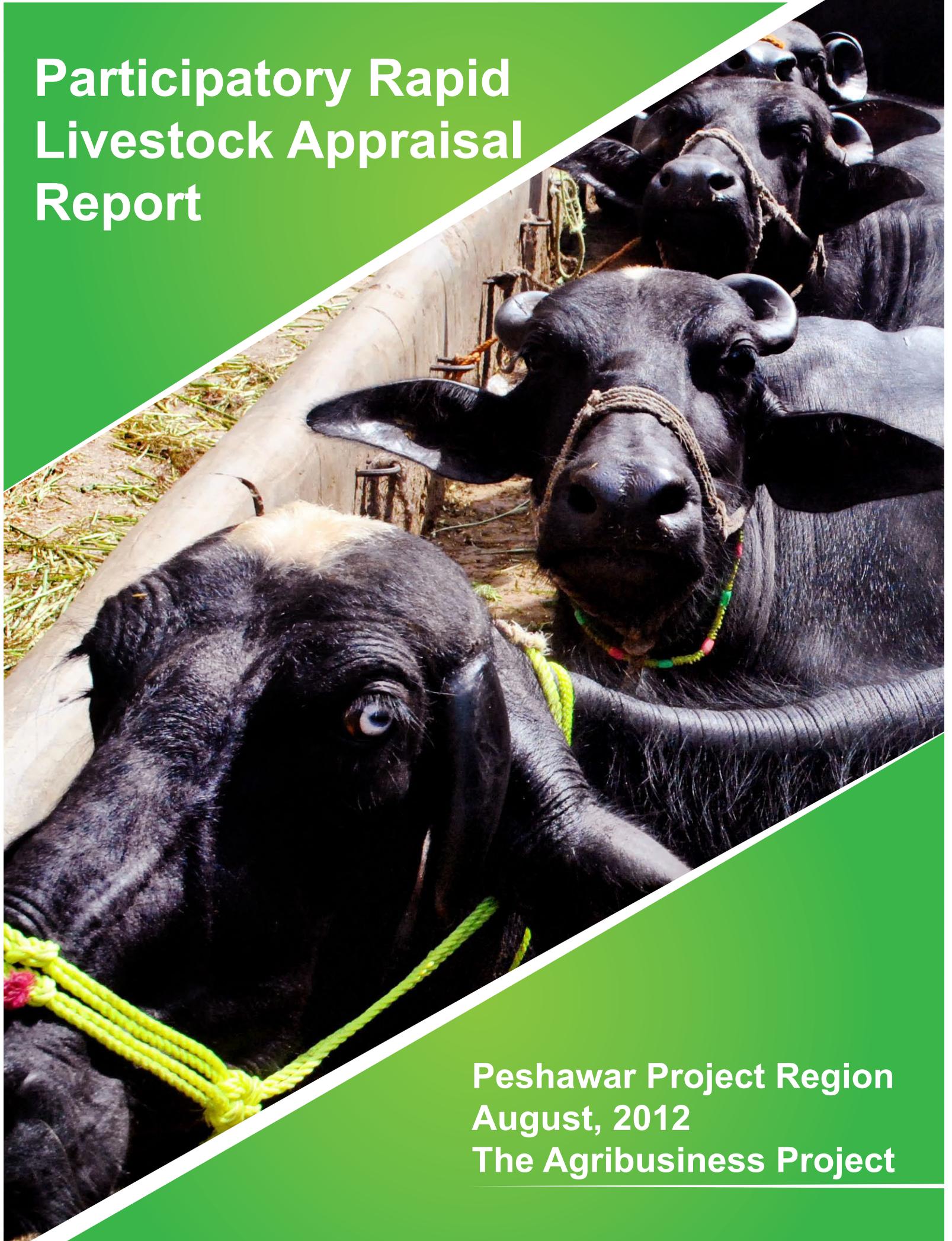




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Participatory Rapid Livestock Appraisal Report



**Peshawar Project Region
August, 2012
The Agribusiness Project**



Acronyms

ASF	Agribusiness Support fund
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
KPK	Khyber Pakhtunkhwa
L&DDD	Livestock and Dairy Development Department
NGO	Non-Government Organization
PRLA	Participatory Rapid Livestock Appraisal
TAP	The Agribusiness Project
USAID	United States Agency for International Development

Disclaimer: This Participatory Rapid Livestock Appraisal report of Peshawar 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 Peshawar 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.

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 secondary data and development appropriate tools for quantification of factors to 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 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 (KPK) level in past five years; ii) Pakistan's share in the world production; iii) KPK share in Pakistan; iv) Share of Peshawar region in KPK; 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, 0.24% in fish, 17.91% in buffalo hides, 1.93% in cattle hides, 4.93% in goat skins and 1.85% in sheep skins.

KPK contributes 15.68% to the national milk production. In addition, KPK shares 20.32% beef, 10.0% mutton, 4.14% fish, 15.17% buffalo hides, 20.89% cattle hides, 6.64% goat skins and 8.91% sheep skins to the total production on national level.

The share of Peshawar region in KPK was 10.26% for milk, 4.60% for beef and 9.73% for mutton. Fisheries contributed 58.30% to the total production on provincial level. Buffalo hides made 34.0%, cattle hides 36.7%, goat skins 18.43% and sheep skins 49.75% of the KPK production.

Among livestock value chains, cattle hides showed highest growth of 3.70% in KPK during 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 animals. Buffalo hides, goat skins, mutton meat and sheep skin had a growth rate of 2.99%, 2.67%, 2.13% and 1.17% respectively. Inland fisheries, however, observed a decline in growth by -6% over the past five years in KPK.

Primary data for Peshawar region was collected through 11FGDs in different districts, involving all groups of stakeholders within the value chains. Livestock and fisheries 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 4.90 points, followed by meat at 4.31 points. Livestock byproducts had 2.7 points and fisheries value chain scored 2.8 points on the priority index.

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 pair ranking technique. Increasing demand in the national market along with breed improvement and better farm management practices were among the top opportunities that need to be employed in order to enhance the capacity of livestock sector and growth of the value chains. Low potential breeds, inadequate financial and technical resources, improper husbandry and poor veterinary care were among the top constraints.

Further, an assessment of the market linkages 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, middlemen 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 L&DDD 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 Peshawar 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 Peshawar. 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.

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.

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 Peshawar region;

- i) Federal bureau of statistics
- iii) Pakistan Livestock census 2006 database
- iii) FAO Database
- iv) Livestock and Dairy Development Board
- v) Directorate of Livestock and Dairy Development, Government. of KPK
- vi) Economic Survey of Pakistan.
- vii) 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 Peshawar 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 above 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.

Overall analysis of Livestock and Fisheries value chains

The projected data was analyzed using tabulation and basic statistical tools such as linear regression to come up with final scoring on the basis of grid analysis given below in Table 1.

Indicators	Milk	Beef Meat	Mutton Meat	Fish	Buffalo Hides	Cattle Hides	Goat Skins	Sheep Skins
Growth Percentage	3.23%	3.33%	2.13%	-(6)%	2.99%	3.70%	2.67%	1.18%
Pakistan Share in World	4.82%	2.17%	3.13%	0.24%	17.91%	1.93%	4.93%	1.85%
KPK Share in Pakistan	15.68%	20.32%	10.0%	4.14%	15.17%	20.89%	6.64%	8.91%
Peshawar Region share in KPK	10.26%	4.60%	9.73%	58.30%	34.0%	36.07%	18.43%	49.75%
Productivity Gap*	60.92%	80%	89%	99.98%	69.61%	85.30%	83%	92.09%

Four livestock value chains that were analyzed on the basis of secondary data include:

- i) Milk value chain
- ii) Meat value chain (Inclusive of Beef Meat & Mutton Meat)
- iii) Livestock byproducts Value Chain (Inclusive of Buffalo hides, cattle hides, goat skin and sheep skin)
- iv) Fisheries value chain (Primarily Inland Fisheries or aquaculture)

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 and byproducts and inland fisheries in KPK and Pakistan over the past five years, Pakistan's share in world production, KPK's share in national production and Peshawar Region's share in province.

Analysis of Milk value chain

Milk is the single most important livestock product. According to FAO statistics production in KPK showed a steady growth over the past few years, but this increase is attributed to the increase in number of milking animals and not due to increase in yield per animal. There was an actual decrease in the milk production during the year 2010 because of the losses in livestock population due to natural calamities but it is not shown on the index due to unavailability of the data from disaster management sources.

KPK contributes 15.68% to the national milk production (Figure 3). The share of Peshawar region in KPK stands at 10.26% (Figure 4). Among Peshawar region districts, Mansehra is the highest milk producing area with an annual milk production of 121, 4000 liters, followed by Peshawar and Charsadda adding 106, 8000 and 985, 300 liters to the region's annual milk production. Medium to high yielding districts include Shangla, Abbottabad, Mardan and Haripur with annual milk production of 852900, 806400, 777000 and 768300 liters respectively.

* Pakistan's yield versus average World yield.

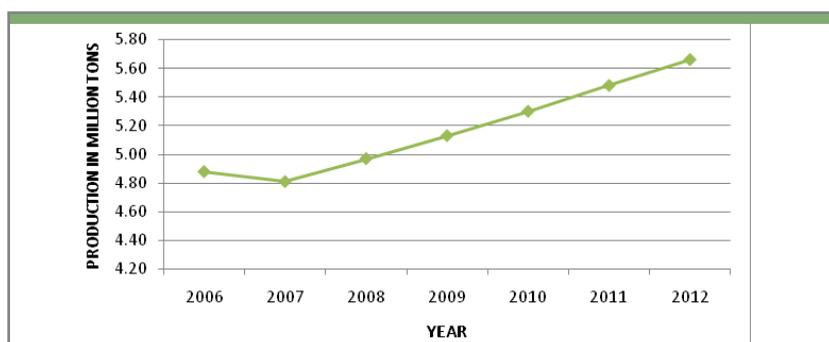


Figure 1: Growth Index of milk production in KPK

Analysis of Meat value chain

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 is an ignored and rather underdeveloped sector amongst the livestock value chains in Pakistan primarily due to nonexistence of breeds specific to meat production. Further, there is no trend of fattening animals for meat the 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. The trend of meat production in KPK for past 5 years is illustrated in Figure 2 below.

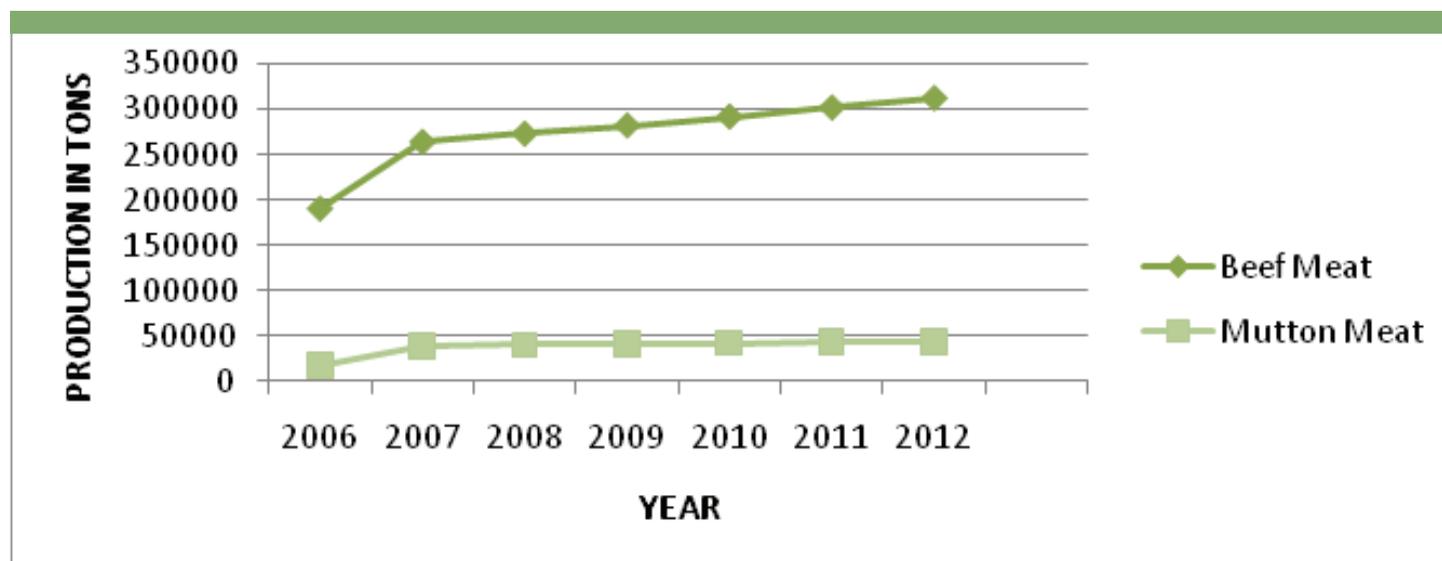


Figure 2: Growth index of beef and mutton production in KPK

The KPK contributes 20.32% to Pakistan's annual beef production and 10% to total mutton production. Peshawar region holds a share of 4.60% in beef and 9.73% in mutton production in KPK. Within Peshawar region, Peshawar ranks as the highest meat producing district with an annual production of 38.603 thousand tons of beef and 3.41 thousand tons of mutton. Mardan is the second highest in terms of meat production with 16.09 thousand tons of beef and 1.42 thousand tons of mutton produced every year.

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 result 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. An overview of the growth of livestock byproducts is shown in Figure 3.

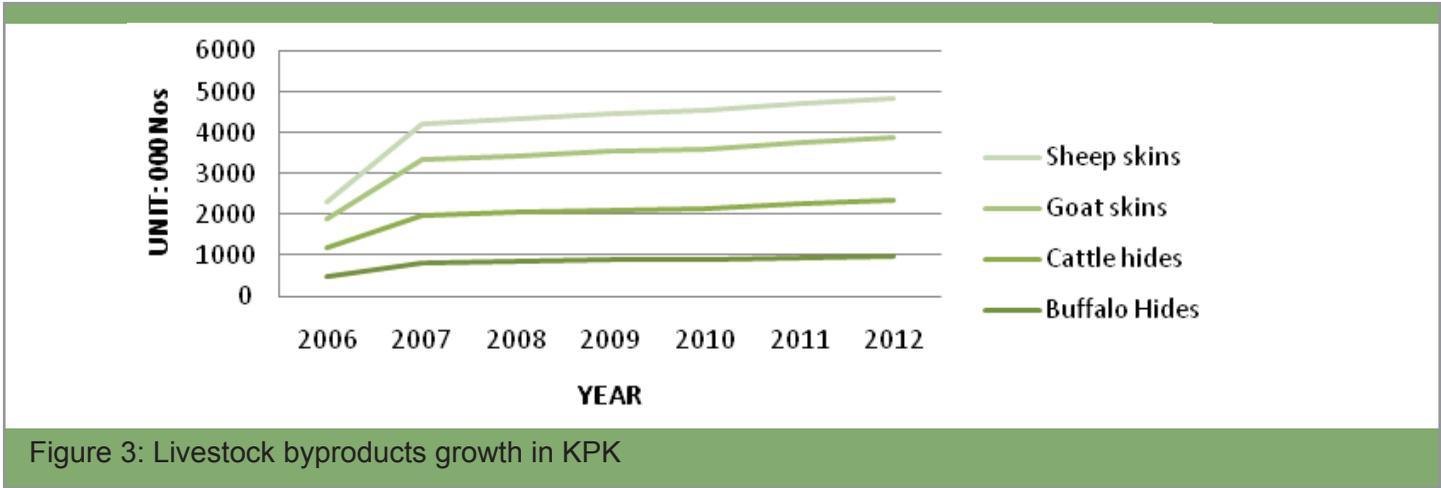


Figure 3: Livestock byproducts growth in KPK

Analysis of Fisheries value chain

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 KPK contributes 4.14% to the national inland fish production. However, Within KPK, Peshawar Region’s share at 58.30% is significantly high in Figure 4. It is obvious that with proper interventions, there is high potential of inland fisheries in this particular region.

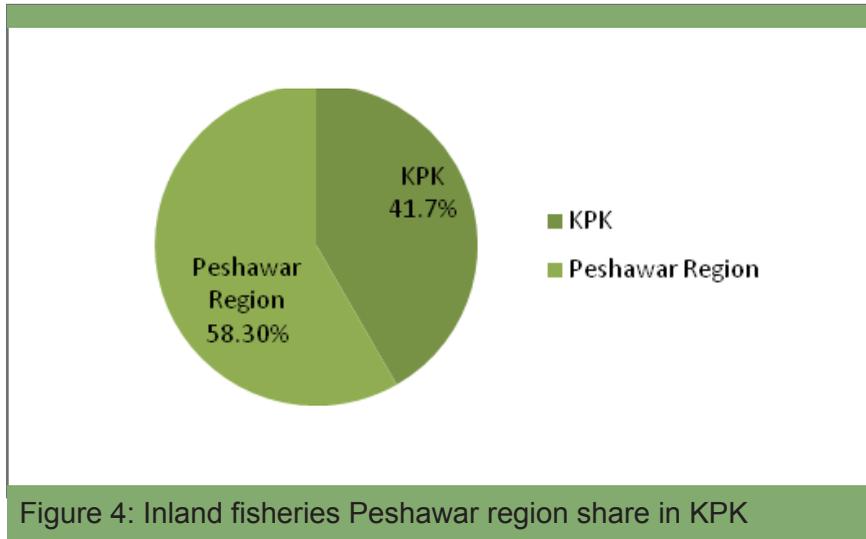
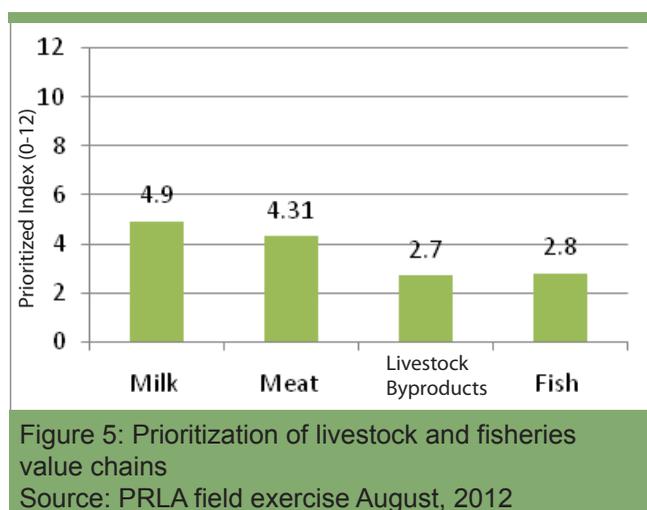


Figure 4: Inland fisheries Peshawar region share in KPK

Appraisal of Livestock and Fisheries Value Chains based on Primary data

Selection and prioritization of the 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 below.



As is evident from the prioritization index, Milk with the highest priority index of 4.9 points scored to the top, followed by meat with a priority index of 4.31 points. Fisheries value chain with 2.8 points on index ranked third and livestock byproducts scored 2.7 points.

The FGDs conducted within Peshawar region showed that Mansehra is the major milk shed area among all districts where maximum growth of 50% in milk production was observed during the past five years. Charsadda and Haripur also showed medium to high potential for dairy value chain where the growth in milk production over past five years was 20% for the former and 15% for the latter district. Chitral, Mingora and Swat had 10% increase in milk production and in Mardan the milk production increased by 5% whereas in Nowshera district a decrease by 3% was observed in the past five years. Dairy value chain involves maximum percentage (33.5%) of the households, generating the highest percentage (34.88%) of employment among all livestock value chains.

The highest growth in meat value chain was also observed in Mansehra where the growth rate for past five years was 50%, ranking it as the high potential zone. Charsadda and Haripur showed 30% and 25% growth in meat with a medium to high potential for meat value chains. Nowshera observed a 15% growth followed by Chitral at 10%. Mardan and Mingora, Swat both had a 5% growth in meat production over the past five year whereas only 2% growth was seen in meat sector in Malakand district. Livestock meat value chain provides 16.17% employment opportunities and involves 21.78% of the households in the region.

As regard to the livestock byproducts, the data collected through FGDs showed that Haripur was the only district where a growth in livestock byproducts was recorded by 20%. The FGDs data for Mansehra recorded no growth in this value chain whereas there was no data available for the rest of the 9 FGDs conducted in Peshawar region as far as the livestock byproducts value chain is concerned. The percentage of households involved with this value chain is only 2% and generates 7.33% employments attributed to lack of awareness about the importance of this otherwise high end value chain.

Inland Fisheries is practiced in few districts of Peshawar region. FGDs conducted showed that Swat and Mansehra had the maximum growth of 50% in fisheries value chain over the past five years. Haripur with a medium to low potential had a 12.5% growth and there was no growth recorded in Charsadda. For the rest of the districts there was

no data available. With regard to the inland fisheries only 1.6% household involvement and 8.7% employment generation was recorded.

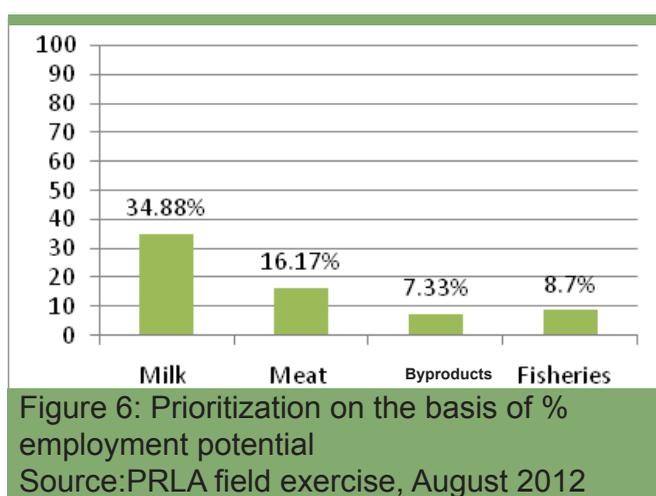
Factor wise prioritization of the value chains

Ranking of the livestock and fisheries value chains was carried out on the basis of following seven factors used in the grid analysis matrix;

Prioritization on the basis of percentage employment potential

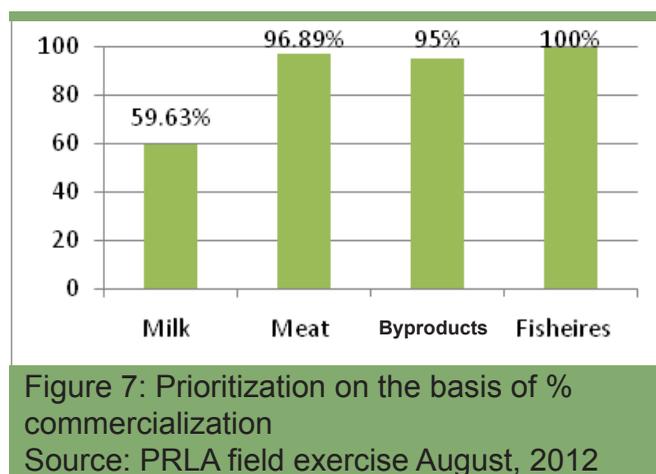
Among all livestock value chains, milk has the highest potential of 34.88% for employment generation. Meat value chain has the ability to create 16.17% employments, followed by fisheries value and livestock byproducts value chains that have a potential to create 8.70% and 7.33% employments respectively. It is important to note milk value chain involves more labor force due to the efforts required for feeding, management & milking of the animals and post production handling of the milk as compared to any other livestock value chain.

Prioritization of different livestock and fisheries value chains with regard to their ability to create employment is shown in Figure 6 below.



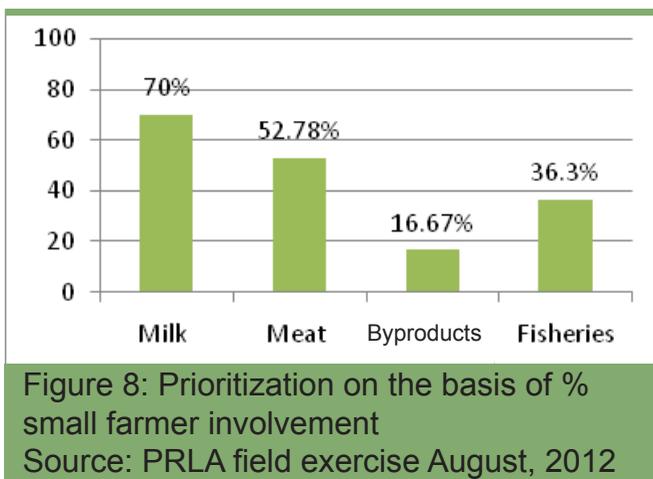
Prioritization on the basis of percentage commercialization

Commercialization can be described as the percentage of the product that is marketed. The data collected from FGDs showed that inland fisheries is practiced as an enterprise and has 100% commercialization. Meat showed 96.89% commercialization, the reason being that animals raised for meat purpose are culled or sold in the market and slaughtered. Livestock byproducts being totally commercial commodity score 95% commercialization. Milk, due to its perishable nature and traditional use in different hot and cold beverages, is used for domestic consumption and therefore showed a lower percentage as regard to commercialization in comparison to other livestock value chain. In Peshawar region milk scored 59.63% on the index of commercialization. Depicted below in Figure 7 is an overview of livestock and fisheries value chains with reference to percentage commercialization.



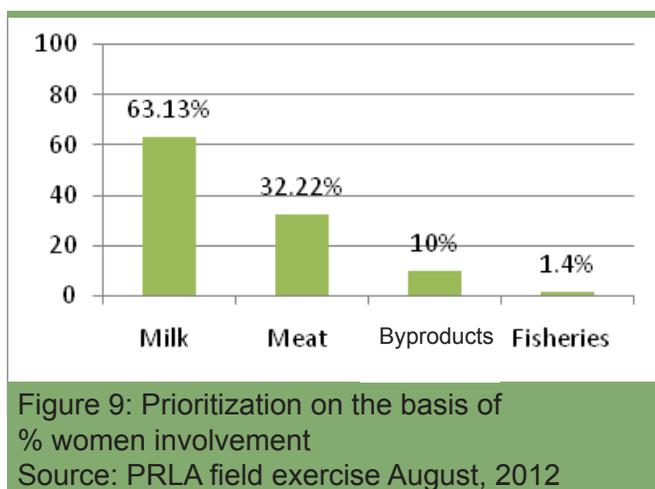
Prioritization on the basis of percentage small farmer involvement

The assessment of livestock value chains on the basis of %small farmer involvement in Peshawar region revealed that milk value chain has the highest percentage (70%) of small farmer's involvement. This is easily explained by the fact that 70-80% of milking animals belong to small holders with 1-4 animals. Whereas 52.78% and 16.67% of small farmers are involved in meat and byproducts business. Since there are no or very small number of animals raised for meat purpose, usually male calves, animals that are dry, or have low production are sold in the market or to butchers for slaughtering and 80% of these animals belong to the small holders . With regard to livestock byproducts such as hides, skins and wool, there is very little involvement of small farmers because of the market trends where only live animals are traded. Fisheries value chain showed 36.30% of small farmer involvement. A graphical presentation of above data is shown in Figure 8.



Prioritization on the basis of percentage women involvement

Women involvement is considered to be an important factor for prioritization of the value chains. As per conclusion from the FGDs data, it was found that milk value chain has the highest priority index (63.13%) with regard to the percentage of women involved. The graph below (Figure 9) shows that the percentage women involvement was 32.22% for meat value chain and 10% and 1.4% for byproducts and fisheries value chains. However, the high indices of % women involvement in milk and meat value chain is limited to the production phase only since women have very limited or no role in marketing of milk, meat and byproducts value chains. Fisheries being a totally commercial enterprise observed the lowest percentage of women involvement.



Prioritization on the basis of percentage of household involvement

Milk value chain had the highest index of 33.50% household involvement since majority of the rural population is engaged either directly or indirectly in milk value chain. Second on the priority index was the meat value chain involving 21.70% household. Livestock byproducts engage 2.0% of the households in Peshawar region and fisheries scored lowest on the index with 1.6% household involvement.

Percentage of households involved is another important factor in the process of prioritization a particular value chain. The data collected through FGDs and analyzed for the percentage household involvement in livestock and fisheries value chains showed results that are interpreted in graphical presentation below in Figure 12.

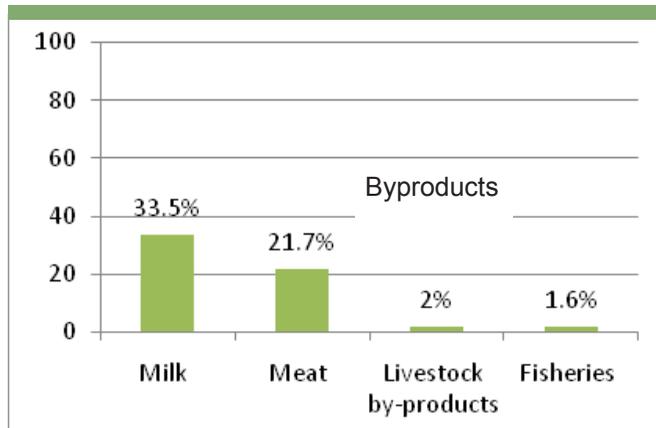


Figure 12: Prioritization on the basis of % household involvement
Source: PRLA field exercise August, 2012

Prioritized Opportunities and Constraints in Livestock and Fisheries Value Chains

Prioritized opportunities and constraints in Milk

Paired ranking tool was used for prioritization of the opportunities. The participants of FGDs ranked the list of opportunities as explained in Table 2 below. On the basis of FGDs data analysis for milk value chain, the increasing demand in national market paired with the subsidy for the dairy sector were highest potential opportunities followed by availability of the improved milk breed animals and better options for improved animal housing and management ranked second on the priority index.

Table 2: Priority opportunities in milk value chain

Priority opportunities	Score	Rank
Increasing demand in national market	15	1
Subsidy for the milk value chain	15	1
Availability of improved breed animals	10	2
Proper animal housing and management	10	2
Establishment of milk collection points	9	3
Capacity building and awareness of farmers	9	3
Availability of improved quality fodder crops	6	4
Comparative market price	6	4
Transportation to the market	6	4
Improved Infrastructure	6	4
Prophylactic veterinary measures	6	4
Milking machines	5	5
Training and capacity building	5	5
Cold storage	4	6
CBO based activities	4	6
Value addition including milk processing	3	7
Establishment of market chain	3	7
Market linkages	2	8
Provision of soft loans (0% interest)	2	8

Source: PRLA field exercise August, 2012

Accelerating demand of milk and products in the regional and national market was identified as the highest ranking opportunity in the milk value chain in Peshawar region. Provision of subsidy by Government to develop the dairy sector, was ranked as another equally important opportunity that can lead to sustainable, diversified, export lead growth of the sub sector because high input costs and low profit margins minimize producer's interest. Availability of improved breed animals and better husbandry practices were ranked second on the priority index of opportunities. Establishment of milk collection points and capacity building of livestock owners ranked third. Improved quality feed & fodder, better infrastructure along with proper transportation of milk were also defined as important opportunities that need to be exploited in order for the dairy sector to grow.

The constraints in milk value chain were identified and prioritized by the participants in FGDs. Shown in Table 3 is a ranking index for the constraints.

Lack of improved breed animals, prophylactic veterinary care and chillers for milk collection were as the high intensity constraints hampering the growth of dairy sector in Peshawar region. Inadequate veterinary health services, lack of proper milk transportation system and financial resources along with poor market linkages were ranked as medium intensity constraints.

These constraints can be addressed through breed improvement (either by introducing high yielding animals or cross breeding with high producing breeds), improved farm management practices, timely and efficient availability of veterinary health services, establishment of integrated milk collection and transportation system. Easy access to soft loans can help resolve financial issues hampering the growth of dairy value chain.

Table 3: Priority constraints in milk value chain

Priority constraints	Intensity
Lack of improved breed animals	High
Lack of policy for price control	High
Lack of quality prophylactic measures	High
Lack of resources for milk chillers	High
Lack of awareness about establishment of milk chillers	High
Inadequate veterinary services	Medium
Lack of proper milk transportation system	Medium
Lack of investment resources	Medium
Poor market linkages	Medium
Absence of policy for price control	Low
Lack of proper farm management practices	Low

Source: PRLA field exercise August, 2012

Prioritized opportunities and constraints in Meat and byproducts

The highest ranking opportunities in meat value chains as identified by participants in FGDs were increasing demand in national and international markets, of provision improved breed animals and better farm management practices. Provision of meat chillers and post slaughter processing machinery were ranked as medium grade opportunities in meat value chain.

The prioritized opportunities, in meat and livestock byproducts value chains, scored and ranked by the participants of FGDs in Peshawar region are listed below in Table 4.

Table 4: Priority opportunities in meat value chain

Priority opportunities	Score	Rank
Increased demand in the market	15	1
Availability of improved breed animals	9	2
Availability of improved feed/fodder	6	3
Improved farm management practices	5	3
Cold storage/meat chillers	4	4
Post slaughter meat processing machinery	4	4
Capacity building and awareness	3	5
Farmer enterprise group formation	2	6
Improved veterinary health services	1	7
Packing and packaging of meat	1	7

Source: PRLA field exercise August, 2012

Shown below is the list of prioritized opportunities in livestock byproducts value chain.

Table 5: Priority opportunities in livestock byproducts value chain

Priority opportunities	Score	Rank
Availability of Improved breeds (for wool)	6	1
Improved animal feed/fodder	6	1
Improved farm management practices	5	2
Provision of wool shearers	5	2
Awareness about by-products production	3	3
Training in by-products handling	3	3

Source: PRLA field exercise August, 2012

With regard to the byproducts value chain, introduction of improved breed animals especially sheep for wool production and better farm management practices were highlighted as the top ranking opportunity followed by provision of wool shearing equipment's and capacity building and training in handling of byproducts.

Table 6 below shows the lists of constraints (merged) for both meat and livestock byproducts value chains as per ranking done through FGDs data analysis.

Table 6: Priority constraints in meat and byproducts value chain	
Priority constraints	Intensity
Lack of improved breed animals	High
Lack of technical and financial resources	High
Lack of awareness/availability of improved feed/fodder	High
Absence of cold storages for meat and by-products	High
Lack of training in calf rearing	High
Lack of awareness/training in skin/hide handling	High
Lack of proper livestock management	Medium
Lack of veterinary services	Medium
Lack of awareness/training in feed lot fattening	Medium

Source: PRLA field exercise August, 2012

The major constraints in both meat and byproducts value chains were lack of improved breed animals and technical & financial resources; absence of cold storages for meat, skin & hides; lack of awareness & training in better farm management practices, calf rearing and feedlot fattening and poor veterinary services. A strategic approach to exploit opportunities and address constraints is required for meat and byproducts value chains to flourish as viable agribusiness in order to address food security issues and export led growth.

Prioritized opportunities and constraints in Fisheries

The prioritized opportunities and constraints in fisheries value chain, scored and ranked by the participants of FGDs in Peshawar region are listed below in Table 7 and 8.

Table 7: Priority opportunities in fisheries value chain		
Priority opportunities	Score	Rank
Provision of quality fish seeds/fingerlings	12	1
Availability of refer containers	9	2
Demand in the national market	4	3
Availability of fish hatchery equipment	3	4

Source: PRLA field exercise August, 2012

Table 8: Priority constraints in fisheries value chain	
Priority constraints	Intensity
Lack of technical & financial resources	High
Unavailability of quality fish seed/fingerlings	High
Lack of awareness about fish farming	High
Packing & packaging of fish	High
Poor market linkages	Medium
Capacity building/training in fish farming	Low

Source: PRLA field exercise August, 2012

State of the Service Providers in Livestock and Fisheries Value Chains

Service providers are of prime importance in all value chains. These include Government bodies, private sector, NGOs and associations, middlemen, buyers, market agents and exporters. A detailed assessment of the service providers, services offered and their strength was carried out using the information shared by participants of FGDs during PRLA exercise. The role of Government organizations such as agriculture extension, Livestock and Dairy Development Department and Fisheries Department is to provide technical information and assistance, on farm and off farm trainings and creating awareness about technological innovations relevant to a particular sub sector where

Table 9: State of the service providers

Service Provider	District	Strength	Paid/Free	Services Provided
Livestock and Dairy Development Department/Fisheries Department	Nowshera	Weak	Free	Training and technical assistance
	Haripur	Weak	Free	
	Mansehra	Weak	Free	
	Swat	Strong	Free	
	Chitral	Strong	Free	
Input suppliers	Haripur	Medium	Cash	Input Supplies
	Mansehra	Medium	Cash	
Middle man	Haripur	Strong	Credit	Intermediate link between producers and market
	Mansehra	Strong	Credit	
	Nowshera	Strong	Credit	
Local confectioners	Haripur	Weak	Free	Buy milk
District administration	Mansehra	Weak	Free	Fix and regulate prices
	Haripur	Weak	Free	
Banks and Co-operatives	Swat	Weak	Cash	Credit on mark up
	Mansehra	Weak	Credit	
	Haripur	Weak	Credit	
Food inspection department	Mansehra	Medium	Free	Quality control
	Haripur	Medium	Free	
NGOs	Chitral	Strong	Free	Training and technical assistance
	Mansehra	Medium	Free	
	Haripur	Medium	Free	
	Swat	Low	Free	
Dairy Association	Haripur	Medium	Free	Training and technical assistance
	Mansehra	Medium	Free	
Private companies/BDSPs	Mansehra	Weak	Free	Technical assistance
Producer's Associations	Swat	Weak	Free	Training and information
Project/Firms/PARRSA	Swat	Weak	Free	Training and information
Department of Agri Extension	Swat	Strong	Free	Guidance and information on improved agri practices
Private Agri chemical supplies	Swat	Weak	Cash	Supply pesticides
Fellow enterprises	Chitral	Strong	Free	Experience sharing
Market agents	Swat	Weak	Cash	Supply inputs and animals from other districts
	Nowshera	Strong	Credit	
Veterinary medicine companies	Chitral	Weak	Cash	Supply vet medicines, vaccines etc.
	Swat	Strong	Cash	

Source: PRLA field exercise, August, 2012

as the local administration defines and regulate prices.

The participants of FGDs in Peshawar region identified provision of quality fish seed/fingerlings as the highest potential opportunity followed by availability of refer containers. Demand in the national market and availability of fish hatchery equipment were ranked third and fourth respectively on the index of prioritized opportunities.

Highlighted constraints in fisheries were lack of technical and financial resources, unavailability of quality fish seed, lack of awareness and capacity building about fish farming, packing and packaging and poor market linkages.

Although the services provided by Government agencies were free, their ranking was weak in all districts of Peshawar region except Chitral and Swat where L&DDD and agriculture extension departments have strong linkages. Private sector encompassed all input suppliers and facilitators within the value chain. The services provided by them were paid and on cash basis. However, they ranked medium on the index in almost all districts because of their demand, easy availability and efficiency. NGOs and fellow enterprises had strong linkages in Chitral and medium in Haripur and Mansehra. Dairy associations showed strong link in Haripur and Mansehra since they are high milk shed clusters. Banks were also mentioned as weak link because of the difficult access for small holders and high markup rates. Middle man and market agents were the strongest link among all service providers in dairy and meat value chains because they are the sole source of readily available credit facility for majority of the small holders.

State of the Market Linkages in Livestock and Fisheries Value Chains

Market linkage plays an important role in prioritizing value chains in a particular region. It also helps determine the price of a particular produce and profitability. Market linkages were assessed and ranked as strong, medium or weak depending on the basis of share of the produce in that particular market, distance from the production site and the cost of transportation. With regard to dairy and meat value chains, local markets had the strongest links in almost all districts of Peshawar region due to easy access, less cost of transportation and less losses except for Nowshera and Charsadda where the strength of local market is medium as compared to strong link to Peshawar market due to higher market share, low cost of transportation and better market price.

To understand the marketing of livestock and products an assessment with regard to the strength of market linkages was also done through data that was collected during FGDs in Peshawar region and is depicted in the Table 10 below:

Subsector	District	Market linked	Strength
Milk andMeat	Haripur	Haripur (Local)	Strong
Milk andMeat		Abbottabad	Strong
Milk andMeat		Wah	Medium
Milk andMeat		Kalabat	Medium
Milk andMeat		Hattar	Medium
Milk andMeat	Malakand	Malakand (Local)	Strong
Milk andMeat		Islamabad	Strong
Milk andMeat		Sialkot	Weak
Milk andMeat		Lahore	Weak
Milk andMeat		Peshawar	Weak
Milk	Chitral	Chitral (Local)	Strong
Milk andMeat	Mardan	Mardan (Local)	Strong
Milk andMeat		Peshawar	Weak
Milk andMeat	Nowshera	Nowshera	Medium
Milk andMeat		Peshawar	Strong
Milk andMeat	Charsadda	Charsadda	Weak
Milk andMeat		Peshawar	Strong
Milk andMeat		Dir	Medium

Source: PRLA feild exercise August, 2012

Conclusion

The Peshawar Project Region has a tremendous potential both in milk and meat value chains with regard to its production and share in the national production. However, milk is ranked highest on the priority index followed by meat, livestock byproducts and Fisheries. Despite of its potential, a number of factors do not let the sector grow appropriately. Very fewer examples are hardly found in the processing and export of livestock and its byproducts. To be more precise, following summary conclusions can be drawn from the appraisal;

- Low potential breeds, improper husbandry practices, inadequate financial capacity and technical resources, lack of processing and slaughtering facilities and poor marketing system results in either high cost of production in milk and meat value chains or less encouragement for further business expansion. Project interventions are required to cope with the said constraints.
- Non availability of quality fish feed and seed, lack of awareness among farmers, lack of technical BDSPP available, inadequate processing and transport facilities and weak market linkages in fisheries sector are considered as the major constraints, hence 6% decline in growth over the past five years is reported. All factors needs to be adressed to strengthen the fisheries value chain.
- The input suppliers, middlemen 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 L&DDD department and banks were among the weakest linkages. Policies to be reframed to strengthen the Government sector institutes.
- Milk had the highest employment/labor potential as compared to the meat and fisheries due to higher input of time and human resources. Interventions to be made in milk and meat value chains as there is a huge potential in the value chains.
- Mansehra is the highest milk producing area in Peshawar project region followed by Peshawar, Charsadda, Shangla, Abbottabad, Mardan and Haripur. Whereas, the highest meat producing district in Peshawar project region is district Peshawar followed by Mardan. Moreover, Swat, Mansehra showed maximum growth in fisheries value chain followed by Haripur and Charsadda.

Prioritization on the basis of percentage growth during past five years

Growth is the most important factor for prioritization of a value chain as it gives a clear idea of the potential of subsector in a particular region. The livestock and fisheries value chains were assessed on the basis of their growth observed during the past five years in Peshawar region. Figure 10 below reflects 26.8%, 21.33%, 14.63% and 6.67% growth rates for fisheries, meat, milk and byproducts respectively during past five years.

On the basis of FGDs conducted, Mansehra district showed the highest rank on the growth index for milk value chain followed by Charsadda and Mardan. Meat value chain observed highest growth in Mansehra while Charsadda and Haripur ranked second and third respectively on the growth index. Haripur was the only district that showed growth

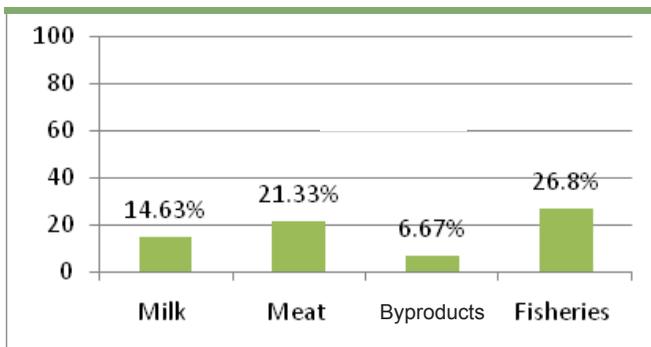


Figure 10: Prioritization on the basis of % growth during past five years
Source: PRLA field exercise August, 2012

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. Milk value chain showed highest percentage of losses (7.43%) among all livestock value chains. Meat value chain had 7.06% losses and byproducts had comparatively low percentage losses at 5.83%. Fisheries value chain had minimum losses of 5.4% among all value chains. An illustration of prioritization of value chains on the basis of percentage losses is portrayed in Figure 11.

The losses in milk, meat and byproducts include both pre and post production losses. Pre-production losses mean mortality or inability of animal to produce due to various reasons whereas post production losses occur usually during handling and transportation and are highest in value chain due to spillage and sourage. Losses in meat value chain usually attribute to pre-production losses. Losses in livestock byproducts value chain are far higher than depicted in the percentage losses index as they usually go un-noticed. Fisheries value chain experience more post production losses due to the perishable nature and lack of proper mode of transportation to the market.

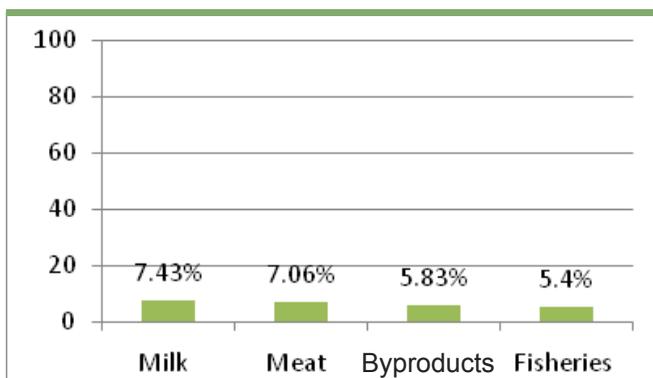


Figure 11: Prioritization on the basis of % losses
Source: PRLA field exercise August, 2012







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