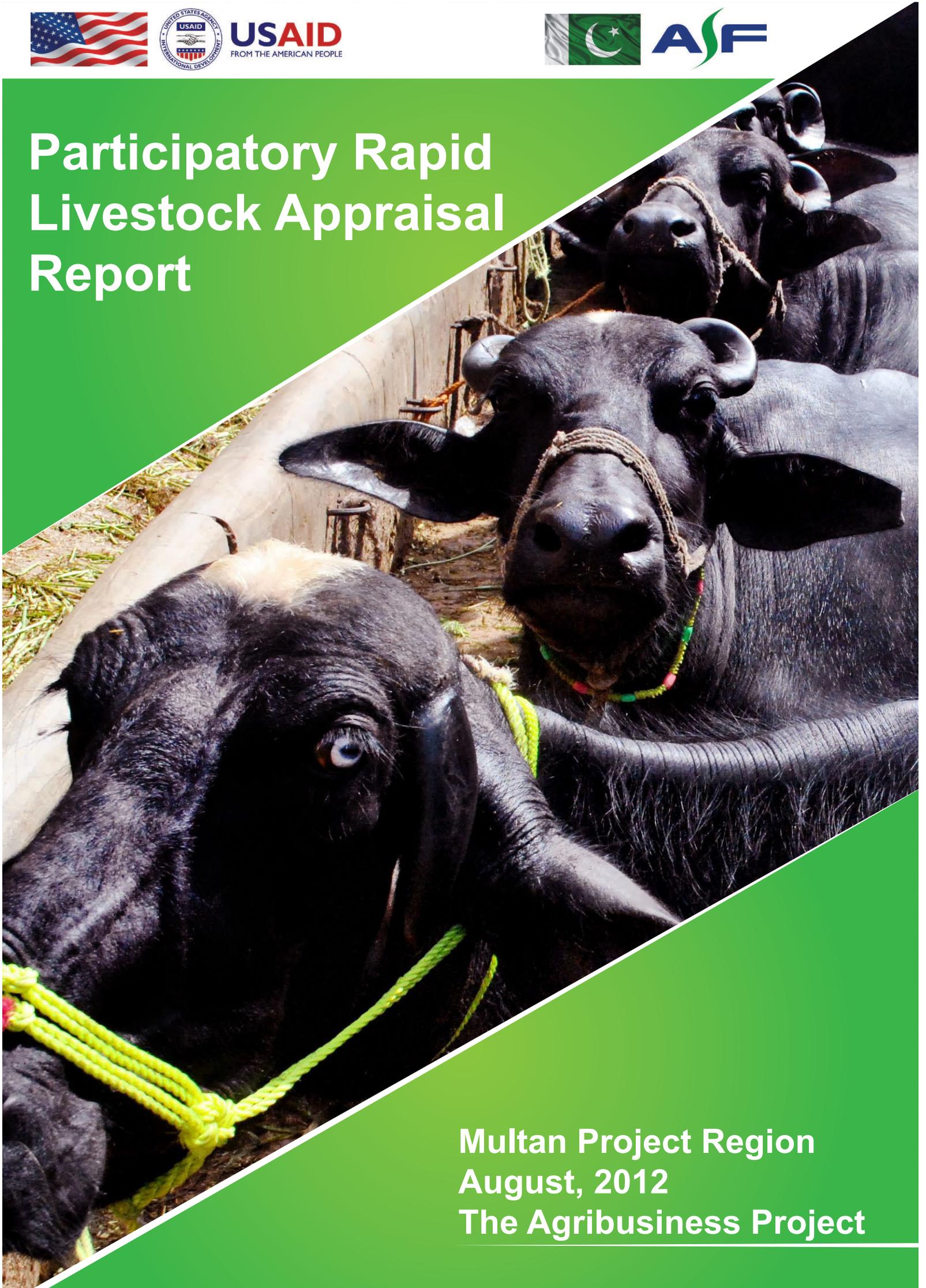




USAID
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Participatory Rapid Livestock Appraisal Report



Multan Project Region
August, 2012
The Agribusiness Project



Acronyms

ASF	Agribusiness Support Fund
FAO	Food and Agriculture Organization
FGD	Focused Group Discussion
L&DDD	Livestock and Dairy Development Department
MPR	Multan Project Region
NGO	Non-Government Organization
PRLA	Participatory Rapid Livestock Appraisal
RCCSC	Research Centre for Conservation of Sahiwal Cattle
TAP	The Agribusiness Project
USAID	United States Agency for International Development

Disclaimer: This Participatory Rapid Livestock Appraisal report of Multan Project Region is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of The Agribusiness Project and do not reflect the views of USAID or the United States Government.

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Executive Summary

The Agribusiness Project funded by USAID Pakistan is being implemented by Agribusiness Support Fund (ASF) in collaboration with International and national partner organizations. This five years project commenced on 10th November, 2011 and aims at increasing competitiveness and productivity of horticulture and livestock sub-sectors in Pakistan. The overall goal of the Project is to support improved conditions for broad-based economic growth, create employment opportunities and contribute to poverty alleviation through increase in competitiveness of horticulture and livestock value chains in partnership with all stakeholders. During the first year of the project, a preparatory program was undertaken to gauge the potential of the sub-sector and to prioritize value chains for various project regions including the Multan Project region. Findings from the Participatory Rapid Livestock Appraisal (PRLA) will enable the project to identify and prioritize livestock value chains, opportunities, constraints and state of the business development services to provide required basis for focusing project interventions. The Multan region covers seven districts including Multan, Sargodha, Toba Tek Singh, Chiniot, Mandi Bhauddin, Khushab and Jhang.

Within the framework of the cluster and value chain approach, a two-pronged approach was adopted, first preparation for PRLA exercise in the field and second collection of secondary data and development of appropriate tools for quantification of factors to be measured on a scale for ranking/prioritization. This report pertains to work completed based on both secondary data and primary appraisals of livestock sub-sector.

The PRLA methodology provides for probing, analysis and validation of information as they unfold during the field work. Seven factors were applied for the quick analysis of the sub-sector. These include; (i) extent of employment generation; (ii) commercial worth; (iii) percentage of small farmers associated; (iv) women involvement; (v) households associated with the value chains; (vi) understanding growth potential; and (vii) vulnerability of the concerned value chains. Covering 50% of the districts, the exercise was undertaken in the randomly selected settlements/villages within each cluster/region. Each focus group consisted of 10-15 stakeholders, a representative sample of sub-sector, whereas, 2-3 FGDs were carried out in each district.

Prior to the primary data analysis, an appraisal of the livestock subsectors was conducted based on the secondary data available to develop objective criteria for the prioritization of the subsectors within livestock milk, meat, byproducts and fisheries value chains. The indicators used for analysis included i) Growth of the subsector on provincial (Punjab) level in past five years; ii) Pakistan share in the world production; iii) Punjab's share in Pakistan; iv) Share of Multan Project Region in Punjab; v) Productivity Gap; vi) Employment potential or Labor intensity; and vii) NPC or National Production Cost calculated by comparing the price in national and international markets.

As per analysis on the basis of secondary data, Pakistan's share in world production was 4.82% in milk, 2.17% in beef, 3.13% in mutton meat, 17.91% in buffalo hides, 1.93% in cattle hides, 4.93% in goat skins and 1.85% in sheep skins. Punjab contributes 63.01% to the national milk production. In addition, Punjab shares 49.17% beef, 59.31% mutton, 55.14% buffaloes, 50.92% cattle, 64.51% goats and 53.26% sheep to the total production on national level. The share of Multan Project Region in Punjab was 6.36% for milk, 6.02% for beef and 5.33% for mutton. Buffalo made 11.07%, cattle 11.74%, goat 3.70% and sheep 26.30% of the Punjab production. Among livestock value chains, cattle hides showed highest growth of 3.70% during the past five years followed by beef meat with 3.33% growth rate. Milk production had a growth rate of 3.23% but this increase was mainly due to the increase in the number of animals and not increased production per animal. The growth rate in buffalo, goat, sheep and mutton meat had been 2.99%, 2.67%, 1.18% and 2.13% respectively.

Primary data for Multan Project Region was collected through FGDs in 6 districts of the region, involving all groups of stakeholders within the value chains. Covering 50% of the districts, the exercise was undertaken in the randomly selected settlement/villages within each cluster/region. Each focus group consisted of 10-15 stakeholders, a representative sample of sub-sector. In each district, 2-3 FGDs were carried out. Meetings were held with individuals including community representatives and progressive farmers. Livestock value chains were then analyzed and prioritized using grid analysis on the basis of seven factors mentioned above. On the basis of the analysis, milk ranked highest on the priority index with 7.6 points, followed by meat at 6.54 points.

As a part of the PRLA exercise the analysis and ranking of potential priorities and constraints, in all value chains, was carried out during FGDs using paired ranking technique. Meat marketing, Breed improvement, capacity building, value addition and technology has been identified as a major opportunities. Whereas, Export markets, lack

of Livestock extension services, technology are identified as major constraints.

Further, an assessment of the market linkages and service providers and the services provided was also carried out. Strength of the market linkages was determined by the share of produce in that particular market and cost of transportation. The input suppliers, middle man and market agents were identified as the strongest links among all stakeholders across the value chains. NGOs and farmers' associations providing technical assistance in the form of capacity building and trainings were among the medium strength linkages. Government institutions such as Livestock and Dairy Development (L&DD) department and banks were among the weakest linkages.

Introduction

Background

The Agribusiness Project funded by USAID, is being implemented by Agribusiness Support Fund (ASF) in collaboration with International and national partner organizations. This five years project, commenced on 10th November, 2011 and aims at increasing competitiveness and productivity of horticulture and livestock sub-sectors in Pakistan. The overall goal of the Project is to support improved conditions for broad-based economic growth, create employment opportunities and contribute to poverty alleviation through increase in competitiveness of horticulture and livestock value chains in partnership with all stakeholders.

The Agribusiness Projects objective is to: i) To strengthen the capacity in horticulture and livestock value chains to increase sales to domestic and foreign markets; ii) Strengthen capacity of small holder and enterprises to operate autonomously and effectively; and ; iii) increased agriculture/livestock efficiency and productivity through adoption of new farming techniques and technological innovations among targeted beneficiaries. Project activities encompass focused technical and capacity building assistance to upgrade and strengthen capacities in the priority value chains in both livestock and horticulture sectors; and a national cost sharing grants program offering a wide range of customized assistance to key players within the priority value chains.

During the first year of the project, a preparatory program was undertaken to gauge the potential of the sub-sector and to prioritize value chains for various project regions including the Multan Project region. PRLA is a short cut yet efficient method for data collection. It is a methodology for action research that uses a range of techniques and plays an important role in probing, developing, analyzing and using indigenous knowledge as a foundation from which to build more productive, valid and sustainable platform for the field work. Findings of the PRLA will enable the project to identify and prioritize livestock value chains, opportunities, constraints and state of the business development services to provide required basis for focusing project interventions.

The Livestock sector is broad and covers highly diverse agro-ecological, social and economic dimensions across countries, regions and continents. In Pakistan, livestock is an integral component and considered as the backbone of the agriculture sector, as in any other agricultural economy. The livestock accounts approximately 55.1% of the agriculture value added and 11.5% to the Gross Domestic Product (GDP). Almost 35-40 million rural households are dependent on livestock for their livelihood, deriving 30-40% of their income from livestock. The primitive state of infrastructure and technology catalyzed by the limited availability and high cost of inputs has halted the growth of a polymorphic, high value livestock sub sector that, if driven in the right direction, can contribute towards food security, import substitution, export led growth and poverty alleviation through employment generation. Pakistan has immensely large livestock resources and there is need to exploit and utilize these resources for the substantial growth of the sector. There is a need to focus on understanding productivity gaps, factors blocking development and expansion of livestock value chains, to identify hurdles causing bottlenecks, uncertainties and inefficiencies that hinder competitiveness. Interventions are required across all nodes of the livestock value chains, especially value addition, processing and marketing in order to increase the competitiveness and enhance capabilities of value chain operators to respond to domestic, regional and international markets.

The reports articulate for each region separately to enable better targeting and focusing project interventions. This report covers the project region of Multan. Within the framework of the cluster and value chain approach, a two-prong approach was adopted, first preparation for PRLA exercise in the field and second to collect secondary data and develop appropriate tools for quantification of factors so that it can be measured on a scale for ranking/prioritization. This report pertains to work completed based on both secondary data and primary appraisals of Livestock sub-sector.

The Region

Historically livestock have had significant potential in the province of Punjab, a major potential for economic growth and development. The Multan Project Region (MPR) under the project consists of 11 districts.

Punjab province with 36 districts indicates the overall positive trend of milk and meat production in the region. Multan Project Region has three milk clusters which are among the eight large clusters of milk in Punjab namely Muzaffargarh, Bahawal nagar and Bahawalpur.

A brief overview and profile of livestock in Multan Project Region reveals that Muzaffargarh has largest population of cattle in Punjab which contribute over 8%. The overall trend in the region is increased both in terms of animals population and their production.

Priority	Cluster/Districts	Total Production Cluster (Litres/Tons)	% Share in Punjab
Milk	Muzaffargarh	3,638,387	0.0094 %
	Bahawal nagar	3,173,223	0.0082 %
	Bahawalpur	3,042,023	0.0078 %
Meat	Muzaffargarh	512,000	25.56 %
	Multan	466,000	23.28 %
	Bahawalpur	331,000	16.50 %
Fish	Muzaffargarh	11,000	13.56 %
	Khanewal	6,283	7.48 %
	D.G. Khan	3,548	4.22%

Table 01 above is shows the district wise milk production in eleven districts of Multan region. Muzaffargarh is on top in Multan Project Region with 0.0094% of total milk production of Punjab followed by Bahawal nagar and Bahawal pur as 0.0082% and 0.0078% respectively. All of these eleven districts of Multan Project region contribute over 32% of total milk production of Punjab.

Objectives

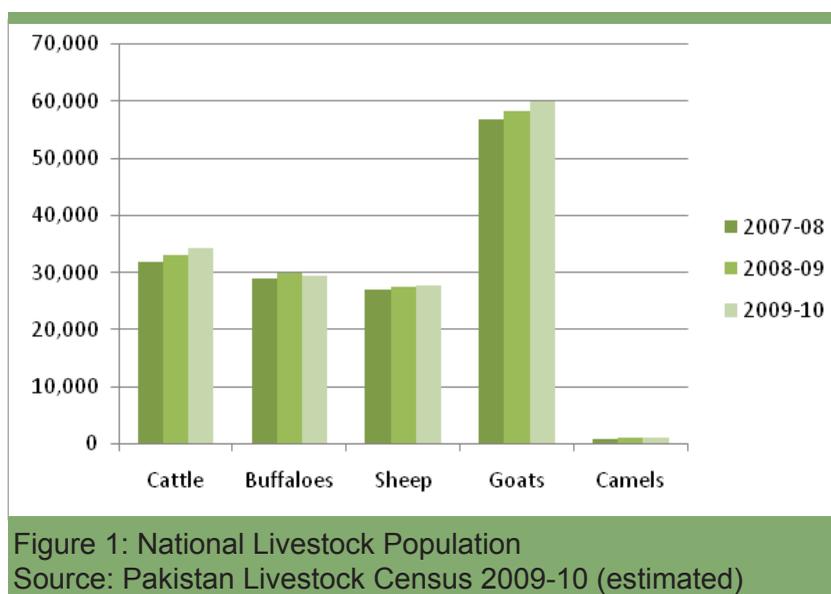
The objectives of PRLA exercise were to a) identify and prioritize the key livestock value chains in terms of growth potential and capability to benefit as many stakeholders across the value chains b) Identify relevant constraints impeding the realization of opportunities c) assess current state of the extension services to the livestock farmers and d) explore linkages of key livestock stakeholders with the local and national markets.

The PRLA was conducted with a view to prepare the stage for focusing project intervention as well as for the project baseline and value chains benchmarking studies. The PRLA results will enable the project to prioritize value chains (validating the cluster approach), set benchmarks, and support establishment of a database to generate primary data on key indicators to be maintained and updated during the course of project implementation and afterwards supporting the planning, monitoring, evaluation and communication functions of the project.

Livestock Sector in Pakistan

Pakistan is endowed with diverse livestock genetic resources. In fact it is postulated as one of the centres of animal domestication lay in this part of the world. Pakistan has a large livestock population well adapted to local environment conditions. The population of buffalo is about 27 millions, cattle 29 million sheep 26 million and goat is 53 million. Livestock contributes 11% of the total GDP (Source: Economic survey of Pakistan 2009-10) 30 to 35 million of rural people are engaged in livestock business deriving 30 to 40% of their income from this source.

Livestock production system is mostly mixed crop-livestock farming. Old and orthodox system of livestock management is still in practice by majority of farmers. Production system of cattle and buffalo are subsistence small holdings, market oriented small holding, rural commercial farms and peri-urban dairy farms. Farming system of small ruminants (Goat and sheep) are nomadic, transhumant and sedentary-household.



Methodology and Approach

The consultant(s) assisted the project staff in undertaking a strategic exercise for identification and prioritization of the value chains to prepare a stage for the baseline study and in close consultation with the project management adopted the following methodology to undertake the PRLA exercise:

Desk Review and Study Matrix

The PRLA team, within the framework of the cluster and value chain approach, reviewed the existing data, including the secondary data on the livestock sector, published reports and developed objective criteria for prioritization of value chains within the livestock subsectors i-e, Dairy, Meat, Livestock by products value chains. Following sources were used to collect secondary livestock data for Multan region;

- i) Federal bureau of statistics
- ii) Pakistan Livestock census 2006 database
- iii) FAO Database
- iv) Livestock and Dairy Development Board
- v) Economic Survey of Pakistan.
- vi) Information from past research papers and reports from various sources.

The PRLA team, prior to inception of the field work, developed approach and methodology for the study based on international best practices. The methodology focused on quantification of factors, by assigning appropriate weights and scales, so as to contribute to ranking and selection of the priority value chains based on a seven factored grid analysis that included (i) extent of employment generation; (ii) commercial worth; (iii) percentage of small farmers associated; (iv) women involvement; (v) households associated with the value chains; (vi) understanding growth potential; and (vii) vulnerability of the concerned value chains.

Data Collection Tools and Techniques

The PRLA team developed and pre-tested tools for undertaking the rapid appraisal exercise in project regions. These tools included;

- i) A five factored grid analysis matrix
- ii) Paired ranking matrix for opportunities and constraints
- iii) Venn-diagrams for mapping market linkages and service providers:

These tools were pre-tested in the field before being applied to collect primary data by holding Focus Group Discussions (FGDs) with selected groups of relevant stakeholders such as livestock farmers, inputs suppliers, processors, traders, retailers and service providers. Later the data collected through FGDs was verified through validation workshops.

Sample Size

The PRLA exercise was undertaken in all project regions to validate production clusters and establish priority value chains on a regional level. 2-3 FGDs were facilitated and conducted in randomly selected settlements/villages within each cluster/region, covering approximately 50% of the districts in each region. A group of 10-15 stakeholders related to the livestock value chains participated in each FGD.

Staff Orientation and Pre-testing of Tools

The PRLA team designed and co-facilitated a two-step training workshop comprising the orientation of the project staff regarding the use of pre designed tools, FGD facilitation & data collection techniques to be used in the field; and a real pre-testing field exercise followed by a debriefing session to help understand and discuss the constraints faced during the exercise in order to revise and improve the tools and techniques.

Primary Data Collection

11 FGDs were organized and facilitated by trained project staff in randomly selected clusters from within 07 districts of Multan Project Region. The participants of FGDs that represented stakeholders from each node across the livestock value chains selected and prioritized value chains through mutual consensus during group discussions that were held and facilitated by the project teams.

Backstopping and Monitoring

The consultants provided a continued coaching and backstopping support to the project staff during orientation, pre-testing and PRLA exercise in project target regions.

Data analysis and Reporting

The primary data gathered via the field investigations through observations and FGDs was recorded using pre designed tools and later reproduced in tabulated form using MS Excel sheets. The final analysis was done by applying statistical tools to the primary data and shown in the form of bar graphs and tables to provide a highlighted outlook on the weaknesses and strengths of the livestock value chains.

Appraisal of Livestock Value Chain based on Secondary Data

Data collection and mining

The secondary data for the livestock sector was collected from various sources mentioned in the desk review and study matrix. The USAID's Pakistan livestock database 2006 and Pakistan livestock Census 2006 data were used as prime source (since these were the only two providing livestock data on district level for all four provinces) and using projections a timeline data was obtained. Further information was also gathered from Agriculture statistics of Pakistan to get provincial level data for 2008-10 and from Livestock and Dairy Development Board.

Overall analysis of Livestock and Fisheries value chains

Livestock occupies a unique position in the socio-economic development of Pakistan. It also plays an important role in the rural economy as supplementing family incomes and generating gainful employment in the rural population, particularly among the landless labourers, small and marginal farmers and women. About 30-35 million rural population is engaged in livestock raising, having 2-3 cattle/buffalo and 5-6 sheep/goat per family which help them to drive 30-40 per cent of their income from livestock.

Dairy and meat sector is a considerable major sector of livestock. Livestock contributes approximately 55.1 per cent to the agriculture value added and 11.5% to the national GDP during 2010-12. Gross Value Added of the livestock sector at constant factor cost has increased from PKR 672 billion (2010-11) to PKR 700 billion (2011-12) showing an increase of 4.04 per cent as compared to previous year which was 3.97%. (Source: Economic survey of Pakistan 2011-12).

The data in Table 2 below was analysed using tabulation and basic statistical tools such as linear regression to come up with final scoring on the basis of grid analysis.

Table 2: Analysis of value chains

Indicators	Milk	Beef Meat	Mutton Meat	Fish	Buffalo	Cattle	Goat	Sheep
Percentage Growth	3.23%	3.33%	2.13%	4.45%	2.99%	3.70%	2.67%	1.18%
Pakistan Share in World	4.82%	2.17%	3.13%	0.2%	17.91%	1.93%	4.93%	1.85%
Punjab share in Pakistan	63.01%	49.17%	59.31%	38.19%	55.14%	50.92%	64.51%	53.26%
Multan Region share in Punjab	6.36%	6.02%	5.33%	43.71%	11.07%	11.74%	3.70%	26.30%
Productivity Gap*	60.92%	80%	89%	99.98%	69.61%	85.30%	83.00%	92.09%

Source: FAO Database

* Pakistan's yeild versus average World yeild.

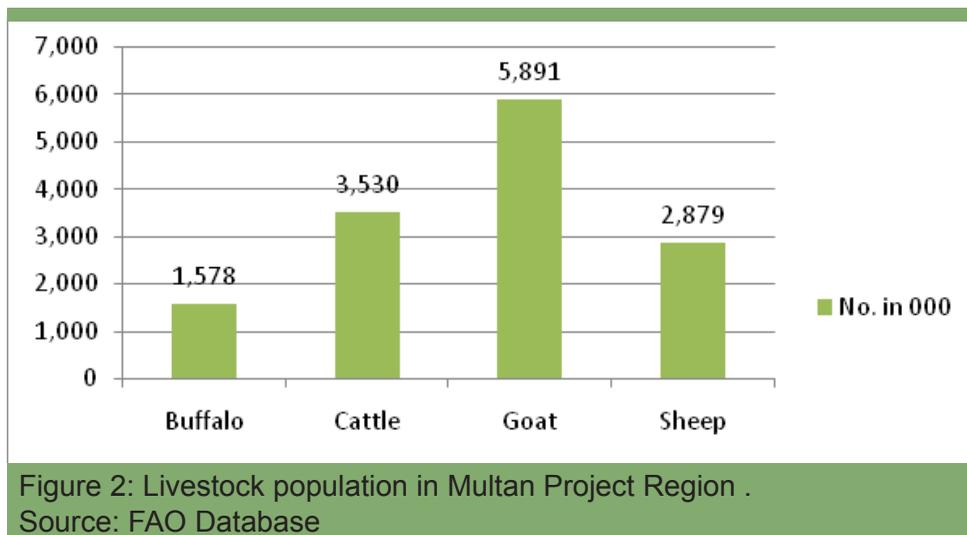
Two livestock value chains that were analysed on the basis of secondary data include:

- i) Milk value chain
- ii) Meat value chain (Inclusive of beef and mutton)

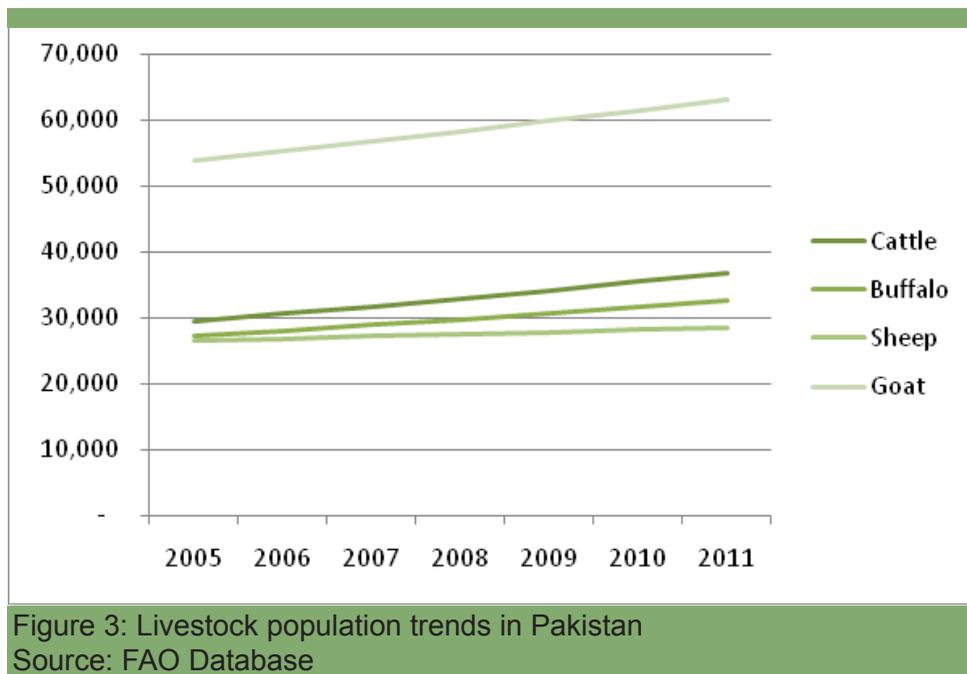
The analysis on the basis of secondary data gave a broader and comparative outlook of the livestock value chains at regional and national levels and helped understand the glitches and potential within these value chains. The analysis showed growth of livestock products in Punjab and Pakistan, Punjab’s share in national production and Multan Project region’s share in province.

Livestock Population in Multan Project Region

According to the secondary data, Multan region is rich in livestock population. The region stands out in cattle, goat and sheep population in Punjab. The buffalo population is less in this region as they are mainly found in central Punjab region of Okara, Kasur and Mandi Bahauddin etc. Figure 2 below shows the total population of major cluster areas of Multan Project region.



The total population of buffalo in major cluster areas is 1.5 million which is mainly found in Rahimyar khan and Bahawal nagar districts. Muzaffargarh has maximum population of cattle in Punjab. The total population of major cluster areas is 3.5 million and are found in districts of Muzaffargarh, D.G.Khan, Layyah, Cholistan area, Bahawalpur and Bahawal nagar. The total goat population of major cluster areas like D.G.Khan, Rahim Yar Khan, Muzaffargarh, Bahawalpur, Bahawal nagar and Khanewal is 5.8 million. Similarly 2.8 million sheep are found in cluster areas of D.G.Khan, Rajanpur, Layyah, Muzaffargarh and Cholistan area.



Livestock Products

Table 3 below shows the status of various livestock products for past ten years in Pakistan. The data show considerable improvement but yet there is a need to increase their competitiveness both at national and international level. Mutton production has decreased over the period under analysis.

Year	Milk (M.Liters)	Beef (M. Tons)	Mutton(M. Tons)	P. Meat (M.Tons)	Hides (M. No.)	Skins (M. No.)
2000-01	26.28	1.01	0.67	0.34	7.8	38.2
2001-02	27.03	1.03	0.68	0.36	7.9	39.2
2002-03	27.81	1.06	0.70	0.37	8.2	40.3
2003-04	28.62	1.09	0.72	0.38	8.4	42.4
2004-05	29.44	1.12	0.74	0.38	8.4	42.6
2005-06	31.97	1.45	0.55	0.51	11.4	43.3
2006-07	32.99	1.50	0.57	0.55	11.8	44.3
2007-08	34.06	1.55	0.58	0.60	12.2	45.3
2008-09	35.16	1.60	0.59	0.65	12.6	46.3
2009-10	36.30	1.66	0.60	0.71	13.0	47.4

Source: Pakistan Economic Survey.2009-10

Analysis of Milk value chain

Pakistan is fourth largest milk producing country in the world. Milk is consumed as fresh, pasteurised or boiled, and in processed form as powder, yogurt, ghee, lassi, butter, cheese, ice cream, sweets and in other confectioneries.

Table 4 below shows National milk production and share of Panjab in Lt (000 Tons).

Production in (Million Litres)						
Item	2006	2007	2008	2009	2010	Average
National Milk Production	31214.00	32219.00	33256.00	34362.00	35491.00	33308.40
Punjab (%) Share	62.97	62.99	63.01	63.03	63.05	63.01

Source: FAO Database

Punjab contributes 63.01 at average in National milk production. Conditions and good milking breeds of livestock, the region still can contribute significantly with latest farm management techniques, technical assistance and capacity building.

Analysis of Meat (Mutton and Beef)

Meat industry in Pakistan is developing these days. The export of meat (beef, mutton, and camel) has increased from \$ 108.54 million (2010-11) to \$123.61 million in 2011-12 showing an increase of 13.9 per cent.

Dairy animals are also being used as beef animals after completion of its productive years. Male calves of dairy animals and dairy bulls when no further required for breeding purposes are also utilized for beef purposes.

Meat sector hasn't achieved its potential amongst the livestock value chains in Pakistan primarily due to non-existence of breeds specific to meat production. Further, there is no trend of fattening animals for meat purpose. However, analysis on the basis of secondary data showed that over the past few years there had been an increase in the meat production due to the ever increasing demand in the regional and national markets for the protein from animal origin.

Table 5 and 6 below shows the share of Punjab province in national beef and mutton production. Moreover, the data also shows share of Multan Project region in Punjab

Table 5: Punjab's Share in Pakistan on beef production

	2006-7	2007-8	2008-9	2009-10	2010-11	2011-12	Average	% Share
Punjab Share	263,957	272,897	282,147	291,710	301,604	311,837	287,359	49.17
Region Share	15,890	16,428	16,985	17,561	18,157	18,773	17,299	6.02

Source: Livestock Census 2006 (Calculated from number of slaughtered animals on the basis of yield per carcass)

Table 6: Mutton meat share of Punjab in Pakistan

	2006-7	2007-8	2008-9	2009-10	2010-11	2011-12	Average	% Share
Punjab Share	335,537	342,733	350,102	357,647	365,374	373,287	354,113	59.31
Region Share	17,884	18,268	18,660	19,063	19,474	19,896	18,874	5.33

Source: Livestock Census 2006 (Calculated from number of slaughtered animals on the basis of yield per carcass)

Analysis of Livestock byproducts value chain

Livestock byproducts, especially hides and skins, had always been ignored despite their importance in the international market. Lack of awareness and absolute absence of proper handling equipment and techniques are resulting in high losses every year. There is huge potential for livestock byproducts in domestic and international markets. Due to limited availability of relevant data on district level, the number of hides and skins were calculated against the number of animals slaughtered every year and hence the actual losses during handling are not evident in this analysis.

Following Table 7 gives an analysis of various livestock byproducts produced from 2005 through 2011. There is an increase in all the byproducts. There is a need to focus more on some of the valuable byproducts so that it can increase the sales and income for the livestock farmers.

Table 7: Analysis of various livestock byproducts in Pakistan									
Sr. No	Species	Units	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
1	Hides	000 No's	11,417	11,800	12,199	12,612	13,039	13,481	13,938
	Cattle	"	5,602	5,813	6,032	6,260	6,496	6,741	6,995
	Buffalo	"	5,722	5,892	6,070	6,255	6,445	6,640	6,842
	Camels	"	94	95	96	97	99	100	101
2	Skins	000 No's	43,353	44,325	45,325	46,351	47,402	48,478	49,582
	Sheep Skin	"	10,016	10,131	10,251	10,373	10,495	10,620	10,745
	Goat Skin	"	20,722	21,283	21,860	22,452	23,061	23,685	24,327
	Fancy Skin	"	<u>12,615</u>	<u>12,911</u>	<u>13,215</u>	<u>13,526</u>	<u>13,846</u>	<u>14,173</u>	<u>14,509</u>
-	Lamb skin	"	2,975	3,009	3,045	3,081	3,117	3,154	3,192
	Kid skin	"	9,641	9,901	10,170	10,445	10,728	11,019	11,318
	Wool	000 Tons	40.1	40.6	41.1	41.5	42.0	42.5	43.0
4	Hair	"	20.3	20.9	21.4	22.0	22.6	23.2	23.8
5	Edible offals	"	300	308	317	325	334	344	353
6	Blood	"	51.5	52.7	54.1	55.4	56.8	58.3	59.8
7	Guts	000 No's	43,795	44,777	45,788	46,824	47,886	48,974	50,089
8	Casings	"	12,159	12,565	12,988	13,426	13,879	14,347	14,832
9	Horns & Hooves	000 Tons	42.8	44.1	45.3	46.7	48.1	49.5	50.9
10	Bones	"	633.4	652.4	672.1	692.4	713.4	735.1	757.5
11	Fats	"	203.3	209.1	215.3	221.6	228.1	234.8	241.7
1. The figures for livestock products for the year 2005-06 were calculated using the livestock population reported in livestock census 2006 and by applying production parameters.									
2. The figures for livestock product for the years 2006-07 and onwards was calculated by applying production parameters to the projected population of 2006-07 and 2007-08									
3. Please note that the units of heads and trotters are in 000 Tons not in 000 No's.									

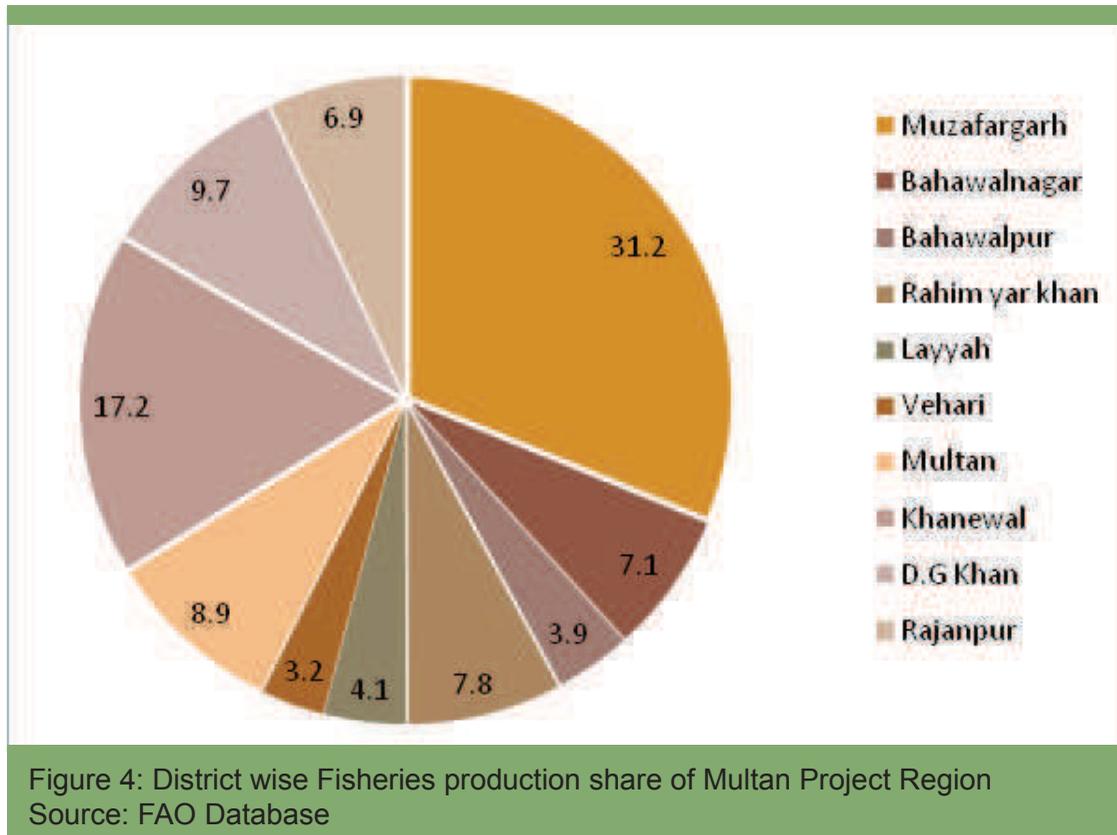
Analysis of Fisheries value chains

Fisheries is a sub sector that plays a significant role in the national economy and towards the food security of the country as it relax the existing pressure on mutton, beef and poultry meat. Fisheries share in GDP is 0.3 per cent. Although the contribution is very small, it adds substantially to the national income via export earnings. A total of 84,498 million tons of fish and fish products were exported 2011-12 in Pakistan and major buyers are China, Thailand, Malaysia, Middle East, Sri Lanka, and Japan.

Inland fisheries or aquaculture being considered an expensive business requiring land, excavation, expensive pumps for oxygenation and formulated fish feed could not gain much popularity and momentum as a viable value chain in Pakistan. Statistical analysis on the basis of secondary data showed that the growth rate of fish production

declined by 6% in Pakistan over past decade. Pakistan has only 0.24% share in the world's total inland fish production and Punjab contributes 38% to the national inland fish production. However, within Punjab, Multan region's share at 43.7% is significantly high. It is obvious that with proper interventions, there is high potential of inland fisheries in this particular region.

Figure 4 below shows the share of various districts in Multan Project region towards inland fisheries production, Muzaffargarh being the biggest contributor while Vehari's share is lowest in the region.



Appraisal of Livestock and Fisheries Value Chains based on Primary Data

Selection and prioritization of value chains

This process was carried out to identify the value chains that offer most promising prospect for economic growth and poverty alleviation through employment generation. It was based on the review of the key issues that have an impact on the development of the livestock and fisheries value chains and the capacity of a given region to produce and market livestock products and byproducts in the domestic and international markets. The choice of the value chains was further refined by applying priority criteria, weighting their relative importance and ranking on score sheet based on the composite index that was calculated on the basis of seven factors used in the grid analysis. A graphical illustration of the summarized overview of prioritization is shown in Figure 5.

As is evident from the prioritization index, Milk with the highest priority index of 7.6 points, followed by meat with a priority index of 6.54 points. Detailed grid analysis of the value chains for Multan project region is shown in the graph below.

About 68 % of household are involved in milk production and 66.33% are involved in meat production. In fact the house hold involved in milk and meat production is specifically dedicated to their purpose but the male animals and unproductive animals are used for meat purpose. So the difference in house hold involvement is nearly similar.

There is marked growth in milk and meat sector in the last five years. The milk and meat sector has shown growth of 40.83% and 39.0% respectively. The post-production losses are minimum in these two sectors i.e. 3.50% in milk and 1.83% in meat.

Women are actively involved in livestock business and in fact they play a major role in this sector. About 63.33% of women are working in milk and 46.67% of women work in meat business. Majority of small farmers (Ownership, less than 5 acres) are in involved in livestock business as compared to large farmers. 81.17% and 54.67% of small farmers are involved in milk and meat production respectively.

Commercialization of milk and meat is very high. About 88.0% of milk and 99.67% of meat is marketed. Milk and meat production generate large no. of employment. Milk production generates 74.17% and meat production generates 53.33% of employment in Multan region.

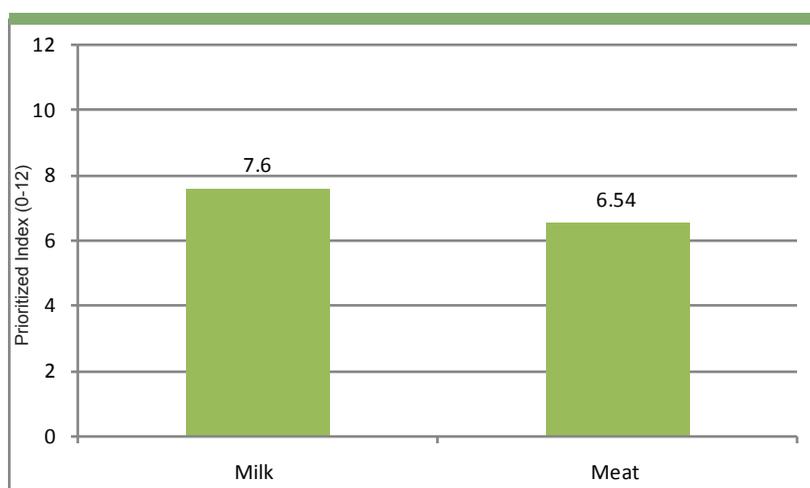


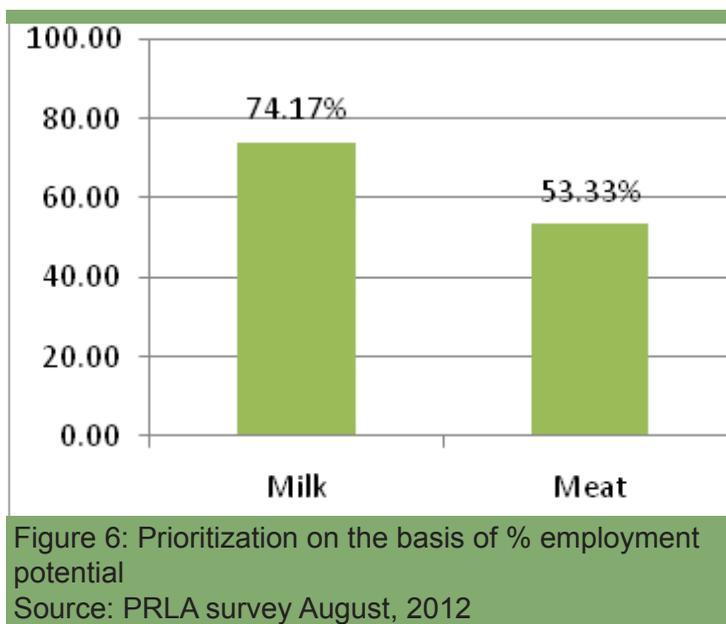
Figure 5: Prioritization of milk and meat value chains
Source: PRLA survey August, 2012

Factor-wise prioritization of Milk and Meat value chains

Prioritization of the milk and meat value chains was carried out on the basis of seven factors including: ability of the value chains to create employment; percentage of the produce that is commercialized; involvement of small farmers associated with the value chains; women involvement in a the value chains; percentage growth rate over the last five years, pre- and post-harvest losses; and, the percentage of household associated with the value chains.

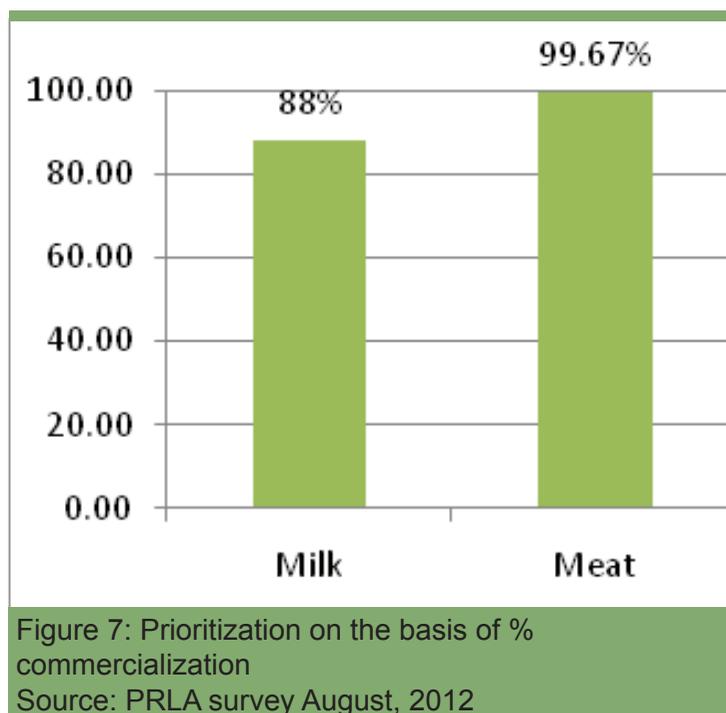
Prioritization on the basis of percentage employment potential

Milk and meat value chains has a great potential for employment generation in this part of Pakistan. Figure 6 shows that milk production has highest potential of employment generation which generates 74.17% of employment followed by meat production. Meat production generates 53.33% of employment. Milk production requires more labor force due to the efforts required for milking of animals and handling / marketing of milk.



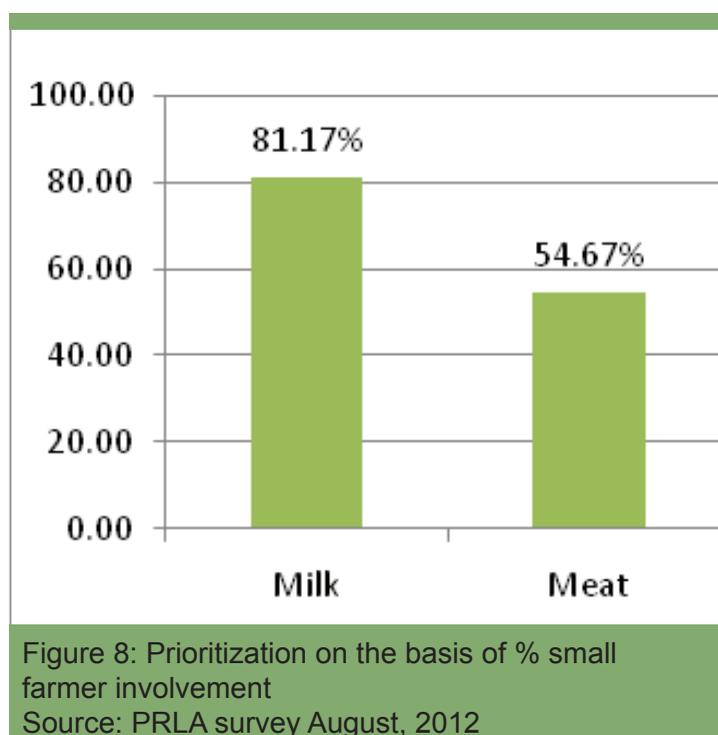
Prioritization on the basis of percentage commercialization

Commercialization is the percentage of product sold or marketed. Milk is commercialized to the extent of 88.0% and rest of the milk is kept for household use. Meat is commercialized to the extent of 99.67% which means that almost all the meat is commercialized. In fact meat producing animals also includes culled or non-productive milk animals and their male calves. Pure beef production farms are very less in number. This trend directs that market systems, processing and value addition can boost up the sector of milk and meat production.



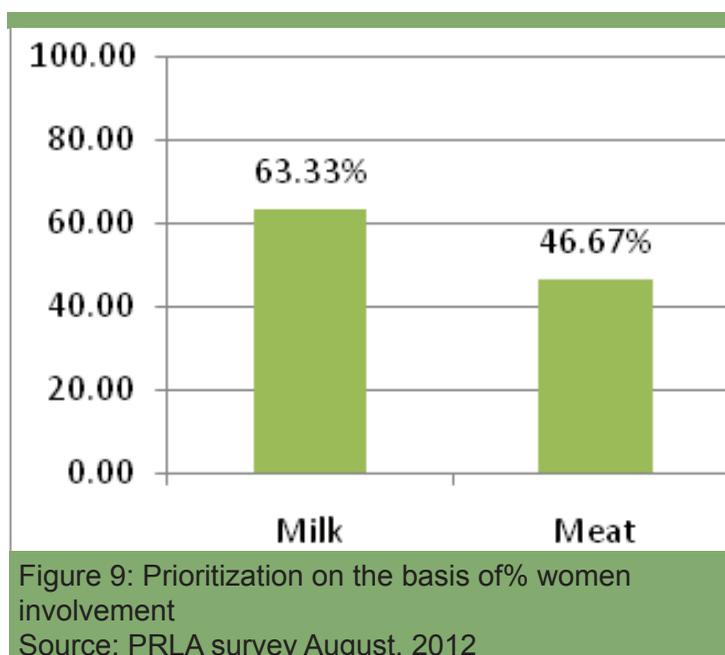
Prioritization on the basis of percentage small farmer involvement

The prioritization of livestock value chain reveals that majority of landless and small farmers of five acres of land are involved in livestock business. Livestock is major source of income for small farmers and is called as bank of poor farmers because this is the only commodity with him which can be sold at any time when need arises. So 81.17% of small farmers are involved in milk business and 54.67% are involved in meat business. Small farmers do not raise animals for meat purpose but usually the dry animal or very low yielder animals and male calves are sold in the market for meat purpose. The graphical presentation of above data is shown below in Figure 8.



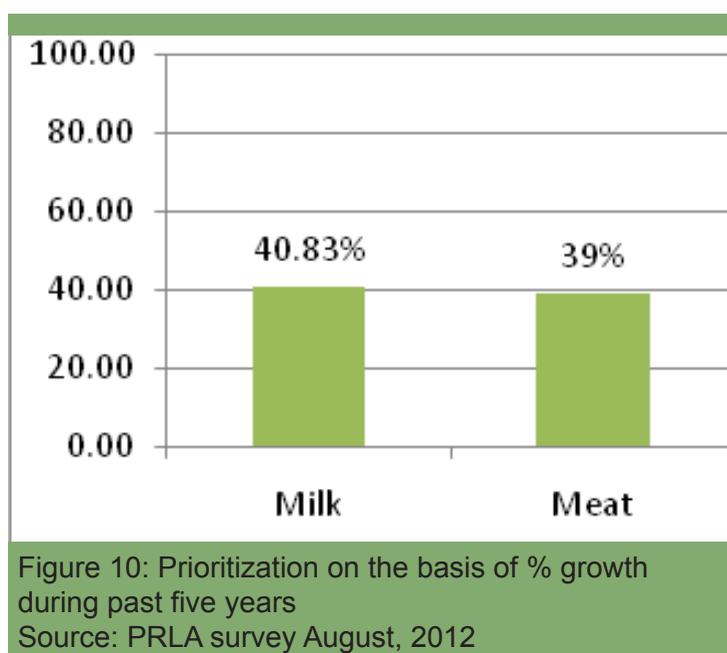
Prioritization on the basis of percentage women involvement

Women involvement is important factor for prioritization of livestock value chain assessment. The data concluded from FGDs show that milk value chain involves highest percentage of women involvement. Large percentage of women is working in livestock business. 63.33% of women are working in milk production and 46.67% of women are working in meat production. Since women involvement is limited to production phase of milk and meat value chain so training and capacity building of women can be more beneficial and productive for livestock sector.



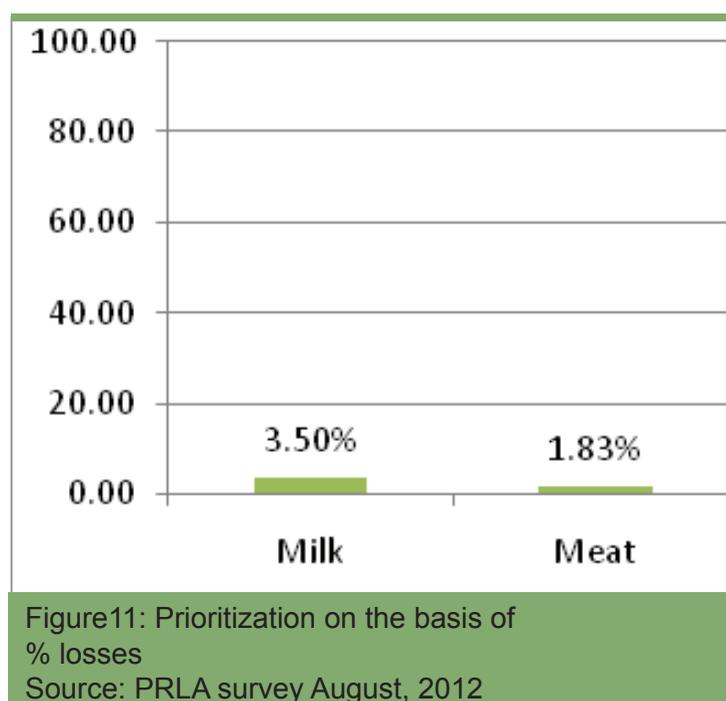
Prioritization on the basis of percentage growth during past five years

Growth rate is one of the major factors in prioritization of a value chain as it gives a clear idea about the potential of the sub-sector in a particular region. Multan region is particularly rich in livestock raising. The milk sector showed 40.83% growth in last five years and meat has shown 39.0% growth in the last five years. This growth rate justifies intervention due to its potential. The graphical presentation of above data is shown below.



Prioritization on the basis of percentage losses

Pre and Post production losses have a high impact on the selection and prioritization of a particular commodity or value chain. The post production losses are very less in milk and meat sector. The main reason of post-production loss is the absence of cool chain system in milk and meat sector. Farmer's lack of knowledge/ awareness is second major factor in post-production losses. Very hot weather in south Punjab is another reason for post-production losses and only cool chain system is the solution to this factor. Milk and meat production encounters 3.5% and 1.83% losses respectively.



Prioritization on the basis of percentage household involvement

Percentage of households involved is another important factor in the process of prioritization of particular value chain. The data was collected through FGDs and analyzed for the %household involvement in livestock value chains. Milk value chain had highest index of 68.48% of household involvement since majority of rural population is directly or indirectly involved in milk value chain. Small animals like sheep and goat are raised for meat purpose but large animals are not purely raised for beef purpose. Dry, very low producing animals and male calves are marketed for meat purpose showed results that are interpreted in graphical presentation in Figure 12 .

A large numbers of household are involved in livestock business and draw their livelihood from this sector. About 68.48% house hold are involved in milk business and 66.33% of house hold are involved in meat business.

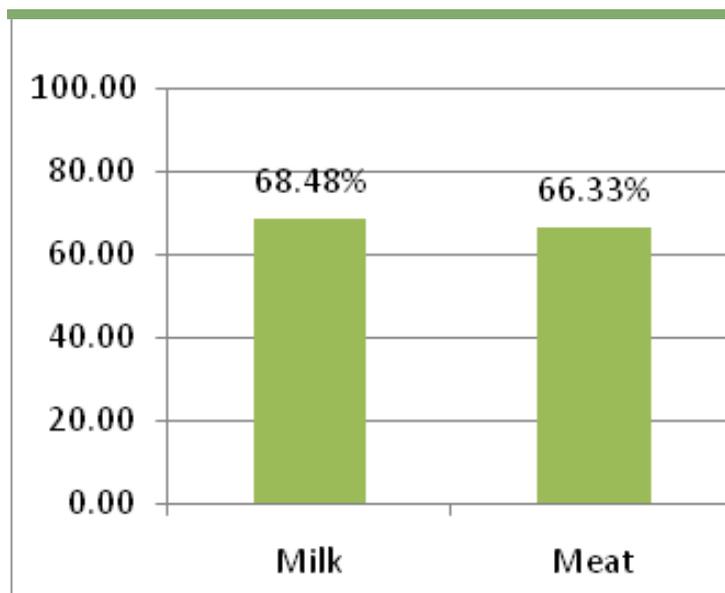


Figure12: Prioritization on the basis of % household involvement
Source: PRLA survey August, 2012



Prioritized Opportunities and Constraints in Livestock Value Chains

Prioritized opportunities in Milk and Meat value chains

Data reveals number of opportunities that exist in the region which can catalyze the development of the sub-sector. These are listed in the Table below of which the most important are increasing demand and processing technologies etc. These opportunities can be further reinforced through the project interventions leveraged by primary-sector investments provided that a holistic and integrated approach is applied. Following are the possible strategies to explore the opportunities.

Table 8: Prioritized opportunities		
Sector	Prioritized opportunities	Intensity
Meat	Meat Marketing	High
Meat	Meat Export	Medium
Milk	Breed Improvement & Capacity Building	High
Milk	Breed Improvement & Value Addition in Milk	High
Milk	Milk Chiller, Silage, Bio Gas	High
Milk	Milk Chillers & Silages	Medium
Milk	Milk Collection Companies, Local Market & Milk Chillers	Medium
Milk	Bio Gas & BDSPs	Medium

Source: PRLA survey August, 2012

The below table actually hinting the potential opportunities in livestock sub sector. FGDs data is showing the potential opportunities of establishing modern slaughter houses, development of modern marketing systems for animal transportation, development of export value chains. The study also pointing out the small interventions, which can lead towards huge profitability for small famers. Similarly the access to finance, business development support services and technical support could be remarkable interventions for TAP project in the region. It has also been noticed that farmers need awareness on information on milk value addition to access lucrative markets at national and international level.

Table 9: Strategy to exploit the opportunities
Strategy to exploit the opportunities
Establishment of modern slaughter house
Development of meat marketing system on live animal weight basis
Development of meat export value chain
Capacity building & financial support
Financial & technical support to BDSPs and farmers
Capacity Building of Stake Holders
Awareness Program on Milk Value Additions

Source: PRLA survey August, 2012

Prioritized constraints in Milk and Meat value chain

Constraints to milk value chain was also identified and prioritized by participants during the FGDs on the basis of their potential as high, medium or low. Most constraints are cross-cutting and generic in nature which provides information on the overall sub-sector and some of the constraint can be considered as opportunities for investment by the project provided that willingness in the private sector for investment exists.

Orthodox system of evaluating animals on visual basis by middlemen has been observed at high risk and constraint. Lack of livestock extension services and awareness is again a high level constraint. Some other constraints highlighted are capacity building on milk value addition, lack of access to export market, lack of good quality of semen, capacity building of farmers, non-availability of modern slaughter house, non-availability of technology a non-availability of finances.

The medium level following list is expressing the constraints in milk value chain. Lack of financial resources and awareness amongst the farmers is ranking at medium level & awareness, capacity building of farmers and service providers, monopoly of middleman and non-availability of milk chillers are important to address.

Table 10: Prioritized constraints in milk and meat value chains

Sub sector	Prioritized constraints	Intensity
Meat	Lack of access to Export Market	High
Meat	Non-availability of modern slaughter house	High
Meat	Orthodox system of evaluating animals on visual basis by middlemen	High
Milk	Lack of livestock extension services & awareness	High
Milk	Capacity building on milk value addition	High
Milk	Lack of good quality of semen	High
Milk	Capacity building of farmers	High
Milk	Little availability of finances & technology	High
Milk	Monopoly of middleman	Medium
Milk	Very few milk chillers	Medium
Milk	Capacity building of farmers & service providers	Medium
Milk	Lack of financial resources and awareness	Medium

Source: PRLA survey August, 2012

State of the Services Providers

The availability and quality of business development services is important for the overall development of any sub-sector. These services providers include Government bodies, private sector, NGOs, Association, middlemen, buyers, market agents and exporters. A detailed assessment of service providers, service provided by them and their strength (determined by their availability, efficiency and available as free or cash) in Multan region was carried out using information provided by participant of FGDs. The situation with regarding to services provisable on for milk and meat was appraised together with focus groups. In most cases the linkages between service providers and users were termed as weak to medium. To be effective in enhancing profitability for farmers and producers, there is a need to build confidence and develop strong linkages of agribusinesses with service providers

Information regarding state of service providers was collected and compiled as a result of FGDs and ranked them as shown in the Table 12. There are several companies working in the regions but they are unable to provide the services at farmer door step i.e. feed supplements (Wanda), insemination service, vaccination services and other

NGOs have strong linkages in Vehari and Muzaffargarh while in other 4 districts it has medium strength. Banks have weak linkages due to lengthy procedures. Livestock development forum at Multan and D.G.Khan has medium linkages with farmers for provision of information and services. Research Center for Conservation of Sahiwal Cattle (RCCSC) has strong linkages with livestock farmers who are registered with them for preservation of Sahiwal cow in all districts of Multan Project Region.

There are number of business service providers working as public or private sector services for small to medium farmers, but the main issue is the availability of service at farmer's town and villages.

Commercial farmers have the access to the modern services to enhance their business in term of profitability; even some of the commercial farmers have been playing the role of service providers to the medium and small farmers.

Government institutions (Veterinary Hospitals / Dispensaries, Food Department, District Administration) are providing subsidized services but their linkages were termed as weak in all districts of Multan Project Region.



Table 11: State of the service providers

Service Provider	District	Strength	Paid/Free	Services Provided
Livestock and Dairy Development Department/Fisheries Department	Multan	Medium	Free	Disease prevention, treatment and extension services
	Muzaffargarh	Weak	Free	
	Khanewal	Weak	Free	
	Lodhran	Weak	Free	
	Vehari	Weak	Free	
Input suppliers	All 6 Districts	Weak	Cash	Animal feed and fodder
Middlemen	All 6 Districts	Strong	Cash and Credit	Purchase of product and financial support for purchase of inputs
Local confectioners	All 6 Districts	Medium	Cash	Sale of milk and cream
District administration	All 6 Districts	Weak	Free	Price fixing of products
Banks and Co-operatives	All 6 Districts	Weak	Paid	Loans
Food Inspection Department	All 6 Districts	Weak	Free	Regulatory authority
NGOs	Vehari	Strong	Free	Financial support and training
	Muzaffargarh	Strong	Free	
	Rest of 4 Districts	Medium	Free	

Source: PRLA survey August, 2012

State of Market Linkages

Market linkages play important role in prioritizing the value chain. Market linkages were assessed and ranked as strong, medium and weak depending upon the share of produce in that market, distance from production site and cost of transportation. Strong market linkages exist in local and national market for milk and meat value chain. Most of the produce is consumed locally and national market. Farmers do not have access to direct marketing so presence of various intermediaries increase the cost at consumer end while farmer get less price of their produce. Bahawalpur and Lodhran has medium linkages in milk market at national level but Lodhran has strong national market linkages in meat sector especially in mutton. Meat is being exported to Middle East and Afghanistan from Lahore and Karachi. Since the Multan Project region is major livestock producing area so it has strong linkages at national market.

Assessment of marketing linkages strength of livestock value chain was also carried out through FGDs. The data collected through FGDs in Multan Project Region is depicted below in Table 12.

Table 12: State of Market Linkages

Subsector	District	Market linked	Strength
Milk	Multan	Local, Lahore and Khanewal	Strong
Meat		Local and National	Strong
Milk	Bahawalpur	Local, Khanewal and Sukkar	Medium
Meat		Local and National	Medium
Milk and Meat	Vehari	Local, Lahore and Khanewal	Medium
Milk	Khanewal	Local and Lahore	Strong
Meat		Local and national	Medium
Milk	Lodhran	Local and Khanewal	Medium
Meat		Local and National	Strong
Milk	Muzaffargarh	Local and Sukkar	Strong
Meat		Local and National	Strong

Source: PRLA survey August, 2012

Conclusion

Multan project region represents a special case for opportunity and constraints to expand livestock products exports. The key constraints which are hampering the abilities of the sector include are the poor quality of the produce often failing to meet export standards; quality of produce that requires efficient handling, low level of value addition and processing and marketing, resultantly poor performance of the sub-sectors as a whole. On the other hand, Multan region offers diverse product in the livestock and, lower production cost due to cheap labour and availability of water provide good opportunities of products year round and to capture larger share of niche markets. Based on the PRLA, the following summary conclusions could be drawn:

Opportunities and Threats:

- Milk of buffalo and cow production has increased in last few years. Milk value chains represent potential in terms of volumes, value and diversity while other products can be promoted as niche market opportunities.
- Amongst the meat and milk production, milk has huge potential in the market at customer demand level; priority is associated by yield per day also, so milk at some extent is meeting the market demand. Milk availability depends on lean and flash seasons. During lean season most of the animal usually face heat stress which affects production of milk from May to September, while in flash milk animals per day yield crosses even the demand of market. Flash starts from October to April. Milk in Pakistan has made its place amongst lucrative to medium end markets.
- It was observed that the milk volume is standing at high market demand level; however competition at domestic and world market would; in addition, need to invest in quality improvement.
- Farmer has limited awareness of life weight of animal which is giving space to middle man to exploited the market
- The current animal transportation system is extremely orthodox and often painful for the animal which is another factor of poor quality meat due to accumulation lactic acid in the body. UAP can intervene in improvement of transportation system.

Recommendations:

- Improvement of breed through artificial insemination (AI), training of AI technicians and attracting semen producing companies for supply of the liquid nitrogen and semen of improved genetic animals.
- Establishment of milk collection centers and installation of milk chillers (training of producers/collectors in hygienic handling of milk) / establishing partnership lead companies (based on analysis of merits and demerits)
- Establishment of model dairy farms and Kissan Field Schools in milk and meat producing areas.
- Establishment of a network of linkages with livestock department, market traders, fodder seed and medicine dealers.
- Development of feedlot fattening among farmer community to maximize bio economic and sustainable meat production and its value addition through meat processing and quality control.
- Development of market for purchase and sale of meat animals through linkages among meat producers and processors.
- Capacity building of stakeholders for meat production, processing and quality control.





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