are leaders in the main halal meat markets. While the largest exporters of bovine

meat, including Brazil, Australia, the United States and India, are non-Islamic countries, they nevertheless have internationally recognized halal accreditations and cater to the demand of Muslim countries as well. Perhaps the most telling illustration lies in the fact that the majority of Indian exports of frozen bovine meat is destined to Asian Muslim countries (approximately 53% in 2020). Halal meat production in Muslim countries does not, consequently, provide them with a competitive edge to penetrate halal meat markets globally. Rather, halal certifications are a necessity for exporters to conform to labelling requirements by Muslim countries.

Global trends in the sheep and goat meat market

The fast-growing global market for sheep and goat meat reached \$7.2 billion in 2020 (UN Comtrade, 2020), boosted by its frozen market segment. As for the bovine sector, global imports of goat and sheep meat are dominated by the frozen meat segment, accounting for approximately 60% of the total in 2020. The international demand for this category of products is growing rapidly, with global imports progressing at a dynamic CAGR of 11.5% in 2016–20 (see Figure 10).

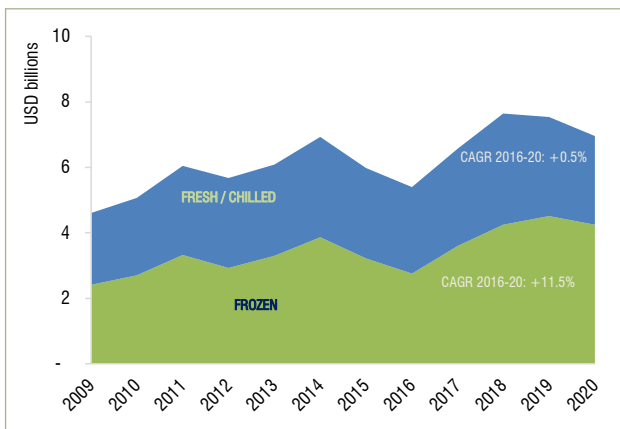
'Sheep cuts with bone in' is the category in highest demand in international markets, whether chilled or frozen, with a share of 57% in total goat and sheep meat imports in 2020. Carcasses, which currently concentrate on Pakistani exports, account for 21% of the international demand for sheep and goat meat, 74% of which is in the fresh or chilled state (see Figure 11).

Important market destinations for sheep and goat meat include the EU (capturing 30% of global imports in

2020), China (24%), the United States (14%) and GCC countries (10%). The demand from Eastern markets, in particular Malaysia, the Republic of Korea, and Japan, is also rapidly progressing. As in the beef sector, higher-end markets tend to import mainly chilled products,

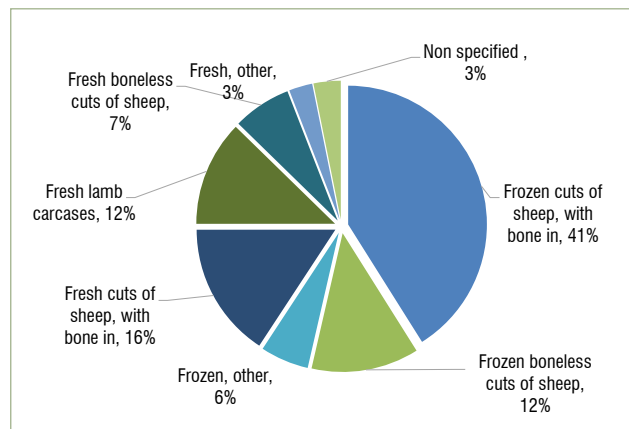
while the demand from developing countries is largely concentrated in frozen items. For example, China, by far the largest importer, buys almost exclusively cuts of sheep, with bone in, mainly from New Zealand and Australia.

Figure 10: World import of sheep and goat meat, fresh or chilled and frozen, in value



Source: ITC calculations based on UN Comtrade statistics.

Figure 11: World imports of sheep or goat meat, in value (2020)



Source: ITC calculations based on UN Comtrade statistics.

- A major shift toward the frozen meat market segment was observed in recent years, driven by the booming demand emanating from the Chinese market. The importance of this price-sensitive segment is expected to grow in the future, pushed by the rising demand from developing countries, in particular in Asia.
- High-income countries continue to dominate the fresh or chilled market segment, with consumers willing to pay a premium for higher-quality chilled prime cuts.
- The global demand for meat is largely dominated by the boneless meat category, in both the fresh/chilled and frozen market segment.
- A limited number of highly competitive players dominate the world trade of meat, including Brazil, Australia, the United States and India.
- Halal meat production does not give Pakistan a competitive edge in Muslim countries, as the main (non-Muslim countries) exporters are leaders in these countries.

These market trends should guide the future development of the export-oriented meat industry in Pakistan, starting with a strong emphasis on increasing the production of livestock reared for meat at lower costs in order to become price competitive on the international markets and gain greater market shares.

PAKISTAN'S MEAT SECTOR: A DEEPLY ROOTED INDUSTRY WITH HIGH EXPORT POTENTIAL

In developing an export strategy for Pakistan's meat sector, the starting point for analysis is to understand the existing products and markets locally. This section provides an overview of the sector's current state and highlights the most significant segments and trends of domestic and export markets.

The socioeconomic importance of Pakistan's livestock sector

Pakistan is primarily considered an agrarian economy in which approximately 35 million people and more than 8 million families are engaged in the rural subsistence livestock production system. It is estimated that these families derive 40% of their income from the livestock sector.³ Being a country that has a largely rural and agriculture-based industry, animal husbandry plays an important role in Pakistan's economy, as it serves as social security for the rural poor, who can cash it in when needed. Livestock also provides security against crop failure, particularly in barani⁴ areas.

Livestock is the most important subsector of agriculture, contributing more than 60% to the total agricultural economy and 11.5% to the country's overall gross domestic product (GDP) for the fiscal year 2020/21.⁵ Livestock also contributes significantly to national exports and 0.9% of total exports belong to this sector.



©ITC

3.– Ibid.

4.– Barani areas are areas that mostly lack access to water for crops and livestock.

5.– Pakistan Economic Survey 2020–21. Available from https://www.finance.gov.pk/survey/chapters_21/02-Agriculture.pdf.

—Table 1: Agricultural subsectors' contribution to the national economy—

Agricultural subsectors	Contribution to agricultural gross domestic product (GDP)	Contribution to national GDP
Livestock	60.10%	11.5%
Crops (major)	22.49%	4.32%
Crops (minor)	11.69%	2.24%
Forestry	2.10%	0.40%
Fisheries	2.01%	0.39%
<i>Rounding off error</i>	1.61%	0.35%
Total	100%	19.20%

Source: Pakistan Economic Survey 2020–21.

Pakistan is endowed with one of the largest livestock populations in the world. According to the latest Pakistan Economic Survey conducted for FY 2020/21, the country is endowed with an estimated bovine animals population of 94 million (cattle and buffalos) and 112 million small ruminants (goats and sheep) (Table 2). This makes it the seventh-largest cattle inventory in the world (and second only considering buffalos) and the fourth-largest population of goats (based on 2019 Food and Agriculture Organization data). The total livestock population grew at a healthy rate of 2.7% in 2020–21 compared to the previous year.⁶

—Table 3: Cattle population (2019) (head, millions)—

Rank	Country	Head, millions
1	Brazil	214.7
2	India	193.5
3	United States	94.8
4	China	63.4
5	Ethiopia	63.3
6	Argentina	54.5
7	Pakistan	47.8
8	Mexico	35.2
9	Republic of the Sudan	31.5
10	Chad	30.6

Source: FAOSTAT.

—Table 2: Livestock population in Pakistan, in million heads—

Item	FY 2019/20	FY 2020/21	YoY growth
Cattle	49.6	51.5	3.8%
Buffalo	41.2	42.4	2.9%
Sheep	31.2	31.6	1.3%
Goat	78.2	80.3	2.7%
Camel	1.1	1.1	
Horse	0.4	0.4	
Donkey	5.5	5.6	1.8%
Mule	0.2	0.2	

Source: Pakistan Economic Survey 2020–21.

The majority of the national herd is maintained by fragmented smallholders. According to a recent report published by the Pakistan Business Council, 85% of total bovine animal stock is owned by households with 10 or fewer animals, fragmented across different parts of rural Pakistan, mainly in Punjab and Sindh.⁷ Livestock is primarily reared to provide for milk production, and male calves are generally considered a liability to the farmer and are sold and culled at young age for meat production. Old cows and buffaloes too old to work in the fields or unable to produce milk or reproduce also enter the food chain. Backgrounding and feedlot fattening farms are virtually inexistent in Pakistan.

—Table 4: Goat population (2019) (head, millions)—

Rank	Country	Head, millions
1	India	148.9
2	China	137.2
3	Nigeria	81.9
4	Pakistan	76.1
5	Bangladesh	61.1
6	Chad	38.8
7	Kenya	35.2
8	Ethiopia	34.0
9	Republic of the Sudan	32.0
10	Mongolia	29.3

Source: FAOSTAT.

6.— Inter-census growth rate of Livestock Census 1996 and 2006.

7.— Pakistan Business Council (2021). 'Scaling-Up Bovine Meat Exports of Pakistan – A Review of Opportunities in the Bovine Meat Sector', P. 33.

Unlike most large bovine meat exporters, Pakistan has yet to develop an indigenous beef breed. Looking specifically at the bovine animals segment, it appears that indigenous breeds are generally milk breeds (i.e. genetically developed for higher milk production) or dual purpose at best, meaning that they are specialized for neither meat nor milk. In particular, there are several breeds of buffalo, namely Azi-Kheli, Kundhi, Nili, Nili-Ravi and Ravi. The two most popular for the

dairy sector are Kundhi and Nili-Ravi, with their populations on the rise, while the rest are on the decline. Cow breeds include Achai, Sibi Bhagnari, Desi, Dhanani, Red Sindhi, Sahiwal and Thari. Consequently, beef produced in Pakistan is basically a by-product of the milk industry.

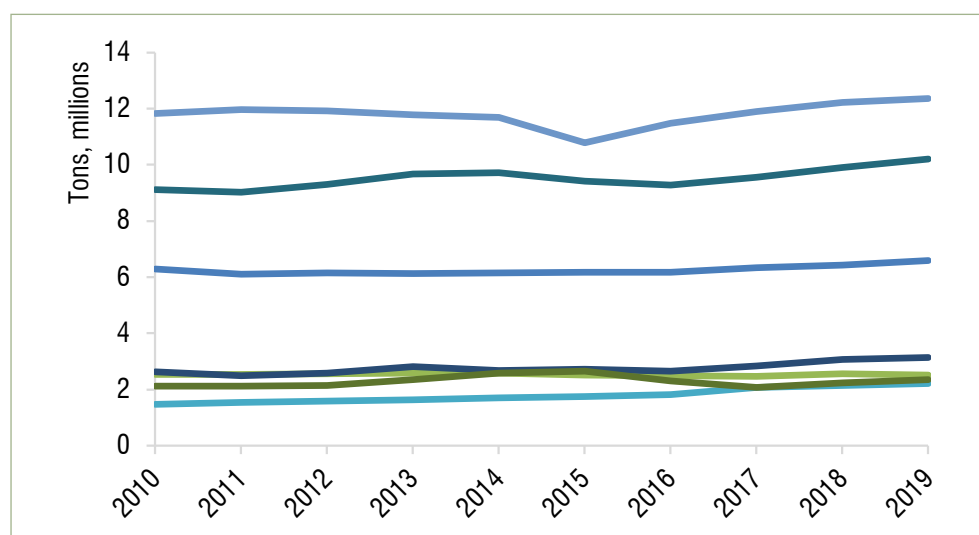
Together with other factors, the lack of meat breeds contributes greatly to the low average carcass weight of cattle in Pakistan.

Pakistan is one of the largest producers of meat in the world

According to the Pakistan Economic Survey 2020–21, domestic production of meat was approximately 5 million tons in FY 2020/21, with a steady growth of 5% annually in 2018–21 (Table 5). Almost half of this production volume consists of beef (48%), followed by chicken (36%) and mutton (15%). With a production

exceeding 2.2 million tons in 2019, Pakistan was the seventh-largest producer of cattle meat in the world in 2019 (Food and Agriculture Organization, 2019). Unlike other large beef producers, with the exception of India, a large share of the cattle meat produced in Pakistan consists of buffalo meat (approximately 48%).

Figure 12: Production of bovine meat in the main production areas, in million tons



Source: FAOSTAT.

Table 5: Pakistan meat production, in volume (thousand tons)

	2018–19	2019–20	2020–21
Beef	2 227	2 303	2 380
Mutton	732	748	765
Chicken	1 518	1 657	1 809
Total	4 477	4 708	4 954

Source: Pakistan Economic Survey 2020–21.

MEAT PROCESSING IS DONE THROUGH TWO DISTINCT CHANNELS

Thirty-four export-oriented slaughterhouses are registered with and approved by the Animal Quarantine Department (AQD).^{8,9} A number of these privately owned entities are state-of-the-art production facilities equipped with modern processing technologies and conform to international standards of meat production. These slaughterhouses operate in the country's major urban centres, namely Lahore (17), Karachi (13), Peshawar (3) and Islamabad (1).¹⁰ In these documented and notified slaughterhouses, bovine animals are brought from the *mandis* and are culled within a few hours after arrival. Due to the shortage of livestock reared for meat production and the restricted access to international markets for Pakistani meat, these facilities are not operating at full capacity, with estimates as low as 25% of their potential (Board of Investment, 2020). These slaughterhouses, therefore, have a collective capacity to produce two to three times more than their current production output.¹¹

Apart from the export-capable slaughterhouses, there are a number of municipal slaughterhouses throughout the country, which cater to the domestic market needs. These public slaughterhouses come under the Tehsil Municipal Administration, which is responsible for their management. In the domestic market, however, the majority of animals are slaughtered at slaughter slabs, slaughterhouses and abattoirs that are not notified by the government, and the meat is then sold in the informal wet markets. Most of these facilities usually lack basic equipment such as hoisting facilities, a lighting system and a regular water supply. The standard of hygiene, and both liquid and solid waste disposal, are also poorly managed.

MEAT PRODUCTION IS MAINLY GEARED TOWARDS THE LOCAL MARKET AND CHARACTERIZED BY LOW YIELD

The average carcass weight of cattle is very low in Pakistan. According to the Food and Agriculture

Organization (FAO), the average carcass weight of cattle (or yield) in Pakistan was estimated at 130 kg/animal in 2019, compared 360 kg/animal, 314 kg/animal and 270 kg per animal in the United States, Brazil and Australia respectively (see Figure 13).

The vast majority of meat production in Pakistan is destined for the domestic market. According to FAO statistics for 2019, more than 97% of the 2.2 million tons of cattle meat produced in Pakistan was consumed domestically. The meat exported by the AQD-approved slaughterhouses mainly consist of fresh or chilled carcasses. In the domestic market, red meat is mostly sold directly from the slaughterhouses and abattoirs to the local butchers and consumed on the same day of slaughter, generally not refrigerated.

THE PRODUCTION OF FROZEN AND FURTHER PROCESSED, VALUE-ADDED PRODUCTS IS STILL NASCENT IN PAKISTAN

Signs of development in the frozen processed red meat segment have nevertheless been witnessed in the domestic market. While the frozen meat market segment remains marginal in terms of exports, in the domestic market, sales of frozen processed red meat in Pakistan have progressed at a healthy average annual growth rate of 15% in 2015–20, to reach PKR 626.2 million (approximately \$3.7 million), according to Euromonitor International (see Figure 14).¹² Sales of frozen processed red meat are anticipated to grow at a dynamic CAGR of 11.7% in 2020–25 (per cent of constant value growth) to reach PKR 1,091 million in 2025 (approximately \$6.4 million), supported by an expanding urban middle class with rising disposable incomes.¹³

Even though a few export-oriented companies are investigating the possibility of developing products such as heat-treated meat to circumvent the ban imposed by most countries on Pakistani meat imports,¹⁴ results have been limited.

8.– Animal Quarantine Department, Ministry of National Food Security & Research, Government of Pakistan. 'List Of Slaughter Houses'. Retrieved from: <http://www.aqd.gov.pk/list-of-registered-slaughter-houses/> on 8 October 2021.

9.– Pakistan Economic Survey 2020–21, *Chapter 2: Agriculture*. Accessed at https://www.finance.gov.pk/survey/chapter_20/02_Agriculture.pdf.

10.– Animal Quarantine Department, Ministry of National Food Security & Research, Government of Pakistan. 'List Of Slaughter Houses'. Retrieved from: <http://www.aqd.gov.pk/list-of-registered-slaughter-houses/> on 8 October 2021.

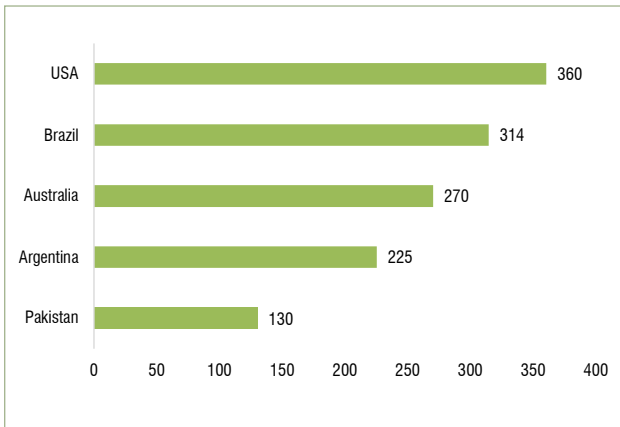
11.– *The Meat Industry of Pakistan* by Dr. Hamid Jalil & Humbal Tariq.

12.– Euromonitor International (February 2021). Passport Packaged Food Factsheet.

13.– Euromonitor International (February 2021). Passport Packaged in Pakistan

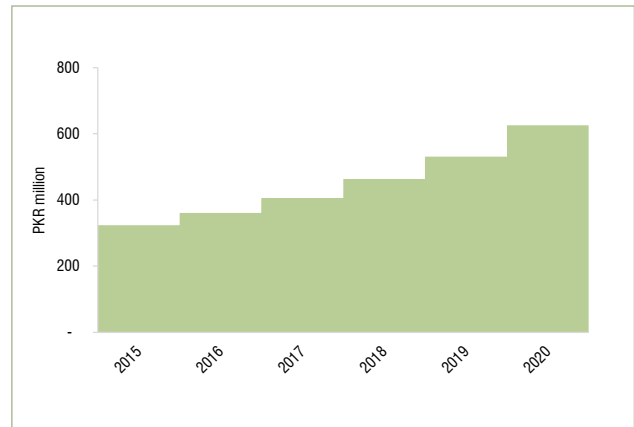
14.– The ban imposed on imports of meat products from Pakistan are due to the following reasons- prevalence of animal diseases such as FMD and partly because new entrants have traditionally competed on pricing, and not so much on product diversification or innovation.

Figure 13: Carcass weight of cattle in the main production areas, in kg/animal (2019)



Source: FAOSTAT.

Figure 14: Sales of frozen processed red meat in Pakistan (2015–20) (PKR million)



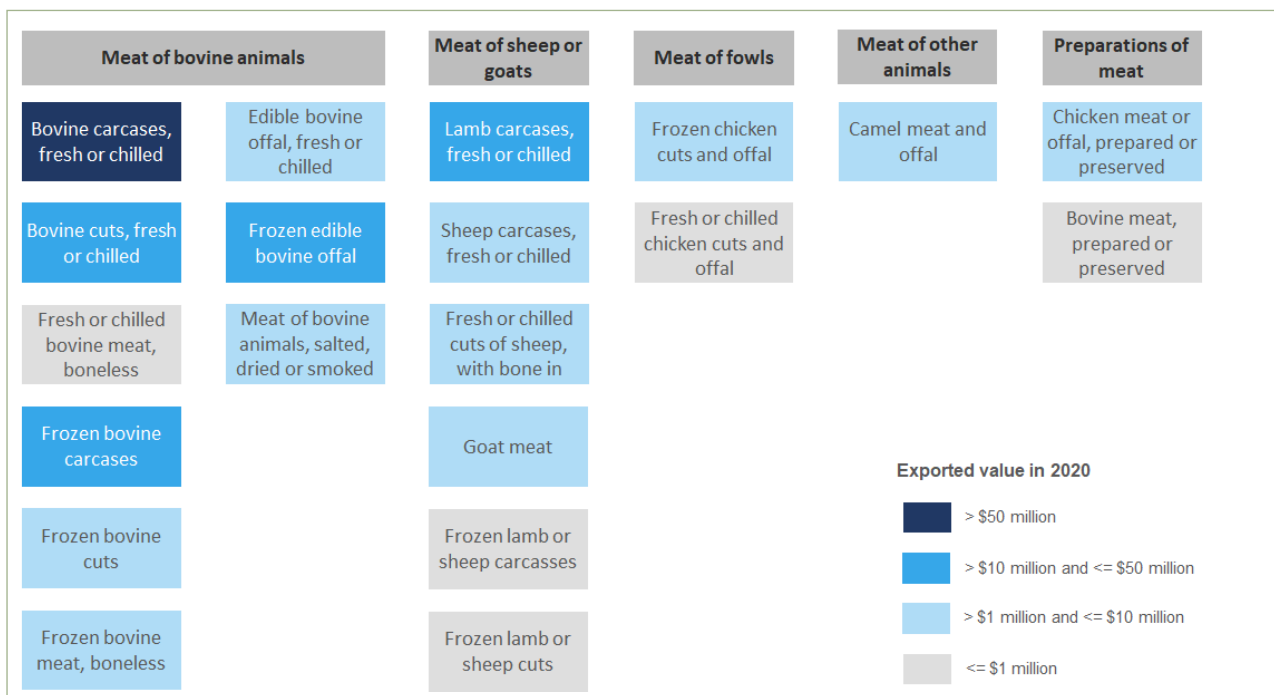
Source: ITC calculations based on Euromonitor data (2021).

Defining the sector

Since Pakistan does not have the capacity to export in all categories of meat products in significant volumes, a product map defining the strategy’s scope was established. This map presents products that are currently being exported as well as some products that could present significant export potential in the near

future. While this list is not intended to be fully exhaustive, it allows readers to gain a better understanding of the product range covered as well as a grasp of the sector’s current external position. The product map is presented in Figure 15.

Figure 15: Product map for meat products in Pakistan



Source: ITC calculations based on UN Comtrade and ITC statistics.

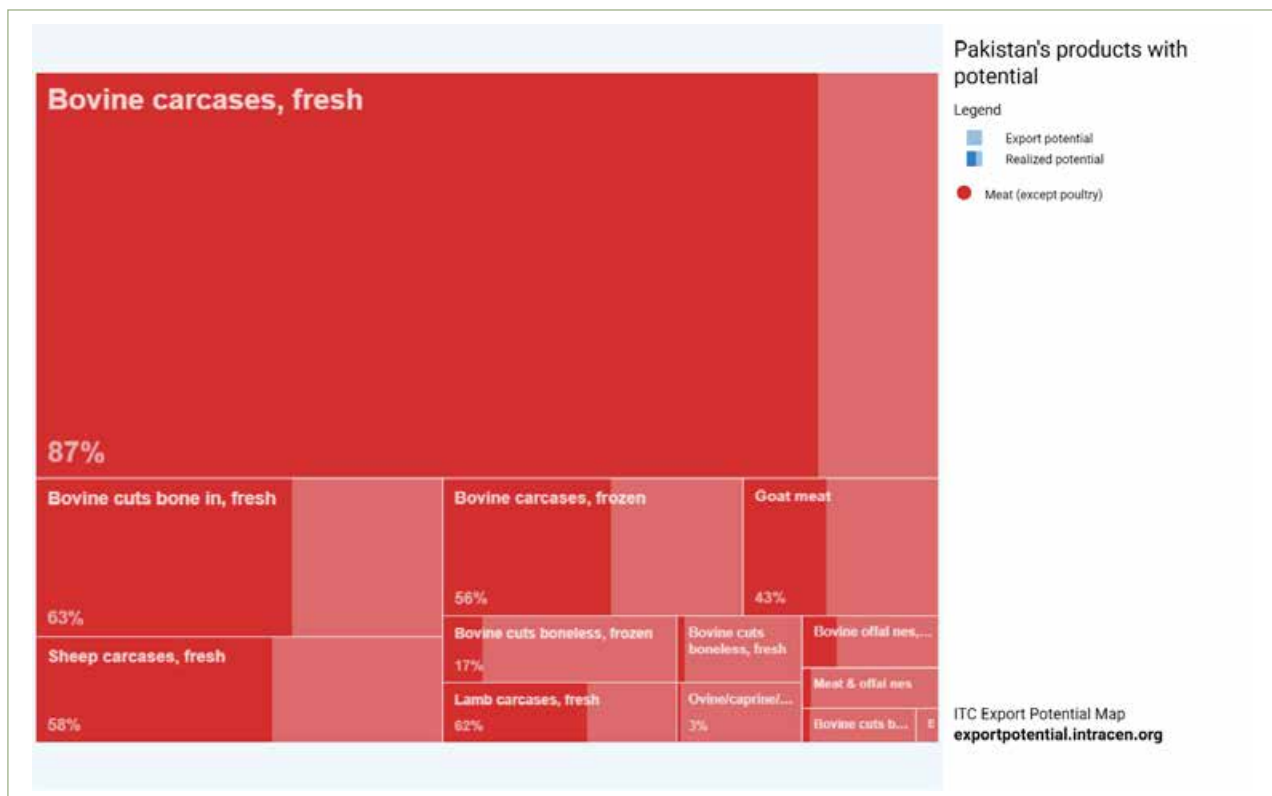
Pakistan is well poised to become a major supplier of red meat to international markets

COMPETITIVE ADVANTAGES OFFER THE MEAT SECTOR PROMISING PROSPECTS FOR EXPORT GROWTH

An immense untapped export potential is to be derived from the large livestock population. Firstly, the country benefits from abundant livestock, leaving it well positioned to grow its meat industry, including the processed meat market segment. This great value-addition potential can be achieved through a strong drive towards improving yields in livestock production

and opening up access to new international markets. A more efficient supply chain that reduces operating costs of animal sourcing for meat processors also holds a tremendous potential for a significant increase in export revenues and farm income. According to the ITC Export Potential Map, meat products with the largest untapped export potential in Pakistan include frozen boneless bovine cuts, frozen bovine carcasses and fresh bovine cuts with bone in (see Figure 16). Overall, the tool valued the untapped potential remaining in individual countries and/or products at \$61.5 million.

Figure 16: Pakistani products with potential



Source: ITC Export Potential Map.

Its geostrategic location also gives Pakistan an important advantage to cater to the Chinese and South-East Asian markets, in addition to the Gulf countries. At the crossroads of Asia with China, Pakistan is ideally located to cater for these countries' increasing demand for food products. The country also has strategic access

to landlocked Central Asian states through the Islamic Republic of Afghanistan and can reach Gulf countries' markets efficiently and cost-effectively.

The rising domestic demand for meat should boost production and encourage more players, domestic and

foreign, to enter the market. The anticipated economic recovery and the expanding urban middle class with rising disposable incomes will lead to an increasing number of households buying a wider range of convenient products, which are becoming more affordable and accessible, including meat and processed meat products. The experience gained on the domestic market should allow private operators to venture into export activities.

The meat processing industry is not operating at full capacity. As mentioned earlier, export-oriented slaughterhouses are not running at full capacity. The country has enough capacity built to process twice, if not thrice, the amount of current meat exports, provided that access to international markets is improved.

- Pakistan is endowed with one of the largest livestock populations in the world and is one of the largest meat producers globally.
- The livestock sector holds an important socioeconomic role, contributing more than 60% to the total agricultural economy in 2020–21 and providing substantial revenue to an estimated 8 million families engaged in rural subsistence livestock production.
- The majority of the national herd is reared in a traditional way for milk production by fragmented smallholders, making meat a by-product of dairy farming. This contributes to the low carcass weight observed in Pakistan, aggravated by the absence of an indigenous beef breed with a high meat conversion ratio.
- Meat processing is done through two distinct channels, with the meat destined for the domestic market (approximately 97%) mainly coming from unregistered slaughterhouses and abattoirs. At the same time, a number of approved export-oriented slaughterhouses that conform to international standards of meat production are operating – at low capacity.

The sector's structure, the animals' characteristics and the way in which animals are being reared, aggregated and processed have a huge bearing on the meat industry's trade performance and a tremendous impact on its competitiveness.

Pakistani meat exports are currently concentrated in the chilled carcasses segment

AN IMPORTANT AND RAPIDLY GROWING EXPORT SECTOR

The growth in bovine meat exports from Pakistan has been very dynamic in recent years, reaching \$245 million in 2020 (UN Comtrade, 2020). Pakistan meat processors also generated \$12 million in export revenue from the sales of edible bovine offal that same year. Among the Top 25 exporters in 2020, Pakistan was the second-fastest-growing bovine meat exporter in the last decade, with a robust CAGR exceeding 14% in 2011–20, only outperformed by Japan (22.5%).¹⁵ The

recent successes of Pakistan's beef industry can be largely attributed to the private sector's dynamism in developing export market channels, particularly in GCC countries.

With this rapid growth, bovine meat progressively emerged as a major agricultural product in terms of export revenues generated in Pakistan, accounting for 6.4% of the exported value for this category of products in 2020, second only to rice (54.6%).¹⁶ The sector's contribution to Pakistan's total products exports reached 1.4% in 2020, a sharp increase compared to its 2011 share of approximately 0.3% (UN Comtrade, 2020).

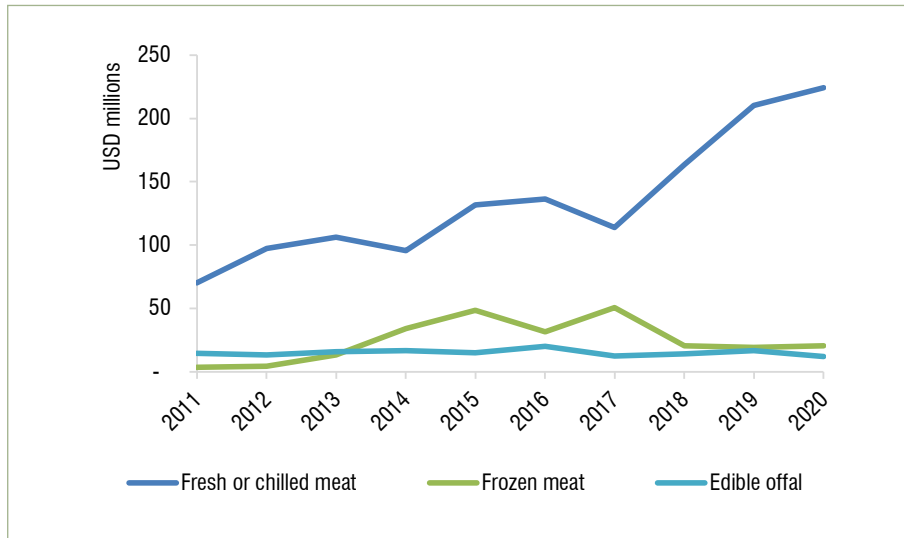
15.– Considering products classified under HS Codes 0201 'Meat of bovine animals, fresh or chilled' and HS 0202 'Meat of bovine animals, frozen'.

16.– Considering 'Live Animals; Animal Products' classified under HS Codes 01 to 05, and 'Vegetable Products' classified under HS Codes 06 to 14.

Despite this recent surge, Pakistan remains a minor player in the international beef market. While Pakistan is a large meat producer, ranking 7th in bovine meat production in 2019 according to the FAO, the country only ranks 25th in bovine meat exports, in value, only capturing a market share of 0.49% in 2020 (1% only,

considering the fresh or chilled market segment). According to the FAO, out of the 2.2 million tons of cattle meat produced in Pakistan in 2019, only a mere 2.7% was exported (approximately 60,000 tons). This ratio exceeded 15% in Brazil that same year.

Figure 17: Pakistan's exports of meat of bovine animal and edible offal, in value (2011-20)



Source: ITC calculations based on UN Comtrade data.

PAKISTAN BEEF EXPORTS ARE LARGELY CONCENTRATED IN THE CHILLED CARCASSES MARKET SEGMENT, SOLD TO GCC COUNTRIES

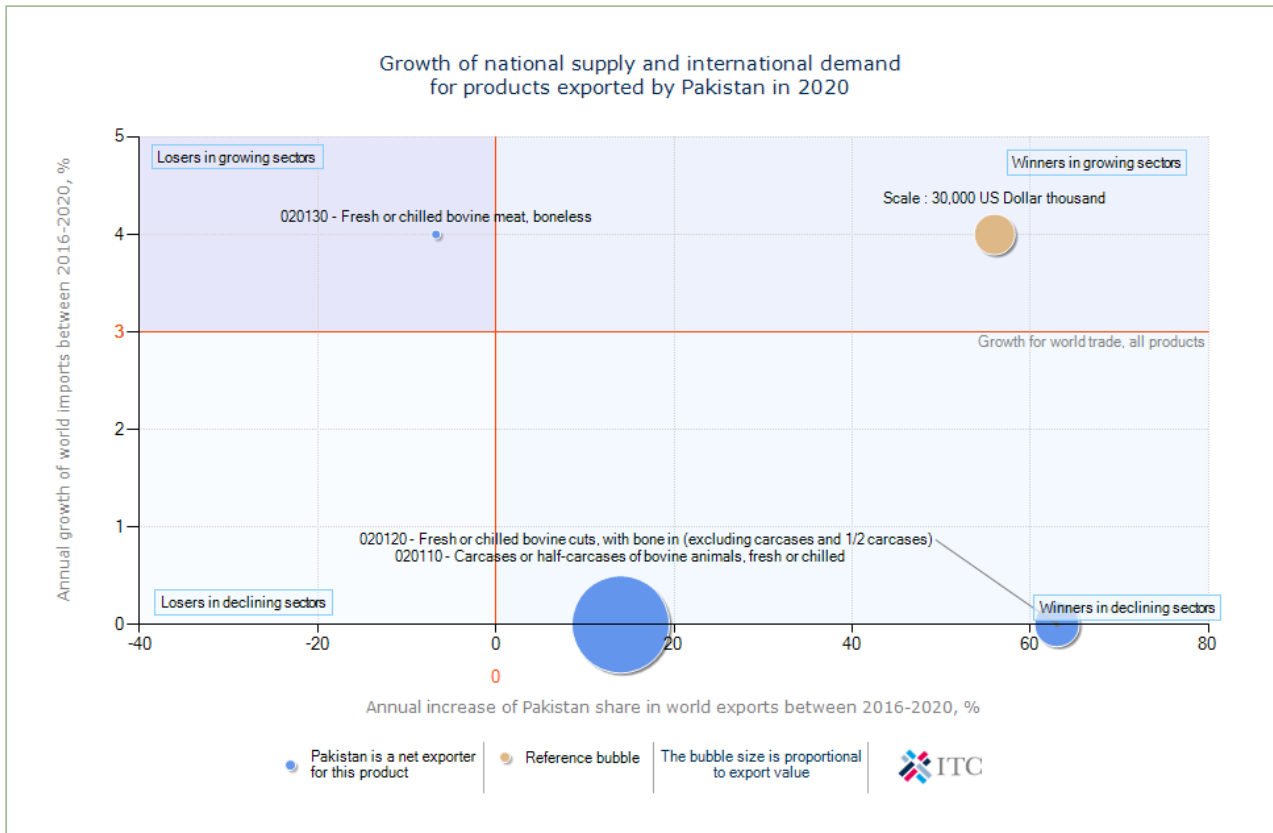
Pakistan's primary exports of bovine meat are in the form of chilled products that have not gone through further processing such as carcasses, half carcasses, and cuts with bone in. In 2020, the fresh or chilled market segment accounted for approximately 92% of Pakistan's total beef exports,¹⁷ 84% of which consisted of carcasses or half carcasses of bovine animals. This is in direct contrast to leading meat exporting countries, including Australia, Brazil and India, which export mainly bovine meat in its frozen form. Export revenues generated from the international sales of bovine carcasses from Pakistan were estimated at \$187.6 million in 2020, or nearly three times their 2011 level (UN Comtrade, 2020). While Pakistan bovine meat processors have capitalized on this highly profitable niche market in GCC countries, this market segment is nevertheless declining globally, and only accounted for less than 4% of global imports of bovine meat in 2020 (Figure).

in the low value added market segment of chilled carcasses, sold primarily to GCC countries, chilled bovine meat is also exported in the form of cuts with bone in, variants of carcasses, representing a share in total Pakistani bovine meat exports of approximately 15% in 2020. This segment is dominated by sales to Afghanistan (64%) and the United Arab Emirates (21%). Exports of chilled boneless bovine meat –by far the most demanded product in international markets in both the fresh/chilled and frozen market segments– are negligible.

Pakistan's meat exporters are not competitive in the frozen meat market segment. While most export-oriented processors do have the capacity to process frozen meat, this product category is currently largely underdeveloped due to limited market opportunities on the international scene. In 2020, Pakistan exports of frozen bovine meat amounted to \$20.5 million, mainly in the form of carcasses (61%) and boneless meat (31%). As illustrated in Figure , revenues generated from the export of frozen bovine meat in Pakistan have been erratic in the past decade, with no clear upward trend. A more detailed analysis of this market segment is presented below.

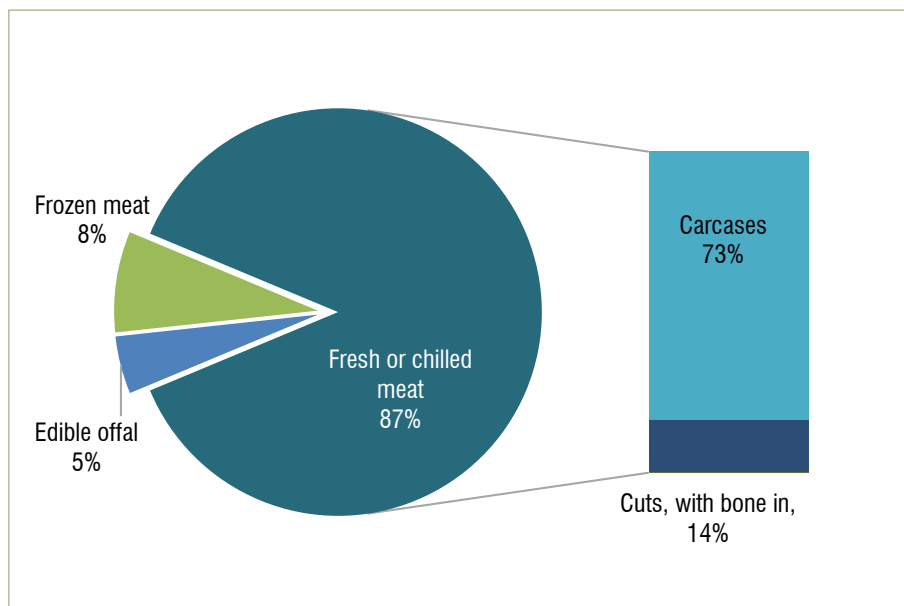
17.– Considering products classified under HS Codes 0201 'Meat of bovine animals, fresh or chilled' and HS 0202 'Meat of bovine animals, frozen'.

Figure 18: National export growth and international demand for fresh or chilled bovine meat exported by Pakistan in 2020



Source: ITC calculations based on UN Comtrade and ITC statistics.

Figure 19: Pakistan exports of bovine meat and edible offal, by products, exported value in 2020



Source: ITC calculations based on UN Comtrade data.

Table 6: Main products exported by Pakistan's red meat industry in Pakistan in 2020, in value (HS 0201, 0202 and 0204)

HS Code	Product	Exported value in 2020, (USD million)
'020110	Fresh or chilled carcasses of bovine animals	187.6
'020120	Fresh or chilled bovine cuts, with bone in	36.0
'020410	Fresh or chilled lamb carcasses	27.2
'020210	Frozen bovine carcasses	12.6
'020629	Frozen edible bovine offal	10.1
'020421	Fresh or chilled sheep carcasses	9.2
'020230	Frozen boneless meat of bovine animals	6.3
'020450	Fresh, chilled or frozen meat of goats	6.0

Source: ITC calculations based on UN Comtrade data.

In addition to bovine meat export, Pakistan exported \$11.7 million worth of edible bovine offal in 2020, mainly in its frozen form (86%). Hong Kong, China captures approximately two-thirds of Pakistan's exports of this by-product (66%), the other main destination market being Viet Nam (19%). While this market segment is relatively small on a global scale (world imports of edible bovine offal amounted to \$3.8 billion in 2020), there is nevertheless room for Pakistan to grow in this niche market.

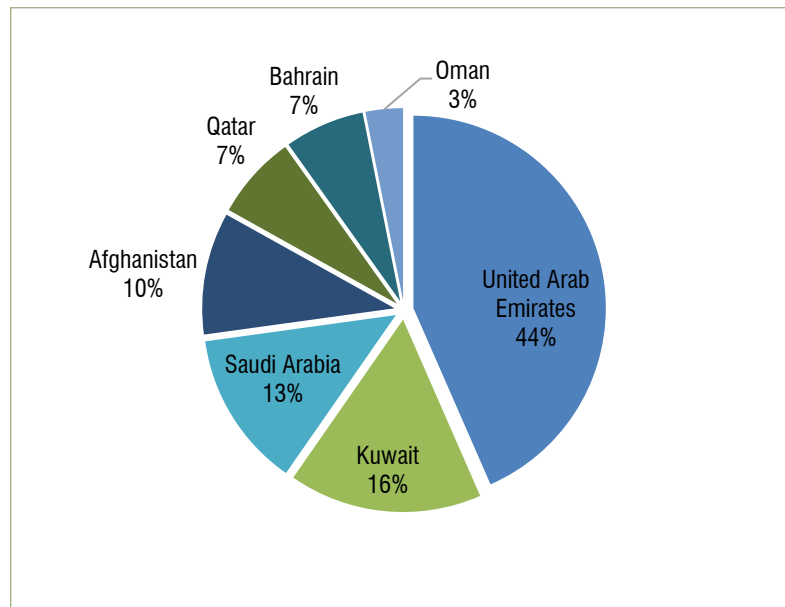
The production of further processes and value-added products is still nascent in Pakistan. Even though a few export-oriented companies are investigating the possibility to develop products such as heat-treated meat to circumvent the ban imposed by most countries on Pakistan meat imports, results have been limited, with insignificant export revenues generated. This is partly explained by the fact that new entrants in Pakistan's bovine meat industry have traditionally competed on pricing, and not so much on product diversification or innovation.

PAKISTAN'S ACCESS TO INTERNATIONAL MARKETS IS RESTRICTED DUE TO THE PREVALENCE OF FOOT AND MOUTH DISEASE

Pakistan is currently being endorsed by the World Organisation for Animal Health (OIE) and is at Stage 2 of the Progressive Control Pathway for Foot and Mouth

Disease (PCP-FMD). Thus, its access to most international markets for locally processed bovine meat, in both the fresh and the frozen segment, is extremely limited. In particular, under this current status, tapping into the higher-value-added markets such as the United States, the EU or Japan is virtually impossible in the short to medium term, as the stringent quality requirements and phytosanitary standards imposed by these countries would require substantial investments in quality and sanitary certifications, including the setting up of FMD-free zones.

Currently, Pakistan's exports of bovine meat are largely concentrated in the six GCC countries, with limited and very variable volumes exported to regional countries such as Afghanistan, Viet Nam, Malaysia and the Republic of Azerbaijan. In 2020, GCC countries captured 90% of Pakistan's fresh or chilled bovine meat exports and the totality of its fresh/chilled carcasses exports. The United Arab Emirates, the State of Kuwait and Saudi Arabia are the largest importers among GCC members States, capturing 48%, 19% and 15% respectively of Pakistan's exports of chilled bovine carcasses in 2020. The remaining 10% of Pakistan's export revenues in this market segment consist of exports of fresh or chilled bovine cuts, with bone in to Afghanistan. This heavy reliance on GCC beef imports exposes the sector to exogenous shocks in this region that could have dramatic impact for Pakistan's export-oriented meat industry.

Figure 20: Pakistan exports of fresh or chilled bovine animals meat, by destination (2020)

Source: ITC calculations based on UN Comtrade data.

As suggested by these trends, Pakistan holds a competitive advantage in the chilled carcasses segment in GCC markets, through the export of fresh and chilled carcasses. In particular, Pakistan's capacity to supply affordable halal chilled meat, which has a limited shelf life, within short delivery times and at relatively competitive transportation costs, provides the country with a competitive edge. In this regard, it is to be noted that, while Pakistani exports of chilled meat was traditionally shipped by air, containers are now progressively shifting to cheaper sea shipments. Pakistan has emerged as the largest supplier of fresh/chilled bovine meat to GCC countries, with a market share of approximately 30%. This advantage is, however, limited to meat products that have not gone through further processing such as carcasses, half carcasses, and cuts with bone in, as Pakistan has almost no share in the boneless chilled beef segment.

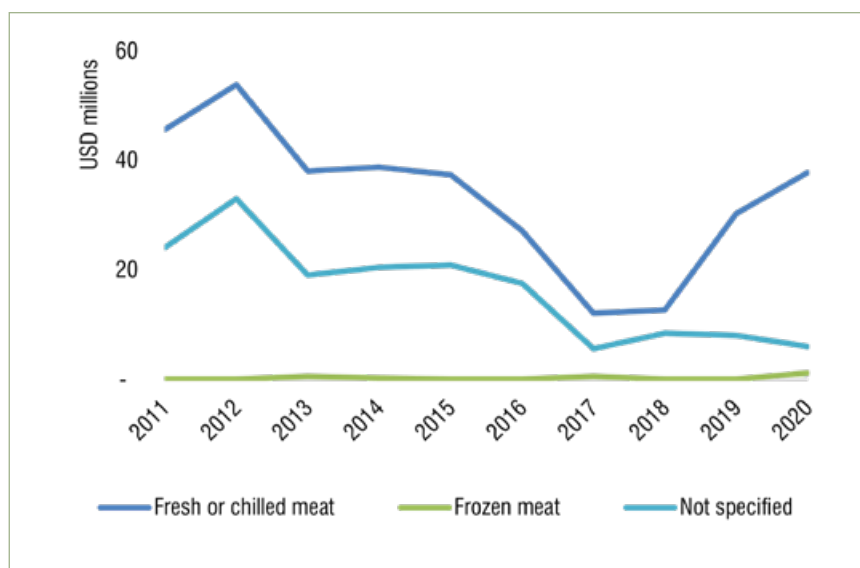
As the shelf life of frozen meat is high enough for importers to source from anywhere in the world, Pakistan loses the competitive advantage gained from its geographical proximity to the GCC market for fresh or chilled meat. This also applies to deboned vacuum-packed beef. In particular, Pakistani meat processors' competitiveness is severely affected by the high costs of animal sourcing and its deficit in yield, resulting in significantly higher market prices compared to its main competitors, including Brazil and India. Reportedly, the production costs in Pakistan fetch 4\$/kg

(for exports) compared to 3\$/kg in India. This price competitiveness is more important in the frozen market segment, as it is generally considered as lower quality and cheaper. In 2020, Pakistan's exports of frozen bovine meat to GCC countries only amounted to \$14.5 million, consisting almost exclusively of frozen carcasses shipped to the United Arab Emirates.

PAKISTAN'S EXPORTS OF SHEEP OR GOAT MEAT

In 2020, Pakistan exported \$45 million worth of sheep or goat meat, consisting of lamb meat (61%), sheep meat (26%) and goat meat (13%). As illustrated in Figure 21 Reference source not found., the export trend has been erratic in the past decade, with a progressive decline observed in 2012–17, followed by an ongoing surge in export earnings observed since 2018.

As for bovine meat, exports of sheep and goat meat are currently concentrated in the chilled carcasses segment, and primarily destined to GCC markets. Approximately 80% of Pakistan's exports of sheep and goat meat consisted of fresh or chilled carcasses in 2020, more than 99% of which were exported to GCC countries, in particular the United Arab Emirates and Saudi Arabia (UN Comtrade, 2020).

Figure 21: Pakistan's exports of sheep or goat meat (HS 0204), in value (2011-20)

Source: ITC calculations based on UN Comtrade data.

- Pakistan's trade performance, focusing on the supply of fresh carcasses, is in striking contrast with the global market trends dominated by the demand for frozen boneless meat.
- Despite a sharp increase in Pakistani meat exports observed in recent years, the country remains a minor player in the international beef market.
- Pakistan competitive advantage are currently concentrated in the declining market segment of chilled carcasses, which accounted for less than 4% of global imports of bovine meat in 2020. The domestic product mix needs diversification, in line with international demand.
- The vast majority of Pakistani meat exports is consumed in GCC markets. This dependency on a limited number of products and destination markets leaves Pakistan exposed to exogenous economic and/or demand shocks in these countries.

The above analysis points at the urgent need for the Pakistani meat industry to work towards greater product and market diversification, therefore reducing the reliance on the, though profitable, current niche market in which Pakistan processors and exporters currently operate.

This transition has been hindered by a number of bottlenecks and issues along the value chain, starting at the farm level to processing meat, and finally to managing international sales and marketing effectively.

VALUE CHAIN AND COMPETITIVENESS DIAGNOSTIC

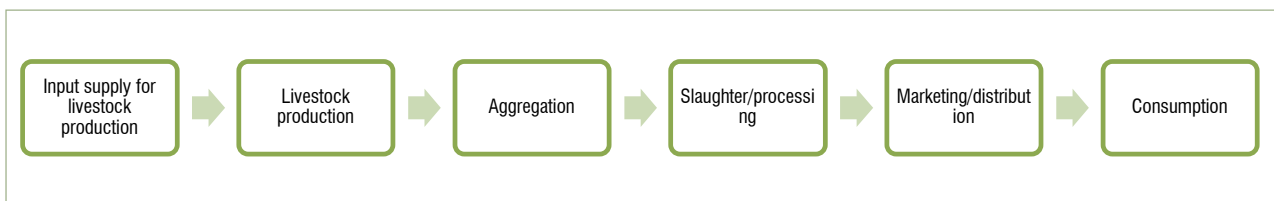
The value chain diagnostic outlines the Pakistani meat industry's operations following a 'from farm to fork' approach. The analysis is used to investigate a sector's competitiveness, identify bottlenecks and challenges and define opportunities for strategic planning.

Value chain mapping

A value chain is simply a visual representation of all the transformation processes and supporting services required to move a product or service from conception through to delivery and the final consumer.

The value chain mapping for Pakistan's meat industry is broadly classified into the main stages of the value chain Figure 22.

Figure 22: Simplified meat industry value chain



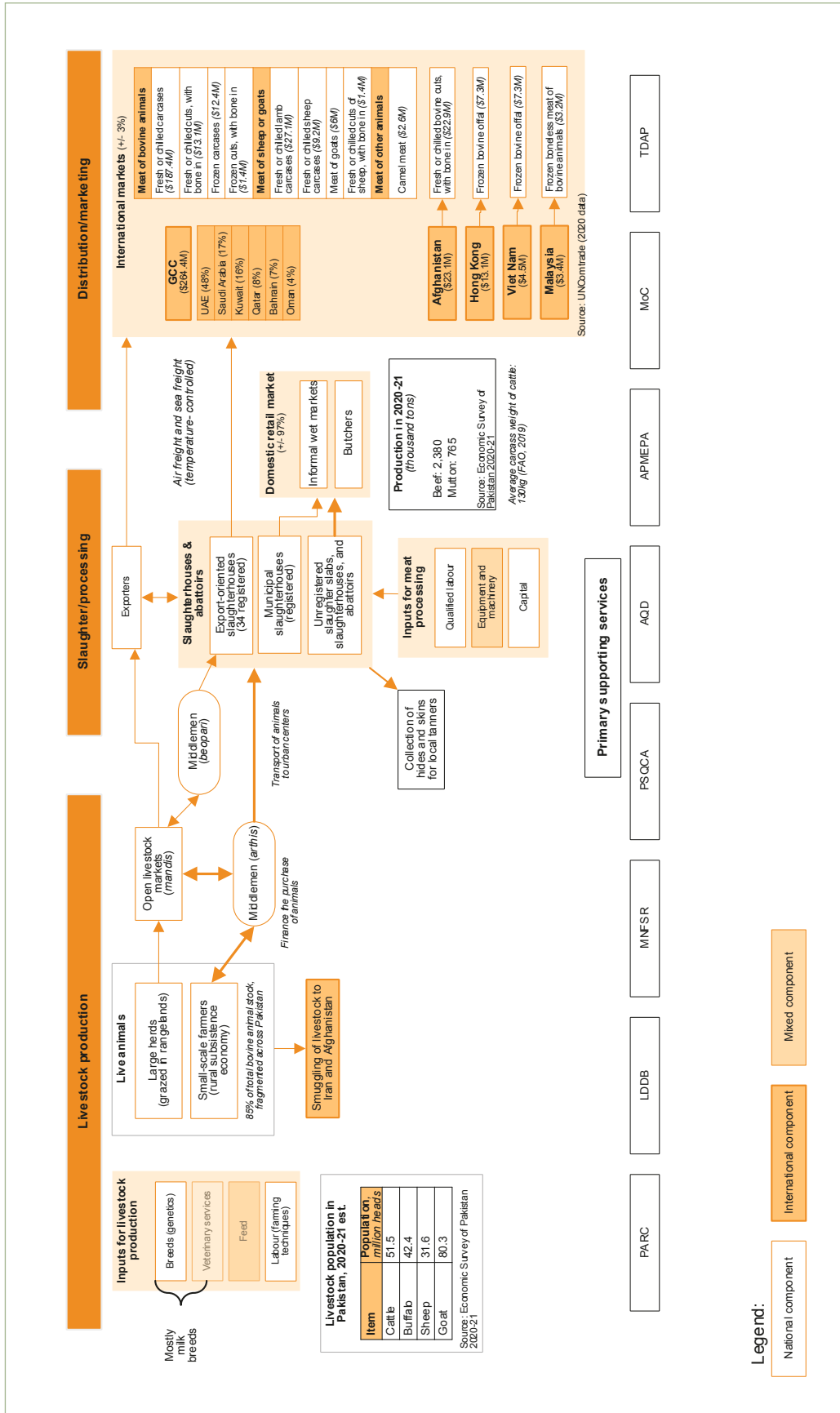
Source: ITC.

A value chain map:

- Is a visual representation of the processes required to bring a product to market;
- Creates a common understanding of the sector's structure and how it operates;
- Identifies the various stakeholders participating in sector production and their performance;
- Provides a tool to analyse where gaps in performance occur and where improvements to the sector could be undertaken.

The value chain for Pakistan's meat sector in Pakistan is presented in Figure 23.

Figure 23: The value chain



Source: ITC.



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INSTITUTIONAL AND POLICY SUPPORT ECOSYSTEM

The meat sector's success will not only depend on the internal capacities of the companies operating in the industry, but also on the role of the various ministries and public institutions, as well as other technical agencies. For the sector to achieve long-term sustainable growth, participating enterprises must be able to rely on a capable network of government and private sector support institutions. The overall trade support network (TSN) of Pakistan's meat industry is considered for this sector strategy as the aggregate institutional framework in the country, bringing together those institutions that have a particular interest in or bearing on the sector's export development and competitiveness. Broadly, the TSN presented in Box 1 comprises the following support areas: policy support network, trade services network, business services network, and educational services and civil society network.

Certain capacity and resource issues must be addressed if these institutions are to support the industry effectively.

The Pakistan Standards & Quality Control Authority (PSQCA). In order to fulfil its function to foster and promote standards and conformity assessment in Pakistan, strengthening the PSQCA's capacities and knowledge in the field of meat processing should be considered a priority. In particular, the authority should have the capacity to swiftly and efficiently revisit and update compulsory PSQCA standards specifications on animal feeds (PoA Activity 1.1.3) and develop a

national grading system for indigenous bovine animals (PoA Activity 2.3.1).

Provincial livestock departments. These departments are instrumental to ensure that national-level regulations and policies are actually enforced at grass roots level, in particular in Sindh and Punjab, which have the largest livestock populations in Pakistan. In this regard, it will be vital to provide technical and pedagogical training for provincial staff, in particular on livestock traceability and monitoring as well as on FMD control measures (PoA activities covered under Strategic Objectives 2.1 and 2.2).

The Ministry of Commerce (MoC). Improving market access conditions being high on Pakistan's meat processors and exporters' agenda, capacity-building work is required for MoC's staff responsible for negotiating access for Pakistani meat and meat products in key target markets (PoA Activity 3.2.2). Strengthening its human resources should allow for the creation of a strategic plan for identifying and opening new markets that are readily accessible. MoC's capacity to negotiate and enforce sanitary protocols and mutual recognition rules with partner countries should also be enhanced.

The Trade Development Authority of Pakistan (TDAP). While the support the TDAP provided in promoting the sector was perceived positively by the private sector representatives consulted as part of the strategy's design process, additional support is nevertheless needed to strengthen the authority's market intelligence function. In particular, specific capacities should be strengthened for the creation of an online market access database for meat and meat products and the development of a brand for Pakistan's bovine meat exports (PoA Activities 3.3.1, 3.3.2 and 3.3.3).

Box 1: Trade and investment support institutions supporting Pakistan's meat industry

Policy support	Ministry of Commerce (MoC) Ministry of Finance <ul style="list-style-type: none"> • Federal Board of Revenue (FBR) Ministry of National Food Security & Research (MNFSR) <ul style="list-style-type: none"> • Provincial livestock development departments • Animal Quarantine Department (AQD) • Livestock and Dairy Development Board (LDDB) Ministry of Science and Technology <ul style="list-style-type: none"> • Pakistan Standards & Quality Control Authority (PSQCA) • Pakistan Council of Scientific and Industrial Research (PCSIR) • Pakistan Halal Authority Animal Husbandry Commissioner
Trade services	Federation of Pakistan Chambers of Commerce & Industry (FPCCI) Ministry of Commerce <ul style="list-style-type: none"> • Trade Development Authority of Pakistan (TDAP) All Pakistan Meat Exporters & Processors of Pakistan (APMEPA) Livestock Exporters Association of Pakistan
Business services	Ministry of Maritime Affairs <ul style="list-style-type: none"> • Directorate General Ports & Shipping National Veterinary Laboratory (NVL), MNFSR Zarai Taraqiati Bank Limited (Agricultural Development Bank of Pakistan) State Bank of Pakistan Board of Investment (BOI)
Academia and civil society	University of Agriculture Faisalabad (UAF) University of Veterinary & Animal Sciences (UVAS) Provincial agricultural universities and research organizations Pakistan Agricultural Research Council (PARC), under MNFSR National Vocational & Technical Training Commission (NAVTTTC)

Current initiatives, policy and regulatory framework

THE REGULATORY FRAMEWORK

Regulations relating to Pakistan's meat industry go back as early as 1872 with the Punjab Laws Act 1872, which is still partially in force, whereby it controlled cow slaughter and sale of beef (Section 43). This section was in force for almost 100 years, repealed only by Public Order VIII of 1970. 'The general effect of the rule was to confine slaughter of cattle to municipal slaughter houses in towns where such a facility existed already.' The reason behind this regulation was to settle the unrest generated by cow slaughter agitation between the Hindu Muslim communities in Delhi.

Since then, the industry has been regulated by more than 30 laws and regulations, including amendments,

most of which are still in force today. The nexus of these regulations control animal safety, feed, breeding, health, slaughter, sale of meat, human food safety and enforcing Islamic Shari'ah compliance with the overall process from farm to fork in order to categorize it as halal.

The Sindh Cattle Act 1950 authorizes the provincial government to restrict the slaughter of any cattle for conservation. Similarly, the Animal Slaughter Control Act 1963, which is applicable in all four provinces, prohibits the sale of useful animals, for example, female sheep pregnant or in milk or fit for breeding. Under these laws, slaughtering was permissible only in slaughterhouses. No slaughtering can take place on Tuesday and Wednesday or other notified days. Ante-mortem examination is necessary. Voluntary



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abortion is not allowed. A veterinary officer or Gazette officer has the power to enter, search and seize carcass or meat slaughtered illegally. Informers of such an activity will be rewarded with 20% of the legal fines imposed by the court. Similarly, the Animal Control Act 1965 increases the penalty to up to three years' imprisonment. Seized animals will be disposed of by public auction. Seized meat, if fit for human consumption, will be disposed of by public auction and, if unfit for human consumption, will be incinerated or buried. Likewise, the Punjab Meat Control Order 1978 was also promulgated in order to reduce consumption of meat. The Order declares issuance of a licence necessary for selling meat. Further, the meat would be sold at a price fixed by the licensing authority. Under these laws, revenue officers, police officers, veterinary officers and inspectors can enter the premises for full implementation of laws.

In 2001, the government promulgated Local Government Ordinance, 2001 regarding slaughterhouses and cattle markets (mandis) under Tehsil Municipal Administration under the town municipal administration for implementing the code of conduct for butchers and slaughterhouses. Imprisonment of 1–6 months or a fine of PKR 5,000 to PKR 15,000 or both is declared for a first-time offender. Higher punishments are declared for second- and third-time offenders. According to this ordinance, local government is required to provide and maintain slaughterhouses and issue licences to private slaughterhouses. An authorized local government servant can enter and inspect any place if he/she has reason to believe that illegal slaughtering is taking place. These laws empower the district government to make by-laws for working days and hours, design of slaughterhouses, details of sanitary conditions, stalling of animals and disposal of diseased animals, etc.



CURRENT GOVERNMENT INITIATIVES

The government has taken the following initiatives to enhance the country's livestock subsector.

Prime Minister's Initiative for Save the Calf*

This is a four-year project (2019–2023), which will be executed throughout Pakistan, with a budget of PKR 3.4 billion. Under this project, a farmer can get his newly born buffalo calf registered with the Livestock & Dairy Development Department and get a subsidy of PKR 6,500 after four months, along with free treatment and advice.

The idea behind this initiative is that, unlike the female, male calves are a liability to the farmer. They are mostly weaned too early and die due to indigestion and lack of nutrition and immunity. The farmer then tries to sell the calf to the butcher before it dies. This is why most male calves end up getting slaughtered and a huge potential of meat production is lost at an early age. The project aims to save 380,000 male calves and mobilize 50,000 livestock farmers.¹⁸

Prime Minister's Initiative for Calf Feedlot Fattening*

A feedlot farmer will get a subsidy for successfully fattening buffalo calves, cow calves, lamb or goat kids, along with free treatment and advice from the government. For calves, the subsidy is PKR 4,000/animal



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for achieving a live weight of 200 kg in 120 days. For lamb or goat kids, the subsidy is PKR 1,500/animal for achieving a live weight of 45 kg in 120 days.

This is a four-year project (2019–23) with a budget of PKR 2.385 billion, spanning the whole of Pakistan. In the first year, more than 55,000 calves were fattened and 52,000-plus calves in the second year. Under this project, almost 5,000 fattening farms have been established so far and more than 2,000 farmers have been trained.

Development of Yak at High Altitude Areas of Pakistan (Gilgit-Baltistan)

This project is being implemented in 10 districts of Gilgit-Baltistan. Under this project, 82 yak farms have been registered and 2,510 yaks fattened.

Competitiveness constraints

The value chain diagnostic outlines Pakistan's meat industry's operations and provides an overview of the constraints faced by stakeholders at each stage in the chain. To remain realistic and resource efficient, this strategy will not be able to focus on all the issues affecting the value chain. An informed selection of the

most important issues was made. To assess relative importance, criteria used are the level of disturbance (perceived by national stakeholders) and the ease of resolution (both in terms of cost and time involved). The most pressing issues are presented in Table 7.

18.– Livestock and Dairy Development Board, Ministry of National Food Security & Research. Available from <https://lddb.org.pk/projects/future/>.

* The geographical coverage of the Minister's initiatives "Save the Buffalo Calf" and "Calf Feedlot Fattening" does not include the Province of Sindh, for political reasons.

Table 7: Longlist of competitiveness constraints

Constraints	Root causes	Ease of resolution (Grade 1-5; 5- very difficult)	Urgent action needed (Grade 1-5; 1- very urgent)
Supply level			
Shortage of animals reared for meat production leading to high livestock costs	The sale of livestock for meat production only occurs when an animal stop producing sufficient milk and/or becomes unable to work in the fields.	4	2
	Early age slaughtering of young female sheep, goats and other animals reduces supply and thus increases the demand–supply gap.	3	1
	Absence of large-scale feedlots or fattening farms dedicated to meat production. The bovine animal population is fragmented across different parts of rural Pakistan, making aggregation difficult.	3	1
	Smuggling of livestock to the Islamic Republic of Iran, and Afghanistan considerably reduces the supply of animals in the domestic market, hence contributing to increasing livestock prices.	4	2
Low average carcass weight puts the meat industry at a disadvantage	Indigenous cattle breeds, mainly consisting of milk breeds (which have poor feed conversion ratio, hence keeping the average carcass weight low) are not optimized for high yields.	3	1
	The poorly regulated domestic market dominated by unregistered operators do not give the impetus for improved productivity and quality.	4	1
	Limited or no practice of backgrounding of beef calves.	2	1
	Limited focus by livestock farmers to rear animals for meat production, therefore with a limited focus on fattening.	4	2
Indigenous cattle breeds are not well suited to cater for international meat demand	Prevalence of low-yield milk breeds that do not gain sufficient weight for optimal meat production.	3	1
	The main focus of cross-breeding programmes has so far been on milk breeds for the dairy industry. There has been no such initiative for the meat industry.	3	1
Limited adoption of good husbandry practices for animal production	Meat production is primarily perceived as a by-product of the dairy industry and, hence, not given due attention.	4	2
	Lack of modern, large-scale feedlots dedicated to the meat industry with adapted backgrounding and fattening practices.	2	1
	Limited reach of extension services, especially in remote rural areas.	2	2
	Lack of easily available quality animal feed due to insufficient production of fodder, which limits livestock production.	3	1
High costs of feed	Shortage of fodder production limits livestock production.	3	1
	Lack of industrially produced local animal feed.	3	1
	Expensive imports of animal feed and value-addition ingredients, as high duties are imposed on animal feed imports, which severely affects production costs.	1	2
The lack of aggregation results in a high cost of animal sourcing	Eighty-five per cent of total bovine animal stock is owned by households with 10 or fewer animals, fragmented across the country (Pakistan Business Council).	2	1
	Outdated methods and technologies are used in aggregating animals. Bovine animals are aggregated through undocumented intermediaries, or arthis.	4	2
Lack of animal traceability	The entire meat value chain relies on an outdated <i>arthis</i> -based system. It is largely informal and undocumented, so the traceability of animals cannot be ensured (no animal sales records and no history of animals, including birth, vaccination and genetics).	4	1
	The sector's fragmented nature makes traceability very difficult in Pakistan, with limited supply of bovine animals reared for beef in traceable farms.	3	1
	Lack on information available regarding livestock populations and their movement at the national level.	2	3

Constraints	Root causes	Ease of resolution (Grade 1-5; 5- very difficult)	Urgent action needed (Grade 1-5; 1- very urgent)
Prevalence of foot and mouth disease (FMD) in Pakistan	Absence of a clear and comprehensive national FMD control programme and lack of disease-free zones.	3	2
	Lack of traceability of livestock makes it difficult to control the spread of the disease.	3	1
	The meat supply chain is mainly informal and undocumented, and does not allow for animal traceability.		
	Animal vaccination is limited.	3	1
Production and processing level			
The meat industry's export basket remains extremely concentrated	Pakistan meat exports are currently restricted to a very limited number of international markets due to the prevalence of FMD.	4	1
Bovine meat processing plants operate at a low capacity (estimates vary between 25% and 40% of their maximum capacity)	The limited access to international markets and the lack of competitiveness of Pakistani meat in most market segments, in particular the frozen one, restrict the industry's potential.	4	1
	Export-oriented meat processors are not allowed to sell their products in the domestic market.	4	1
Overall poor export quality management system	Pakistan's domestic meat industry regulations and standards are outdated and do not cover the whole production chain.	5	2
	Absence of national standards for beef.	2	2
	Except for a limited number of modern facilities, most of the private sector and government-run abattoirs are ill-equipped, poorly managed and characterized by unhygienic slaughtering conditions. Hygienic conditions at the slaughterhouses is a prerequisite to access international markets, in particular higher-end ones.	4	3
Market access level			
Limited market access for Pakistani meat processors and exporters	Pakistan is unable to sell meat in most markets due to being in FMD Stage 2 according to the OIE.	4	1
	Pakistan is to advance through the PCP-FMD to progress to Stage 3 if the country is to significantly increase its market access for bovine animal meat.		
	Absence of a clearly defined strategy to enable access to new markets, including for further processed products.	3	1
Unattractive domestic market for bovine meat	Export-oriented processors are not allowed to sell meat in the domestic market.	2	2
	The prevalence of informal practices from unregistered facilities results in registered, export-oriented processors being unable to compete on a level playing field. The costs required by export-oriented meat processors to comply with quality requirements imposed by their international clients do not allow them to compete fairly and equally with unregistered domestic operators who do not apply food safety standards.	3	2
Inadequate access to market information	Information on export quality management is inadequate. There is no easily accessible and updated information on market access requirements in existing and potential partner countries for the meat and meat products processed in Pakistan.	2	3

Deeper discussion of selected priority issues

SUPPLY LEVEL

The high costs of raising live animals weight in the domestic livestock sector put the meat industry at a disadvantage on the international scene

The yield gap for cattle meat produced in Pakistan when compared to the largest meat-producing countries is abysmal. According to the FAO, the average carcass weight of cattle (or yield) in Pakistan was estimated at 130 kg/animal in 2019, compared to 360 kg/animal, 314 kg/animal and 270 kg/animal in the United States, Brazil and Australia respectively. While the low average carcass weight observed in Pakistan is not an issue as such, the high animal production cost for each kilogram kg of meat produced deeply affects the competitiveness of the export-oriented bovine meat industry, preventing the sector from competing on the same market segments as the above-listed competitors. In Pakistan, industry estimates indicate that about 89% of the overall production cost for meat processors consists of animal production, and only about 5% falls under the ambit of the producers, the remaining consisting of freight costs. Low carcass weight and high production costs are mainly attributed to the limited presence of meat breeds in Pakistan – and the fact that cattle is mainly reared for milk production – as well as poor farming practices and high costs of feed.

- **Traditional practices of rearing livestock affect yields.** The production of livestock in Pakistan is largely dominated by small rural households rearing animals for subsistence, mostly for dairy production. For the majority of these farmers, the sale of livestock for meat production only occurs when an animal stops producing sufficient milk and/or becomes unable to work in the fields. In these rural areas, animals are not given adequate nutrition and the adoption of good husbandry practices for animal production by mostly uneducated farmers is extremely limited. The combination of these factors coupled with the lack of large-scale fattening farms contributes to keeping the average carcass weight low. There is currently limited or no practice of back-grounding of beef calves in Pakistan.
- **Indigenous breeds are not well suited for meat production.** All indigenous breeds are generally either

milk breeds (i.e. genetically developed for higher milk production) or dual purpose at best, meaning that they are specialized for neither meat nor milk. Consequently, the vast majority of bovine animals in Pakistan have a relatively poor feed conversion ratio; that is, they do not convert feed to meat in a substantial way, resulting in low carcass weight. Unlike other developed countries, Pakistan has yet to develop an indigenous beef breed, a prerequisite to substantially increase yields in the medium to long term. The lack of specialized beef breeds impedes firms' ability to meet the global boneless beef demand.

High costs in animal sourcing deeply affects domestic meat processors and exporters' competitiveness

In addition to the low yield observed in livestock production, the competitiveness of local export-oriented meat processors in international markets is severely impacted by high – and continuously rising – livestock prices in Pakistan. As a result, the meat processed in Pakistan is currently not price competitive in most international markets dominated by the largest meat exporters, including Brazil and Australia. This is particularly true in the frozen meat market segment, as shelf life is high enough for importers, including Pakistani traditional destination markets in the Gulf, to source from anywhere in the world. Pakistan hence loses the competitive advantage gained from its proximity to the GCC market for fresh or chilled meat. Ensuring improved price competitiveness is all the more important, as Pakistan cannot compete in terms of quality, as the meat produced locally is less tender compared that supplied by the world's largest exporters.

Several root causes contribute to inflated livestock costs in Pakistan, chief among them the shortage of animals reared for meat production, the high costs of feed and inefficiencies in the supply chain.

- **The shortage of livestock and the limited supply of animals limited supply of animals reared for meat contribute to inflate livestock costs to processors and result in processing plants operating at low capacity.**

Pressure from the market for an increased supply of livestock to meet the increasing domestic demand also causes underage animals to be slaughtered, including young female bovine animals, sheep and goats, subsequently leading to

reduced supply and a worsening of the demand–supply gap. For this reason, male calves are often considered a liability for farmers and generally slaughtered at a young age.

Pakistan faces a significant smuggling issue, as live animals are smuggled across the border into meat-starved Iran and Afghanistan. These outflows limit animals' supply of local meat exporters and create pressure on prices in the Pakistani domestic market. These illegal practices are said to have been minimized greatly with the construction of fences on borders with both the countries. Preventing the smuggling of animals to neighbouring countries would spur the domestic demand for meat as well as for other linked industries such as leather.

- **The current feeding regime is not cost-effective.** Shortage of fodder production (the main and cheapest source of feed for livestock) is the major limiting factor for livestock production in Pakistan. Approximately 2% reduction in fodder area in each decade, along with two important fodder scarcity periods, one in winter (November to January) and the other in summer (May to June), further worsened the situation. According to various estimates, fodder production is insufficient to meet even half of the livestock population's maintenance requirements. In terms of nutrients, the deficit estimate is 15%–30% of the requirement and is even higher when expressed in terms of digestible protein. Due to the lack of industrially produced local animal feed, most small-scale farmers depend on what is locally available as the source of feed for their farms, while larger producers with higher financial strength rely on expensive imports of animal feed and value-addition ingredients to bridge the gap. Ensuring a regular supply of adequate and nutritious fodder at a competitive price is essential for the livestock sector's promotion and development.
- **The predominance of intermediaries in sales channels reduces farmers' margin and inflates livestock prices.** Pakistan's meat sector relies on inefficient auction markets to buy livestock, whereby the selling of animals is based on its appearance, with animal weight being assessed by eye. These transactions are mainly made through the hiring of intermediaries who buy animals on behalf of the meat processors. It is widely believed in the industry that the majority of the profit margin is taken away by the intermediary and the farmer and processors are left with a bare minimum.

The lack of aggregation also results in high costs of animal sourcing, because the livestock is fragmented across the country.

- » **Relevant activities in the PoA for supply level:**
1.1.1; 1.1.2; 1.2.1; 1.2.2; 1.2.3; 1.3.1; 1.3.2

MARKET ACCESS LEVEL

Limited access to international markets impedes Pakistan's export growth

- Due to the prevalence of FMD, the industry is currently dependent on a limited number of geographical destinations that have allowed imports of Pakistani meat to their local markets; chief among them are the six GCC countries. Together, the United Arab Emirates, Saudi Arabia, the State of Qatar, the Kingdom of Bahrain, Kuwait and the Sultanate of Oman capture 90% of Pakistani fresh or chilled bovine meat exports and the totality of sheep or goat meat exports in 2020 (UN Comtrade, 2020). This high concentration of Pakistan's export basket in terms of both products and markets leaves the meat industry highly exposed to product- and partner-specific shocks, including diplomatic tensions or strengthened quality control and quarantine systems.
- **Foot and mouth disease (FMD) is a priority livestock disease in Pakistan,** which was classified in Stage 2 of the PCP-FMD in 2015, aiming to reduce disease impact. This status restricts access of Pakistani meat to most international markets and efforts are now required to reduce viral circulation and further progress to PCP-FMD Stage 3. In particular, a clear FMD control programme is required, in particular promoting the extensive use of vaccines and the establishment of disease-free zones for FMD.
- **The lack of government initiatives to enable access to new markets hinders progress towards market and product diversification.** Irrespective of the prevalence of FMD in the country, Pakistan lacks vision for its domestic meat industry, as no clearly defined strategic plan for identifying and opening new markets that are readily accessible has been elaborated to date. Negotiating market access for Pakistani meat and meat products in key target markets should, therefore, be considered a priority, including for processed products, which are not subject to the restrictions related to FMD.

- Market access is further constrained by the limited access to market information for meat processors. Easily accessible and updated information on market access requirements in key target markets for meat and processed meat products would allow local meat processors and exporters to identify market and product opportunities, particularly in the cooked products segment. This would stimulate innovation in niche products with high added value, hence overcoming the FMD issue.
 - » Relevant activities in the PoA for market access level: 2.2.1; 2.2.2; 2.2.3; 3.2.1; 3.2.2; 3.3.1; 3.3.2

A number of impediments contribute to Pakistan's inability to become more competitive on international markets, including relatively high livestock production costs and low carcass yields, significantly affected by high feed costs, inadequate rearing practices, absence of indigenous meat breeds and the limited supply of livestock for meat production.

Limited market access due to the prevalence of FMD in the country perhaps represents the greatest hurdle for meat exports from Pakistan, which are currently restricted to a limited number of markets.

Building on this diagnostic and considering the current global trends in meat consumption, the next section provides tailored responses to the most pressing needs voiced by the main stakeholders involved in the development of the Pakistani meat sector and examines opportunities that might arise in the short to medium term.

THE WAY FORWARD

Pakistani meat exporters must adapt to a number of global market trends that take on an increasing importance when attempting to capture market share. The present strategy's focus is to assist the local meat sector to incorporate the key drivers of change in their

marketing strategies to leverage on the increasing global demand. The strategy proposed a number of strategic orientations for a more competitive and diversified industry that creates more value along its value chain.

Key drivers of change pushing the global demand for meat

The demand for meat is expected to increase substantially in the near future, driven by population growth, urbanization and rising per capita income, especially

in developing countries. The top trends that have influenced and will continue to influence the food industry globally are presented in Table 8.

Table 8: Key global trends in the meat sector

Trend	Implications
Population growth	<p>The major global driver in the food sector is population growth. From an estimated 7 billion people today, the United Nations predicts that the world population will reach 9 billion by 2050. Food security thus takes on unprecedented importance. Demand for meat, as for other food products, tends to increase mechanically as the world population grows, and is becoming increasingly popular with the growing global urban population in developing countries.</p> <ul style="list-style-type: none"> • Takeaway: Targeting developing countries, in particular in Asia, holds important potential and an assured growing market if retailer and consumer preferences are taken into account.
Rising per capita income in developing countries	<p>Consumption of meat in developing economies will increase in the future as rising per capita incomes result in an increasing propensity to consume more meat as a primary source of protein. This trend can already be observed with the booming demand from emerging and developing markets, particularly in Asia, as more comfortable disposable incomes are encouraging an increasing number of households to buy a wider range of convenient products, including meat, which is becoming more affordable and accessible. This trend is less clear in high-income countries, though, as the per capita meat consumption is already relatively high in these countries and there is growing demand for a plant-based diet and more sustainable healthy food.</p> <ul style="list-style-type: none"> • Takeaway: Fostering a market for Pakistani meat products in rapidly developing Asian economies, including China, should be a key consideration in exporters' marketing strategies.
Urbanization	<p>Another important factor pushing the international demand for meat and processed meat is the progressive changes in food consumption patterns, particularly lifestyle changes brought about by urbanization and increasing participation of women in the workforce. These trends contribute to a transition towards quicker and more modern cooking habits. Urban women in particular will increasingly opt for processed meat. This indicates a positive future for the sector as cities grow and incomes rise in many highly populated developing countries.</p> <ul style="list-style-type: none"> • Takeaway: The fast-evolving consumer preferences in urban areas, particularly in the processed meat market segment, need to be carefully studied and considered to ensure product relevance.

In addition to the above-mentioned factors, consumer preferences are increasingly becoming a major demand determinant. Key emerging demand determinants include the following trends.

High and sustainable demand for chilled boneless meat in high-income countries, but with growing environmental concerns

Consumers in high-income countries tend to consume primarily fresh or chilled beef premium, and in particular superior-quality cuts, which fetch higher prices. In these more sophisticated markets, consumers are becoming increasingly demanding in terms of quality and safety, with a growing health consciousness that has resulted in changing consumption patterns. Looking at the European market in particular, while per capita meat consumption has remained relatively stable in the past decades, shifting preferences for different types of meat have been observed, with an increase in poultry consumption and a decline in bovine meat intake, suggesting that health and environmental messages around red meat are affecting consumer choices. Along the same lines, an increasing number of consumers in high-income countries are also trying to eat meat in a more responsible manner, opting for products with higher animal welfare standards, such as grass-fed beef and organic products. This trend has also translated to an increasing demand for traceability of products, pushing governments to introduce standardized labelling rules and standards for meat products.

Increasing demand for frozen bovine meat in developing Asian markets

Boosted by rising disposable incomes, the rapidly increasing demand for meat emanating from developing economies is largely concentrated in the frozen market segment, especially in the boneless meat category. This preference for frozen meat mainly lies in the fact that these products generally fetch lower prices on international markets given their longer shelf life and the possibility to be shipped by sea from far and exported competitively at lower costs. Overall, developing markets in Asia remain highly price sensitive, preferring what is generally considered lower-quality frozen meat.

STRATEGIC FORESIGHT

The strategy design process considered Pakistan's meat industry's current capabilities, constraints, and future shifts and opportunities. Industry stakeholders were also given the opportunity to discuss and assess future orientations and upgrading trajectories, a critical step to achieving a comprehensive understanding of the sector's strengths and weaknesses and building consensus on the strategic steps to be taken, and to

jointly implement the strategy in a decisive and effective manner.

The Ride Two Curves exercise was used to analyse broad phenomena and evaluate the changes in the industry – focusing on the shifts caused by increasing demand of traceable meat, organic production and technological upgradation. Figure 24 below shows a visual representation of the Ride Two Curves exercise conducted with the participants. Key messages that emerge from this exercise are the following.

Some compelling **strategic future shifts** along the value chain for Pakistan's industry – latching on to current trends and innovations – include:

- Setting up disease-free zones to curb the problem of FMD, and implement a tagging system to meet the traceability demand from importing countries;
- Strengthening branding and packaging efforts to enhance product image in GCC countries to move out of commodity carcass sales to case-ready high-value products;
- Focus on developing skills for value-added beef products for Eastern markets like China;
- Have access to the local market and a level playing field to compete with the local informal meat sector;
- Explore the market of Central Asia due to logistics advantages to reach the landlocked countries.

THE FUTURE VALUE CHAIN

Unlocking the Pakistani meat sector's potential will require transformations throughout the value chain. These adjustments, as reflected in the future value chain schematic (see Figure 25 below), are the result of the targeted efforts detailed in the strategy's PoA that address the constraints identified in the competitiveness constraints section.

The future value chain will be characterized by:

- A market-related component involving identification of key markets in the short and medium to long term for Pakistani exporters;
- Structural changes to the value chain that result in strengthening of linkages or introduction of new linkages.

A transformed value chain will be characterized by meat processors having better access to an adequate and disease-free supply of raw material (livestock) with higher meat yields and at competitive prices. The future value chain should also entail greater market access



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for Pakistani meat products. Both components are integral parts of the future value chain, which is the basis of the strategic plan of action developed for the sector.

Structural adjustments to the value chain

Tapping into the potential of Pakistan's meat sector will require modifications throughout the value chain, from the development of high-meat-yielding beef breeds to developing a quality based national grading system and improving the hygienic controls at the slaughterhouses through the introduction of food safety regulations. Moreover, developing research and development for innovative products adapted to consumer preference, are adjustments required to tap into new markets. These include China, South-East Asia (Malaysia, Indonesia and the Republic of the Philippines), Central Asia (the Republic of Kazakhstan, the Republic of Uzbekistan, and Turkmenistan), Europe and North America. This will allow the sector to offer competitive levels of both quantity and quality of produce. The following segments of the value chain are foreseen as key areas of focus for achieving the future value chain.

Livestock production

The Pakistani meat sector's future performance will largely be determined by the sector's ability to improve the quality and availability of its raw material at competitive prices. This can be achieved by implementing a cross-breeding programme to develop high-meat-yielding beef breeds, reducing animal feed costs and increasing their availability, building small-scale

farmers' skills on good farming practices and orienting them towards backgrounding of beef calves. The strategy also aims to improve the traceability of animals through the introduction of a basic tagging system accessible to all farmers and suggests the need to conduct a national livestock census, an exercise that has not been conducted since 2006.

Enforce meat industry regulations

Only by enforcing regulatory changes to domestic slaughterhouses can local exporters truly compete in the domestic market. At present, the costs incurred by exporting firms to comply with stringent hygiene and quality requirements do not allow them to be price competitive when competing against unregulated slaughterhouses that do not bear any compliance costs. In this regard, the strategy recommends the enforcement of regulations allowing export-oriented meat processors to sell leftovers from exports in the domestic market. This should be implemented hand in hand with comprehensive meat industry regulation.

Investment to reach large-scale markets

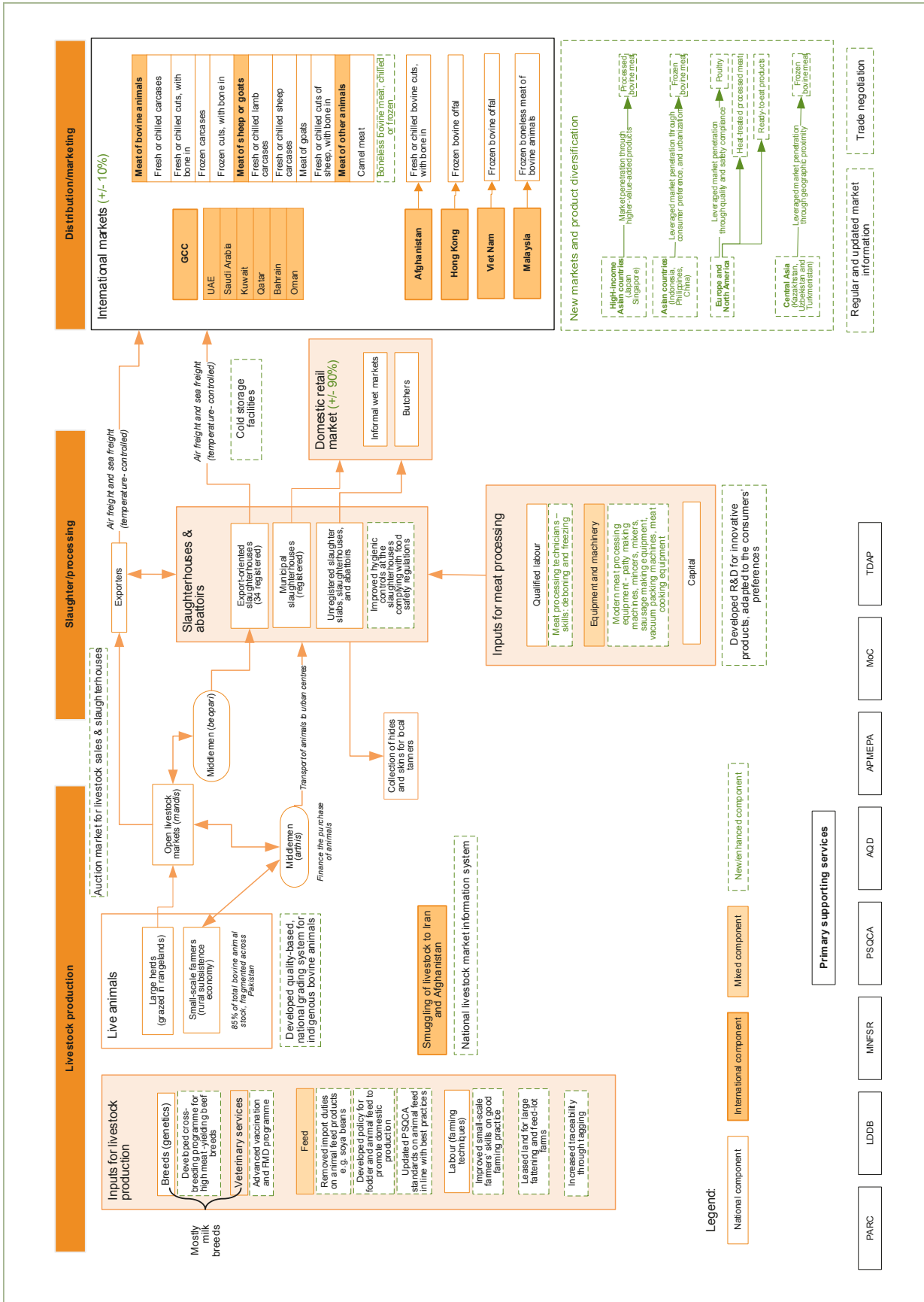
Meat is one of the most promising sectors in the country, but also one running on a substantially low capacity due to market access restrictions. Investments are required in large-scale fattening farms and feedlots where herds can be reared exclusively for backgrounding and fattening. This would allow for better quality and more competitive, disease-free meat.

Figure 24: Ride Two Curves exercise



Source: ITC, adapted from the Institute for the Future.

Figure 25: Future value chain



Source: ITC.

The main strategic orientations for the development of meat exports from Pakistan are presented below.

ORIENTATION 1 (SHORT TERM): CREATE THE CONDITIONS NECESSARY FOR LOCAL EXPORT-ORIENTED MEAT PROCESSORS TO OPERATE IN THE DOMESTIC MARKET ON A LEVEL PLAYING FIELD

The constrained access to the domestic market has a substantial impact on Pakistani meat exporters' competitiveness on the international markets. The prevalence of unregulated practices coupled with a weak and outdated regulatory framework make it virtually impossible for export-oriented slaughterhouses to compete on a level playing field with domestic wet markets which do not bear heavy hygiene compliance costs.

Access to the domestic market –under satisfactory conditions– would allow local export-oriented meat processors to venture into new market segments internationally. In particular, exporting prime cuts of bovine meat, including boneless, in a competitive way requires selling the rest of the carcasses domestically. Failing to do so results in prohibitive and uncompetitive production costs, also generating significant waste. A level playing field with the domestic market would consequently enable export-oriented businesses to progress towards greater product diversification in a competitive way.

Market focus

It is crucial to stress the importance of adopting a sequenced strategy when considering the opening up of the domestic market to export-oriented meat processors.

Firstly, legal provisions in place at the federal, state and municipal level for the sale of meat products from animals slaughtered in other Provinces of Pakistan should be reviewed and clarified, in particular when marketed through export-oriented processors (PoA Activity 3.1.1).

Basic regulations should then be introduced across the domestic market, providing standards, procedures and requirements for the production of safe meat and meat products to which the industry must abide (e.g. meat industry regulations or Act) (see PoA Activity 3.1.2). The main focus areas should include hygiene requirements for abattoirs and meat processing facilities, along with basic requirement for chilling,

packaging and labelling across all domestic market. A voluntary, quality-based national grading system for indigenous beef animal should also be developed in order for processors of superior-quality meat to differentiate themselves from the competition, as suggested in PoA Activity 2.3.1.

Only by enhancing the regulatory framework and reinforcing its enforcement can local export-oriented meat processors truly compete in the domestic market on a level playing field. The reason is that the costs currently supported by these entities to comply with stringent hygiene and quality requirements –including traceability– do not allow them to be price competitive when competing with unregulated slaughterhouses that do not bear compliance costs.

In addition to providing the local population with a wider range of higher-quality bovine meat, this would stimulate competition and translate into higher levels of investment and increased meat yield.

Required regulatory adjustments

- Review and streamline existing legal provisions at the federal, state and municipal levels granting permission to sell meat products, particularly for animals slaughtered in other Provinces of Pakistan and commercialized by export-oriented companies.(PoA Activity 3.1.1.).
- Provided that the above-mentioned regulation is enacted, develop and enforce comprehensive meat industry regulations for the production of safe meat and meat products to which the industry must abide (PoA Activity 3.1.2).
- Develop a national grading system for indigenous bovine animals (PoA Activity 2.3.1.).

ORIENTATION 2 (SHORT TO MEDIUM TERM): OPEN UP NEW STRATEGIC MARKETS FOR FRESH/CHILLED AND FROZEN MEAT EXPORTS

Due to the prevalence of FMD in Pakistan and the associated sanitary and phytosanitary (SPS) restrictions imposed by most importing countries, the number of international markets that are readily accessible to local meat processors and exporters is very limited. Evidence suggests that export-oriented slaughterhouses in Pakistan collectively have licences, permission, contacts and know-how to export to more than 20 countries, including the six GCC countries, Azerbaijan, Viet Nam, Malaysia, Iran, the Arab Republic of Egypt, Afghanistan, the Republic of Maldives and Hong Kong,

China, to name a few. In practical terms, Pakistan's exports of bovine meat are almost exclusively concentrated in the six GCC countries, with limited and very variable volumes exported to other Asian countries, including Afghanistan, Viet Nam, Malaysia and Azerbaijan.

In order for the Pakistani meat sector to thrive on the international scene and take advantage of its unused processing capacity, priority focus should be placed on opening up new strategic markets. Indeed, while resources should be mobilized to advance through the PCP-FMD to progress to Stage 3, considerable effort should be made to negotiate market access to new destinations at the same time, through bilateral agreements. By diversifying its export destinations, local meat processors and exporters will have the opportunity to access markets with greater purchasing power and market demand, thereby increasing export revenues for Pakistan. Penetrating new markets will also allow the local meat industry to reduce its dependency on GCC countries and, by way of consequence, its exposure to demand shocks in these countries.

Market focus

Market access should be negotiated with key import markets that are readily accessible to Pakistani meat processors. Agreements should particularly seek the recognition of sanitary and veterinary measures. The top priority markets are presented below.

Tapping into the vast and rapidly expanding Chinese market should be considered a top priority

China is experiencing a surge in meat consumption in recent years, driven by rising income levels, higher disposable income and rapid middle-class expansion. Since the country does yet possess the capacity to cater to the needs of its booming domestic demand, it imports ever greater quantities of meat, including bovine meat. As a result, imports of bovine meat from China have been multiplied more than tenfold in the past decade to reach \$10.2 billion in 2020, making it the largest importer of bovine meat in the world, alone capturing 21% of world beef imports (UN Comtrade, 2020).

As the supply-demand gap is not likely to be bridged through domestic production in the near future, the Chinese Government is inclined to grant market access to an increasing number of trading partners to fill in the gap in the beef supply. Duty-free access has been granted to Pakistan for most bovine meat products classified under HS 0201 'fresh or chilled meat of bovine animals' HS 0202 'frozen meat of bovine animals'

, and processed meat products classified under HS 1601 and HS 1602, including heat treated meat under the China–Pakistan Free Trade Agreement II (CPFTA-II). In practical terms, however, the prevalence of FMD and the incapacity of meat processors to comply with the quality requirements and phytosanitary standards imposed by the Chinese authorities does not currently allow for beef imports from Pakistan. Tapping into the opportunities offered by the Chinese market, and the Chinese Muslim community in particular, will require investments in quality and sanitary certifications to set up FMD-free zones.

Untapped opportunities exist in South-East Asia

A rapidly increasing demand from Association of Southeast Asian Nations (ASEAN) member States was observed in recent years, chief among them Malaysia, Indonesia and Viet Nam. As a group, ASEAN emerged as the second-largest importer of frozen bovine meat, with imports exceeding \$2 billion in 2020, representing 7.5% of the global trade. Opportunities exist for Pakistani exporters to take advantage of these untapped potential markets, in particular through the strengthening of, even though limited, existing trade relationships with bovine meat importers in these countries, including Malaysia and Viet Nam. In this regard, it needs to be stressed that the Malaysian Government is progressively allowing meat imports from a few approved suppliers in Pakistan. It is also to be noted that Pakistan has started FTA negotiations with Indonesia and the Kingdom of Thailand, which are large meat importing countries.

Central Asian countries could offer promising prospects

Given its geographic location, Pakistan is well poised to cater to the needs of Central Asian countries, particularly Kazakhstan, Uzbekistan and Turkmenistan. A particular focus should, therefore, be placed on promoting Pakistani bovine meat in these Central Asian countries, maximizing the country's logistics advantages to reach these landlocked countries and ensure a consistent supply of bovine meat products, especially in frozen form.

Required investments

- Expansion of Pakistani meat exports into more markets requires investments to comply with international regulatory requirements, including in quality and sanitary certifications, with a focus on setting up disease-free zones (PoA Activity 2.2.1).

- Investment is required to improve hygienic controls at slaughterhouses in order to address importers' concerns about food safety (PoA Activity 2.3.2).

Required skills

Securing better market access conditions for meat exports in strategic markets will require the strengthening of Pakistan trade officers' trade negotiating capacity (PoA Activity 3.2.2).

ORIENTATION 3 (MEDIUM TO LONG TERM): EXPAND PAKISTAN'S MEAT INDUSTRY PRODUCT RANGE, FOCUSING ON THE FROZEN MEAT AND BONELESS CUTS, BOTH CHILLED AND FROZEN, MARKET SEGMENTS

Opportunities exist for the Pakistani meat industry to increase and diversify exports, particularly through the processing of boneless cuts and the development of the frozen meat segment in new markets as well as within its existing export destinations. The Pakistani meat sector is currently concentrated in chilled carcasses market segment, mainly to GCC markets. In order to become more competitive on the international scene, and while pursuing improved market access (see Orientation 2), Pakistan needs to strengthen its capacities to move up the global value chain and offer a wider range of quality products. In particular, support should be provided to local meat processors and exporters to develop their capacity to supply boneless chilled bovine meat and frozen bovine meat, for which there is a significantly higher global demand, in a competitive manner.

Generally considered as lower quality and cheaper, frozen beef has a longer shelf life and can be transported by sea to the far markets.¹⁹ While this improves the product's marketability and provides better returns due to cheaper transportation costs by sea, as opposed to by air cargo in the case of chilled meat,²⁰ it does not favour Pakistan's position, as it allows more distant competitors to offer their products in almost all importing markets. In particular, the competitive advantage that Pakistan exporters enjoys from its relatively short distance – and low shipping costs – from a number of market destinations in Asia in the chilled carcasses segment is lost out to competitors that have

the capacity to market frozen at much lower prices, including Brazil and India. This is particularly true in price-sensitive developing countries that mainly import meat in its frozen form.

Consequently, and in addition to strengthening the sector's capabilities to process frozen meat, substantial efforts and resources should also be mobilized to increase meat yields and reduce exporters' operating costs throughout the value chain with a view to become price competitive in this particular market segment.

Market focus

Pakistan should take advantage of its established trade relationships in the chilled meat segment in the Gulf markets to explore higher-value-added market segments, including boneless bovine meat, chilled or frozen. Pakistani meat has lot of acceptance in Gulf countries due to the high numbers of expatriate population, in particular in Saudi Arabia and the United Arab Emirates. Nevertheless, although Pakistan is by far the largest supplier of chilled carcasses of bovine animals to GCC countries with a market share of approximately 75%, it only captures less than 10% in the boneless chilled bovine meat segment, far behind more distant suppliers such as Australia (25%) and Brazil (23%). Pakistani bovine meat's lack of competitiveness is even more pronounced in the frozen bovine meat market segment, with the country only capturing a market share of less than 2% in the frozen bovine meat segment in 2020, lagging behind India (35%) and Brazil (31%). In order for Pakistan to capture greater market share in GCC countries, Pakistani meat processors will need to increase their capability to process boneless cuts and frozen bovine meat in a competitive manner. Bone-in beef is also popular in the Gulf region.

The Chinese market, by far the largest importer of frozen beef, remains untapped

Provided that access to the Chinese market is improved (see Orientation 2), tremendous opportunities exist for Pakistani export-oriented meat processors in this booming market, particularly in the frozen, boneless meat segment. The Chinese demand for beef on the international markets consists almost exclusively of boneless cuts in the frozen form (90%). In 2020, China captured approximately 36% of the world imports of frozen beef (adding up to 45% considering Greater China²¹). More than three-quarters of this demand is

19.– Pakistan Business Council (2021). 'Scaling-Up Bovine Meat Exports of Pakistan – A Review of Opportunities in the Bovine Meat Sector', P. 2.

20.– Ibid.

21.– Greater China encompasses mainland China, Hong Kong, Macao Special Administrative Region and Taiwan Province of China.

currently being catered for by Brazil (43%), Argentina (21%) and Australia (12%). If Pakistan is to expand into the Chinese market and benefit from immense export opportunities, meat processors will nevertheless have to diversify into other meat segments, especially frozen, boneless beef.

The need to diversify away from fresh carcasses to penetrate the Chinese market is all the more pressing, as no concessions were granted under the China–Pakistan Free Trade Agreement II (CPFTA-II) for fresh or chilled bovine carcasses, on which a prohibitive tariff of 20% is still applicable. On the other hand, Pakistani bovine meat processors enjoy duty-free access for the other market segment (all frozen bovine meat products as well as fresh boneless meat and fresh bovine cuts with bone in), providing Pakistan with a substantial advantage over other major beef exporters. As mentioned earlier, in order for Pakistani meat processors to penetrate this promising market, substantial efforts and resources should be mobilized, in particular complying with the stringent phytosanitary standards imposed by the Chinese authorities.

The need to switch towards the frozen beef market segment is also valid to expand to other major markets in Asia, including Malaysia, Indonesia and Viet Nam, where similar consumption patterns can be observed.

Required investments

- Increase the uptake of value-added processing equipment and tools for cuts and de-boning.
- Increasing export of chilled meat by sea will also require meat processors to invest in vacuum packaging, including controlled atmosphere packaging (CAP), which will increase the shelf life of chilled bovine meat, making it viable to export larger quantities.²²

ORIENTATION 4 (MEDIUM TO LONG TERM): PROMOTE PRODUCT DIVERSIFICATION INTO HIGHER-VALUE-ADDED PRODUCTS

Currently constrained by import bans imposed by most countries on Pakistani meat due to the prevalence of FMD, local meat processors and exporters have the possibility to diversify their production away from the fresh/chilled segment and develop more sophisticated, higher-value-added processed meat products.

The presence of diseases in Pakistan makes the opening up to new markets for the traditional fresh/chilled market segment – as well as the frozen meat market segment, which is subject to the same requirements – a slow and complex process requiring the mobilization of a number of actors, including at the institutional level. In parallel, efforts should be deployed to venture into the manufacturing of further processed products that have been heat treated in order to circumvent the restrictions associated with FMD, as these products are not subject to the same hygiene regulations (heat treatment process, or pasteurization, of meat products kills all harmful pathogens, making them safe for consumption). While recent initiatives to develop such products have recently been undertaken by a few local export-oriented bovine meat processors, the domestic market for processed bovine meat products remains at a nascent stage and it will take some time for this market segment to fully develop.

Heat-treated processed meat products include cooked (including cured and cooked, and dried and cooked), heat-treated (including sterilized) and canned products. Product development into those value-added products could include ready-to-cook and ready-to-eat meat products such as cooked jerkies, canned corned beef, pre-grilled beef patties, boiled meat pieces in sauce, meat pastes and meat sausages. Developing such value-added products would allow Pakistani meat processors to access international markets that were generally beyond their reach due to the prevalence of FMD, including high-income countries such as the EU and North American markets.

Market focus

North American and European markets

As illustrated in Figure 6, EU member States, the United States and Canada are the largest players in the global processed meat market, together capturing approximately 73% of world imports in 2020. Special attention should, therefore, be paid to these markets, with a particular focus on countries that have a large Pakistani diaspora, chief among them the United Kingdom, the second-largest importing country of prepared or preserved beef after the United States. The large North American market also offers promising business opportunities, especially driven by the dynamic demand for imported processed beef from the United States in the past decade, which progressed at a robust CAGR exceeding 6% in 2012–20.

22.– Pakistan Business Council (2021). 'Scaling-Up Bovine Meat Exports of Pakistan – A Review of Opportunities in the Bovine Meat Sector', P. 57.



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Non-tariff barriers could represent a significant barrier to penetrate these markets, particularly technical barriers associated with compliance with the stringent quality and food safety standards imposed by these countries, including animal traceability requirements. Marketing and better-labelled products will also be a key factor to successfully enter these markets.

High-income Asian countries

On the Asian continent, high-income countries, including Hong Kong, Japan and the Republic of Singapore, offer the most promising prospects for Pakistani bovine meat processors and exporters. Even though these markets remain relatively small in terms of imported value (\$91 million, \$45 million and \$21 million in 2020 respectively), they possess a culture of consuming processed bovine meat that Pakistani exporters could take advantage of.

Recent signs of development have also been observed in other developing Asian markets, including Indonesia, the Philippines and China. While the market demand for these products is still nascent in these countries (between \$13 million in China and \$20 million in Indonesia), two-digit annual import growth rates were observed in 2016–2020, driven by rising disposable income and an increasing middle-class urban population. It is anticipated that this demand will continue to progress in coming years, as the propensity to consume convenience food is set to increase as per capital incomes continue to rise. In these more

price-sensitive markets, offering price-competitive products will be the main success factor.

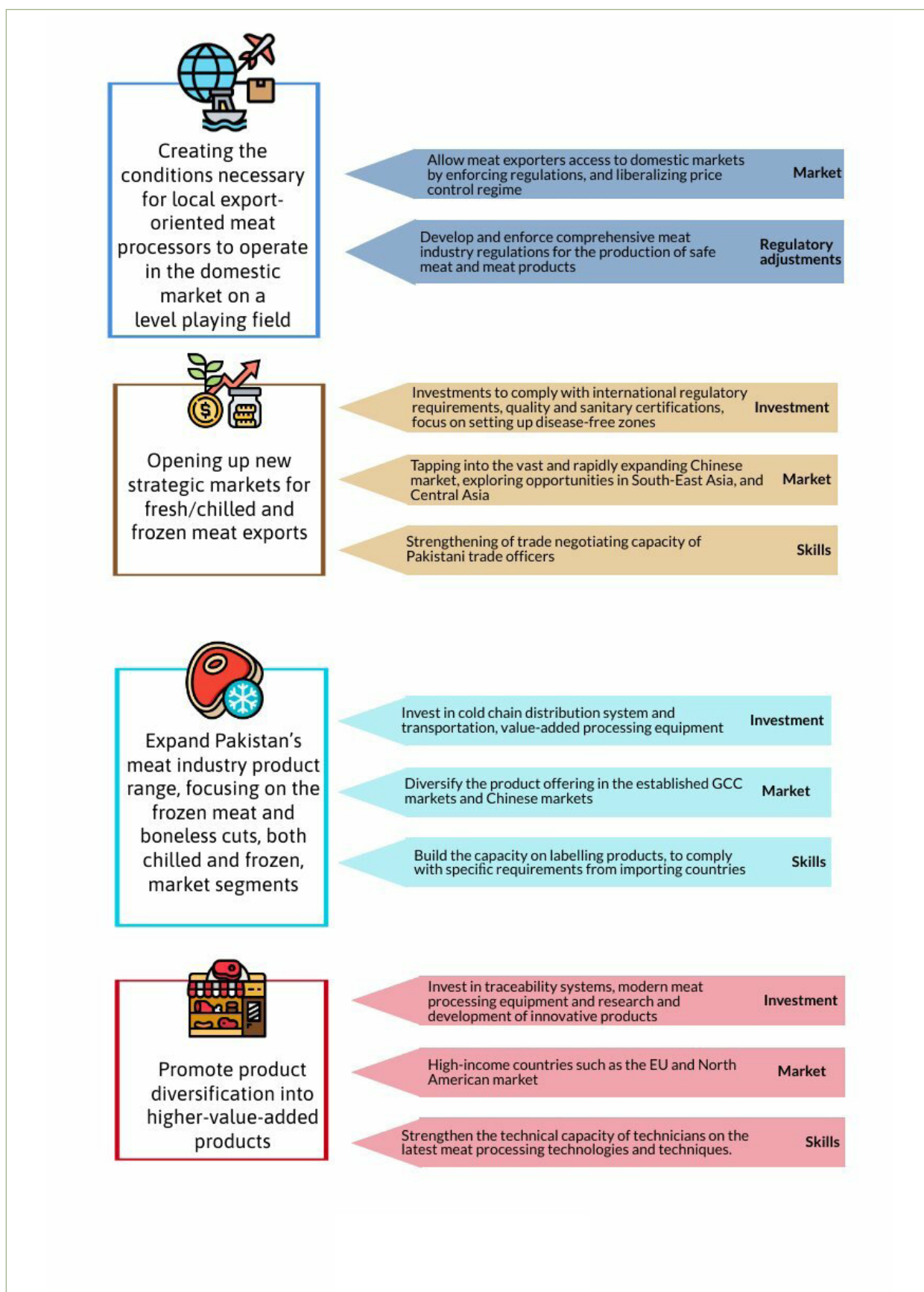
Required investments

- Invest in traceability systems to meet the requirements of high-income countries before exporting processed beef products (PoA Activities 2.1.1 to 2.1.4).
- Invest in modern meat processing equipment and technologies, including patty making machines, mincers, mixers, sausage-making equipment, vacuum packing machines and meat-cooking equipment, etc.
- Invest massively in research and development to develop innovative products, adapted to consumers' preferences in key target markets (PoA Activity 3.2.1).

Required skills

- Pakistan's export-oriented meat sector should strengthen its technical capacity to manufacture and supply higher-value-added processed meat and develop a wider product range. In particular, meat processors' technicians should be up to date on the latest meat processing technologies and techniques.
- The market intelligence function should be strengthened to provide the sector with up-to-date information on market access requirements and consumer preferences (PoA Activity 3.3.1).

Figure 26: Key drivers of change



Source: ITC generated.

The strategic framework

THE VISION

In the context of the STPF's broader vision for 'Pakistan to become a dynamic and efficient domestic market as well as a globally competitive export-driven economy', its meat industry offers an important opportunity for increased value addition and diversification of exports.

Based on a number of key ideas and driving concepts that the sector's stakeholders identified as crucial



to guide progress and change in the sector, the following delineates this strategy's proposed vision and strategic approach to develop the meat sector. The vision statement was agreed on by all stakeholders attending the online consultations held in September 2021.

“ To develop the Pakistani meat industry with the highest food safety and halal standards to serve international markets with value-added products. ”

To achieve this vision and guide the strategy's implementation, a number of strategic objectives have been defined to pursue the key value chain transformations required to unlock the industry's potential.

THE STRATEGIC OBJECTIVES

The plan of action (PoA) responds to the vision by addressing the sector's constraints and leveraging opportunities in a comprehensive manner through a robust, actionable and realistic set of activities. The PoA is structured around the above-mentioned strategic objectives, agreed with all sector stakeholders, and constitutes the heart of this strategy.

Strategic Objective 1: Ensure access to competitive raw material to increase the attractiveness of Pakistani meat products on global markets

- Increasing the supply of livestock reared for meat production, either higher meat yields and at competitive prices, is a prerequisite to improve the Pakistani meat industry's competitiveness.

Strategic Objective 2: Ensure a supply of disease-free, quality and traceable livestock

- Improving Pakistan market access to new destinations in a sustainable way through improved traceability of meat throughout the value chain, progressive eradication of FMD, and the provision of better grade processed meat.

Strategic Objective 3: Improve market access conditions for Pakistani meat products

- Securing greater access to international markets for Pakistani meat products and allowing export-oriented meat processors to compete on the domestic market on a level playing field.

IMPLEMENTATION FRAMEWORK

The objective of the meat strategy for Pakistan is to create an enabling environment for the industry to realize its potential and benefit the country's image by 'developing the Pakistan meat industry with the highest food safety and halal standards to serve international markets with value-added products'. Achieving this ambitious objective will depend on the industry's ability to implement the activities defined in this strategy. To structure sector development, it is recommended that the following interventions be implemented with priority:

- Implement a cross-breeding programme to develop high-meat-yielding beef breeds, including through importing high-yielding breeds and semen for artificial insemination (PoA Activity 1.2.1).
- Build farmers' skills on good farming practices for animal production food safety and orient them towards rearing cost-efficient animals exclusively for meat production through backgrounding of beef calves (PoA Activity 1.2.3).
- Work towards improving the traceability of animals through the introduction of a basic tagging system for animal identification that is accessible to all farmers (PoA Activity 2.1.1); conduct a national census (PoA Activity 2.1.2); and develop a national livestock database (PoA Activity 2.1.3).
- Establish basic requirements for hygiene as well as for chilling, packaging and labelling operations in the domestic market.
- Negotiate market access for Pakistani meat and meat products in previously identified key target markets that are readily accessible to Pakistani meat processors (PoA Activity 3.2.2).

MANAGING FOR RESULTS

The translation of priorities into implementable projects will contribute to achieving the substantial increase in export competitiveness and export earnings envisaged under the strategy. These will be driven by reforming the regulatory framework, optimizing institutional support to exporters and strengthening private sector capacities to respond to market opportunities and challenges. Allocation of human, financial and technical resources is required to efficiently coordinate, implement and monitor overall implementation.

Successful execution of activities will depend on stakeholders' abilities to plan and coordinate actions in a tactical manner. Diverse activities must be synchronized across public and private sector institutions to create sustainable results. Therefore, it is necessary to foster an adequate environment and create an appropriate framework for the strategy's successful implementation.

Key to achieving the targets will be coordination of activities, monitoring progress and mobilizing resources for implementation. To that effect, industry representatives recommended that a public-private sector specific council for the processed food and beverages industry be rapidly established, operationalized and empowered. The sector specific council is to be responsible for overall coordination, provision of policy guidance and the monitoring of industry development along the strategic orientation.

MEAT SECTOR SPECIFIC COUNCIL

It is recommended that a meat sector specific council be rapidly established by the Minister of MoC and effectively organized by the TDAP and MoC to support the industry with the capacity to steer its development strategically. The sector specific council is to be facilitated by a secretariat coordinated by the TDAP, supported and advised by APMEPA.

Industry representatives recommend that the meat sector specific council be composed of the following members:

- TDAP;
- MoC;
- Animal Quarantine Department (AQD);
- Livestock and Dairy Development Board (LDDDB);
- National Veterinary Laboratory (NVL);
- Pakistan Agricultural Research Council (PARC);
- Provincial livestock development departments;
- Animal Husbandry Commissioner;
- Pakistan Standards & Quality Control Authority (PSQCA);
- Pakistan Council of Scientific and Industrial Research (PCSIR);
- Pakistan Halal Authority;
- Federation of Pakistan Chambers of Commerce & Industry (FPCCI);
- APMEPA;
- The Organic Meat Company (Pvt) Ltd;
- Livestock Exporters Association of Pakistan;
- Livestock farmers' associations;
- State Bank of Pakistan;
- University of Veterinary & Animal Sciences (UVAS);
- University of Agriculture Faisalabad (UAF).

It is recommended that the sector specific council be empowered to meet quarterly and to implement the following functions:

- Create a shared understanding of key market challenges and opportunities facing the sector;
- Set goals and targets that, if achieved, will strengthen the sector's competitive position and enhance Pakistan's overall capacity to meet markets' changing demands;
- Propose key policy changes to be undertaken and promote these policy changes among national decision-makers;
- Support the coordination, implementation and monitoring of activities in the sector by the government, private sector, institutions or international organizations to ensure alignment to goals and targets, as required to contribute to resource identification and alignment.

As part of the Strategic Trade Policy Framework (STPF) and the sector strategy design process, it has been recommended that an *inter-ministerial and multi-industry private sector* council be organized and structured to address overall challenges and opportunities to Pakistan's trade performance. It is recommended that chairs of the sector specific council be members of the council to consult on key trade thematic areas ranging from policy to regulations and trade negotiations.

KEY SUCCESS FACTORS FOR EFFECTIVE IMPLEMENTATION

The presence of the sector specific council to oversee the strategy's implementation is a key success factor, but it is not sufficient to effectively fulfil its assigned functions.

Private sector support and participation in implementation

The private sector clearly expressed its willingness to contribute, directly or in partnership with public institutions, to the strategy's implementation. Their implementation efforts can range from providing business intelligence to institutions to contributing to project design, promotion and branding, and policy advocacy, etc. In brief, the private sector's practical knowledge of business operations is essential to ensuring that the strategy remains aligned to market trends and opportunities.

Proactive networking and communication

The key implementing institutions detailed in the PoA need to be informed of the strategy's content and the implications for their 2022–26 programming. This networking and communication is essential to build further ownership and provide institutions with the opportunity to confirm the activities they can implement in the short to long term. It will be important for the TDAP, MoC and members of the sector specific council to reach out to relevant institutions nationally to create awareness and support for the meat industry's development.

Resources for implementation

The sector specific council, in collaboration with the TDAP and the Secretariat at MoC, will need to leverage additional support for efficient implementation. Effective planning and resource mobilization is indispensable in supporting strategy implementation. Resource mobilization should be carefully planned and organized.

As the meat industry is a priority sector strategy of the STPF, the Government of Pakistan should define annual budget allocations and support to drive the industry's growth. This commitment will demonstrate clear engagement towards strengthening the sector and will encourage private partners to support development. In addition to national budget support, resource identification will require the Board of Investment (BOI) to effectively target foreign investors in line with the strategy's priorities, such as the attraction of more commercial farmers. Investment flows

to Pakistan should also be considered as a valuable driver of strategy implementation and overall industry development.

The various implementation modalities will determine the success of the strategy's implementation.

However, high-level support from the government, in collaboration with strong championship by the private sector, will be the real driver of successful strategy implementation.

The PoA is structured around three strategic objectives and associated operational objectives. For each objective, the PoA outlines detailed activities and their implementation modalities, which include:

- **Priority level:** Priority 1 being the highest and 3 the lowest.
- **Period:** The desired time-frame of the activity.
- **Targets:** Quantifiable targets that allow completion monitoring of the activity during the implementation stage.
- **Leading implementing partners:** One single accountable lead institution per activity. (The institution can also have a technical role or can solely have an oversight and coordination role.)
- **Supporting implementing partners:** Any institution that should be involved at any stage of the activity's implementation.



PLAN OF ACTION (2023-2027)

Strategic objective	Operational objective	Activity	Priority (1 = Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
1. Ensure access to competitive raw material to increase the attractiveness of Pakistani meat products on global markets	1.1. Ensure availability of competitive quality feed and improve feed management	1.1.1. Remove import duties on animal feed products to ensure access to quality feed for farmers (e.g. soybeans).	1					Reform	<ul style="list-style-type: none"> Import duty regulation on animal feed adjusted 	Ministry of Commerce	<ul style="list-style-type: none"> Ministry of National Food Security & Research (MNFSR) Federal Board of Revenue 	
		1.1.2. Develop a national programme to develop fodder production domestically – mainly focusing on soya beans – and identify suitable areas for cultivation. The programme shall include the development of a local GMO-free mother seed.	2					Project	<ul style="list-style-type: none"> Seasonal fodder production plan and feed composition established and available on the database for producers. 	MNFSR	<ul style="list-style-type: none"> Agriculture Policy Institute National Veterinary Laboratory Pakistan Agricultural Research Council (PARC) Livestock wing Provincial livestock departments 	
		1.1.3. In consensus with all stakeholders involved in the value chain, revisit and update compulsory PSQCA standards specification on animal feeds, in line with international best practice, especially the 17 national standards not in line with ISO. Provide technical and financial support to provincial livestock departments for upgrading conformity assessment capabilities.	2					Reform	<ul style="list-style-type: none"> At least 5 critical standards updated to ISO level Provincial livestock departments received a training programme and upgradation of basic equipment. 	Pakistan Standards & Quality Control Authority (PSQCA)	<ul style="list-style-type: none"> APMEPA PARC Provincial livestock departments MNFSR 	
	1.2. Stimulate and increase the supply of animals reared for meat production	1.2.1. Implement a cross-breeding programme to develop high-meat-yielding beef breeds, through the establishment of semen production facilities. This could be done through a PPP model using existing vacant livestock farms.	1					Project	<ul style="list-style-type: none"> Cross-breeding programme implemented At least 10% increase in feed conversion ratio (FCR) At least 10% increase in average weight gain (AWG) At least 3 semen production facilities established by 2025 At least 10% increase in dressing carcass ratio 	PARC	<ul style="list-style-type: none"> University of Veterinary & Animal Sciences (UVAS) University of Agriculture Faisalabad MNFSR (LDDDB) Research Center for Conservation of Indigenous Breeds Jhang Corporate Dairy Farmers Association 	

Strategic objective	Operational objective	Activity	Priority (1 = Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
1. Ensure access to competitive raw material to increase the attractiveness of Pakistani meat products on global markets	1.2. Stimulate and increase the supply of animals reared for meat production	1.2.1. Introduce a national regulation setting a minimum slaughter weight for bovine animals to enhance meat production and increase yields.	1					Reform	<ul style="list-style-type: none"> Legislation on minimum slaughter weight enacted and enforced 	MNFSR	<ul style="list-style-type: none"> Provincial assemblies Provincial livestock secretariats APMEPA 	
		1.2.2. Build farmers' skills through agriculture extension on good farming practices for animal production food safety ²³ and orient them towards rearing cost-efficient animals exclusively for meat production through backgrounding of beef calves. Focus should be placed on large scale operations, including through Cooperative models in which small farmers can be partners in business.	1					Project	<ul style="list-style-type: none"> Yearly extension programme in place. At least 1000 farmers trained per year. 	LDDB	<ul style="list-style-type: none"> Provincial livestock departments 	
	1.3. Support the development of fattening and backgrounding	1.3.1. Lease land to private processors or exporters in disease-free zones to establish large-scale fattening farms and feedlots where herds can be reared exclusively for backgrounding and fattening. As a first step, a pilot project could be implemented, where land is available and considered to be a disease-free zone.	2					Project	<ul style="list-style-type: none"> 500–1,000 acres leased Pilot project implemented At least 10 feedlots established per disease-free zone 	Planning Commission Pakistan	<ul style="list-style-type: none"> Provincial planning and development boards Cholistan Development Authority APMEPA Board of Investment (BoI) 	
		1.3.2. Provide subsidized credit to encourage the expansion of feedlot farming practices and backgrounding with land used as collateral.	2					Project	<ul style="list-style-type: none"> New subsidized credit scheme in place 	Zarai Taraqati Bank Limited (Agricultural Development Bank of Pakistan)	<ul style="list-style-type: none"> State Bank of Pakistan Commercial banks APMEPA 	

23 – Intervention areas to include: farm management; animal health management; veterinary medicines and biologicals; animal feeding and watering; environment and infrastructure; and animal and product handling, as defined by the FAO and OIE in their *Guide to Good Farming Practices for Animal Production Food Safety*. Available from <http://www.fao.org/3/i0482t/i0482t00.pdf>.

Strategic objective	Operational objective	Activity	Priority (1 = Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
2. Ensure a supply of disease-free, quality and traceable livestock	2.2. Advance progress through the PCP-FMD to Stage 3	2.2.2. Building on the tagging system for animal identification (see 2.1.1), undertake a mass vaccination programme by recording tag numbers of each animal vaccinated.	2					Project	<ul style="list-style-type: none"> Mass vaccination programme carried out over a two year period covering all tagged animals 	Animal Husbandry Commissioner	<ul style="list-style-type: none"> MNFSR (AQD) Provincial livestock departments 	
		2.2.3. Once the tagging system is introduced (Activity 2.1.1) and after the rules imposing that only tagged animals are allowed to the market are enforced (Activity 2.1.4), introduce a regulation authorizing access to livestock markets and slaughterhouses only to animals that are vaccinated.	3					Reform	<ul style="list-style-type: none"> Legislation enacted At least 50% of <i>mandis</i> implementing the regulation 	Animal Husbandry Commissioner	<ul style="list-style-type: none"> Cattle Market Management Company (CMMC) APMEPA 	
	2.3. Improve quality and food safety along the value chain	2.3.1. Develop a voluntary, quality-based national grading system for indigenous bovine animals to encourage farmers to raise livestock to a certain standard and improve quality. 2.3.2. Develop standard operating procedures (SOP) to obtain AQD licence/certification from veterinarians mandated across the board, i.e. for both domestic slaughtering and export-oriented facilities, with a rotation between the slaughter facilities. 1. New strategic market for fresh/chilled and frozen meat –China, Southeast Asia, and Central Asia 2. Processing of boneless cuts –GCC (in particular, Saudi Arabia and the United Arab Emirates) and China 3. Higher value-added products (ready-to-cook and ready-to-eat meat products such as cooked jerkies, beef patties, meat pastes and meat sausages, etc.) –North American and European markets and High-income Asian countries.	1					Project	<ul style="list-style-type: none"> Meat standards Pakistan (MSP) established 	PSQCA	<ul style="list-style-type: none"> APMEPA 	
			2					Reform	<ul style="list-style-type: none"> SOP developed All veterinarians hired by slaughterhouses have obtained their AQD licence/certificate by 2024 	MNFSR (AQD)	Provincial Governments	

Strategic objective	Operational objective	Activity	Priority (1 = Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
3. Improve market access for Pakistani meat products	3.1. Make the domestic market accessible and available to export-oriented slaughterhouses	3.1.1. Review and streamline existing legal provisions at the federal, state and municipal levels granting permission to sell meat products, particularly for animals slaughtered in other Provinces of Pakistan and commercialized by export-oriented companies.	1					Reform	<ul style="list-style-type: none"> Legislation enacted 	MNFSR	<ul style="list-style-type: none"> Provincial livestock departments Provincial food authorities APMEPA 	
		3.1.2. Establish basic requirements for hygiene and chilling, packaging and labelling operations in the domestic market.	1					Reform	<ul style="list-style-type: none"> Meat industry regulations enacted and enforced 	MNFSR	APMEPA	
	3.2. Secure better market access conditions for Pakistani meat products	3.2.1. Undertake a comprehensive study to identify value-added meat products that can be easily processed in Pakistan (e.g. heat-treated processed meat and ready-to-eat products, etc.) and for which market access to major importers could be granted.	2					Project	<ul style="list-style-type: none"> Study developed and disseminated among potential investors (national and international) At least 10 new products identified 	TDAP	<ul style="list-style-type: none"> Federation of Pakistan Chambers of Commerce & Industry (FPCCI) Lahore Chamber of Commerce & Industry (LCCI) Karachi Chamber of Commerce & Industry (KCCI) BOI 	
		3.2.2. Negotiate market access for Pakistani meat and meat products in previously identified key target markets that are readily accessible to Pakistani meat processors, including heat-treated meat products to China.	1					Reform	<ul style="list-style-type: none"> At least 5 target markets allowing access to Pakistani meat products 	Ministry of Commerce	<ul style="list-style-type: none"> APMEPA MNFSR TDAP 	

Strategic objective	Operational objective	Activity	Priority (1 = Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
3. Improve market access conditions for Pakistani meat products	3.3. Improve access to market information and support export promotion efforts	3.3.1. Create an online market access database for meat and meat products, providing information about import requirements in countries where market access is not restricted (i.e. duties and taxes, food safety requirements, labelling requirements and customs clearance procedures, etc.).	2					Project	<ul style="list-style-type: none"> Online database designed At least 15 major markets documented, 	TDAP	<ul style="list-style-type: none"> National Information Technology Board (NITB) Punjab Information Technology Board (PITB) APMEPA 	
		3.3.2. Through Pakistan's trade missions abroad, undertake strategic marketing planning to promote and facilitate expansion of Pakistan's meat exports in countries where market access has been secured (including facilitating business-to-business meetings, organizing meetings with potential buyers and providing market intelligence to exporters, etc.)	3					Project	<ul style="list-style-type: none"> Marketing plan defined for at least 5 target markets At least 2 events organized per market 	TDAP	<ul style="list-style-type: none"> Trade missions abroad APMEPA 	
		3.3.3. Develop a brand for Pakistan's bovine meat exports, emphasizing key attributes such as sustainability, grass-fed, halal certified and superior quality.	3					Project	<ul style="list-style-type: none"> Brand strategy designed 	TDAP	<ul style="list-style-type: none"> APMEPA 	

ANNEXES

Annex I:

List of participants in the public-private consultations

Name	Designation	Organization
Azmat Saifi	Executive director	Anis Associates (Pvt) Ltd
Amir Sohail Chohan	Quality control officer	Anis Associates (Pvt) Ltd
Khalid Ashfaq	Assistant Animal Husbandry Commissioner	Ministry of National Food Security & Research
Tariq Mahmood	Trade policy expert	Ministry of Commerce
Ali Sufian	Deputy director	Ministry of Commerce
Yousaf Rasool	Deputy director (Agro-II)	Ministry of Commerce
Sumair Ahmad	Research associate	Ministry of Commerce
Khushbakht Asif	Assistant director	TDAP
Ravia Khalid	Associate manager	TDAP
Aurangzeb Jahangir	Assistant manager	TDAP
Zia-UI Hasan	Member In Charge Animal Sciences Division	Pakistan Agricultural Research Council
Ayaz Ahmed Soomro	Assistant director (Agri. & Food Division, Standards Development Centre)	PSQCA
Ummad Khan	Human resources manager	The Organic Meat Company Limited
Noureen Anjum	Manager	Small and Medium Enterprises Development Authority (SMEDA)
Maqbool Ahmad	Quarantine officer	Animal Quarantine Department
Zia Bandy	Consultant	Hilal Meat Processing
Syed Hasan Raza	CEO	Syed Traders
Muhammad Jaspal	Associate professor	University of Veterinary & Animal Sciences, Lahore
Hafiz Muhammad Yasin Iqbal	Manager, accounts	Punjab Agriculture & Meat Company
Muhammad Khan	Manager, administration	Punjab Agriculture & Meat Company
Muhammad Aleem	Consultant, operation	Big Bird Group
Khalil Sattar	CEO	K&Ns
Tabinda Khawaja	Programme manager	Livestock and Dairy Development Board
Muhammad Mohsin Kiani	Project manager	Livestock and Dairy Development Board
Musab Mian	CEO	Tazij Meats & Food
Bilal Tata	CEO	Tata Best Foods Ltd

Annex II:

Detailed value chain assessment

INPUTS ALONG THE VALUE CHAIN

Upstream activities of the meat value chain concern animal husbandry and the inputs needed to keep livestock. The key livestock production inputs include breeding techniques for calves, veterinary services, immunization and animal foodstuffs.

Feed and fodder

Due to the lack of industrially produced local animal feed, most farms depend on what is locally available as the source of feed for their farms. In rural households, livestock is fed using grown fodder, which comprises all crops that are used as cut and carry livestock feed. Large herds, on the other hand, are grazed in rangelands, where livestock feed includes all vegetation accessible to livestock. These rangelands include rain-fed flat lands, hill lands and rangelands. More than half of animal feed comes from fodders and crop residues, one-third from grazing of rangelands, wastelands, canal banks and roadsides, and the rest is from crops and their by-products.

Table 1: Availability of fodder in Pakistan
(FY 2020–21)

Fodder	Availability
Green fodder and crop residues	51%
Forage grazing	38%
Post-harvest grazing	3%
Concentrates/crop residues	2%
By-products (molasses, sugarcane tops and vegetables)	6%
Total	100%

Source: Pakistan Economic Survey 2020–21.

Despite being the main and cheapest source of feed for livestock, fodder crops barely meet half of the maintenance requirements of the country's present livestock

population. The annual fodder production in Pakistan is estimated at 52 million tons, which is insufficient to feed the 213 million heads of livestock in the country, including buffalo, cattle, goats, sheep, camels, horses, asses and mules.²⁴ As this population grows (at a rate of 2.7% per year), its feed requirements increase accordingly.²⁵ Further worsening the situation is the fact that the harvested fodder area decreases by approximately 2% each decade. The livestock sector also has to cope with two important fodder scarcity periods, one in winter (November to January) and the other in summer (May to June). Shortage of fodder production is considered the major limiting factor for livestock production in Pakistan.

Breeds (genetics)

All indigenous breeds are generally milk breeds (genetically developed for higher milk production) or dual purpose at best, meaning that they are specialized for neither meat nor milk. Hence, the beef produced in Pakistan is basically a by-product of the milk industry. Unlike other developed countries, Pakistan has yet to develop an indigenous beef breed. Together with other factors, this contributes greatly to the low average carcass weight of cattle in Pakistan, estimated at 130 kg/animal in 2019, whereas a developed beef breed would exceed 350 kg, on average.

The Pakistan Agricultural Research Council (PARC) plays a critical role in promoting breeding technologies, with the scope to breed superior quality cattle.

Veterinary services

The health monitoring of the animals at farms or at home-sheds is done by professional veterinarians at requirement, but not in an organized way.

LIVESTOCK PRODUCTION

As indicated earlier, Pakistan is endowed with one of the largest livestock populations in the world, with an

24.– Pakistan Agricultural Research Council. Fodder Research Program. See <http://www.parc.gov.pk/index.php/en/csi/137-narc/crop-sciences-institute/714-fodder-program>.

25.– Inter-census growth rate of Livestock Census 1996 & 2006.

estimated 94 million bovine animals (cattle and buffalo) and 112 million small ruminants (goat and sheep).

The majority of the national herd is maintained by fragmented smallholder farmers with limited knowledge of good husbandry practices. Cattle are raised by informal and undocumented methods across rural Punjab and Sindh. Two types of livestock production practices prevail in Pakistan, namely:

1. Rural household: Animals are closely integrated with the rural subsistence economy and households have 1–3 dairy animals kept for sustenance.
2. Large herds: Animals are kept in rangelands where livestock is fed by grazing on all types of vegetation.

Cattle in Pakistan are reared primarily to produce milk, as this activity provides better returns to small-scale farmers, providing them with a daily income source. Consequently, livestock farmers have a preference for rearing heifers to male calves, the latter being mostly culled for meat at a young age.

Commercial ranching is almost negligible. The raising of animals in Pakistan is mostly to provide milk and cheese and to work in the fields. Meat production is, therefore, primarily perceived as a by-product of the dairy industry.

LIVESTOCK MARKETS – MANDIS

The aggregation process is facilitated by *arthis* acting as intermediaries and playing a key role in financing the purchase of animals from rural areas and transporting them to designated open livestock markets called *mandis*. They provide immediate financing and liquidity to rural households at the time of purchase from the farmer.²⁶

Mandis are mostly located in Punjab and Sindh and are usually held for a day every week or every month. Some of these markets are popular for meat animals, while others are famous for dairy animals. A few *mandis* are also famous for certain breeds of animals. Since these *mandis* are makeshift markets, their infrastructure, management systems or resources are very limited. Weight, breed, vaccination record, medical history, milk production record and reproduction record, etc. are not available to the buyer.

Buying and selling of livestock take place on an 'as is' basis, based on visual inspection whereby the buyer inspects the animal, guesstimates its weight and

negotiates price with the owner. As this operation requires specialized skill, most meat processors hire a *beopari* who buys live animals at the *mandis* on behalf of slaughterhouses and/or meat processors, against compensation. It is widely believed in the industry that the majority of the profit margin is taken by the intermediary, and the farmer and exporter are left with the bare minimum.

SLAUGHTER SLABS, SLAUGHTERHOUSES AND ABATTOIRS

The young male calves or old cows and buffaloes sold in the *mandis* are then transported to urban centres to be slaughtered.

In the domestic market, the majority of animals are slaughtered at slaughter slabs, slaughterhouses and abattoirs that are not notified by the government. Most of these facilities usually lack basic equipment such as hoisting facilities, a lighting system and a regular water supply. The standard of hygiene, and both liquid and solid waste disposal, are also poorly managed.

At the same time, 34 export-oriented slaughterhouses approved by the AQD operate in the country's major urban centres and cater exclusively to the needs of the international markets.^{27, 28} Due to the shortage of livestock reared for meat production and the restricted access to international markets for Pakistani meat, these facilities are estimated to be operating at approximately one-quarter of their peak capacity (Board of Investment, 2020). These processing plants require inputs in the form of equipment and machinery, which is mainly imported, and qualified labour and finance.

The animals slaughtered at the privately operated facilities and government-run abattoirs are examined ante-mortem and post-mortem by a designated veterinary officer.

The meat processed in AQD-approved slaughterhouses is then exported, mainly in the form of fresh, chilled carcasses. The meat destined to the domestic market is sold directly from the slaughterhouses and abattoirs to local butchers. The meat is then sold to the final consumers, mainly in informal wet markets, and consumed 'hot' or fresh on the same day of slaughter and, apart from exceptions in selected butcherries in the major cities, is not refrigerated.

26.– Pakistan Business Council (2021). 'Scaling-Up Bovine Meat Exports of Pakistan – A Review of Opportunities in the Bovine Meat Sector', P. 33.

27.– Animal Quarantine Department, Ministry of National Food Security & Research, Government of Pakistan. 'List Of Slaughter Houses'. Retrieved from: <http://www.aqd.gov.pk/list-of-registered-slaughter-houses/> on 8 October 2021.

28.– Pakistan Economic Survey 2020–21, *Chapter 2: Agriculture*. Accessed at https://www.finance.gov.pk/survey/chapter_20/02_Agriculture.pdf.



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MARKETING AND EXPORTS

The final stage in the value chain involves a series of activities such as distribution, product placement, branding and packaging, and policy initiatives to open new markets and enhance market share. As indicated earlier, only a very small share of Pakistan's red meat production is destined to the international markets, most of the meat processed being sold to the local markets through butchers or informal wet markets.

Traditionally shipped by air, Pakistani exports of chilled carcasses to GCC countries have progressively shifted to cheaper shipments via sea. According to the Pakistan Business Council, airfreight for chilled meat to the Gulf costs approximately \$1 per kilogram (and up to \$2 due to restrictions caused by the COVID-19 pandemic), while shipment by sea lowers it to \$0.2 per kilogram.²⁹

29.– Pakistan Business Council (2021). 'Scaling-Up Bovine Meat Exports of Pakistan – A Review of Opportunities in the Bovine Meat Sector', P. 56.

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This document has been produced
with the financial support
of the Foreign, Commonwealth
& Development Office