



Feasibility study for slaughterhouse

Table of Contents

- Disclaimer 4
- Measurement Table 5
- ABBREVIATIONS 6
- Executive summary 7
- 1. Introduction 8
 - Market analysis* 9
- 2. Methodology 11
- 3. Rationale for establishing the unit 11
 - 3.1 Economic Factors* 11
 - 3.2 Social Factors* 12
 - 3.3 Environmental Factors* 13
 - 3.4 Impact of COVID-19 crisis on operation* 13
- 4. Pre-Feasibility study for the unit 13
 - 4.2 Additional factors* 14
 - 4.3 Design and setup of the unit* 14
 - 4.4 Quality control* 15
- 5. Required Features for the establishment of the unit 15
 - 5.1 Land and Infrastructure* 15
 - 5.2 Required resources for operationalization* 16
 - 5.3 Production Scope and Supply Chain* 18
 - 5.4 Human Resources* 18
 - 5.5 Sensitivity indicators* 19
- 6. Project Cost 21
- 7. Financial Analysis 22
 - 7.1 Projected Income Statement* 22
 - 7.2 Projected Balance Sheet* 24
 - 7.3 Projected Cash Flow Statement* 26
- 8. Key assumptions 28



8.1 Project Capacity Assumptions 28

8.2 Cost of Goods Sold Assumption 28

8.3 Revenue Assumptions..... 29

8.4 Economic Assumptions 29

8.5 Expense Assumptions 30

8.6 Depreciation Expense Assumptions..... 30

8.7 Cash Flow Assumptions 30

References 31



Disclaimer

The information in this document is to provide a general idea to potential investors for the financial feasibility to establish a slaughterhouse based on adequate practices. The information and data in the report has been gathered from reliable sources and due diligence has been taken to compile the document; however, it is based upon certain assumptions which may differ from case to case. The information may vary due to any change in any of the concerned factors and the actual results may differ from the information presented. UNIDO, its employees or consultants do not assume any liability for any financial or any other losses as a result of the study. The information presented does not reflect the position of UNIDO Secretariat or Japan International Cooperation Agency (JICA). The potential investor or user of this study is encouraged to take further professional and expert advice before taking any decision to act upon this information.

Measurement Table

1 US Dollar	160.38 Pakistani Rupees
1 Square Yard	9 Square foot
1 Ton	1000 kilograms
1 Hectare	2.47105 Acres
1 Kilo gram	1000 grams
1 Marla	272 square feet
1 Kanal	5440 square foot

ABBREVIATIONS

KP	Khyber Pakhtunkhwa
KPFSHFA	Khyber Pakhtunkhwa Food Safety and Halal Food Authority
UNIDO	United Nations industrial development organization
TBT	Technical barriers to trade
WTO	World Trade Organization
SPS	Sanitary and phyto-sanitary
SMEDA	Small and Medium Enterprises Development Authority
PKR	Pakistani Rupee (Rs.)
Kg	Kilogram
UAE	United Arab Emirates
KM	Kilometer
GST	Goods and services tax
US	United States
D.I Khan	Dera Ismail Khan
L&DD	Livestock & Dairy Development Department
SOP	Standard operating procedures
GHP	Good Hygiene Practices
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis and Critical Control Point
PAFAID	The Project on Agri-Food and Agro-Industry Development Assistance in Pakistan
MNFSR	Ministry of National Food Security and Research
AQD	Animal Quarantine Department
FAO	Food and Agriculture Organization
WHO	World Health Organization

Executive summary

Khyber Pakhtunkhwa (KP) has an abundant supply of livestock and poultry but the supply of hygienic and quality meat remains scarce from farm to fork. Currently slaughterhouses in KP are not able to comply with basic hygiene and food safety regulations due to 1) lack of knowledge and skills, lack of infrastructure, price capping, finance and access to food safety services provided by governmental bodies or private sector. In most slaughterhouses multiple animals are slaughtered simultaneously on the ground with basic equipment and appalling infrastructure and transportation facilities.

However, by increasing awareness on the positive economic and public health perspective of food safety compliance and requirements for export of meat, the government and private operators are becoming more inclined towards improving compliance practices. On the other hand, competent authorities pay increased attention towards the enforcement of food safety compliance practices of operators.

The proposed feasibility study will calculate the economic viability of being able to operate a compliant slaughterhouse, providing food safety compliant beef only. Supply of food safety compliant food product will help reduce food borne illnesses which also creates productivity loss and also enable the province to access the export market with a huge potential.

The proposed slaughterhouse will have the capacity to slaughter 200 large ruminants with the capability to increase the capacity to 400 animals in total. The slaughterhouse will operate 5 days a week as on Tuesday and Wednesday sale of meat is prohibited all over Pakistan. The initial capacity of the slaughterhouse will be 70% in year 1 and reaching the maximum capacity of 95% in year 5 based on increased demand and customer base. Slaughtering of animals will take place in a food safety compliant manner with proper facilities for lair age, slaughtering, cold storage and transportation. The slaughterhouse can be used for export of meat after acquiring required national and international certifications.

The proposed slaughterhouse requires a total investment of PKR 240 million which includes a capital cost of PKR 162,017,800 and total working capital of PKR 240,000,000. Based on the calculations of this report the proposed slaughterhouse will have a net profit of PKR 10,552,774 in year 1 which will increase up to PKR 49,168,761 in year 5.

The slaughterhouse will provide employment to 39 people directly and additional jobs can be created if the capacity is increased. The proposed slaughterhouse can be established in any of the major cities within KP with proximity to basic services like electricity, water and human resources.

1. Introduction

Livestock, particularly cattle value chain, serves as a primary income source to many households in Khyber Pakhtunkhwa (KP), providing 11 percent of the agricultural GDP. In addition to cattle, there is a large population of buffaloes, sheep, goats and camel along with poultry, horses and mules. According to the latest available statistics from KP Statistical Yearbook 2015-16, the increasing cattle population reached 6.06 million which counts around 15 percent of the total cattle population of (42.8 millions) of Pakistan. This provides sufficient supply not only for domestic consumption but also for export markets. KP is also famous for its meat dishes which can serve as a gastronomic tourism in the country.

As per the district-wise data, there is sufficient supply of different types of livestock in Hazara district, in Swat valley as well as in Peshawar. Subsequently, D.I. Khan District has the largest cattle population with 411,432 with 832 slaughtered animals, Abbottabad 111,415 with 3,327 slaughtered animals, Swat 253,790 with 3,124 slaughtered animals, Peshawar 223,150 with 6,203 slaughtered animals from the year 2015-16.

As per the Livestock and Dairy Development Department (L&DD) there are 39 slaughterhouses in Khyber Pakhtunkhwa, out of which only 30 operate at the moment. Compliance level with food safety requirements is very low and to date none of the slaughterhouses in Khyber Pakhtunkhwa have been able to comply with national and/or international requirements.

In Pakistan, importance and awareness of food safety has generally been neglected in the past, mainly also resulting from the lack of awareness on this vital domain. Consequently, slaughterhouses usually lack standard operating procedures in basic hygiene and food safety as well as waste management, the required layout and facilities, and appropriate food handling practices and by products utilization. As an example, in most slaughterhouses multiple animals are slaughtered simultaneously on the floor with basic equipment and with appalling infrastructure and transportation facilities.

The ongoing joint efforts of the Agriculture Department, Local Government Department and Khyber Pakhtunkhwa Food Safety and Halal Food Authority (KPFSHFA) on enforcing existing food safety regulations are acknowledged to help improve food safety conditions of these slaughterhouses, however, further improvement can be considered in this area based on international best practices.

Overall, despite the abundant livestock resources, the province has failed to provide safe and hygienic meat for local consumption as well as tap into the multi-trillion dollar global halal food market. For these reasons, the purpose of the proposed slaughterhouse would be to prove the economic viability of slaughtering animals in a compliant, safe and hygienic manner. The slaughterhouse will have a positive socio-economic impact not only on the local market economy but also on the health of the consumers.

Market analysis

The total number of operational slaughterhouses in KP is 30 and generally the compliance level with food safety requirement is very low within these slaughterhouses. Government slaughterhouses are used for slaughtering animals for local consumption out of which none of the slaughterhouses have been able to comply with national or international food safety requirements. There are some private slaughterhouses operating in the province with relatively better safety and hygiene conditions that are mainly used to export meat to Afghanistan and some Middle Eastern countries. As a result of lack of compliance and regulatory issues, locally slaughtered animals cannot be sold to high end markets, resulting in loss of potential economic benefits for the herders and other actors in the cattle meat value chain.

1.1.1 Current challenges for investment

The main challenge for establishing a slaughterhouse in KP is weak regulatory and legislations. There is a lack of awareness and technical knowledge and expertise among the actors on food safety practices along with access to food safety services. On the other hand, KP livestock policy 2018 has identified price capping of meat products as a major hurdle for the sector. Existing slaughterhouses lack basic facilities as well as infrastructure, like proper road networks, sewage, water and electricity. The additional costs incurred due to non-availability of basic facilities and price capping leaves little incentive for the slaughterhouse operators to improve their condition. In addition to the investment related to the facility, additional investment might be required to establish adequate practices for the sector.

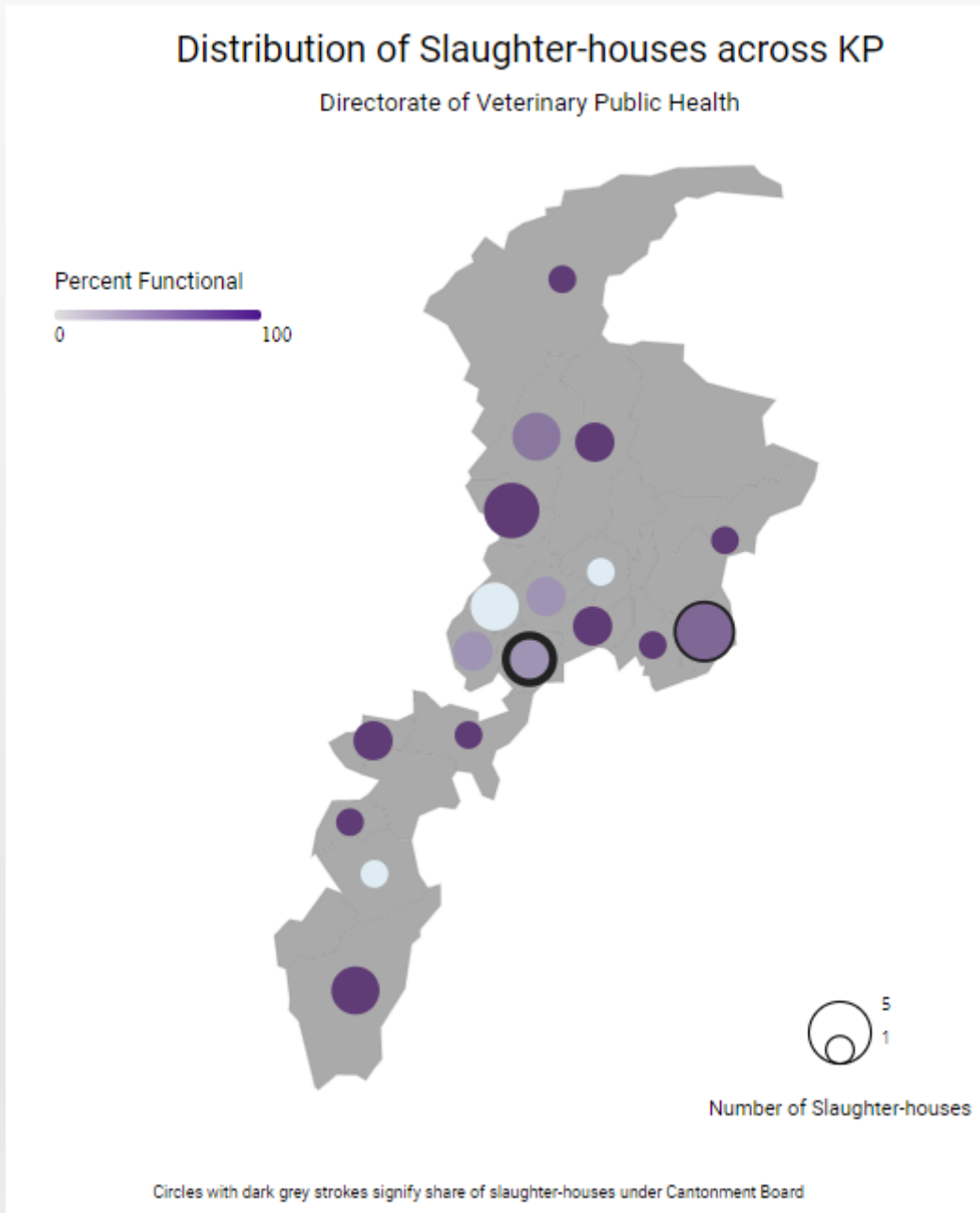
Other challenges include lack of credit facilities and in some areas the security situation can also create certain risks for investors. The provincial government and community-based organizations should also play their role in promoting and facilitating any private sector investments from other provinces. With regard to the upgrade of their facilities, general lack to food safety services, such as coaching and training along with non-existence of vocational training on meat processing can further decrease the safety and the quality of the product.

1.1.2 Status of current slaughterhouses in KP

Table 1 below shows the distribution of slaughterhouse across KP but none of these slaughterhouses comply with national or international food safety standards. There are districts that currently do not have any functional slaughterhouses and for this reason, animals are usually slaughtered inside homes or shops. In most cases slaughtered animals are transported in carts, rickshaws and pickup trucks. To ensure compliance in the farm to

fork continuum, slaughterhouses play an essential role and also encourage actors involved in post-slaughtering processes to enhance their practices. The non-existence of food safety compliant slaughterhouses in the province is also recognized by local authorities as a key bottleneck to encourage the compliance of other actors from the value chain.

Table 1. Distribution of slaughterhouses across KP



2. Methodology

This study is a result of a consultative process where UNIDO experts conducted discussions with various stakeholders in November and December 2019. An additional detailed analysis was also conducted on the cattle meat value chain and its related enabling environment. Further discussions and inputs were received on the project approach from stakeholders including KPFSHFA, Agriculture Department and academia. The outcome of the report will be shared with relevant departments and will be finalized in consultation with all stakeholders to ensure the credibility and reliability of the information.

3. Rationale for establishing the unit

This section will explain the economic, social and environmental viability of establishing slaughterhouses in KP.

3.1 Economic Factors

Livestock farming is also a dominant occupation of the farming community, with more than 15 million animal heads inhabiting the province. The province has abundant livestock and dairy resources for local consumption as well as for export purposes. The provinces geo-strategic location, access to other provinces and demand of meat products in neighboring Afghanistan as well as the Middle Eastern countries provides a huge potential for the meat sector. Animals slaughtered in a food safety compliant manner will increase the products shelf life and as a result it could be sold to local high-end markets. Properly packaged meat will also be sold at a higher margin which can also further improve the livelihood of actors involved in the value chain. For international export, the application of adequate product packaging, complying with technical barriers to trade (TBT) measures, and establishment of a traceability scheme will be required along with relevant phytosanitary certifications.

3.1.1 Government incentives for the sector

The Livestock & Dairy Development Department (L&DD) has multiple ongoing and new initiatives to enhance health and production of animals by developing effective vaccines against diseases, improving livestock breeding and establishing veterinaries. Ante- and post-mortem examinations are carried out by the inspectors of the L&DD at the registered slaughterhouses which might require additional support. KPFSHFA plays an essential role in enforcing food safety and hygiene standards among food business operators by developing SOPs for the meat sector and organizing awareness campaigns. The Government has already commenced with the procurement of equipment for a meat

laboratory and in addition to that started to organize the relevant actors in a platform. As an upgrade of a slaughterhouse require substantial investment, the establishment of a public-private platform would be essential where other stakeholders, like KPFSHFA and SMEDA can provide additional financial support through its ongoing project.

3.1.2 Export potential

According to Harvard's atlas of economic complexity meat exports of Asian countries alone in 2017 was USD 119 billion with Pakistan's share only at USD 247 million. Export of specifically frozen beef from Pakistan was USD 39.4 million while neighboring India's exports were at USD 3.92 billion. Despite the abundant livestock resources and huge demand for meat products internationally the potential is yet to be tapped. One of the main reasons for low export volume is the absence of food safety compliant and certified slaughterhouses as per international standards. Slaughtering facilities, storage, packaging and transportation remains a huge issue when it comes to export of meat products. However, huge potentials still remain within Pakistan due to the population size of the country. Furthermore, if the required infrastructure is made available there is a huge market potential for meat products from Pakistan in Japan, China, Saudi Arabia, UAE, Afghanistan and Malaysia.

3.2 Social Factors

KP's economy is heavily dependent on agriculture and livestock sectors with more than 15 million animal heads inhabiting the province. There is a large segment of the rural population whose livelihoods and dependent on meat value chain related activities. The usual household usually contains of one bread earner who is providing financial support to the entire family. The slaughterhouse will improve livelihoods of the actors involved by enabling them to target the high-end markets and at the same time create access to safe products, decreasing the food safety burden caused by incompliant practices and capacities. Consequently, women and children are the most vulnerable group when it comes foodborne illnesses, causing not only health issues but social damage. In addition, the slaughterhouse should make special arrangements to offer job opportunities especially to youth and women within the local cultural norms. Unhygienic conditions at slaughterhouses can lead to severe illnesses creating productivity loss in the form of higher health care costs and inability to work in the amount of \$1.5 billion per year (Source: The World Bank: The Safe Food Imperative). In some cases, consumption of incompliant meat has also resulted in loss of precious lives.

3.3 Environmental Factors

The slaughterhouse will maintain the environmental safeguarding of its ecosystem, through sustaining the existing flora and fauna and not introducing any material or product that will affect or change them in a negative way. Additionally, the infrastructure and services that need to be developed and implemented will be planned in an environmental friendly way; where the introduction of proper waste management practices will be encouraged. The slaughterhouse does not aim to upscale current number of animals slaughtered rather improve the level of compliance at the slaughterhouse, thus improving quality and hygiene and creating value addition. This might lead to further decrease in the output of processing but in turn improved shelf life and decreased waste on the long-term.

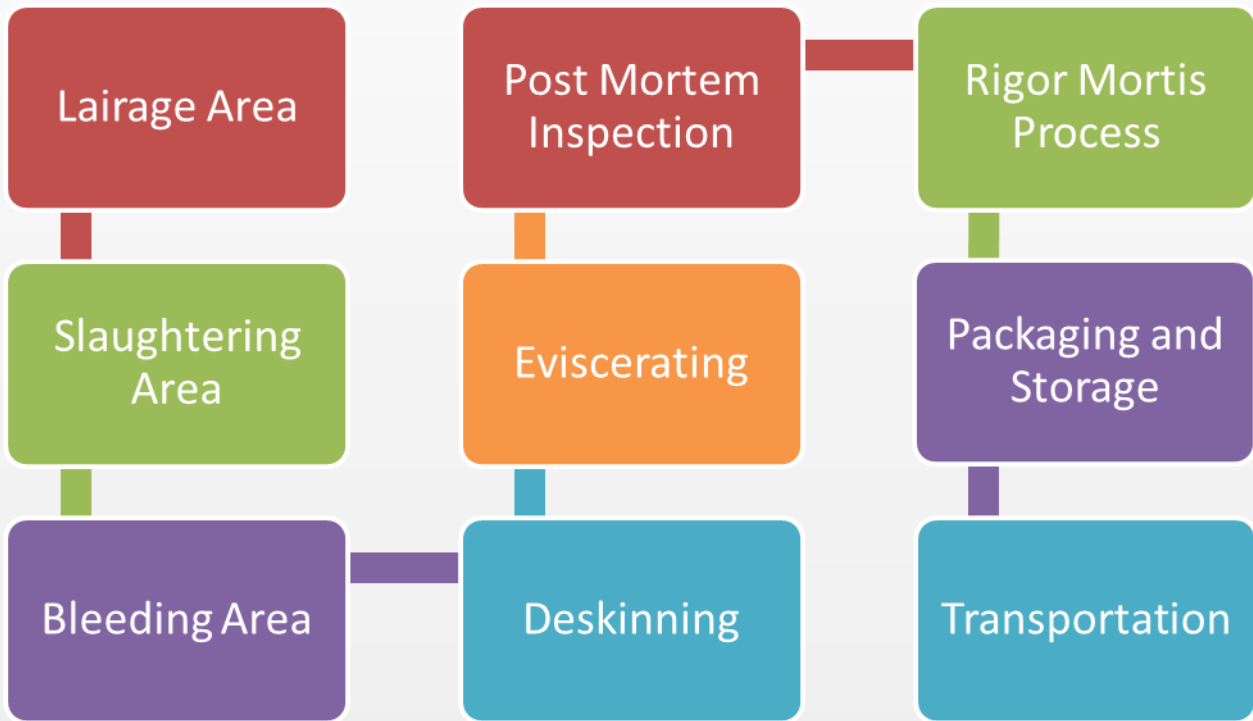
3.4 Impact of COVID-19 crisis on operation

Promoting adequate practices from food and labour safety aspect is essential to ensure business continuity and avoid potential disruption in value chains, leading to economic loss and food insecurity. For this reason, it is extremely important to follow the guidelines developed by FAO and WHO with the title COVID-19 and food safety: guidance for food businesses. As a first experience among industrialized nations, the implementation of adequate physical distancing among workers can lead to reduced output and lower capacity but on the other hand still ensures the safety and health of workers. This has to be strongly considered at this stage for the conduction of any feasibility study, however, as this pandemic shall be considered as a periodic challenge, the financial calculation of this feasibility study does not take into account. Overall, food business operators are strongly encouraged to apply the FAO/WHO guidance and also include them in their business continuity plan for mitigation of future risk.

4. Pre-Feasibility study for the unit

This section will outline the procedure, design and setup, quality control and additional factors required for the establishment of the slaughterhouse.

4.1 Process flow chart of compliant slaughterhouse



4.2 Additional factors

The location of the slaughterhouse is to be situated away from residential areas but with proximity to the city to have access to basic facilities like water, electricity and proper road network. The facility should be also easily accessible for the workers. It will also be important to identify skilled labor force and trainings of the personnel based on the capacity building framework planned to be developed as part of “The Project on Agri-Food and Agro-Industry Development Assistance in Pakistan” (PAFAID) initiative. Proper supply of quality animals, storage, packaging and transportation will ensure successful operations of the slaughterhouse. In case of export of meat approved private slaughterhouses must be registered with the Animal Quarantine Department (AQD) of the Ministry of National Food Security and Research (MNFSR) and competent departments of importing countries.

4.3 Design and setup of the unit

The location, physical layout, basic services, installations and equipment must be considered before establishing the slaughterhouse. In addition, it is important to keep in mind that the infrastructure meets specific requirements for slaughtering of animals and

processing of meat intended for human consumption. The design must follow good hygienic practice (GHP) planned to be developed during “The Project for Agri-food and Agro-industry Development Assistance in Pakistan” (PAFAID) initiative.

The floors must be of solid material and washable with proper drainage and disposal system. The slaughterhouse must be equipped with proper areas for lair age, slaughtering, bleeding, skinning, evisceration and packaging and storing. The slaughterhouse must also have basic facilities required by the work force and have access to stable electricity and running water. These requirements are a must in order to guarantee slaughtering of animals in a food safety compliant manner.

4.4 Quality control

The slaughterhouse shall follow and comply with the national or provincial technical regulations and/or with the requirements of relevant food safety certifications selected by the operator. The design and the setup of the slaughterhouse has to follow the requirements of these standards and accordingly the provided design and setup showcases a best practice and adjustments have to be made depending on the capacity as well as the resources of the operator. The slaughterhouse shall also have at least one personnel in place that can monitor food safety practices and introduced corrective actions when and where required on a constant basis.

5. Required Features for the establishment of the unit

The proposed slaughterhouse will have the facility for slaughtering, skinning, carcass cutting, packaging and storage as well as proper waste management system as per requirements of food safety compliance for 200 large animals with average carcass of 120 kg on daily basis. This will further be extendable to 400 animals per day depending on the requirement and demand of meat. This section will identify the preferred and required features for the establishment of the slaughterhouse.

5.1 Land and Infrastructure

The slaughterhouse is to be established away from residential areas but within the proximity of the city or town with access to water, electricity, proper road network and human resources.

The space requirement for the proposed slaughterhouse is 34,588 square feet which will include lair age area for animals, hall for slaughtering of animals, raw material storage, staff washrooms, cold storage area, pavement, duty staff accommodation and ground/boundary wall. It is suggested that the facility be run in partnership with a local

investor that may provide land and or contribute towards the building cost. The total land to be acquired for the unit is 10 kanal keeping in view future expansions of operations. The land is to be acquired at Rs. 5million per kanal. The cost of construction for slaughtering hall is estimated to be Rs. 2000 per square feet, cold storage Rs. 3100 per square feet and lair age area at Rs. 1500 per square feet at current market rate. The details of space requirement and cost related to land & building are given in table 1.1.

Table 1.1 Building & Infrastructure

Description	Expected area (Square feet)	Unit Cost in Pak Rupees	Total Cost in Pak Rupees
Lair age area	4000	1500	6000000
Slaughtering hall	4500	2,000	9000000
Raw material storage	1200	1,600	1920000
Cold storage	1088	3100	3372800
Pavement/Driveway	4500	600	2700000
Cafeteria	600	2100	1260000
Duty Staff Accommodation and washroom	900	2000	1800000
Ground/Boundary wall	17800	120	2136000
Total Area	34588		28,188,800

5.2 Required resources for operationalization

This section will outline the required equipment, furniture and fixtures and office equipment required to set up the slaughterhouse with price estimates. (Table 1.2, Table 1.3 and Table 1.4)

Table 1.2 Machinery/ Equipment for slaughterhouse

Machinery needed	Quantity	Unit cost in Pak Rupees	Total Cost in Pak Rupees
Automatic slaughtering line	1	55000000	55,000,000
Cold Storage Room	1	6,500,000	6,500,000
Meat Packaging Line	1	4,500,000	4,500,000
Refrigerated Vehicle	2	5,800,000	11,600,000
Generator	1	1500000	1,500,000
Tube well for water supply	1	250000	250,000
Miscellaneous	1	1250000	1,250,000
Total			80,600,000

The miscellaneous costs will include wall framing with cladding panels, internal wall and floor plastering as required, installation of mechanical plant (including lairage fences and

gates), construction of external effluent disposal system and solid waste disposal systems. The cost will also include working clothes including gloves, boots, hair covers and aprons.

Details of the machinery and equipment included within the automatic slaughtering line given in table A below.

Table A. Machinery and equipment parts

S.No	Type of Machinery
1	Halal hydraulic slaughtering box for cattle
2	Meat industrial hanging scale
3	Butcher stainless steel hooks for cows
4	Node hook
5	Boning hook 4”
6	Boning hook 6”
7	Boon cutter saw
8	Meat Knives Kit
9	Table for meat cutting (stainless steel with plastic food grade cutting surface)
10	Slaughter line
11	Cow scratcher
12	Chain quipay
13	Reciprocating hydraulic DE breaking saw
14	Hydraulic bracket Saw MA-1B
15	Beef catalog MGIV 903mpg
16	Blade sharpener BR5A

Table 1.3 Furniture & Fixture

Description	Quantity	Unit Cost	Total Cost
Furniture	1	200,000	200,000
Electrical wire & Lights	1	950,000	950,000
Air Conditioner Inverter (1.5 ton)	4	80,000	320,000
Total			1,470,000

Table 1.4 Office Equipment

Human Resource	No. of Employees	Expected unit Cost in Pak Rupees	Total Cost in Pak Rupees
Desktop Computers	2	65,000	130,000
Computer Printers	2	22,000	44,000
Network Cost	1	200,000	200,000
Multimedia	1	80,000	80,000
Telephones	5	3,000	15,000
Telephone exchange	1	120,000	120,000
Fax machine	1	45,000	45,000
Photocopier	1	125,000	125,000
Total			759,000

5.3 Production Scope and Supply Chain

Proper supply chain will help maintain the quality of meat produced. With the help of a food safety compliant slaughterhouse quality meat will be provided to consumers locally as well as exported to other countries which will help reduce the foodborne diseases as well as improve the economic condition of value chain actors by targeting high-end markets.

Increased population growth, increase in disposable incomes of middle to high income families, increased food safety awareness and increased penetration in newer smaller markets in peri-urban and rural areas have increased the demand for hygienic meat products. The slaughterhouse will have to capacity to slaughter 200 large ruminants with an average carcass of 120 kg on daily basis which can further be extended to 400 large ruminants based on the increased demand of meat nationally or internationally.

5.4 Human Resources

To run the slaughterhouse operations smoothly, details of required human resources along with number of employees and monthly salary are suggested as below: (Table 1.5)

Table 1.5 Human Resources

Human Resource	No. of Employees	Expected Salary (PKR)	Total Cost
Owner/Manager/CEO	1	150,000	150,000
Admin Officer	2	29,000	58,000
Cleaning Staff	5	18000	90,000
Veterinary Doctor	1	60000	60,000
Veterinary Assistant	1	25000	25,000
Skilled processors	10	30000	300,000
Supporting labor	10	18000	180,000
Food safety managers	2	50,000	100,000
Sales / Marketing Manager	3	50000	150,000
Account Officer /Cashier	1	30,000	30,000
Security Guard	1	20,000	20,000
Drivers	2	22,000	44,000
Total	39		1,207,000

The slaughterhouse will provide employment to 39 people directly; however, semi-skilled butcher, marketing and sales personnel, trainers and indirect employment will also be created depending on the capacity and operations of the slaughterhouse. The management will be responsible for cleaning and disinfection on a regular basis and maintaining the hygienic standard.

5.5 Sensitivity indicators

a) Attracting small holders (≤ 10 animals)

Livestock is one of the major contributors in KP's agriculture sector and has a huge potential for growth due to natural resources and preference of meat by locals. Majority of the livestock farmers in the province are small holders with 5-10 animals. According to the L&DD there are 39 slaughterhouses in the province. The capacity of these slaughterhouses range from 100-1000 animals per day but the majority rarely comply with food safety practices and international best practices due to lack of knowledge and skills and little incentive. These slaughterhouses usually charge a very minimal amount for getting animals slaughtered. It will be difficult to attract small holders due to a higher fee for slaughtering the animals, reluctance to adopt new methods and technologies and short term oriented expectation of returns. This factor can be mitigated through awareness, education, enforcement, trainings and tangible financial rewards. The facility will also connect the different actors including involved in the value chain including farmers, butchers, wholesale dealers, meat shops and exporters.

b) Suppliers

The livestock sector provides food of animal origin to population of more than 35.53 million people of which 82% are rural dwellers having great dependence on agriculture and livestock. The province produced 580.410 ton meat annually and majority farmers (>90%) in KP involved in livestock production are rearing animals as subsistence farming. They provide their animals to these slaughterhouses and butchers to earn a living which can be improved by connecting them to local high-end markets. Despite abundant livestock resources, consumers find it difficult to find food safety compliant meat as well as huge export potential is lost.

c) Price fluctuations

Meat prices are regulated by the local government. As per the survey's conducted by UNIDO it was established that livestock prices generally fall during the winter months as the farmers are unable to provide them with shelter and grazing land. There are fluctuations in price of meat products during religious festivals like Eid.

d) Maintaining standards

Presently, the slaughterhouses in KP are regulated by District government, L&DD and KPFSHFA. The standards of slaughterhouses need to be improved as per the requirements of food safety and quality standards of slaughterhouses. The slaughterhouse needs to comply with standards set nationally, including complying with good hygiene practices (GHP) and HACCP in the future. Export market can be tapped into by conforming with the World Trade Organization's (WTO) Sanitary and Phytosanitary (SPS) measures, Halal requirements and ISO 22000.

e) Exchange rate fluctuation

The exchange rate of Pakistani rupee has been stable for the last few months after a volatile period of over six months after the present government took over. Pakistani rupee was devalued against dollar to reduce the current account deficit through reducing the balance of trade deficit.

The volatile exchange rate affects the business community more than everyone, because of the uncertainty it exhibits. Kandilov (2008) revealed that exchange rate volatility has large negative effect on the agricultural trade between countries. The effect is much larger for developing countries exporters than the developed countries' exporters. But in Pakistan it is expected that after the downward adjust of Pakistan rupee against US dollar, the exchange rate will remain stable in near future and will be helpful to agricultural and livestock exports.

6. Project Cost

Project Cost	
Description	Price (PKR)
Land	50,000,000
Building & Infrastructure	28,188,800
Machinery	80,600,000
Furniture and Fixtures	1,470,000
Office Equipment	759,000
Pre-operating costs (Licensing etc)	1,000,000
Total Capital Cost	162,017,800
Working Capital	
Raw Material Inventory	49,000,000
Upfront Insurance Payment	1,627,180
Cash	27,355,020
Total Working Capital	77,982,200
Total Project Cost	240,000,000

7. Financial Analysis

7.1 Projected Income Statement

Projected Income Statement					
	Year 1	Year 2	Year 3	Year 4	Year 5
	Amount in (PKR)				
Revenue	2,496,614,400	2,985,441,488	3,544,521,706	4,208,300,239	4,996,383,819
Cost of Goods Sold	2,437,092,708	2,904,776,139	3,446,034,124	4,088,425,472	4,850,822,362
Gross Profit	59,521,692	80,665,349	98,487,582	119,874,766	145,561,457
General administrative & selling expenses					
Administration Expense	24,966,144.00	29,854,414.88	35,445,217.06	42,083,002.39	49,963,838.19
Office Expense	2,496,614.40	2,985,441.49	3,544,521.71	4,208,300.24	4,996,383.82
Travelling Expense	1,248,307.20	1,492,720.74	1,772,260.85	2,104,150.12	2,498,191.91
Communication Expense	60,000	66,000	72,600	79,860	87,846
Promotional Expense	2,496,614.40	2,985,441.49	3,544,521.71	4,208,300.24	4,996,383.82
Insurance Expense	1,627,180	1,464,462	1,301,744	1,139,026	976,308
Amortization Expense	200,000	200,000	200,000	200,000	200,000

Professional fees	249,661	298,544	354,452	420,830	499,638
Depreciation Expense	11,101,780	11,101,780	11,101,780	11,101,780	11,101,780
Subtotal	44,446,301	50,448,805	57,337,097	65,545,249	75,320,370
Operating Income	15,075,391	30,216,544	41,150,484	54,329,517	70,241,087
Other income Gain / (loss) on sale of assets					
Earnings Before Interest & Taxes	15,075,391	30,216,544	41,150,484	54,329,517	70,241,087
Interest Expense					
Earnings Before Tax	15,075,391	30,216,544	41,150,484	54,329,517	70,241,087
Tax	4,522,617	9,064,963	12,345,145	16,298,855	21,072,326
NET PROFIT/(LOSS) AFTER TAX	10,552,774	21,151,581	28,805,339	38,030,662	49,168,761

7.2 Projected Balance Sheet

Projected Balance Sheet						
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Assets						
Current Assets						
Cash & Bank	27,355,020	5,422,404	20,069,853	39,588,704	64,448,925	103,399,529
Accounts Recievable	-	72,817,920	87,075,377	103,381,883	122,742,090	145,727,861
Raw material Inventory	49,000,000	52,887,431	62,791,600	74,550,511	88,511,500	97,362,650
Slaughtered Meat Inventory	-	18,892,192	22,371,193	26,540,023	31,487,484	37,359,185
Pre-paid Insurance	1,627,180	1,464,462	1,301,744	1,139,026	976,308	813,590
Total Current Assets	77,982,200	151,484,408	193,609,767	245,200,147	308,166,308	384,662,815
Fixed Assets						
Land	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000
Building & Infrastructure	28,188,800	25,369,920	22,551,040	19,732,160	16,913,280	14,094,400
Machinery	80,600,000	72,540,000	64,480,000	56,420,000	48,360,000	40,300,000
Office Equipment	759,000	683,100	607,200	531,300	455,400	379,500
Furniture & Fixtures	1,470,000	1,323,000	1,176,000	1,029,000	882,000	735,000
Total Fixed Assets	161,017,800	149,916,020	138,814,240	127,712,460	116,610,680	105,508,900

Intangible assets						
Pre-operation costs	1,000,000	800,000	600,000	400,000	200,000	0
Total Intangible Assets	1,000,000	800,000	600,000	400,000	200,000	0
Total Assets	240,000,000	302,200,428	333,024,007	373,312,607	424,976,988	490,171,715
Laibilities & Shareholders' Equity						
Current Liabilities						
Accounts Payable	-	51,647,655	61,319,652	72,802,913	86,436,632	102,462,598
Total Current Liabilities	-	51,647,655	61,319,652	72,802,913	86,436,632	102,462,598
Other Liabilities						
Deferred tax						
Long term debt						
Total Long Term Liabilities	-	-	-	-	-	-
Shareholders' Equity						
Paid-up capital	240,000,000	240,000,000	240,000,000	240,000,000	240,000,000	240,000,000
Retained Earnings		10,552,774	31,704,354	60,509,694	98,540,356	147,709,117
Total Equity	240,000,000	250,552,774	271,704,354	300,509,694	338,540,356	387,709,117
Total Capital & Liabilities	240,000,000	302,200,428	333,024,007	373,312,607	424,976,988	490,171,715

7.3 Projected Cash Flow Statement

Projected Cash Flow Statement						
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Operating activities						
Net profit	-	10,552,774	21,151,581	28,805,339	38,030,662	49,168,761
Add: depreciation expense	-	11,101,780	11,101,780	11,101,780	11,101,780	11,101,780
Amortization expense	-	200,000	200,000	200,000	200,000	200,000
Accounts receivable	-	(72,817,920)	(14,257,457)	(16,306,506)	(19,360,207)	(22,985,771)
Raw material inventory	(49,000,000)	(3,887,431)	(9,904,169)	(11,758,911)	(13,960,989)	(8,851,150)
Slaughtered Meat Inventory	-	(18,892,192)	(3,479,002)	(4,168,829)	(4,947,461)	(5,871,701)
Advance insurance premium	(1,627,180)	162,718	162,718	162,718	162,718	162,718
Accounts payable	-	51,647,655	9,671,997	11,483,261	13,633,718	16,025,966
Cash provided by operations	(50,627,180)	(21,932,616)	14,647,449	19,518,851	24,860,221	38,950,603
Financing activities						
Change in long term debt						
Change in short term debt						
Issuance of shares	240,000,000					
Purchase of (treasury) shares						
Cash by financing activities	240,000,000	-	-	-	-	-

<i>Investing activities</i>						
Capital expenditure	(162,017,800)					
Acquisitions						
Cash by investing activities	(162,017,800)	-	-	-	-	-
Net Cash	27,355,020	(21,932,616)	14,647,449	19,518,851	24,860,221	38,950,603
Cash balance brought forward	27,355,020	27,355,020	5,422,404	20,069,853	39,588,704	64,448,925
Cash available for appropriation	27,355,020	5,422,404	20,069,853	39,588,704	64,448,925	103,399,529
Owner's Withdrawals						
Cash carried forward	27,355,020	5,422,404	20,069,853	39,588,704	64,448,925	103,399,529



8. Key assumptions

8.1 Project Capacity Assumptions

Production Capacity	
Description	Calculation
Maximum Capacity Daily (Animals)	200
Working days in a week	5
Weeks in a year	52
Capacity Year 1	70%
Capacity Year 2	76%
Capacity Year 3	82%
Capacity Year 4	88%
Capacity Year 5	95%

8.2 Cost of Goods Sold Assumption

Cost of Goods Sold Assumptions	
Description	Calculation
Average weight of live animal (Kg)	300
Price of live animal / Kg	220
Feeding Period at slaughter house (Days)	5
Cost of feed per animal/day	200
Packaging cost of meat per animal	2000
Other Manufacturing Costs (annual basis):	
Direct Labor Cost	14,484,000
Electricity	13,387,056
Transportation Cost (as percentage of total sales)	0.30%
Direct Water Cost	24,000

8.3 Revenue Assumptions

Revenue Assumptions	
Description	Calculation
Sale Price Meat per Kg	480
Sale Price Growth Rate/ Year	10%
Boned Meat as % of live animal	48%
Skin, head, brain & other sellable items price / animal	2500
Animal Inventory (in days)	5
Raw Material Packaging (in days)	10
Slaughtered Meat Inventory (in days)	2

8.4 Economic Assumptions

Economic Assumptions	
Description	Annual % increase
Electricity Price Growth Rate	10%
Water Price Growth Rate	10%
Salary Growth Rate	10%
Feed cost Growth Rate	10%
Packaging Cost Growth Rate	10%
Communications Cost Growth Rate	10%
Meat selling price growth rate	10%
Live animal price growth rate	10%
Tax Rate	30%

8.5 Expense Assumptions

Expense Assumptions	
Administrative Expense (% of total revenue)	1%
Office Expense (% of administrative expense)	10%
Travelling Expense (% of administrative expense)	5%
Telephone and Internet Expense	60,000
Professional Fee (Legal, Audit etc)	0.01%
Machinery & Equipment Insurance Rate	2%
Promotion Expense	0.1%

8.6 Depreciation Expense Assumptions

Depreciation Expense Assumptions	
Depreciation method	Straight line
Machinery & Equipment	10%
Furniture & Fixtures	10%
Office Equipment	10%
Building & Infrastructure	10%
Amortization of pre operating costs	20%

8.7 Cash Flow Assumptions

Cash flow Assumptions	
Accounts Receivable Cycle (In Days)	15
Accounts Payable Cycle (In Days)	15
Credit Sales as % of total sales	70%
Credit Purchases as % of total purchases	50%

References

- Trade and Markets Division. (2013) Food outlook: Biannual report on global food markets. Published by Food and Agriculture organization (FAO). pp. 139
- Kandilov, I.T., (2008). The effect of Exchange Rate Volatility on Agricultural Trade. American Journal of Agricultural Economics. Vol. 90, No.4, pp. 1028-1043. https://www.jstor.org/stable/20492351?seq=1#metadata_info_tab_contents
- Pre-Feasibility Study Meat Processing Unit and Slaughter House. 2019. Small and Medium Enterprises Development Authority, Ministry of Industries & Production, Government of Pakistan
- Pre-feasibility Study Modern Slaughter House (Abattoir) For Cattle only. 2010. Sindh Board of Investment, Government of Sindh
- <https://atlas.cid.harvard.edu/explore?country=undefined&product=101&year=2017&productClass=HS&target=Product&partner=undefined&startYear=undefined>
- <https://www.who.int/publications-detail/covid-19-and-food-safety-guidance-for-food-businesses>

The logo for PAFAID features the word "PAFAID" in a bold, sans-serif font. To the right of the text is a stylized gear icon with a circular element on top, suggesting a cycle or a process. The entire logo is centered within a large, light gray circular shape that has a subtle gradient and a slight shadow, giving it a three-dimensional appearance. The background of the page is a light gray with a large, faint gear shape that overlaps the central circle.

PAFAID

www.pafaid.org