Efficiencies found on-farm and in marketing

Opportunities for increasing profit in the beef component of dairy farms has been identified through on-farm efficiency improvements and increase in the market value of the product.

The project has mapped and analysed beef value chains to identify value chain opportunities and constraints for smallholder farmers. It will form and support farmer business groups to enable smallholders to identify and access more profitable beef markets.

This document for download is a compilation of three separate studies undertaken by the Dairy_Beef team, as below

Rapid Value Chain Assessment of Selected District Beef Chains in Punjab and Sindh
August 6, 2018

Preliminary investigation of Eid-ul-Azah as a market opportunity for smallholder livestock producers
January 4, 2019

Detailed beef value chain assessment of a potential market opportunity for small scale livestock producers
27 April 2019

The Dairy-Beef Research Project

Rapid Value Chain Assessment of Selected District Beef Chains in Punjab and Sindh




Prepared by:
The Dairy-Beef Team

August 6, 2018

Contents

Executive Summary

This report documents the analysis of the beef value chains in selected districts of Punjab and Sindh. The purpose of this activity was to consolidate the knowledge and skills of the Dairy-Beef project team in utilizing the value chain analysis approach to identify new marketing opportunities for smallholder farmers. This activity was conducted in mid-2017 and involved the team conducting a series of semi-structured interviews with chain actors (consumers, retailers, traders and farmers). The data collected through these interviews was analyzed using content analysis and generate the following observations:

- Consumers were purchasing more beef due to its taste, nutritional value and its cheaper price compared to mutton. Their major concerns were meat quality (freshness) and hygiene.
- Retailers experienced difficulties in sourcing a consistent supply of beef that beef that met their requirements in terms of carcass weight and price especially during the summer months.
- Traders played an important role in the chain both as aggregators and classifiers. They also experienced difficulties in sourcing a consistent supply of beef due to seasonal fluctuations and the selling behavior of farmers, particularly smallholders.
- Smallholder farmers considered their animals, particularly male calves, as an asset that can be sold on a needs basis. Consequently, these animals are reared using a minimal input system and sold predominantly to local traders (beopari).
- The relationships that existed between members of the chain were transactional and there was limited information exchange which resulted in smallholders have little, if any, market power.

The major output from the analysis of these selected value chains was the identification of three potential market opportunities for smallholders:

1. Direct selling to local butchers.
2. Direct selling to second level traders who had access to the larger provincial mandies, feedlot farms, private processing companies and exporters.
3. Participation in the Eid-ul-Azah market.

While each of these markets presents an opportunity for smallholders, each needs a more detailed examination of the specific market requirements, an evaluation of smallholders' capacities to meet these requirements and the financial viability which was beyond the scope of this activity.

As a capacity building activity, this report demonstrates that the activity has successfully grown the teams' knowledge of, and skills in, applying the value chain analysis approach in identifying new market opportunities for smallholder farmers in the Pakistan context. The next phase is to develop the teams' capacity to critically evaluate these market opportunities.

Introduction

This study was initiated by the Dairy-Beef project team in collaboration with the University of Veterinary & Animal Sciences, Lahore Pakistan as part of the Australian Government's initiative to improving pro-poor value chains in Pakistan. The overall project goal is to improve the profitability of smallholder farming households, in the Punjab and Sindh provinces of Pakistan, through on-farm efficiency gains and development of new dairy-beef market opportunities. An important component of this project is to develop the capacity of the Dairy-Beef project team in Pakistan in new research approaches such as value-chain analysis. This includes building the team's capacity to undertake comprehensive evaluations of existing dairy-beef chains to identify potential market opportunities that enhance the livelihoods of smallholder livestock producers. In July 2017, field work was conducted to undertake a rapid beef value chain analysis (RVCA) in two districts, Okara and Badin, of Punjab and Sindh provinces respectively This report documents the process and outputs of one such capacity building activity.

Objective

The objective of this activity was to build on the knowledge and skills of the Dairy-Beef team to identify and evaluate market opportunities for smallholder dairy-beef producers. Prior to engaging in this activity the Dairy-Beef team had been involved in an intensive program that focused on promoting their understanding of the value chain approach to market research and developing their skills in value chain analysis.

Methodology

3.1 Research Setting

Districts Okara and Badin were used for this activity because of the Dairy-Beef team's familiarity with the regions. There are three Tehsils in district Okara (Okara, Renala Khurd and Depal Pur) and there are six Tehsils in district Badin (Tando Bago, Badin, Matli, Talhar, Golarchi and Shaheed Fazal Rahu). Members of the Dairy-Beef team previously provided extension services to 10 villages of Tehsils Okara and Badin as part of their previous work (with the ASLP Dairy Project 2010 – 2015). Tehsil Renala Khurd, Matli and Talhar were selected as the focal Tehsils because the Dairy-Beef team had not previously worked directly in the villages of these locations.

There are 174 villages in Tehsil Renala Khurd and four of these were selected as the focus of this RVCA. The livestock population in the four villages consisted of 4,891 large animals (cattle and buffalo) and 2,812 small ruminants (source: Tehsil Veterinary Office, Renala Khurd). There are 30 registered beef meat retailers in Renala Khurd and approximately 40 to 50 large animals are slaughtered daily in an abattoir operated by the Tehsil Municipal Administration (TMA)/District Government.

In the Sindh province, 4 villages were selected for this study. The livestock population consisted of 83,067 large animals (cow and buffalo) in Matli & Talhar (source: Tehsil Veterinary office, Matli). There are five registered beef meat retailers in Matli and six in Talhar, and five to eight large animals are slaughtered daily.

3.2 Research Approach

The RVCA approach (Collins & Dunne 2008)1 was in response to the need to collect reliable data efficiently in a short period of time. Its purpose, in the context of this activity, was to provide an overview of the performance of livestock value chains in Tehsil Renala Khurd, Okara and Matli and Talhar, Badin and the behavior of their participants, which ultimately allows for the identification of potential market opportunities for smallholders.

In prior capacity building activities, the Dairy-Beef team had constructed a generic livestock value chain map which is in presented in Figure 1.

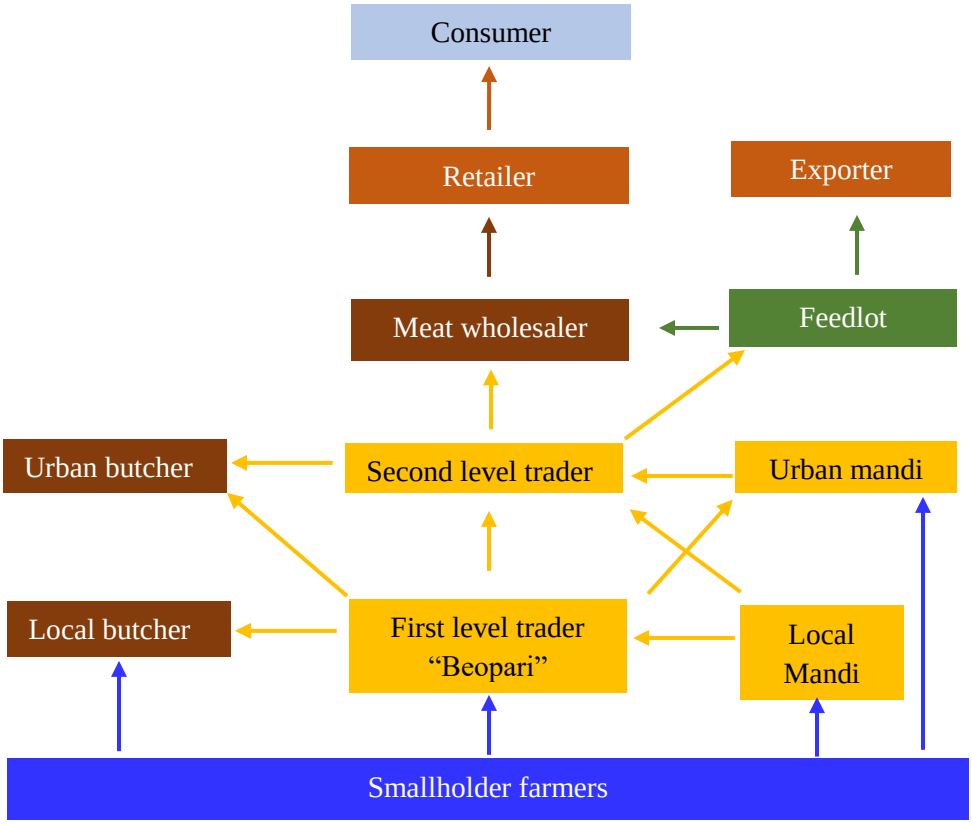

Figure 1: A Generic Livestock Value Chain Map of Punjab and Sindh

This generic map identifies the major categories of participants in the livestock value chain. In keeping with the RVCA approach, samples of informants from each category were interviewed by the Dairy-Beef team (Table 1).

[1] Collins R J & Dunne A J 2008. A rapid supply chain appraisal approach for agribusiness development projects. Pp. 73-79 in 'Proceedings of the Second International Symposium on Improving the Performance of Supply Chains in transitional Economies', ed by P J Batt. 23-27 September 2007, Hanoi, Vietnam.

Table 1: RVCA Informants

Chain Category	Number of Informants (Okara)	Number of Informants (Badin)
Farmers	46	40
Traders	10	10
Retailers	7	10
Consumers	30	46

The final number of informants interviewed under each category was large enough to satisfy the Dairy-Beef team that they had an accurate understanding of the present livestock value chain and its issues from the chain participants' perspective.

3.3 Research Instrument

Primary data collection involved one-on-one semi-structured interviews with each of the informants. The semi-structured interview approach was a useful tool that enabled the interviewer to probe the responses of informants in greater detail. Prior to conducting the interviews, semi-structured interview guides were prepared (Appendix). The interviews were conducted by two teams of researchers, each consisting of two members.

Data Analysis: Okara and Badin

4.1 Consumer Interviews

During this activity, 30 retail consumers were interviewed from Tehsil Renala Khurd, Okara where majority of the consumers were from villages areas (22). In Tehsils Matli & Talhar, Badin, 46 retail consumers from village communities were also interviewed. Consumers were asked about their meat preferences, product specifications, and the frequency and quantities of beef purchase.

The major findings from these consumer interviews were:

- Beef meat consumption varied from 0.25 to 6kg per week in Okara and 0.25-10kg per week in Badin among different consumers depending upon family size, family gatherings and events.
- 53% of respondents from Okara and 35% from Badin indicated that their consumption of beef had increased due to its taste, nutritional value and cheaper price compared to mutton.
- Meat preferences from this component of the study can be seen in Table 2. The trends across both Okara and Badin are quite similar, except for a slightly higher preference for minced beef meat in Okara.

- Majority of consumers indicated a stronger concern about meat quality and hygiene, particularly with respect to the slaughtering of sick/diseased animals and meat adulteration. Regarding product quality; 94% consumers in Okara and 89% in Badin indicated willingness to pay more for improved meat quality (freshness) and hygiene.

Table 2: Consumer preference for beef cuts

District	Meat preference with bone	Without bone	Mince
Okara	66%	11%	27%
Badin	68%	13%	19%

These results were consistent with consumer feedback obtained during previous capacity building activities conducted in Lahore (March 2017). The major difference being the higher preference for mince in Lahore (55% to the village communities of Okara 27% and Badin 11%) and meat without bone (18% compared with 11% in Okara and 13% in Badin).

4. 2 Retailer Interviews

In Tehsil Renala Khurd, Okara there are 30 meat retailers (also known as local butchers) of which seven were interviewed. In Badin, 10 retailers/butchers were interviewed in Tehsils Matli & Talhar.

Retailers purchase livestock from smallholder (29%), beopari (42%) and from both (29%). A typical retailer would purchase 5-10 animals per week, hold them in a paddock and have 1-2 head slaughtered per day at the District Government abattoir.

The major issue raised by retailers was their tight profit margins. The factors contributing to this were:

- The shortage of animals that met their carcass weight specification of 100-120kg.
- The high price of livestock especially during summer.

Box 1: Understanding Butcher Activities (June 2018)

In a separate study to better understand the mechanisms butchers use for purchasing livestock from farmers, the team conducted interviews with five randomly selected butchers in Renala Khurd (1) and Shergarh (4) of district Okara, and six traditional butchers from union councils of Tando Ghulam Ali (2), Rajo Khanani (2), and Kadhan (2) of district Badin.

In this study, 80% of the butchers interviewed preferred to purchase directly from farmers in villages, while others purchased from middlemen. Butchers prefer to purchase livestock from farmers because the animals are cheaper and can generate more profit. According to butchers, the weight and pricing of livestock is stricter in city markets and additional charges are often applied. In Badin, butchers purchase buffalo calves both as individuals and on a collective shared basis.

- There is a cap on the retail price of meat which is set by the District Government at PKR 320/kg. This was the same for both Okara and Sindh and varied slightly throughout the year

Butchers purchase livestock from villages and middlemen and slaughter is conducted at nearby slaughter houses. Livestock must be healthy cattle or buffalo male bulls of 1-1.5 years old with 100-120 kg carcass weight to meet butcher product specifications. Butchers travel up to 20 km depending upon the availability of livestock for purchase. Livestock is typically sourced on Tuesday and Wednesday unless butchers are contacted by farmers on other days of the week.

All butchers have said that they have differentiated themselves from each other and followed their forefather's business approach by building trust with their customers through acquiring and slaughtering quality, healthy animals. Farmers and middlemen call and visit butcher shops to inform butchers of the availability of animals, whilst butchers also visit farms and discuss the weight and price of livestock for purchase. No butcher has a permanent supplier and their relationship is transactional with both farmers as well as other butchers. The butcher's claimed that they do not purchase diseased animals and if an animal is diagnosed as diseased, then sell in mandi. The mode of payment is generally on a cash basis or can include loans with trusted suppliers; all costs are paid by butchers. According to butchers in Badin, meat sale increases during festival days as they sell two to three carcasses to meet the demands. Butchers find it challenging to source animals at the time of Eid so they tend to purchase animals two to three months before Eid and rear at their homes until the time comes to slaughter and sell.

A summary of analysis of the interview data using Value Chain Analysis framework is presented in Table 3.

Table 3: Value Chain Analysis –retailers' perspective in Okar and Badin

VCA Criterion	
Product Flows	Reliability of supply is a problem
Information flows	Exchange of transactional information – quantities, specification, delivery
Financial Flows	Purchase price PKR260 – 300/kg estimated carcass weight Selling price in local retailer shop PKR320 - 340/kg for domestic consumers Retail price set by government at 320 PKR/kg
Relationship with Buyer	Butchers do not have permanent suppliers so their relationship is transactional.

4.3 Livestock Trader Interviews

A total of 10 livestock traders were interviewed from Okara. Three of these traders were beopari while the other seven consisted of second level traders. Ten livestock traders were interviewed from Badin. Seven of these traders were beopari and three were second level traders.

The primary function of beopari is that of a **collector.** On an average, beopari purchase up to five animals per week from smallholder farmers of nearby villages and sell these animals to either local butchers or second level traders directly or indirectly through local mandi.

The second level traders have two roles in the traditional livestock value chain – aggregation and classification. As an **aggregator,** second level traders purchase classes of livestock from a variety of sources – boepari (33% and 41%), smallholders (23% and 11%) and small local mandis (44% and 48%) in Okara and Badin respectively. Across the two districts, the second level trader would purchase 5-28 animals per week.

As a **classifier**, second level traders sort the livestock they have purchased into categories based on specifications determined by their potential buyers. Typically, their major customers, butchers and exporters, are seeking animals with an estimated carcass weight of 120-160 kg.

The interview data identified the absence of any fattening farms or exporters in the districts. Therefore, one of the main activities of second level traders was to aggregate livestock from Okara and Badin and to prepare consignments for the larger provincial mandis, feedlots, private processing companies or exporters located outside the area (Table 4).

Table 4: Percentages of second level traders selling to different customers

Customer	**Percentage of sales (%)**	
	Okara	**Badin**
Suppliers of fattening farms or exporters through large provincial mandis	78	87
Suppliers of private processing companies or exporters directly	22	13

A major problem identified by second level traders was the difficultly they experienced in sourcing suitable animals. There were two major reasons identified:

- Selling behavior of farmers especially smallholders who saw their animals as a store of wealth that could be drawn upon in times of need
- The engagement of smallholders in harvest activities of cotton, sugarcane and wheat which minimized their activity in livestock trading. This was a particular problem in summer.

A summary of analysis of the interview data using Value Chain Analysis framework is presented in Table 5.

Table 5: Value Chain Analysis - traders' perspective in Okara and Badin

VCA Criterion	
Product Flows	First level traders/beopari create value as a collector, while second level traders create value as both collectors and aggregators. The selling behavior of smallholders impact the quality and reliability of supply. Supply of animals is reduced in summer when smallholders are engaged in harvest activities
Information flows	Restricted to the sale process; seller has incomplete information concerning selling alternatives
Financial Flows	Buyer has market power; seller is a price taker as a result of poor information flows
Relationship with Buyer	Transactional although there may be social/cultural ties

4.4 Smallholders

A total of 46 smallholder farmers from four villages in Tehsil Renala Khurd (Okara) and 40 smallholder farmers from four villages in Tehsil Matli & Talhar (Sindh) were interviewed. A livestock ownership profile of these respondents is presented in Table 6.

Table 6: Livestock Ownership Profile

Number of Livestock	Number of Farmers (Okara)	Number of Farmers (Badin)
0-10 (small)	27	26
10-20 (medium)	13	12
20+ (large)	6	2

4.4.1 Pathways to market

The data indicated that smallholder farmers sold their livestock in four ways:

1. Directly to first level traders (beopari)/second level traders
2. Directly to local butchers/retailers

3. Directly in local mandi
4. Into the Eid ul-Azah market

Calves are the future source of income for smallholder farmers. Presently, these calves have a number of different uses and are reared for different purposes and market opportunities. The major systems and targets are:

1. The majority of farmers interviewed (94% Okara, and 97% Badin) rear their calves using low input practices (traditional practices; such as milk, green fodder and wheat straw) and sell them, as the need arises, either to beopari (54-62%) or local butchers (8-21%).
2. In Okara, male calves in villages are reared on a low-input system along with other livestock and are not given any special feed or care. At about six months of age, farmers decide to rear these calves either for Eid if the animal is beautiful, if not, they are reared using traditional methods. Calves not reared for Eid are sold at 2-3 years of age to middlemen or butcher and are also sold on a needs basis.
3. Dairy farmers in buffalo colonies do not rear male calves for fattening purposes and instead sell them 15 days to 2 months after birth. The primary focus of farmers is to sell milk, so the cost incurred to feed milk to calves is considered unfeasible. Due to this reason, farmers prefer to sell calves at an early age.
    a. These calves are sold to restaurants @ Rs1500-2000 to be used as beef in different dishes e.g Haleem. Some butchers in Badin have contracts with farmers where all calves born in a year are purchased at @ 2000-2500 Rs/ calf with advance cash payments.
    b. Some calves are sold to farmers/middlemen at same price and these calves are used as alien calf in animal markets to deceive buyers (Some farmers take freshly parturated buffalo to mandi along with male calves. These calves are either sold along with dam or farmers take these calves home to rear with other animals. These calves are sold to middlemen after one year of age when need arises).
2. In Badin, some contractors in the mandi also purchase all male calves from farmers in the evening. They load these calves into vehicles and transport them to villages where they sell to them to farmers at 2000 Rs/ calf.

4.4.2 Purchasers of smallholder produce

Beoparis are preferred by smallholders for the following reasons:

- They are always looking to purchase animals
- They will purchase animals of any weight or age
- They pay quickly and in cash
- They are well known and have the trust of smallholders

This is a contrast to butchers who are seeking animals in a specific live weight range of either 120-140 kg in Okara and 80-120 kg in Badin.

Beoparis, second tier traders and butchers offer similar prices for animals – in the range of PKR250-280/kg estimated carcass weight[2]. The Eid market is a specialty market where prices can fluctuate widely. From a buyer's perspective, the main selection criteria are general appearance, health and age (2-2.5 years).

Among the smallholders interviewed there were three farmers (two small scale and one medium scale) in Okara and two farmers in Badin who adopted more modern calf rearing practices (see Box 2).

Box 2: Finding opportunities for smallholder farmer, Okara

Through analysis of field data, medium scale farmer adds value to livestock by maintaining animal health and aims to supply animals that are in accordance with customer specifications. The farmer records the number of animals, documents feeding and health information, and also follows the vaccination and deworming protocol advised by the local veterinary officer to optimise the health of the animals. This farmer was happy that the additional animal health costs were beneficial and believes that this will be worthwhile to continue in the future.

On the other hand, the two small scale farmers who continued to sell through the traditional system claimed that the prices they received did not compensate for the extra costs involved. One farmer faced a loss in fattening business, continued for two years with 7-8 calves which he purchased from his village and nearby farmers but after a big loss discontinued this enterprise. The animals died due to feeding malpractice. The farmer fed a broiler poultry diet to fatten the animals, as recommended by his friends; however, the animals became ill and died with different intervals. After facing a financial loss this farmer has shifted his business as middlemen. Both smallholder farmers failed because they did not have adequate technical knowledge for feeding and management practices for fattening animals. They did not follow advice from veterinary service providers', government or private. According to the farmers, fattening is a good business but due to a lack of resources and technical information it is challenging for them to adopt.

Finding opportunities for smallholder farmer, Badin

Through content analysis of field data, the first farmer added value in nutrition using feed supplements and his own feed formulation. The second farmer added value in health and built strong relationship with his customers (Suppliers of exporter & Eid market) and received more profit return as a result. Both farmers mentioned that animals sold in the local market did not compensate for the extra costs involved.

The majority of smallholders in Okara and Badin continue to support the traditional selling system because it is flexible – they are able to find a buyer when they want to sell, there are no specific product specifications outside of it being a healthy animal, and the transaction costs associated with the ownership transfer are minimal. The downside associated with this system is that the smallholder may not be maximizing their net returns from the sale of their animals. As the interview data explained, they do not have the knowledge, capacity or upstream linkages to engage with other selling opportunities.

[2] Estimated carcass weight = 50% of estimated live weight

A summary of analysis of the interview data using Value Chain Analysis framework is presented in Table 7.

Table 7: Value Chain Analysis - smallholders' perspective in Okara and Badin

VCA Criterion	
Product Flows	Consistency of product: variable – different ages, live weights & health status Reliability of supply: – unreliable, sold when the need arises Minimal customer value is created
Information flows	Restricted to the sale process; seller has incomplete information concerning selling alternatives or market trends
Financial Flows	Buyer has market power; seller is a price taker. Sell at 250-280Rs/Kg carcass weight. Sales are on a cash basis
Relationship with Buyer	Transactional although there may be social/cultural ties

RVCA Outputs

5.1 Livestock Map for Okara and Badin

One of the objectives of the RVCA approach is to document the traditional marketing pathways available to smallholders. Based on the data collected from a sample of participants in the livestock value chain from Tehsil Renala Khurd, Matli and Talhar, it was possible to construct the livestock value chain map for the Tehsil shown in Figure 2.

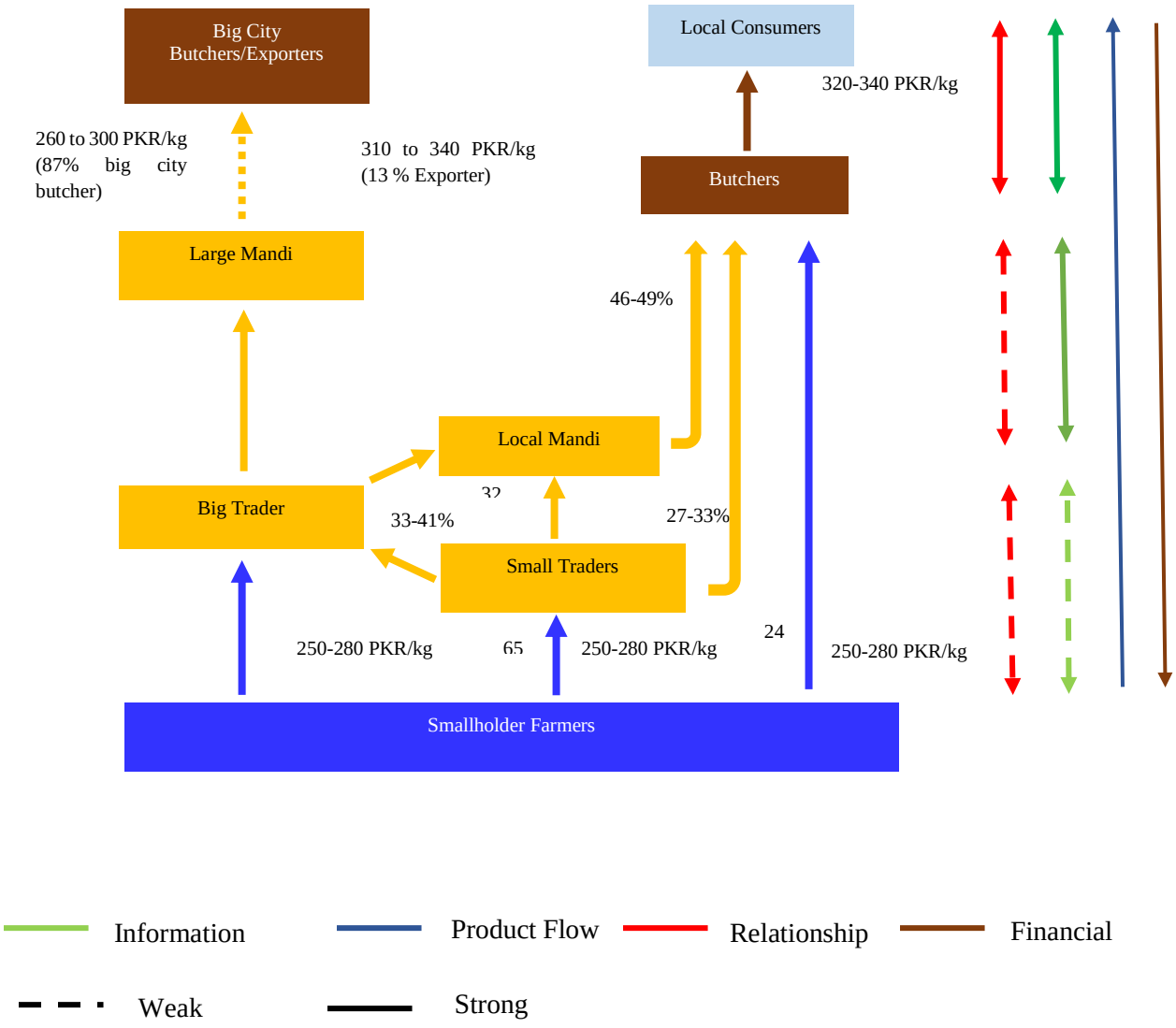

Figure 2: Livestock Value Chain Map, Okara and Badin

The major features of this map, from the perspective of a smallholder, are:

1. While smallholders have the opportunity to sell to three customer types, the majority choose to sell to a beopari because of the flexibility this pathway provides in terms of timing, convenience, simplicity and payment security.
2. Irrespective of the pathway chosen, the price received is similar at PRP250-280/kg estimated carcass weight.
3. Information transfer along the chain to smallholders is weak.
4. The commercial relationships between smallholders and other member of the chain are transactional although the social relationships may be strong.

This analysis of the traditional pathways to market for smallholder livestock farmers confirms that smallholders have little, or no, market power. Even if they adopt improved animal husbandry practices, as two respondents from Okara reported to have adopted some of practices, there is no guarantee that they will be rewarded for the improved quality of their animals.

5.2 Potential Opportunities for Smallholder Livestock Producers

The analysis of the RVCA data indicated that three of the smallholders were attempting to differentiate themselves from other smallholders by adopting improved animal husbandry practices and in the case of the medium size farmer, establishing linkages with exporters, through large traders, and the Eid ul-Azah market. Whereas, the analysis of RVCA Badin data indicated that two medium scale farmers differentiated themselves from other smallholder farmers by adopting modern animal husbandry practices including concentrate feeding, supplements, deworming and vaccination according to schedule. These farmers had good sources of technical knowledge for rearing of animals as well as good market information with focus on product specifications demanded by customers in Eid ul Azah market. These potential opportunities are examined further.

5.2.1 Traditional Value Chain Opportunity

This opportunity requires smallholder producers to:

1. Adopt improved on-farm practices that improve productivity and efficiency – reduced calf mortality and improved growth rates. This will require access to technical assistance from government extension officers.
2. Seek value chain partners (traders, exporters, retailers) that value a regular supply of better quality animals (see Figure 3). This may require a group of smallholders to cooperate in marketing their animals.

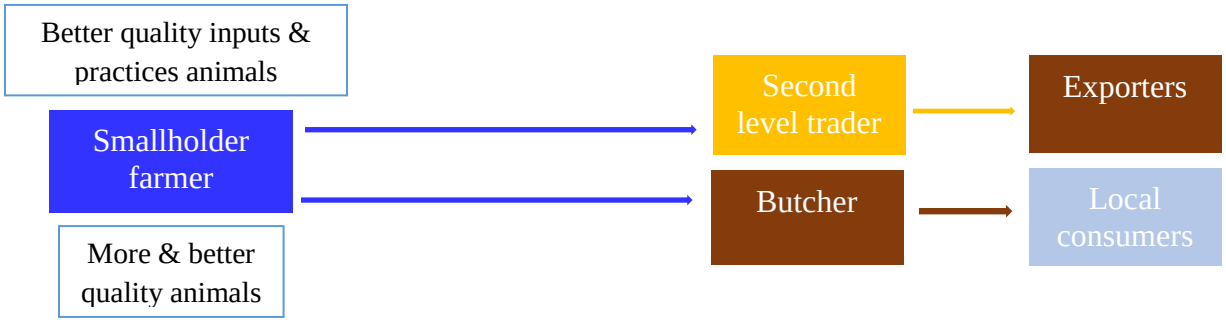

Figure 3: Value Chain Improvement Opportunity – on-farm practices

To enable this opportunity:

- The improved on-farm practices need to be learned, implemented and established.
- The financial case for the adoption of these improved practices needs to be developed.
- The changes to the current system that are necessary to ensure that smallholders capture the potential rewards from adopting improved practices need to be identified.

5.2.2 The Livestock Fattening Value Chain Opportunity

While this opportunity was not directly identified from the RVCA process, it was identified in a previous capacity building activity (Feb-March 2017) when the Dairy-Beef team visited a livestock feedlot operation (Fig 4). In this situation, the manager of the feedlot had a group of 'preferred' second level traders that sourced animals for him. The opportunity here is for a group of smallholders to become a 'preferred' supplier to a 'preferred' second level trader who is in a similar position described above. Second level traders and retailers mentioned that they had problems sourcing animals during summer. This needs to be followed up since it may present an opportunity for smallholders to target this period.

This opportunity will be restricted to smallholders (or groups of smallholders) that have the desire and resources necessary to engage in this opportunity.

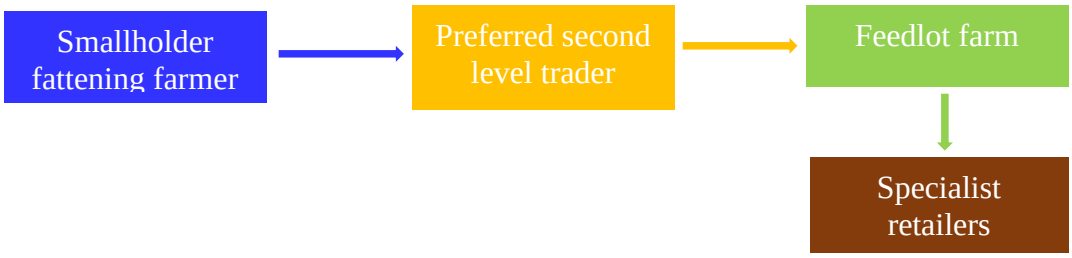

Figure 4: Value Chain Improvement Opportunity – fattening

Issues that require further clarification with respect to this opportunity are:

- The identification of 'preferred' second level traders who are willing to work with smallholders.
- The documentation of what these second level traders expect of smallholders, in terms of performance, if they are to participate in this chain.
- The ability for the smallholder farmers to meet the specifications of the preferred second level traders.
- The financial case for participation in this chain.
- Seasonal price data needs to be collected and analyzed.

5.2.3 The Eid ul-Azah Value Chain

One smallholder from Okara and two farmers from Badin that were interviewed said that they had participated in this opportunity and indicated that it can be financially rewarding (see value chain map in Figure 5).

This opportunity is limited but requires further investigation in terms of:

- The identification of where the opportunity for smallholders exists in this chain
- The financial case for participation in this chain

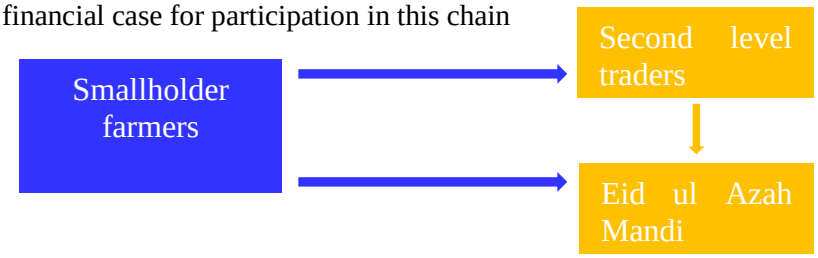

Figure 5: Value Chain Improvement Opportunity – Eid ul-Azah

Conclusion:

The objective of this activity was to build the capacity of the Dairy-Beef project team to identify potential market opportunities for smallholders through the adoption of the value chain analysis approach. The content of this report indicates that this objective has been achieved.

In applying the Rapid Value Chain Analytical process, the team has:

- Gained a better understanding of the traditional beef value chains that operated in Pakistan.
- Gained a better understanding of the interactions that exists between the various actors in these chains.
- Developed their skills in conducting qualitative research using semi-structured interviews.
- Developed their skills in recording, analyzing, interpreting qualitative data.
- Developed their skills in formally reporting the outcomes of qualitative research.

As with all capacity building activities, the development of the teams' knowledge and skills in value chain analysis is a continually evolving process but the journey has begun successfully.

PRELIMINARY INVESTIGATION OF EID-UL-AZAH AS A MARKET OPPORTUNITY FOR SMALLHOLDER LIVESTOCK PRODUCERS

Prepared by:
The Dairy-Beef Team

January 4, 2019

Contents

1. Introduction

Prior research undertaken as part of a district level value chain analysis of the beef industry in Pakistan, identified Eid-ul-Azha as a potential market opportunity for smallholder livestock producers.[1]

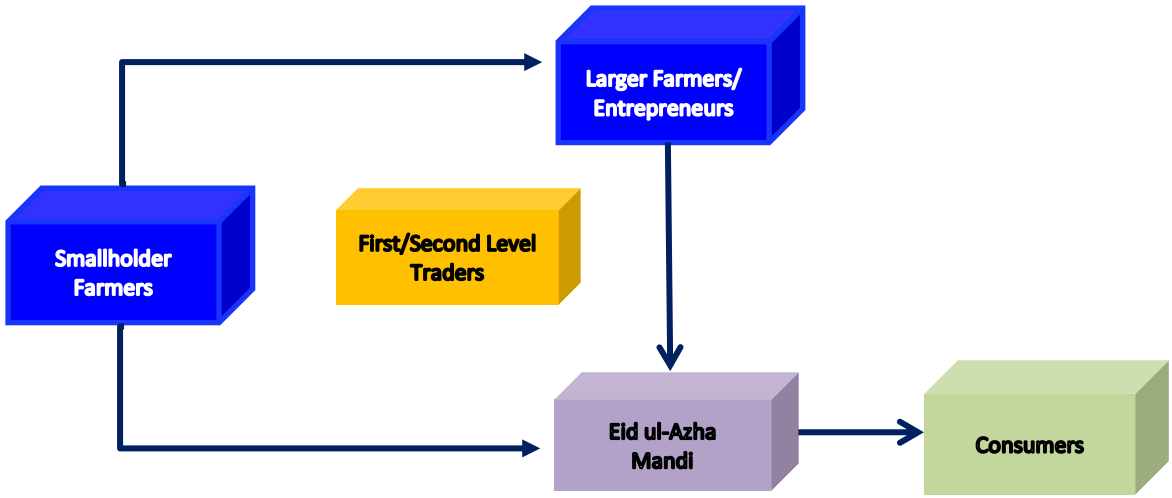

Figure 1: The Generic Eid-ul-Azha Value Chain

Eid-ul-Azha is the second most important religious festivity in Pakistan. During Eid-ul-Azha it is estimated that approximately 8 million animals are slaughtered with a combined value of in excess of PKR 2800 billion. Under this system, animals are prepared for the Eid-ul-Azha market by smallholders, larger livestock fatteners or entrepreneurs. The process is facilitated by traders and the majority of animals are sold through specialist Eid-ul-Azha markets.

Qurbani is the term use to describe the sacrifice of animals during Eid-ul-Azah and rules define who should perform Qurbani, what animals are acceptable and how the meat should be distributed. Under these rules acceptable animals are goat, sheep, cattle (including buffalo) and camel. General guidelines dictate that the animals can be male or female, be in good health, free from disability or handicap, and above a certain age (goat & sheep at least 1 year, cattle two years and camel five years).

As the first stage of a detailed evaluation of this opportunity, some preliminary market research was undertaken in September 2017 during the lead-up to the Eid-ul-Azha celebration. The specific objective of this research was to gain a better understanding of the Eid-ul-Azha market by directly interacting with participants to determine:

- What consumers looked for when purchasing animals for Qurbani
- How farmers and traders select, prepare and trade animals for Qurbani.

This paper details the outcomes of this research.

[1] Rapid Value Chain Assessment of Selected District Beef Chains in Punjab and Sindh, Dairy-Beef Project Report, December 2018. p.16.

2. Methodology

A total of 863 semi-structured interviews were conducted with smallholders, fatteners, traders and customers. The farmers were drawn from villages located in 4 Districts in Punjab (Kasur, Sheikhupura, Okara and Pakpattan) (84 villages) and 2 in Sindh (Badin and Hyderabad) (12 villages). While traders and customers were interviewed in animal markets (mandi) of shah pur, saggian bridge, kot abdul malik, shahdara, raiwind, darogha wala and jallo mandi. All these animal markets were specified for Eid season only. The composition of these respondents is shown in Table 1

Table 1: Interview Respondents

Chain Category		Number of Respondents
Farmers		262
Traders		258
Customers	Urban	252
	Local	149

3. Data Analysis

3.1 Consumer Preferences

There were multiple factors that influenced consumer purchasing behaviour with respect to animals selected for Qurbani such as species, age, beauty (coat colour and conformation), weight, health, breed and, of course, price. The weighting given to these factors varied between consumers in both urban and local markets as outlined in the following sections

3.1.1 Species

Cattle were the preferred animal for Qurbani with over 60-90 % of the customer respondents reporting that they had purchased, or intend to purchase cattle. The major reason given for this purchasing behaviour was financial. Under the rules governing Qurbani, each large ruminant (cattle or buffalo) can be shared by up to seven persons while small ruminants (goat and sheep) are restricted to one share, so large ruminants are more attractive on a cost/share basis.

In spite of the financial attractiveness of cattle, 35% of urban consumers had a preference for small ruminants, particularly goats, due to taste. Consumers in local markets showed a strong preference (76%) for goats because of their availability and relatively lower price. The preference for camel was minimal in both markets.

3.1.2 Breed

The preferred goat breeds were Nukra (Rajan Pur) and Kamori, while Sahiwal was the preferred cattle breed in both urban and local markets. All other breeds commanded lower prices

Nukra Rajan Pur Goat
Estimated weight: 80kg
Price: PKR 175,000

Sahiwal Cattle
Estimated Weight: 400kg
Price: PKR 310,000

3.1.3 Price

The price consumers were willing to pay for an animal was influenced by the species, breed, age (weight, health) and beauty (conformation, free from blemish). Indications of prices consumers interviewed were prepared to pay are presented in Table 2 and illustrated in the photos below.

Table 2: Estimated Livestock Prices – quoted by customers in urban & local animal markets

	Species	Urban animal markets			Local animal markets		
		Weight Range (kg)	Price (PKR/ animal)	Price (PKR/estimated kg live weight)	Weight Range (kg)	Price (PKR/ animal)	Price (PKR/estimated kg live weight)
Small Ruminants	Goat	30-80	15000-175000	500 – 2200	30-160	18000-60000	600-750
	Sheep	30-65	12500-58500	411 – 900	30-160	15000-30000	188-500
Large Ruminants	Cattle	200-400	26500-310000	133 – 780	240-640	45000-120000	188
	Camel	500-650	110000-160000	220 – 246			

Estimated Weight 30kg
Price: PKR. 15,000

Estimated Weight 80kg
Price: PKR. 175,000

Estimated Weight 200kg
Price: PKR26,500

Estimated Weight 400kg
Price: PKR310,000

Estimated Weight 500-650kg
Price: PKR110000-160000

Estimated Weight 30-65kg
Price: PKR12500-58500

3.1.4 Summary

The Eid-ul-Azha market is a large, but competitive, market that offers an opportunity for smallholder livestock producers. Within this market there appears to be a wide range of consumer preference in the type of animal that they desire and can afford. Urban markets appear to offer higher prices than local markets.

The attributes most favoured by consumers are:

- Age – 1 year for small ruminants; 2 years for cattle
- Weight – good conformation
- Beauty – uniform coat color; absence of horns; absence of structural defects
- Healthy- robust appearance

3.2 Farmer involvement

3.2.1 Respondent profile

Over a 2-week period, a total of 353 farmers from different villages in Districts Kasur, Sheikhupura, Okara, Pakpattan, Badin and Hyderabad were asked about livestock rearing practices for Eid-ul-Azha. Of the 353 farmers approached, 262 (74%) were actively raising animals for the Eid-ul-Azha market. Of these 104 (40%) farmers were rearing own livestock, 108 (41%) were purchasing animals to rear and 49 (19%) were involved in both activities.

The livestock ownership profile of these respondents is presented in Table 3.

Table 3: Farmer Livestock Ownership Profile

Livestock	Number of Livestock	Number of Farmers
Goat/Sheep	0-10 (small)	83
	11-20 (medium)	13
	20+ (large)	10
Cattle	0-10 (small)	110
	11-20 (medium)	14
	20+ (large)	30
Camel	0-10 (small)	2
	11-20 (medium)	0
	20+ (large)	0

Of the farmers interviewed, 74% were smallholders which indicates that smallholders were acutely aware of the potential of this market opportunity.

The farmers who indicated that they did not participate in rearing animals for the Eid-ul-Azha market for a combination of the following reasons: lack of interest, lack of experience or a lack of resources.

3.2.2 Rearing practices

The farmers who reared animal for Eid-ul-Azha market, claimed that they adopted 'modern' rearing practices which included health care (deworming, vaccination and treatment in case of disease) and supplementary feeding (concentrates, oil/ghee and wheat flour in water).

3.2.3 Selling practices

The interview data identified that farmers sold their Eid-ul-Azha livestock in a combination of ways which included:

- Directly to a large/city mandi (52 %) due to variety of customers in market and good profit margins
- Direct to local consumers (41 %) because of more profit margins and mostly consumers also visit farmer for the purchase of animals at their door step
- Directly to a local mandi (13 %)
- To beopari or second level traders (3 %) because traders also visit farmer to purchase animals at their door step

The data also indicated that the majority of farmers that sold directly to the large/city mandi were medium or large farmers. Small farmers preferred to sell their livestock locally because there were less costs involved.

When asked to nominate an estimated price for livestock prepared for the Eid-ul-Azha market, farmers quoted a wide range of prices for each species as shown in Table 6

Table 4: Farmer Estimates of Livestock Prices

	Species	Price (PKR/estimated kg live weight)
Small Ruminants	Goat	714 – 1875
	Sheep	550 – 818
Large Ruminants	Cattle	225 – 357

As with the prices estimated by consumers (Table 2), the wide price range estimated by farmers reflected the variation in species, breed, age, 'beauty' and health of the animals prepared for the Eid-ul-Azha market. However, these prices were consistent with the price ranges for animals sold in urban markets.

3.2.4 Summary

The majority (91 %) of farmers reported that their involvement in the Eid-ul-Azha market was profitable, and the overwhelming majority (98%) stated that they would continue to be involved in supplying animals into this market.

3.3 Livestock trader involvement

3.3.1 Respondent profile

A total of 258 livestock traders who engaged in the Eid-ul-Azha market were interviewed. The traders varied in the number of livestock suitable for the Eid-ul-Azha they purchased and the species they specialized in. A profile of the trader respondents is provided in Table 7.

Table 5: Livestock Trader Profile

Livestock	Number of Livestock Purchased	Number of Traders
Goat/Sheep	0-10 (small)	29
	11-20 (medium)	34
	20+ (large)	58
Cattle	0-10 (small)	52
	11-20 (medium)	43
	20+ (large)	40
Camel	0-10 (small)	2
	11-20 (medium)	0
	20+ (large)	0

Based on the interview data, large traders are dominant in the small ruminant market while the small to medium traders are more prominent in the large ruminant market. One reason provided for the domination of large traders in the small ruminant market was that more small ruminants are reared in more remote areas and large traders are able to take advantage of their size to minimize the transport and other operational costs involved in servicing large/city mandis. On the other hand, large ruminant rearing is located closer to the large/city mandis, hence more small and medium traders operate in this market segment.

3.2.2 Trader practices

As in the normal livestock selling system, traders play an important role in the Eid-ul-Azha market. These roles include:

- Facilitate the transfer of animals between small farmers and larger farmer/fatteners either directly or through their presence in the mandis
- Provide farmers with a buyer for their animals
- Act as an accumulator of animals for sale in the Eid-ul-Azha mandis
- Act as a classifier of animals for different market segments
- Act as entrepreneurs – holding and fattening animals for the Eid-ul-Azha market

These diverse roles were confirmed by the interview data, where while some traders confined their purchasing activities to either the village or urban mandis, 57 % purchased from both locations.

With respect to their entrepreneurial activities in holding and fattening livestock for the Eid-ul-Azha market, traders typically purchased animals anytime from 45-360 days prior to Eid. The retention times and sales data are shown in Table 8.

Table 6: Retention periods, Livestock Purchase & Sale Prices

Livestock	Specie	Purchase price (PKR/estimated kg live weight)	Retention Time (months)	Sale Price (PKR/estimated kg live weight)
Small Ruminants	Goat	450 - 1250	1.5 – 12	600 - 1500
	Sheep	545 - 600	2 – 12	571 - 642
Large Ruminants	Cattle	184 - 375	1.5 - 12	228 - 468
	Camel			272 - 291

The range in both purchase and sale prices reported by traders was consistent with those reported by farmers and reflected the range in the type of animal presented for sale in the Eid-ul-Azha market.

3.3.3 Summary

While no specific data on the profitability of engaging in the Eid-ul-Azha market was sought from traders, the high numbers who do engage in this market would suggest that it is profitable. In addition, there was no evidence presented by either consumers or farmers that traders engaged in any activities that suggested a misuse of market power.

4. Financial Analysis

All farmers who had engaged in preparing animals for the Eid-ul-Azha market reported that they had adopted ‘modern’ rearing practices. Although no financial data was collected during the interview process, indicative costs of adopting ‘modern’ reading practices have been calculated for two calf rearing situations:

1. where the farmer rears their own calves, and
2. where the farmer buys in calves.

These estimates of calf rearing costs are presented in Tables 9 and 10.

Table 7: Owned Calf rearing costs for Eid-ul-Azha

Calf rearing cost for Eid market (own calves)				
Assumptions Birth weight (kg): 30 Age at sale (days): 913 Weight at sale (kg): 320				
Feeding Cost				
Description	**No of days**	**Quantity(Kg)**	**Unit price**	**Total**
A: Milk	90	4	50	18000
B: Concentrate	60	2	35	4200
C: Green Fodder	853	10	2	17060
D: Dry Fodder	700	5	5	17500
E: Others (Oil, mineral mixture)	60	0.5	100	3000
Total				59760
Other cost				
Item	**Unit price/month**	**Total months**		**Total**
A: Health	50	30		1500
B: Labour	500	30		15000
C: Utility Bills	200	30		6000
D: Misc.	100	30		3000
Total				25500
Total cost (PKR)				**85260**

Table 8: Purchased Calf rearing costs for Eid-ul-Azha market

Calf rearing cost for Eid market (purchased calves)				
Assumptions Weight at purchase (kg): 240 Age at purchase (days): 823 Purchase price (PKR): 50000 Weight at sale (kg): 320 Age at sale (days): 913				
Feeding Cost				
Description	**No of days**	**Quantity(Kg)**	**Unit price**	**Total**
A: Milk	0	0	0	0
B: Concentrate	60	2	35	4200
C: Green fodder	90	15	3	4050

D: Dry fodder	90	5	7	3150
E: Others (Oil, mineral mixture)	60	.5	100	3000
Total				14400
Other cost				
Item	**Unit price/month**	**Total months**		**Total**
A: Health	100	3		300
B: Labour	500	3		1500
C: Utility Bills	200	3		600
D: Misc.	200	3		600
Total				3000
Total cost (PKR)		**17400**		

Based on these rearing costs, the sale price farmers who engage in rearing calves for the Eid-ul-Azha market would require to cover their costs would be PKR 266/kg live weight (own calves) and PKR 211/kg live weight (purchased calves).

Table 9: Break-even Analysis

	Own Calves	**Purchased Calves**
Purchase Price (PKR)	0	50,000
Total rearing costs(PKR)	85,260	17,400
Total Costs	85,260	67,400
Break-even selling price (PKR/kg)	**266**	**211**

Given that the farmers interviewed indicated that they expected the selling price of cattle sold in the Eid-ul-Azha market to be in the range of PKR 225-357/kg live weight, this preliminary analysis would indicate that rearing calves for this market can be profitable.

Similarly, traders indicated the sale price for cattle brought in and reared for the Eid-ul-Azha market would be in the range of PKR 228-468, which again indicates that this option can also be profitable.

5. Conclusion

This market research activity set out to explore the opportunity presented by the Eid-ul-Azha celebration, and its associated practice of Qurbani, for smallholder livestock farmers. Based on the analysis of the interview data presented in Section 3 and the preliminary financial analysis presented in Section 4, it can be concluded that that **Eid-ul-Azha celebration does present a market opportunity for smallholder livestock farmers.**

This conclusion is based on:

1. Price premiums are evident for animals sold in the Eid-ul-Azha market
2. the quantum of the price premium is determined by a combination of desired consumer requirements that relate to species, breed, age, live weight, health and 'beauty'.
3. 74% of farmers interviewed, of which the majority were smallholder farmers, were already involved in rearing and/or fattening animals for the Eid-ul-Azha market.
4. The majority of farmers involved in rearing and/or fattening animals for the Eid-ul-Azha market stated that being involved in this market was profitable.
5. The preliminary financial analysis presented in Section 4, supports this statement
6. The majority of farmers involved in rearing and/or fattening animals for the Eid-ul-Azha market reported that they would continue to participate in this opportunity

Given that an opportunity exists for smallholder livestock farmers to profitably participate in the market opportunity presented by the Eid-ul-Azha celebration further analysis needs to be conducted to determine how best smallholders can exploit this market opportunity. Some of the issues that need further examination include:

1. Which particular Eid-ul-Azha mandi should be targeted?
2. What animals (species, breed, phenotype) should be the focus for their efforts?
3. To what stage should smallholders rear and/or fatten animals?
4. What husbandry and nutritional practices need to be implemented?
5. Should smallholders act independently or collectively to maximize the potential returns from this activity?

These issues need to be addressed within the structure of a comprehensive operational and marketing plan that is underpinned by detailed financial analysis.

Detailed beef value chain assessment of a potential market opportunity for small scale livestock producers

Prepared by:
The Dairy-Beef Team

27 April 2019

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Executive summary:

This report documents the analysis of potential beef market opportunity for smallholder farmers. The objective of this activity was to evaluate the opportunity in terms of profitability and risks involved in engaging farmers in this value chain. This opportunity was identified during a rapid value chain assessment (RVCA) conducted in two districts Okara and Badin. Following from that, this detail beef value chain assessment activity was conducted from December 2017 to April 2018 and involved a series of semi-structured interviews with selected beef value chain actors (consumers, retailer, traders, feedlot and smallholder farmers) by adopting a case study methodology. The data collected through interviews was analyzed using content analysis and generated following observations:

- Consumers valued freshness, hygiene, quality and they were willing to pay more if they were provided meat with no added fat and cuts from the desired portion of the carcass.
- Retailer, as a trader, creates value for his customers by providing product according to customer specifications. For this purpose, he sources animals from different animal markets and also buys directly from smallholder farmers and ensures the provision of hygienic and fresh product to the customers.
- Farmers create value by adopting wide variety of animal husbandry practices to produce healthy animals.

Based on analysis, it appears that smallholder farmers can benefit from participating in this opportunity if they fulfill the required product specifications and become a preferred and reliable supplier. However, there are some risks involved. For example, if they fail to deliver the consignment on time, as most of smallholder farmers sell animals at the times of need then retailer might not prefer to purchase from them due to inconsistent supply. Secondly, gross margin and sensitivity analysis indicated that the financial attractiveness of this opportunity is marginal which shows that there is a possibility that this opportunity will not be profitable.

Although this opportunity is financially marginal, it demonstrates that smallholder farmers could increase their income from rearing male calves if they rear their animals efficiently and meet the market specifications. One alternative available to them which has the potential to improve the financial outcome from this opportunity is for them to seek out other buyers who have a demand for similar animals but are willing to offer higher prices.

To participate successfully in an opportunity such as this, smallholder farmers will have to adopt a more business-like approach to the rearing and sale of their male calves instead of the opportunistic approach, which traditionally they have adopted.

1. Introduction

The Dairy-Beef team conducted a rapid beef value chain assessment (RVCA) in Districts Okara and Badin to find opportunities for smallholder farmers. Among the different opportunities identified, selling animals to a feedlot farmer was selected for more detailed assessment to evaluate its financial viability and the risks involved for smallholder farmers engaging in this chain as shown in Figure 1.

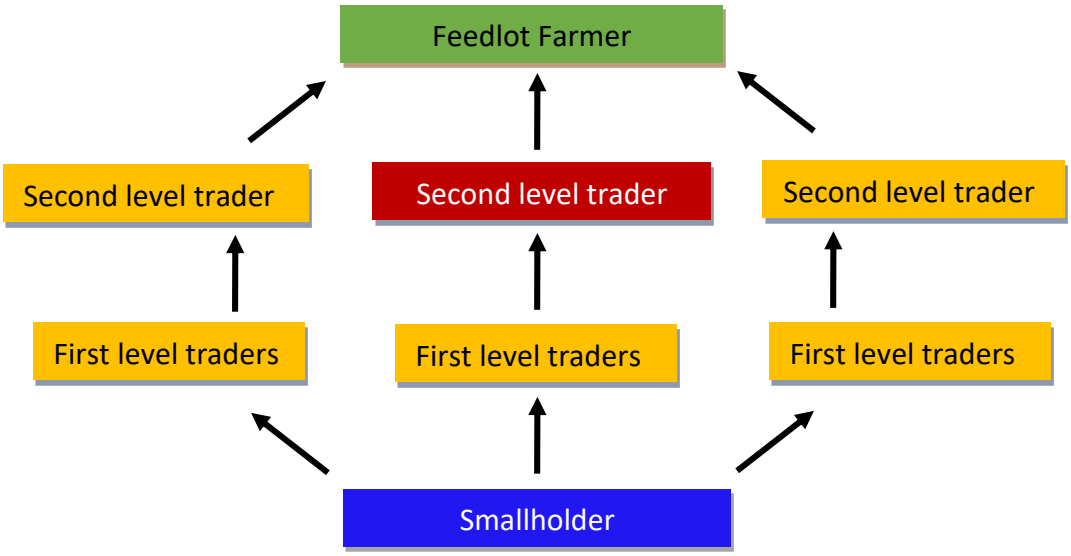

Figure 1: The feedlot value chain opportunity

In the initial discussion with the feedlot farmer it became evident that he was not interested in dealing directly with smallholder farmers and, if smallholder farmers wished to become part of his value chain then they would have to do so through one of his 3 existing preferred animal suppliers (traders).

One of these traders was working as retailer and willing to work with smallholder farmers so the opportunity to work with him became the focus for the analysis of this opportunity. This decision was strengthened by the fact that retailer had multiple roles within the feedlot chain – he was a supplier as well as a client of feedlot farm, he also acted as wholesaler and owned a retail outlet in Lahore. The value chain map of this revised feedlot opportunity is shown in Figure 2.

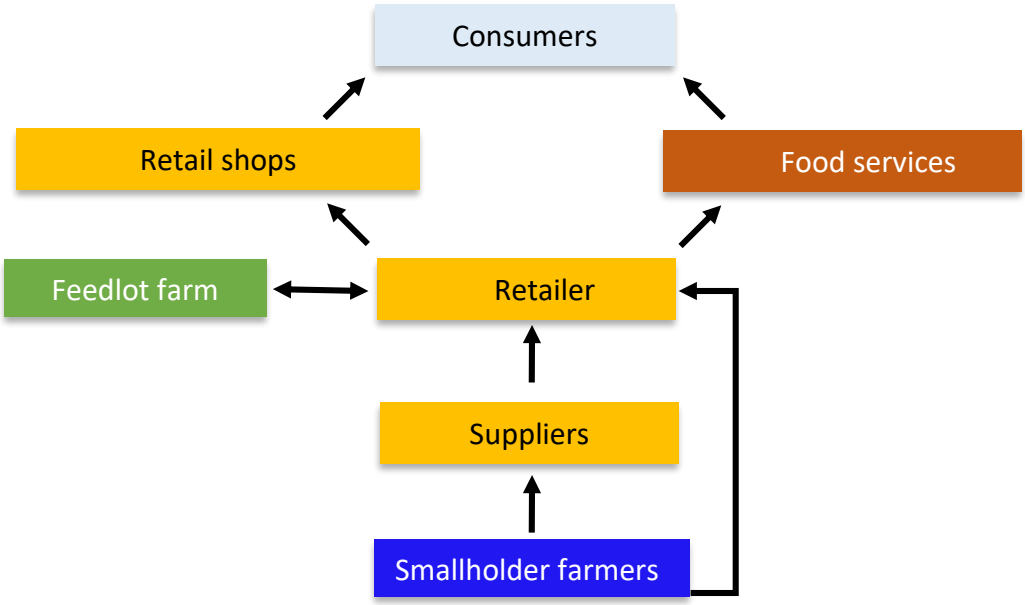

Figure 2. Retail value chain

2. Methodology

Adopting a case study methodology, semi-structured interviews with representatives of the major businesses involved in the retail value chain were conducted. The composition of the interview group is as follows:

Table 1: Interview Respondents

Chain actor	Number of respondents
Smallholder farmers	9
Feedlot farmer	1
Traders	12
Retailer	1
Consumers	10

All the chain actors except consumers were asked about their sourcing of livestock, value created for customers, expectations about product from suppliers, strategies to fulfill customer demand according to their specifications and possibility of doing business with smallholder farmers. Consumers were asked about their preferred type of product and reasons to purchase from a particular retailer.

3. Data Analysis

The data generated through semi-structured interviews was analysed through a context analysis process. The outcomes of this analysis are presented in the following sections.

3.1 What consumers' value

The retailer's outlet is located in an area of District Lahore where most of the people belong to middle socio-economic class. Ten consumers were interviewed at the retail shop to understand what they valued when purchasing beef from this shop. The main findings were;

- Consumers valued freshness (as indicated by a light red color); hygiene (as indicated by the nature of the retail premises) and quality (indicated by carcass conformation and light fat cover).

Picture 1. Retailer's outlet

- Consumers preferred that 40% of their beef purchases were boneless, 40% with bone and 20% mince. This preference was different from that recorded in the rapid value chain analysis where only 20% of meat purchases were boneless.
- Consumers were willing to pay more for the beef that they purchased – boneless Rs600/kg, with bone Rs450/kg and mince Rs600/kg. These prices are a significant premium (40%) on average beef prices in Lahore set by the government.

3.2 How does the "retailer" deliver value for its customers?

The data collected and analyzed in Sections 3.2-3.4 was collected during interviews with retailer in his retail store in Lahore. Retailer satisfies his customer's needs by taking following measures:

- Provides hygienic environment and having modern facilities and equipment for meat handling with more focus on cleanliness (see Figure 3).

- Provides fresh beef to his customers by slaughtering on daily basis.
- Adds less fat in meat as compared to other retailers in area and slaughters young male animals of 1-2 years of age to meet consumer expectations for fat cover and carcass shape.
- Slaughters 2-3 animals daily to ensure the quantity of different cuts demanded by consumers.
- The direct costs associated his retail/wholesale operations is approximately Rs30/kg.
- His attitude towards his customers is very pleasant

In summary, consumers preferred retailer's shop because of trust, hygiene, quality meat and ease of accessibility to the shop. They are satisfied with services provided and are willing to pay high prices because of the good quality of beef provided. Consumers know that he sells at higher prices than the Government set price for meat but they still prefer him due to above mentioned benefits.

3.3 What does Retailer/Wholesaler create value?

In order to meet the demands of his retail consumers and food service customers, retailer requires 15-20 carcasses per week. He specifies that each carcass must be of 280kg weight, have good conformation, have a light fat cover and from a healthy animal. He pays Rs380/kg carcass weight for cow calf.

3.4 What does retailer as a buyer of live cattle value?

His product specifications for suppliers are male, 1-2 years old, healthy animals, 80-280 Kg carcass weight, shiny skin, round rump and no bony appearance (good conformation). Animals below the required estimated carcass weight of 280kg would be 'finished' in a feedlot. He purchases beef animals on live weight basis and pays Rs180-190/kg.

3.5 Retailer's current suppliers

Retailer sources animals from different animal markets and also buys directly from smallholder farmers. He is willing to purchase more animals from smallholder farmers directly. He has 5 permanent suppliers (traders) who source animals from different animal markets and the peri-urban buffalo colony. He pays a commission of Rs1000/animal to these suppliers for sourcing animals for him.

3.6 Preferred Supplier's views

To obtain a supplier's perspective on being part of the retailer's value chain, 3 of his 5 preferred suppliers were interviewed in a buffalo colony located near Lahore.

They purchase 5-12 animals in week. They keep animals in a paddock for 1-5 days and sell in to the large animal market. Butchers and some of large traders like this retailer are their main customers.

They visit more animal markets and cover more distance, sourcing animals to the customer required specifications. They collect and segregate animals and then transport to buyers such as retailer when they have acquired sufficient numbers (12-15). They purchase animals within the price range as instructed by retailer which is approximately Rs180-190/kg live weight. Payments are made in cash. One of the preferred suppliers interviewed stated that he wasn't currently supplying to retailer because of the difficulty in sourcing animals that met his specifications.

3.7 The views of smallholder producers

In order to gain an understanding of the issues faced by smallholders who fatten their male calves before selling them, 9 dairy farmers who were located in a peri-urban buffalo colony in Lahore. Three of the 5 preferred suppliers to the retailer value chain visited this market on regular basis for sourcing of desired animals.

Farmers have adopted wide variety of husbandry practices to produce healthy animals. They have feed shortage and experience difficulty in sourcing input supplies. Seasonal stress also affects health of animals. They don't have knowledge to market their animals and sell their animals at times of need and emergency. Their cost of production is high but return on sale of animals is very less.

3.8 Summary

From the analysis of this chain, an opportunity is identified for smallholder farmers to engage in a more profitable beef value chain (Figure 4).

Retailer has a high demand for livestock to meet the demands of his business. Currently, he is facing a problem in sourcing desired animals; he has to travel long distances to attend different animal markets to find the desired beef animals. He is willing to work with smallholder farmers to buy the desired quality and quantity of beef animals from one place with more ease. Therefore, there is an opportunity for group of small-scale producers to become "preferred" suppliers of retailer. This opportunity will be restricted to smallholders or a group of smallholders who have the motivation, skills and resources to engage in this opportunity and meet retailer's product specifications as given in Table 2

Table 2: Product specifications demanded by retailer

Age	1-2 years
Weight	80-280kg carcass weight
Appearance	Shiny skin, healthy, no bony prominences
Confirmation	Round rump, more meat to bone ratio
Sex	Male animal
Price	Rs180-190/kg cow calf

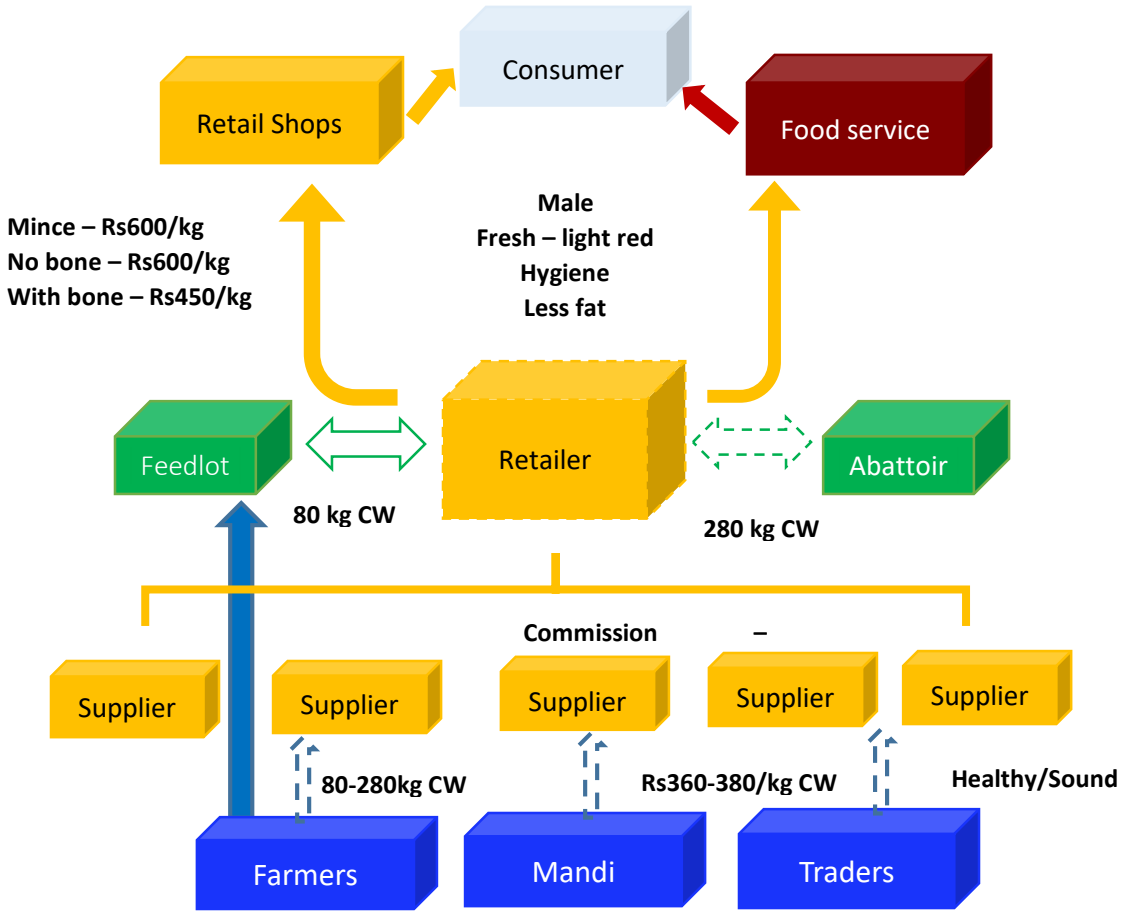

Figure 3: The retail value chain opportunity

4. Financial Analysis

The opportunity exists and the product specifications have been detailed but is it a financially viable option for smallholder farmers to consider? To ascertain its financial viability a simple gross margin analysis was conducted.

A targeted carcass weight of 90kg (200kg LW) was chosen for this analysis on the basis of minimizing risk (cost involved) and maximizing motivation (quicker turnover) for the smallholders involved.

Baseline Assumptions (based on previous work undertaken by the Dairy- Beef team)

- Live weight at weaning: 85kg
- Cost of raising calf to weaning weight: Rs14,000
- Weight gain post-weaning: 0.7kg/day
- Feed cost: Rs85/day
- Husbandry + cost: Rs7,000

- Retail chain buying price Rs190/kg Live Weight (Section 3.4)

Table 3: Gross Margin Analysis

Revenue (200kg @ Rs190/kg)		Rs38,000
Pre-weaning costs	Rs14,000	
Days on feed to achieve 200kg LW	165 days	
Cost of feed (165xRs85)	Rs14,000	
Health & husbandry costs	Rs7,000	
Variable Costs		Rs35,000
GROSS MARGIN (per animal)		**Rs3,000**

There are 2 key assumption in this Gross Margin analysis – the cost of feed/day and the weight gain/day. To test how sensitive, the Gross Margin of Rs3,000/animal was to changes in the values of these assumptions a Sensitivity Analysis was conducted. The results of this analysis as shown in the following table indicate that the positive Gross Margin associated with this fattening opportunity are very sensitive to slight variations in both key assumptions.

Table 4: Sensitivity Analysis

FEED COSTS WEIGHT GAIN	ORIGINAL (Rs85/day)	Rs90/day	Rs95/day	Rs100/day
ORIGINAL	Rs 3,000	Rs2,150	Rs1,325	Rs 500
0.6kg/day (190 days)	Rs1,850	-Rs100	-Rs1,050	-Rs2,000
0.5kg/day (230 days)	-Rs2,550	-Rs3,300	-Rs4,850	-Rs6,000
0.4kg/day (290 days)	-Rs7,650	-Rs9,100	-Rs10,550	-Rs12,000

5. Risk Analysis

5.1 Production risk

There are many potential sources of production risk:

- It might be difficult for smallholder farmers to rear animals that meet retailer's specifications because they don't have the knowledge and skills required.

- Smallholder farmers may not have the financial resources to purchase and input supplies and the ration required for fattening which will hinder their ability to achieve a growth rate of 0.7kg/day.
- Individual smallholders, in most cases, would not have the capacity to accumulate the 12-15 animals required per consignment.
- Traditionally smallholder farmers have viewed their young animals as a 'store of wealth', therefore it may be difficult for them to commit to a long-term calf rearing opportunity.

Together these production risks cast doubt on the ability of smallholders to establish a reputation for being a consistent and reliable supplier to the retail value chain.

5.2 Financial risk

The gross margin and sensitivity analysis indicates that the financial attractiveness of this opportunity is marginal. In particular, the gross margin is very sensitive to daily weight gain achieved. Given the production risks outlined above, there is a strong possibility that this opportunity will not be profitable.

6. Conclusions

The opportunity identified in retail value chain may not be attractive for smallholder farmers. Never-the-less there are other benefits from adopting improved calf rearing practices:

- Better animal husbandry practices could reduce calf mortality rates
- Better health care and nutrition could improve pre and post weaning growth rates

In addition, a record keeping systems would allow an accurate calculation of the costs of calf rearing that will benefit a smallholder in the price negotiation with traders such as retailer's preferred suppliers.

Data collected in this activity clearly indicates that there is a shortage of young beef animals that are healthy and exhibit good body conformation. This shortage provides an opportunity for smallholders, or a group of smallholders, to rear their young male calves by adopting improved animal husbandry practices. The financial success of such opportunities depends on their ability to become part of a value chain that adequately rewards them for the value they create for the chain.