

## **Heifer International Bangladesh**



**Report on  
Beef Value Chain Study in Bangladesh**

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**30<sup>th</sup> June 2013**

**Notes on the cover page picture**

**[The landless, marginal and small farmers will increasingly depend on home based production system due to shrinking land base. Beef fattening can be a home based enterprise. A farmer or his wife can raise four cattle in one small room adjacent to their living room and can manage four bulls by family labor. To have a monthly cash flow as a main means of livelihood one bull has to be added to the herd in a 4 month rearing cycle with credit and insurance support from a NGO. This model has been piloted by Practical Action Bangladesh and proved to be successful. The NGO being loan and insurance provider also provides all veterinary services free to ensure zero mortality]**

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### Abbreviation

Abbreviations	Meaning
AI	Artificial Insemination
BLRI	Bangladesh Livestock Research Institute
BB	Bangladesh Bank
BBS	Bangladesh Bureau of Statisticcs
BKB	Bangladesh Krishi Bank
BRAC	Bangladesh Rural Advancement Committee
DLS	Department of Livestock Services
DoWA	Department of Women Affairs
DYD	Department of Youth Development
IEB	Import Export Bureau
FDIL	Field Disease Identification Laboratory
FO	Field Observation
FMD	Food and Mouth Disease
FGD	Focus Group Discussion
INGO	International Non-government Organization
CDIL	Central Disease Identification Laboratory
JCF	Jagarani Chakra Foundation
IGA	Income Generating Activities
MMC	Market Management Committee
NGO	Non Government Organization
NS	Nutrition Survey
PKSF	Palli Karma Shahayak Foundation
RAKUB	Rajshahi
TOR	Terms of References
ULO	Upazila Livestock Services
UP	Union Parishad
VAT	Value Added Tax
VC	Value Chain

## **Glossary**

- Anthrax** : Anthrax is a bacterial disease affecting any part of body of cattle causing serious damage and death and can also be transmitted to human body for which consumers reduced consumption of beef in 2010-11 due to anthrax infestation
- FMD** : FMD is a virus disease affecting foot and mouth of the cattle. It is one of the major disease whose vaccine is not adequately available causing death of animals.
- Foreyas** : Foreya are small traders who buy products from the doorstep of the farmers and sell it to local retailers or large traders or arathers who ar large aggregators
- Huzur** : Huzur is commonly addressed to islamic educated persons who performs group or mass prayers and also slaughter animals in islamic way called halal meat without which it is not edible to Muslim
- Idulazha** : It is an annual islamic prayer and sacrifice day when a solvent person must sacrifice an animal as per his/her economic capacity.
- Kosai** : Kosais are not butcher who slaughter animal but retail cattle meats getting animals slaughtered by a Huzur
- Peravet** : Peravets are bare footed veterinary doctors who are engaged in this profession by receiving training or life experiences inherited from parents profession
- Paikers** : Paikers are the large traders of agricultural commodities who collects commodities from foreys as well as by from primary markets and sell or supply to whole seller of distant markets
- Shahiwal** : It is cattle breed of heavy structure of Indian origin and of higher productivity of both meat and milk. It also grows faster,

## EXECUTIVE SUMMARY

The Heifer International Bangladesh engaged a team of independent consultants to conduct a Beef Value Chain Study in Bangladesh focusing north-west region of Bangladesh. The consultants have conducted the field survey in Rajshahi, Natore and Pabna districts during 14-21 July 2013, analyzed the data and are furnishing this report. The report constitutes findings of beef sub-sector, smallholders' production system, beef value chain analysis and strategies for sustainable livelihoods. Based on the findings the consultants put forwarded a set of recommendations for actions.

### Major Findings

#### Status of the Beef Cattle Sub-Sector

National estimate of per capita total meat intake was only 20 gm per capita per day in 2006-07 which has tripled (58 gm) by 2013. Yearly growth rate was 26.51% per year. Field survey showed that average per capita per day consumption of meat in north-western region (Rajshahi, Natore and Pabna) was 64.56 gm which is 11.04% higher than the national average with wide variations among socio-economic classes. Beef constitutes 65.05% of meat consumption with significant seasonal variation. Consumers are facing the problems of unavailability of quality meat, high price of meat, sale of unsold beef kept in refrigerator as fresh cut, faulty weighing machine

Presently total requirement of meat is 6.66 million ton against which production is 2.96 million ton. Gap is 56%. As a result, import of meat and meat products has sharply increased from Tk. 1.5 crore in 2006-07 to about 14.5 crore in 2008-09. Annual production of beef was found to be 1.92 million MT as against the total requirement 4.33 million MT. A large part of deficit of animal and animal product is met by import of live animals from neighboring countries viz. India, Pakistan, Nepal and Sri Lanka. Last six years' average value of live cattle was Tk. 125.69 crore of which 99.56% from India. Keeping other things constant the projected requirement of beef was estimated as 7.33 million MT as against production of 5.32 million MT by 2020-21. A gap of 2.01million MT will still remains after 2021. This gap cannot be met unless more concerted effort is launched to increase local production.

#### Smallholders Production System

Traditionally cow rearing and beef fattening go hand in hand. As such both are compatible. Cost benefit ratio of cross breed cow rearing for one lactation period is 146.03% while that of beef fattening for the same period (8 months, two cycles) is 111.83%. Cow rearing is more profitable with the great advantage of providing daily cash flow which is of great benefit to the poor to meet cash need for meeting daily expenses. Use of by-products of beef such as skins, bones, manure, slaughterhouse blood and offal etc, could make cattle rearing more profitable and lowering customer prices. Small holders cattle farmers have been facing a plethora of constraints related to genetics or breed, artificial insemination, veterinary service, nutrition, fodder, farm practices, management and marketing of cattle

The hard core grid constitutes 4 whole sale cattle markets located in the large consumer markets namely Gabtaly in Dhaka, CDA market in Chittagong and Kazir hat in Sylhet and Chakbazer in Comilla. This grid is also extended to Barisal. From supply side there are few large assembly markets such as Satmail in Khulna, Arankhola in Pabna, City market in Rajshahi, Haripur in Thakurgaon, and Patgram in Lalmanirhat districts which are linked with the grid. About 40% of the total animals slaughtered in Bangladesh are added to the grid from India through cross border trade.

There are only two industrial scale meat processing industries namely Bengal Meat in Pabna and Pabna Meat in Dhaka. As claimed both are processing Halal way and safe or organic meat. Their processing capacity is 200 and 25 respectively. At present they claim to operate at 25 and 20 % capacity respectively. Smallholders are not likely to meet their standards of bull as well as supply conditionality. They depend on suppliers.

#### Value Chain Analysis

In the beef cattle market all stakeholders operates individually and independently. Product flows from farmers to consumers through a number of small (*pareya*/brokers) or large (*paikers*) traders eventually to *Kosai* who slaughter

and sell to the consumers at local or in the distant city markets. In this process all stakeholders try to maximize his/her benefits even with utter disregard to the interest of fellow stakeholders, animals and consumers' interest and safety.

In an upazila there are about 10 thousand beef fatteners, 30 foreyas, 80 brokers, 120 traders, 40 local kosai and 345,000 beef consumers assuming 80% population consume beef. Product flows through three alternative channel to local and national consumers. It is observed that the largest proportion of product 63-70% flows through farmers-paiker-metropolitan kosai-national consumers in the north-western region where intensity of beef fattening is reported to be high compared to other part of the country.

It is observed that the Metropolitan kosais added the highest value (Tk. 6500) per 100 kg bull followed by Paikars (Tk. 4,350), local kosai (Tk. 3,850), farmers (Tk. 3,500), foreyas (Tk.1500) and brokers (Tk.1350). The discontentment expressed by farmers that they are not getting fair price of the beef cattle to a great extent true. In fact they are getting 28.69% of the total value addition on beef cattle because of long value chain. Elimination of one or two tiers is likely to increase their share of the value.

Contact, relationships and exchange of information among stakeholders exists but are partial, informal and very weak to affect the development of the product significantly.

Development of cattle in general and beef sector in particular depends greatly on the availability and quality of business development services such as technology, inputs and finance and education of farmers to use those services effectively and profitably. Banks, NGOs and financial institutions may re-examine their loan port folio, terms of the loan (interest and repayment schedule including insurance) and design an innovative loan portfolio which is friendly to small holder beef fattening.

### **Strategies for Sustainable Livelihoods**

In order to ensure sustainable livelihoods of farmers, traders and other stakeholders and worker in his sector there is a need to adopt the following strategies:

- Protection of Smallholders Production
- Development of Processing Industries
- Organizing the Smallholders' Production System
- Use of Peravet Forces
- Enforcement of Code of Conduct among Market Operators
- Orient and Equip the DLS and BLRI as Facilitators not as Providers
- Support from Various Agencies Including Heifer in Future

Government has adopted a number of acts related to disease control, feed and slaughtering which need implementation effectively

### **KEY RECOMMENDATIONS**

The consultants reviewed the beef cattle sector as a whole and analyzed the beef cattle value chain with particular focus to North-western regions. They also examined the scope and potential of integration of stallholders, and postulated the strategies of sustainable livelihoods of those associated with beef cattle sector. There are indications of observations and recommendation in all those expositions. However, the consultants are summarizing the key recommendations to pinpoint certain issues for the development of beef cattle sector of Bangladesh.

- Protection of Smallholders Production System by adopting policy of discouraging growth of large farms (more than 10) and import of processed or life cattle by increasing tax structure
- Organizing the smallholders' production system with provisions of training, asset support for poor, vaccine availability, control of fees for veterinary services, marketing support and subsidy on feed
- Provision should be made to train the Peravets up to a level which will help them get recognition as Peravet with provision of making changes in Vet Service Act



- Market Regulation Act should be upgraded inserting Code of Conduct among market operators with provision of fixed fees, commissions and charges and should be strictly implemented through market management committees having representation of all groups of actors with change of rules and procedures of using the market
- Orient and Equip the DLS as Facilitators not as Providers by using services of NGOs, Peravets and their associations and feed and medicine companies and their dealers and commission agents
- Government should strictly implement the adopted acts related to disease control, feed and slaughtering of animals
- NGOs and banks should be assisted to identify producer friendly loan portfolio for beef fattening with provision of insurance and encourage location specific value chain financing by making provision of a loan portfolio for all value chain actors for production, trading and retailing of meat and for buying specialized trucks for cattle
- Provision should be made for training on slaughtering, meat quality, preservation and provision for loan for *Kosais* to have modern cool chain and cutting meats and bones
- Meat companies should be supported for making review of their business operations and accordingly design intervention package and encouraging new entrepreneurs to invest through loan and technical support package. They should also be supported to have contract production and supply system.
- DLO should be encouraged for privatization of vaccine and seamen production, supported to implement Acts, Provision of more Vet Doc with logistic support and recognize the services of Peravets
- BLRI should be supported to extend the research and analytical facilities to cattle rearing regions
- Companies and their dealers and commission agents should be encouraged to abide by feed act and to do research to find out cheaper feed by recycling agricultural wastes
- A mass campaign program should be adopted to create awareness among consumers for buying safe and quality meat

## I. INTRODUCTION

### 1.1 Introduction

There was an overriding importance of expansion of rice cultivation to fill hungry bellies of millions of people of the country in the backdrop of frequently occurring famines in the first half of the last century. Consequently, growth and development of livestock in general and of beef sector in particular were not adequately emphasized for quite a long time, though rearing a goat, few poultry birds, a cow and a small cattle herd in each rural household was a culture and tradition of Bangladesh as a source of protein (egg, meat and milk) and draft power for tilling land until very recently. As a result, Bangladesh has a large cattle population with high density per unit of land area. But cattle breeds of Bangladesh are basically short stature compared to Haryana and Shahiwal breeds of other parts of the subcontinent. Small body structure, dwindling grazing land due to expansion of rice cultivation, scarcity and high price of feed and prolong low development priority deteriorated cattle productivity to a level that in spite of high density of cattle population production of milk and meat is quite low as compared to neighboring countries. High demand, soaring price and release of cattle as draft power due to introduction and use of power tillers and rural mechanized vehicles have created a right perspective for cattle development. As a result, government agencies, national and international NGOs and the financial institutions have now focused their attention to livestock sector development in general and cattle subsector in particular as Income Generating Activity (IGA) in poverty prone areas and regions. Commercial farming is also emerging rapidly. How small and marginal producers can graduate from an IGA to commercial cattle farming particularly for beef fattening as a principal means of livelihoods is now a challenge for cattle development programs as per capita land is progressively decreasing due to alternate use of land and population increase. Heifer International, Bangladesh with its very rich tradition of livestock development, intends to join in this pursuit of cattle development programs of Bangladesh.

### 1.2 Background and Rationale

Heifer International Bangladesh has procured service of an independent consultant group to undertake a study on beef sector and value chain of national significance, with specific focus on Rajshahi, Natore and Pabna districts and some important places in Dhaka in order to plan a beef sector development program with appropriate perspectives and interventions.

### 1.3 Aims and Objectives of the Study

The main aim of the study was to formulate strategies, approaches and action plans to integrating smallholder cattle farmers in the national beef market grid through their engagement in and promotion of various beef value chain enterprises (pre-production, production, processing and marketing). The overall objective of the study was to document the existing status of the beef cattle sub-sector, through a value chain analysis, that will help formulate future programs. The study was aimed to identify areas/enterprises that smallholder farmers can receive supports from various agencies including Heifer International Bangladesh in future. The specific objectives include:

- i. To assess the existing situation and document prevailing beef value chains in Bangladesh, considering its compatibility with associated dairy production practices/systems and its by-products (skins, bones, manure, slaughterhouse offal etc)
- ii. To identify key interventions across the different layers of the beef value chain to improve beef value chain efficiency and governance to meet the gap in demand and supply of beef and meat products.
- iii. To develop strategies for sustainable livelihoods and increased income through promotion of beef value chain enterprises.

#### **1.4 Scope of Work**

The scope of work of this study was wide focusing all relevant issues of the beef cattle sector. It included all issues relevant to the following areas:

- Consumer preferences for meat and meat products
- Trends in production and consumption (yearly consumption pattern, per capita intake, wastages if any, seasonal variation in consumption, if any)
- Annual demand and supply situation and projection for the next five years
- Import and export situation and significance in national trade balance
- Costs comparison of imported beef with that of domestic production
- Competitiveness of domestic beef
- Current status, constraints, and prospects of smallholders' and integration in cattle production, processing and marketing facilities (private and public)
- Cost of prevailing value additions at each layer of beef production, collection, chilling,(or trading),
- Distribution of profit margins among various actors of the value chain
- Costs benefit analysis of beef cattle vis-a- vis dairy cattle
- Relationships among actors
- Key project interventions/ areas for building trust, reciprocity and business relationship among these value chain actors
- Current status and constraints of smallholders in terms of genetics or breed, artificial insemination, veterinary service, nutrition, fodder, farm practices and management and marketing of meat.
- Availability of financial and technical resources
- Potentiality of commercialization through leverage from actors
- Strategies for attracting private sector
- Policy framework
- Incentives for cattle farmers and investment environment, price policy, food aid, import duties including health and veterinary regulations

#### **1.5 Deliverables**

The deliverables of the study are as follows:

- An inception report within a week of signing the contract with detailed plan of study that includes questionnaires/checklists, sampling methods, sample size and calendar of operation and outline of the final study report.
- Sharing of field observations/interim reports with Heifer International, Bangladesh
- Submission of draft report
- Submission of final report after sharing the draft in a workshop

## II. METHODOGY

### 2.1 Data Source Matrix

The consultants have conducted both qualitative and quantitative assessments of beef sector as a whole and the status of beef value chain. The former was based on secondary data sources and findings of FGDs and the latter was assessed on the basis of sample survey in the focus areas of Rajshahi, Natore and Pabna. A combination of methods of information gathering and techniques of analysis was applied for undertaking the study. A data source matrix has been presented in **Appendix A**. It is used as basis of designing the study instruments.

The study commenced from 3<sup>rd</sup> week of May and was completed within 30<sup>st</sup> of June 2013 after signing the contract award. Heifer International Bangladesh worked closely with the study team and also monitored the study process.

### 2.2 Methods of Data Collection

The methods of data collection were briefly as follows:

**Briefing:** Senior officials of Heifer International, Bangladesh briefed the consultants about their expectations in respect of various issues of the beef sector with particular reference to beef value chain as compared to several south Asian countries. They also clarified the TOR with focus on objectives and deliverables.

**Review Documents:** The consultants collected relevant documents and reviewed to assess the national status of beef sector with particular reference of trend of production and consumption of beef and export and import. Meanwhile Heifer International forwarded some relevant study reports which were reviewed by the consultants. A list of document reviewed has been presented at the end of the report.

**Focus Group Discussion (FGD):** Five FGDs were conducted in each district, one with each group of value chain actors such as Cattle Fatteners, Traders, Retailer (Kasai), Consumers, as well as NGO staff providing services to cattle fatteners, including local Livestock Officers. In each FGD on an average 10 representatives of those actors have been participated with gender balance where ever possible except Fatteners of whom 15 participants were requested to have greater participation of producers. A format was used to record the proceedings of the FGDs, primarily focused on common and qualitative issues as in **Appendix-D**. FGD participation sample was as follows:

**Table 1: Sample structure for FGD on common issues of beef VC**

Districts	Cattle Fatteners	Paravet	Traders	Retailer (Kasai)	Hotels	Consumers	NGO Staff	Total
Rajshahi	1x15	1x5	1x10	1x10	1x5	1x10	1x10	65
Natore	1x15	1x5	1x10	1x10	1x5	1x10	1x10	65
Pabna	1x15	1x5	1x10	1x10	1x5	1x10	1x10	65
Total	45	15	30	30	15	30	30	195

**Note: NGO staff including ULO**

**Sample Survey (SS):** Questionnaire survey was conducted on a small but purposive sample of 157 stakeholders to estimate the magnitude of some quantitative variables. Samples were drawn during FGDs and then individually interviewed. Sample distribution across the value chain actors was as follows:

**Table 2: Sample framework for questionnaire survey on entrepreneur based issues**

Districts	Beef Fatteners	Paravet	Traders	Retailer (Kosai)	Processors	Super Markets	Hotels	Consumers	Exporters	Total
Rajshahi	10	5	5	5	-	-	5	10		40
Natore	10	5	5	5	-	-	5	10		40
Pabna	10	5	5	5	2		5	10		40
Dhaka	-		-	-	-	5	5	25	2	37
Total	30	15	15	15	2	5	20	40		157

Detail questionnaires for each group of actors are presented in **Appendix E**.

**Field Observations (FO):** During the FGDs the consultants visited some bull rearing households and a cattle market to observe the rearing and marketing condition in order to assess problems and constraints of production and marketing.

**Rapid Market Appraisal:** During visit of a cattle market the consultants met some traders as well as market management committee to assess marketing problems and constraints including probable interventions.

**Data Analysis:** Data obtained through these methods were computed and analyzed using SPSS program to arrive at quantitative estimates of the some of the parameters and used in the report to make conclusions and recommendations.

**Validation Workshop:** A validation workshop was organized at Dhaka with national level experts, actors and service providers to have opinion on the findings and recommendations. Based on the observations in the workshop and comments of the Heifer International Bangladesh the draft report was upgraded.

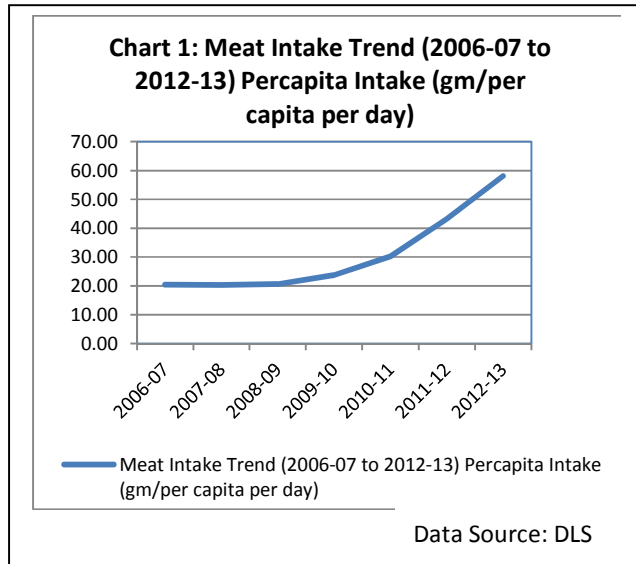
### 2.3 Outline of the Report

The consultants have conducted field survey in Rajshahi, Natore and Pabna districts during 14-21 July 2013, analyzed the data, furnished a draft and are furnishing this final report. The report constitutes a brief introduction of the background and methodology of the study followed by an overview of the sector at national perspective, an analysis of the beef value chain, smallholders production system, beef value chain analysis, strategies for sustainable livelihoods and finally put forwarded a set of key recommendations for program development.

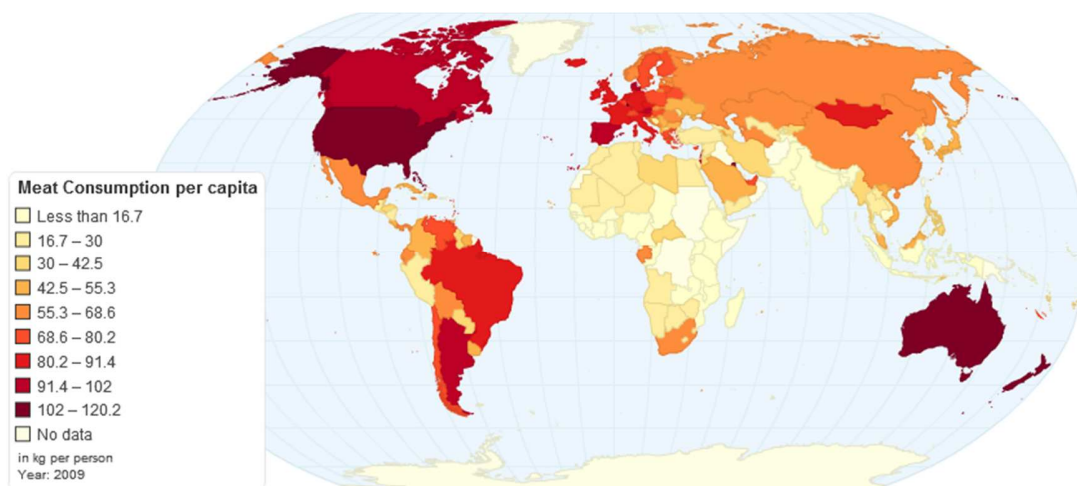
### 3 STATUS OF THE BEEF CATTLE SUB-SECTOR

#### 3.1 Consumer Preferences for Meat and Meat Products

National estimate of per capita per day total meat intake was only 20 gm in 2006-07 which has tripled (58 gm) by 2013 (**Chart 1**). Yearly growth rate was 26.51%. Indeed it is a spectacular increase due to income increase, nutrition consciousness, impact of mass media and overall impact of education and disposable income for increasing protein intake. Per person per year consumption stands 21.17 kg which is equivalent to Myanmar, Thailand, and Indonesia but above India or Sri Lanka. However, it is still below the consumption of Saudi Arab or Egypt or China. Consumption in USA or Australia was 102-120 kg per person per year which far above the Bangladesh.



The consultant tried to estimate the level of consumption of beef as compared to consumption of total meat in other words meat from all sources such as beef, goat/sheep, poultry, etc through both sample survey (N=30) of consumers of various categories. Both estimates were very close and also close to national estimate (**Table 3**).



**Table 3: Per capita/month(kg) or day (gm) beef consumption as % total meat consumption**

Professional Group	Meat	Beef	Beef as %
Labor	3.62	1.69	46.81
Vocational	8.88	5.73	64.50
Service holders	8.15	5.23	64.15
High Officials	14.23	9.31	65.41
Businessmen	13.54	9.54	70.45
Average/Month (kg)/Family <sup>1</sup>	9.68	6.30	65.05
Per capita/day(gm)	64.56	42.00	65.05

<sup>1</sup>A family of 5 members  
Source: Consultants' field survey

that high officials consume 14.23 kg as compared to day laborers who on an average consume 3.62 kg per month. Beef's share on an average was 65.05%. Again businessmen consume more beef than other professional groups. High officials and businessmen consume more or less similar volume of meat and beef. It is a clear indication that people prefer beef as compared to other meats. Beef's share is less than 50% of the total meat in the diet of labor class probably because of higher price compared to broilers.

Historical data of beef consumption trend is not available either in local offices or in nation level. The consultant tried to estimate the trend by asking the consumers. Back calculation method was followed. Respondents were asked to assume the present year's (2013) consumption as 100% what was the level of consumption during last 5 years. The consultant's past experience is that the people can give a fair estimate through back calculation. Based on this method of estimate FGD findings revealed that consumption of beef in north-western region has been increasing on an average by 7.76% per annum but the increment was not uniform. It was observed that consumption in fact decreased in 2011 (Table 5). It was widely reported that the sharp decrease (-1.96%) was due to fear of Anthrax infection which was almost reported as epidemic in that year. However, that fear has been overcome in the following years and the upward trend of consumption has been resumed. This trend of consumption was fairly agreed by experts on key informants as well as in the validation workshop.

As regards other sources and forms of beef there is unequivocal statement from all stockholders including consumers that 80% of people of this region prefer meat of local breed while 20% may like the meat of cross breed or Indian cattle. Indian cattle are not considered edible in rural areas except in Sylhet and Chittagong where those cattle are artificially fattened and slaughtered. People of Chittagong and Sylhet have special fascination of those meats. There is a section of people in the Dhaka Metropolitan down town where those cattle are also liked. But in most cases meat of local bulls are adulterated with the meat of Indians cattle.

Assorted or special cut of beef meat is not available in local towns except the super market of Dhaka. Once a supermarket was opened in Pabna but it was closed due to lack enough customers. Even supermarkets are selling fresh cuts like ordinary *Kosai* but they do keep the meat at chilling temperature.

Average per capita per day consumption of meat in north-western region (Rajshahi, Natore and Pabna) was found as 64.56 gm which is 11.04% higher than national average of 58.00 gm/capita/day (Table 3). This is obvious because people of north-western region are more dependent on meat as there is relatively more scarcity of fish in the region and cattle is abundantly reared in the region. However, consumption is not uniform across different socio-economic strata of population. It has been found through FGD estimate

**Table 4: Annual Growth of Beef Consumption**

Year	Base=2013	Yearly growth rate (%)
2008	69.69	0.00
2009	78.46	12.58
2010	86.15	9.80
2011	84.46	-1.96
2012	100.00	18.40
Average (%)		7.76

Source: Consultants' field survey

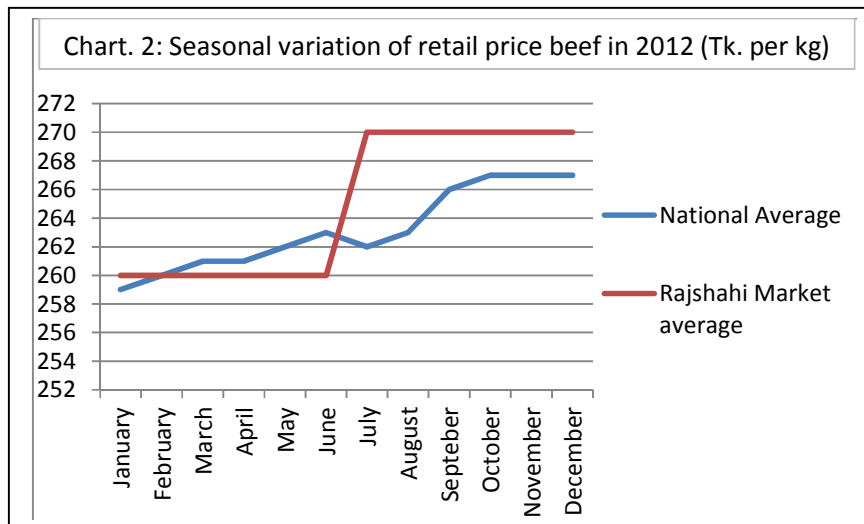
Over 99% customers expressed that they prefer fresh cut meat and mixed with bones. Less than one percent customers expressed willingness to buy frozen meat of supermarket.

However, 73% respondent expressed concern with problems of buying beef in the markets. The most frequently expressed concerns are lack of proper weighing, followed by high prices, unavailability of quality beef and Unsold beef kept in refrigerator sold as fresh cut (Table 5). Retailing of beef needs substantial changes in quality and proper weight assurance to gain consumer confidence. It has been observed that consumers are willing to 15-20% higher price for unadulterated quality meat. In their opinion such expectation is not fulfilled even by the super markets.

Type of problems	Consumers (N=30)	
	No.	%
Unavailability of quality beef	4	13.33
High price of beef	7	23.33
Unsold beef kept in refrigerator sold as fresh cut	3	10.00
Faulty weighing machine	8	26.67

Data source: Consultants' field survey

Through FGDs and interviews it has been observed that there is seasonal impact on the consumption of beef but it is very much likely that during winter consumption is relatively higher as the price is low. However price fluctuates because of intensity of social and religious ceremonies like picnic season, marriages, Shabe-barat, Idulajha when consumption of beef increases quite significantly. Idulajha bears special significance. As per DLS's statistics a total of 14,094,372 cattle are slaughtered in 2012-13 and 50% of which are assumed to be slaughtered in Idulazha (Appendix B, Table B.3). Number of cattle slaughtered in Idulazha of 2012-13 was reported as 6,310,370. As a result, people consume a huge amount of meat in a short period of about 10-20 days. On an average slaughtering increased by 12.60 % during last 6 years (Table Appendix B Table B.3). In fact 80% cattle rearing are focused to sell during Idulazha. There is therefore, a high degree of seasonal variation.



Seasonal variation of beef consumption is not highly pronounced. It seemed that consumption remain low during winter from January to March when price remain low as compared April to August and again increased during It is reported that price in the local market was stable during first six month of the year upto June at Tk. 260/- per kg which was increased by Tk. 10/- during a Muslim festival and it remained same in

rest of the year (Fig. 2).



### 3.2 Demand and Supply of Beef (65% of Meat)

Data on economic demand and its projection is not available. Differentiate data of production and

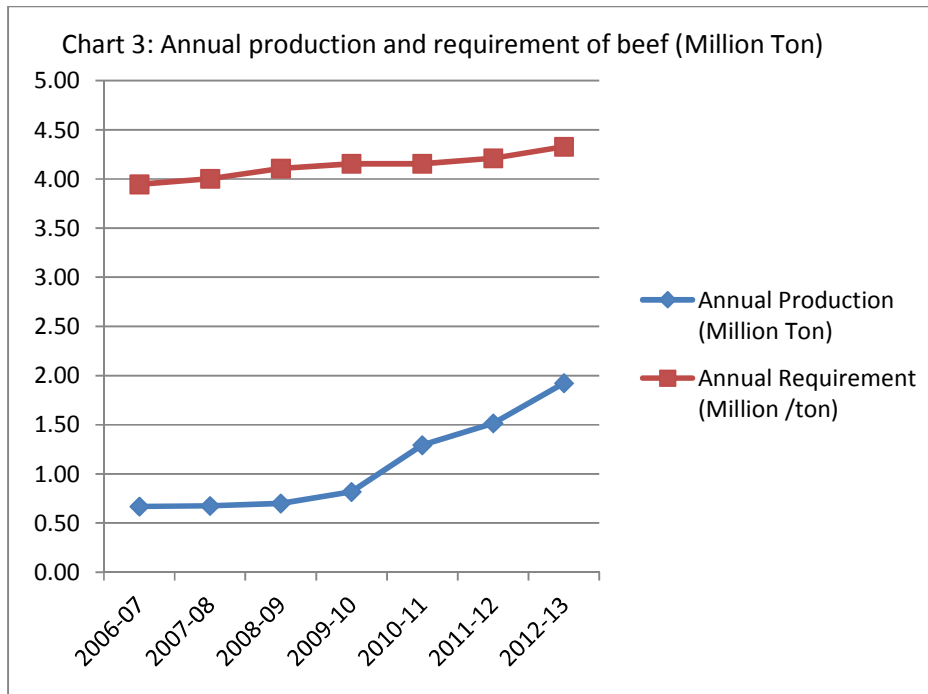
Year	Annual Production (Million Ton)	Annual Requirement (Million Ton)	Annual Gap (Million Ton)
2006-07	0.67	3.95	3.28
2007-08	0.68	4.00	4.34
2008-09	0.70	4.11	3.41
2009-10	0.82	4.15	3.33
2010-11	1.29	4.15	2.86
2011-12	1.51	4.21	2.70
2012-13	1.92	4.33	2.41

**Table 6: Annual Beef Production and Requirement (78 gm/per capita per day (2006-07 to 2012-13)**

requirement of beef is also not available. DLS estimated physiological need of meat consumption as 120 gm/per capita per day and made a estimate of demand and supply (**Appendix B, Table B.2**).. It is estimated that demand is slowly increasing as the population is increasing. The present consumption has increased to 64.51 gm per day per person which is 53.76% of the requirement. There is about 46% deficiency in animal protein intake.

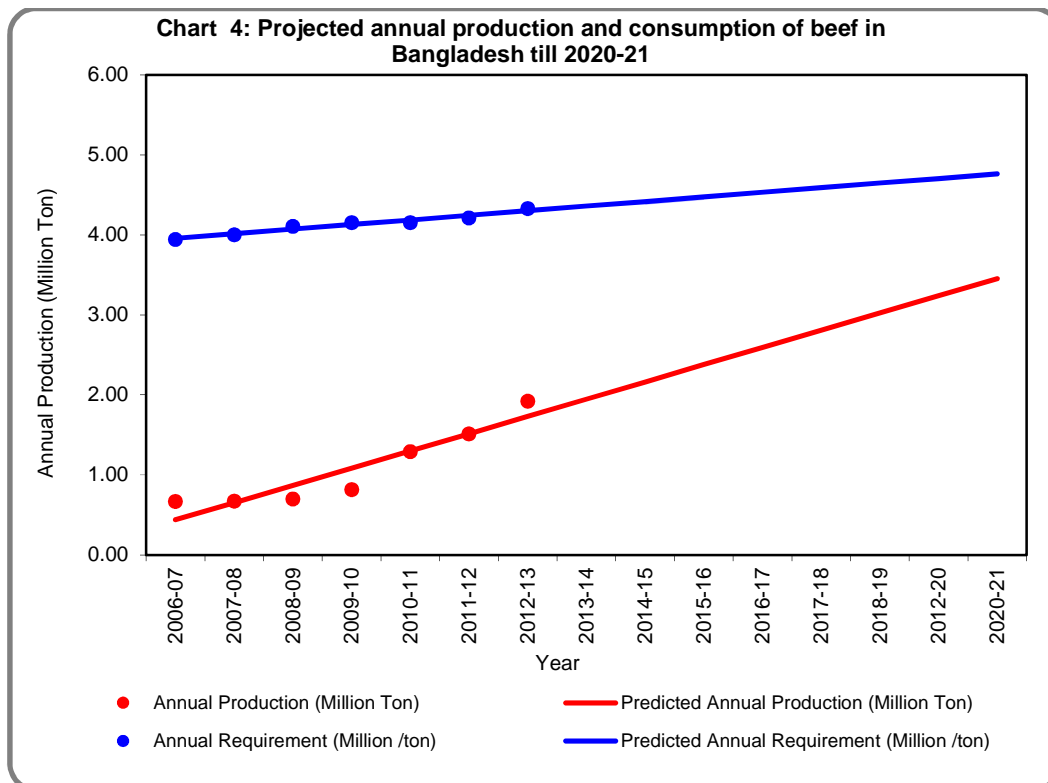
The consultant found that proportion of beef to meat in northern region is 65.0%. Based on this ratio

production and consumption was calculated and presented in **Appendix B, Table B.2a**. Presently, total requirement of beef is 4.33 million ton against which production is 1.92 million ton. The trend shows that production is increasing slowly narrowing the gap from 2009 and onwards. If this trend continues production will catch up the physiological need by 10-15 years. Proper intervention can help meet the gap much faster which is essential as demand for meat is increasing due to nutrition consciousness, education, and urbanization and above all increase of income.



### 3.3 Projection of Annual Demand and Supply

Based on the last 7 years data (2006-07 to 2012-13) supply and demand of beef in Bangladesh has been statistically projected till 2020-21 (**Chart 4**). It is estimated that at the estimated requirement of beef consumption (78 gm/per capita per person the present requirement 4.33 million ton will increase to 4.76 million ton in 2020-21. Whereas the present level of production of 1.92 million ton, keeping other things constant in other word at present level of endeavor of cattle development, will increase to 3.46 million ton (**Appendix B, Table B.4a**). Gaps of 1.70 million ton will still remain between demand and supply of beef. If consumption increases to above the physiological need with the increase of income the gap will further increase. This gap cannot be met unless more concerted effort is launched to increase local production.



### 3.4 Import and Export Situation

There are sporadic efforts to export various categories of meat and meat products as exhibited in BBS statistics. A consistent and substantial increase of export of meat, edible meat, offal flour meat, ltd, dry (HS Code 0210) has been observed. It has sharply increased from Tk. 1.5 crore in 2006-07 to about 14.5 crore in 2008-09 (**Table 6**). Differentiated data of beef import is not available. In fact processing facilities of exportable standard has not been adequately grown in the country. There are two small companies namely Bengal Meat and Pabna Meat both of them are operated, as reported, at 20-30% capacities due lack of supply of quality cattle as reported by them. The former has entered into export market and the latter is specialized in organic and *halal* meat and is still struggling in the local market. The companies reported that their product has high demand in neighboring countries as well as middle-eastern countries but they cannot meet demand due to lack of supply of quality cattle. Government offers 25% cash incentive for export. In spite of incentive and demand the companies could not take off in about a decade. Consultant’s assessment is that there are entrepreneurial and managerial problems. If desired the

companies should be provided technical assistance based on a thorough assessment of their problems of business operations. Besides new entrepreneurs should be encouraged to invest in this potential area as Bangladeshi consumers of all wakes of life are being exposed to processed meat and its demand will surge in a few years time.

**Table 7: Import and export of animal and animal products of Bangladesh (2004-05 to 2008-09)**

HS code	Commodities	2004-05	2005-06	2006-07	2007-08	2008-09	In 000 Tk
	<b>Export</b>						
105	Live Poultry		429	4592	1200		
204	Meat, sheep, Goat, fresh, chill or frozen				1207		
208	Meat, eduable meat, ofal fresh chill/fz			223	37	12	
210	Meat, eduable meat, ofal flour meat, ltd, drry			15946	141329	144741	
	<b>Total</b>		<b>429</b>	<b>20761</b>	<b>143773</b>	<b>144753</b>	
	<b>Import</b>						
105	Live Poultry	344036	530859	542348	431168	496503	
204	Meat, sheep, Goat, fresh, chill or frozen	3325	4766	5696	2895	1743	
208	Meat, eduable meat, ofal fresh chill/fz	663	948	1359	366	224	
210	Meat, eduable meat, ofal flour meat, ltd, drry	94	76	180		162	
	<b>Total</b>	<b>348118</b>	<b>536649</b>	<b>549583</b>	<b>434429</b>	<b>498632</b>	
	Balance	-357894	-536220	-528822	-290656	-353879	

(Source: BBS Report)

Contrary to export a sizable volume of all types of meat and meat products (Tk. 49.86 crore) are also imported to Bangladesh. Excluding poultry volume of other products is negligible (Tk. 0.20 core). This is mostly done by 5 star hotels, restaurants and embassies. The tariff structure of imported meat as reported by Tariff Commission Report is as follows (**Table 8**):

**Table 8: Tariff Structure for meat import to Bangladesh**

Products	Custom Duty (%)	VAT (%)	Supplementary Duty (%)	Total tax incidence (%)	Advance Income Tax (%)	Total (%)
Frozen boneless bovine meat	25	3				25
Frozen bovine Caracas and half Caracas	25	3				25
Frozen other cuts and bovine meat	25	3	15	1.5	4.31	48.81

(Source: Tariff Commission's Report)

Import of animal products exceeds export by an amount of about Tk. 35 to 54 crore a year it has negative impact on balance of payment which is now always remained over Tk. 5 lac crore (BBS Report) equivalent to US \$ 5,882 crore. Promotion of beef production can be a good import substitution initiative. The strategy should be to promote production of organic beef and encouraging new entrepreneurs to invest in establishing international standards beef processing industries establishing contract production and supply.

A large part of deficit of animal and animal products is met by import of live animals from neighboring countries viz. India, Pakistan, Nepal and Sri Lanka. Last six years' average import was Tk. 125.69 crore of which 99.56% from India (**Table 9**). There are significant year to year variations. Unofficial cross border trade with India is significantly high meeting huge demand and supply gap of cattle in Bangladesh. Stakeholders of cattle value chain alleged that there is no policy as well as control of cross border trade from either side of the border. As a result, cattle market is often slumped by sudden influx of cattle from India causing huge loss to small and micro beef fattening enterprises of Bangladesh. Beef sector development needs some concrete policy action from the government to control cross border trade.

**Table 9: Live animal product imported from Neighboring countries (2003-04 to 2008-09)**

								000 Tk.
Countries	2003-04	2003-05	2005-06	2006-07	2007-08	2008-09	Av/year	%
India	328574	1105682	1177202	913008	2849046	1135218	1251455	99.56
Pakistan	1298	4804	30	1699	1857	14557	4041	0.32
Nepal		1389	314	4592	883		1196	0.10
Sri Lanka			451		992		241	0.02
Total	329872	1111875	1177997	919299	2852778	1149775	1256933	100.00
								Data source: BBS,2011

It is clearly noted earlier that people of Bangladesh prefer beef of local origin than to that of animals imported from neighboring countries, because local beef is superior in the tenure, texture and taste. It is not only due to the nutritive preferences. As a result, price of a local bull of same weight is 5-10% higher as compared to an Indian animal. Market of assorted, packed and frozen meat is increasing with the rapid growth of supermarkets. Preference for imported packed and frozen market is likely to grow fast but the country is not prepared to meet the demand. Two small industries are staggering to enter into local as well as international markets. Unless they develop they will not be able to meet the domestic demand. Presently, the import is held up due to tariff structure. However, import has to be considered on different perspective. Presently, beef cattle are reared by free family labor in millions of poor households at relatively cheaper costs as a means of their livelihoods. There is no alternative means of livelihoods as per capita land is shrinking very fast. Commercial beef fattening farms are also small having on an average of 4 bulls. As a policy government should restrict growth of import as well as large size commercial farms (more than 10) bulls to protect the livelihoods of millions of poor as well as keeping the price of meat within the reach of poor people.

### 3.5 Key Observations

- National estimate of per capita total meat intake was only 20 gm per capita per day in 2006-07 which has tripled (58 gm) by 2013. Yearly growth rate was 26.51%
- Average per capita per day consumption of meat in north-western region (Rajshahi, Natore and Pabna) was found as 64.56 gm which is 11.04% higher than the national average with wide

variations among socio-economic classes. Beef constitutes 65.05% with significant seasonal and occasional variations

- Consumers are facing the problems of unavailability of quality meat, high price of meat, unsold meat kept in refrigerators sold as fresh, faulty weighing machines
- Presently, total requirement of meat is 6.66 million ton against which production is 2.96 million ton. Gap is 56%. Beef constitute 65% of meat. As a result, import of meat and meat products has sharply increased from Tk. 1.5 crore in 2006-07 to about 14.5 crore in 2008-09.
- A large part of deficit of animal and animal products is met by import of live animals from neighboring countries viz. India, Pakistan, Nepal and Sri Lanka. Last six years' average was Tk. 125.69 crore of which 99.56% from India.
- Keeping other things constant the projected requirement of beef is 4.76 million ton based on constant requirement of physiological needs of 78 gr per day per person (65% of Meat) as against the production of 3.46 million ton by 2020-21. A gap of 1.70 million ton will still remains after 2021. This gap cannot be met unless more concerted effort is launched to increase local production.

#### **IV SMALLHOLDERS PRODUCTION SYSTEM**

##### **4.1 Compatibility of Beef Fattening with Dairy Production**

Traditionally cow rearing and beef fattening go hand in hand as a cow produces about 8 calves in her life time of which approximately 50% are male. Males were castrated and used as draft power. They are part of the same management system and subject to similar diseases and treatments except pregnancy and delivery complicity in case of cow. Feeding has differences in terms of quantity and quality for milk and meat production. Through prolong efforts of a large number of NGOs and private feed and medicine companies as well Departments of Livestock Services and Department of Youth Development farmers have been mostly oriented to some key management practices and primary treatments by local Paravets. Rejected cows and draft cattle are also slaughtered for meat. With the increased use of machines and release of bulls as draft power beef fattening has been emerging as specialized enterprise. The vast majority of rearers are women. They try to choose healthy young bulls with preference to red Shahiwal breed and try to rear in houses of generally filthy environment void of electricity and quality water sources/supply. They feed the bulls with poor quality natural grasses and adulterated feed ingredients with sufficient poor quality dry paddy straw. There is fear of disease infestation such as Torka and Anthrax facing with poor quality of veterinary services of bare footed Paravets. FMD vaccines are scarcely available. Formal and informal marketing cost is high and subject to harassment of brokers. Adequate finance, training and advice are not available and there is constant threat of sudden influx of imported Indian bullocks reducing market prices of domestic bulls.

With limited data base the consultants conducted costs benefit analysis of beef cattle vis-a- vis dairy cattle (**Appendix B, Table 6, 7**). It has been observed that cost benefit ratio of cross breed cow rearing for one lactation period is 146.03% while that of beef fattening for the same period (8 months, two cycles) is 111.83%. Cow rearing seemed to be more profitable with the great advantage of providing daily cash flow which is of great benefit to the poor to meet cash need for meeting daily expenses. Profitability of beef fattening can also be increased by adopting short cycle of rearing and rearing more than one bull at a time.

Use of by-products of beef such as skins, bones, manure, slaughterhouse blood and offal etc, could make cattle rearing more profitable and lowering customer prices. Skin and bone industries are well established but procurements, preservation, storage and processing is highly traditional and quality of products is not of any standard. There is great scope of improving the systems. Manure and biogas industries are also emerging slowly using cow dung. A good number of organic manure and fertilizer companies have been established but they are suffering from standardization, registration and marketing of products. Slaughterhouse blood and offal are still a total waste because there is no organized slaughter house in the country except in metropolitan cities where municipality corporations established one or two slaughter houses but there is also no provision of collecting and preserving blood and offal. Some entrepreneurs were trying to collect those wastes, processed in traditional ways and are marketing locally as fish or poultry feed without any standardization and registration. There is an enormous scope to improve the collection, preservation and processing of animal wastes as valuable products of medicine and plant and animal nutrition in which country is highly deficient.

#### **4.2 Constraints of Smallholders**

Small holders cattle in other word bull rearers have been facing a plethora of constraints related to genetics or breed, artificial insemination, veterinary service, nutrition, fodder, farm practices, management and marketing of cattle. These cannot be prioritized as they are complementary to each other. In the absence of one, others will not be effective affecting profitability of the enterprise.

**Genetics and breed:** As regards genetics and breed local indigenous breeds are poor in body structure and feed conversion ratio as 1:>4.05 or 4.00 (dry matter). There is no specific breed or variety of cattle for beef production in the country. Traditionally developed dual purpose (both draft and milking) breed/variety like Red Chittagong, Pabna Cattle is found in the specific region of the country which is small in size with poor feed conversion ratio. Within these limitations farmers lacks capacity to select a right type of bull which can grow fast with high feed conversion ratio. Farmers have limited ability to management of cross breeds and afford the cost of proper treatments.

Recently, semen of Brahman as beef breed has been tested in some areas of Bangladesh which gave a positive response. Experiments showed that average growth rate 656.40 gr/day ranging from 414 gr/day in Bogra and 933 gr/day in Rangpur and feed conversion ratio was 1:6.44 kg (dry matter). (Talukder et.al. nd unpublished). A new project proposal is under the process of approval to develop the breed under the Department of Livestock Services.

**AI Service:** Farmers are relentlessly endeavoring to improve the indigenous breeds through AI facing problems of reliability of semen in terms of quality and desired breed and low effectiveness of conception. Many of them have no idea of AI due to highly monopolized, inadequate and ineffective AI services provided by DLS and it's only authorized agent, BRAC due to lack of competition. Government should be persuaded to liberalize or encourage new entrepreneurs to provide AI services. Without competition there is no scope of improving quality and cost of services and inputs. AI services are highly inadequate compared to demand for services. There is a need to undertake a thorough study of on-going AI practices and quality of semen and ability to meet extend of demand.

**Veterinary service:** Veterinary service is also highly insufficient and ineffective in the Country due to insufficient trained manpower in the country both in public and private sectors. Only one veterinary surgeon is available for each of the upazilas. So, it is difficult to provide adequate veterinary service for livestock development. There are one CDIL, 8 FDIL, 64 District Veterinary Hospital and 487 Upazila/metropolitan Livestock offices in the country to provide veterinary services. Farmers should not remain silent observer of public sector inadequacy, inefficiency and monopoly causing very low growth of this sector. There is a need to train, improve, recognize and support the

Paravets to improve their capacity to supplement the public sector veterinary services. Some sorts of monitoring and control need to be imposed by the government on the cost and quality of Paravet services. Privatization of production and supply of quality vaccines of anthrax, FMD, etc and semen of appropriate bulls with transparency of their pedigree should be a top priority for cattle sector development in general and beef sector development in particular.

**Nutrition:** There is a huge deficiency in feed and fodder production for cattle rearing in the country. Cattle suffer from chronic malnutrition. The farmers mainly start farming without sufficient knowledge regarding cattle nutrition. Ignorance and high price of low quality and often adulterated feed or feed ingredient deteriorated the situation. Cattle were found to chew dry and poor quality straw all day long and also providing boiled broken rice with little nutritive value resulting large stomach and little flesh on the body. A thorough study is needed about the nutritive value of feeds consumed by the animal in a day.

**Green grass:** Green grass is a basic feed for normal growth of both cows and bulls. Cows suffer most for lack of it affecting conception rate. Farmers could cultivate a little due to lack of land. They mostly depend of natural grass of poor quality often mixed with dirty materials including mud or soil having very little nutritive value. Commercial grass production has begun due to high price of grass but how much expansion will be possible in a food scarce country is still doubtful. It may be feasible in areas of low productivity or intensity of crop cultivation. In cattle rearing should be intensified in those agro-ecological regions where grass cultivation is feasible.

**Husbandry:** Farmers lack of knowledge about shade management. As a result, 70% cattle shades were found to be unclean likely to be susceptible to infection of FMD. There is no provision of clean water and water ponds were unhygienic and dirty. Often cattle drink water of that pond water causing stomach infection. Management of the shade and husbandry is left to casual labors that have no knowledge of it. A great deal of technical training would be required to enhance the capacity of rearers to ensure proper husbandry along with balance nutrition.

**Sales:** Selling cattle in an open market system is quite a big hassle. There is no assurance of getting fair price, broker's harassment and exploitation. Besides them there are exploitations of different types of people like toll collectors, local influential, organized groups of labors. The cost of selling a bull is quite as high as Tk. 1135.86. The detail is shown in **Table 9**. This is because cattle market is neglected. It sits once, twice or every day of week mostly in dirty and filthy place e.g. city market of Rajshahi. Market management does not follow any norms and values and dominated by organized groups of labor, dalals, commission agents and arathders and wholesalers and above all the market management committee itself.

**Table 10: Cost structure of selling a cattle**

Statement of expenditure (Tk.)	Rajshahi	Natore	Pabna	All together
	Mean	Mean	Mean	Mean
Transportation cost of cattle	158.75	380.00	327.78	288.84
Transportation cost of owner	92.86	110.00	85.56	96.14
Toll	163.75	106.00	255.56	175.10
Broker	400.00	440.00	200.00	346.67
Food cost of owner	118.75	140.00	128.57	129.11
Others	100.00		100.00	100.00
Total (Tk.)	1034.11	1176.00	1097.46	1135.86

Data source: Consultants' own survey

### 4.3 Disaster Risk Management

Disaster prone (flood and cyclone) areas are particularly in coastal and flood plains of large rivers. In spite of disasters, people raise cattle and occasionally lose their entire herd but begin anew. Provision of disaster shelter is highly inadequate for human being. In this case there is very little capital investment. Farmers start with a heifer and gradually build the herd. But commercial beef fattening round the year requires high capital investments and promotion of such investment should be outside the disaster prone districts of north and north-west region and to some extent in north east region not in haor but in hilly areas. Similarly it has been observed that prevalence of some deadly disease as well as dearth of land to grow fodder is relatively very high in warm and high humidity areas of flood prone regions. Commercial venture in such areas should also be avoided. Recent study on beef fattening with cross breed of Brahman breed showed that growth rate of beef cattle is almost double in such district as Thakurgaon, Rangpur, Rajshahi districts. Therefore, commercial beef fattening should be intensified in those and other districts having similar climatic and agro-ecological conditions.

### 4.4 Smallholders' Commercial Beef Fattening Model

Due to shrinking land base the landless, marginal and small farmers will increasingly depend on home based production system. Beef fattening can be a home based enterprise. A farmer or his wife can raise four bulls in one small room adjacent to living room and can manage four bulls by family labor. To have a monthly cash flow as a main means of livelihood one bull has to be added to the herd in a 4 month rearing cycle with credit and insurance support from a NGO. This model has been piloted by Practical Action and proved to successful in northern districts. The NGO being loan and insurance provider will provide all veterinary services by employing a Veterinary Doctor supported by Paravets to ensure zero mortality. It is assumed that the farmer male or female will be grouped for better technology, loan and service receiving and marketing mechanism.



### 4.5 Smallholders' Integration

Earlier it has been narrated that beef cattle rearing is still an IGA based family production system. Commercial rearing is emerging but still at micro level. Statistics shows that in an upazila there are only 144 commercial farms as registered in the upazila livestock office and average herd size is only 4 except few which may be 20-30 cattle at best in suburban areas of metropolitan cities. Most cattle are locally consumed or used. As the stakeholders indicated in the FGDs only about 25-40% is added to national grid depending upon the intensity of rearing cattle in a locality. Smallholders in fact are the backbone of the sector and constitute the national grid of beef cattle sector.

#### 4.5.1 National Cattle Grid

There are many cattle markets in the country. Most of them are mixed with other agricultural products. Specialized cattle markets are few. A list of major cattle market sole or mixed has been presented in **Appendix C** (Source: DAM, 2013). The hard core grid constitute 4 whole sale cattle markets located in the large consumer centers namely Gabtaly in Dhaka, CDA market in Chittagong and Kazir hat in Sylhet and Chakbazer in Comilla (**See map 1**). This grid is also extended to Barisal. From supply side there are few large assembly markets such as Satmail in Khulna, Arankhola in Pabna, City market in Rajshahi, Haripur in Thakurgaon, and Patgram in Lalmanirhat districts. Small markets as listed in **Appendix C**



either supply to the national grid or get supply from the grid. Because of recent development of transportation system and mobile communication to and fro movement is quickly executed depending on supply and demand situation. Transportation is not a problem even in between primary assembly and wholesale markets due to emergence of motorized rural vehicles which are abundantly available anywhere. Therefore, the stallholders have been well integrated with the national cattle grid. Major problem of transportation is lack of specialized trucks for cattle movement and toll collection at different points increasing cost of transportation. Animals are severely hart during movement by ordinary trucks or Nasiman.

#### 4.5.2 Processing & Export Grid

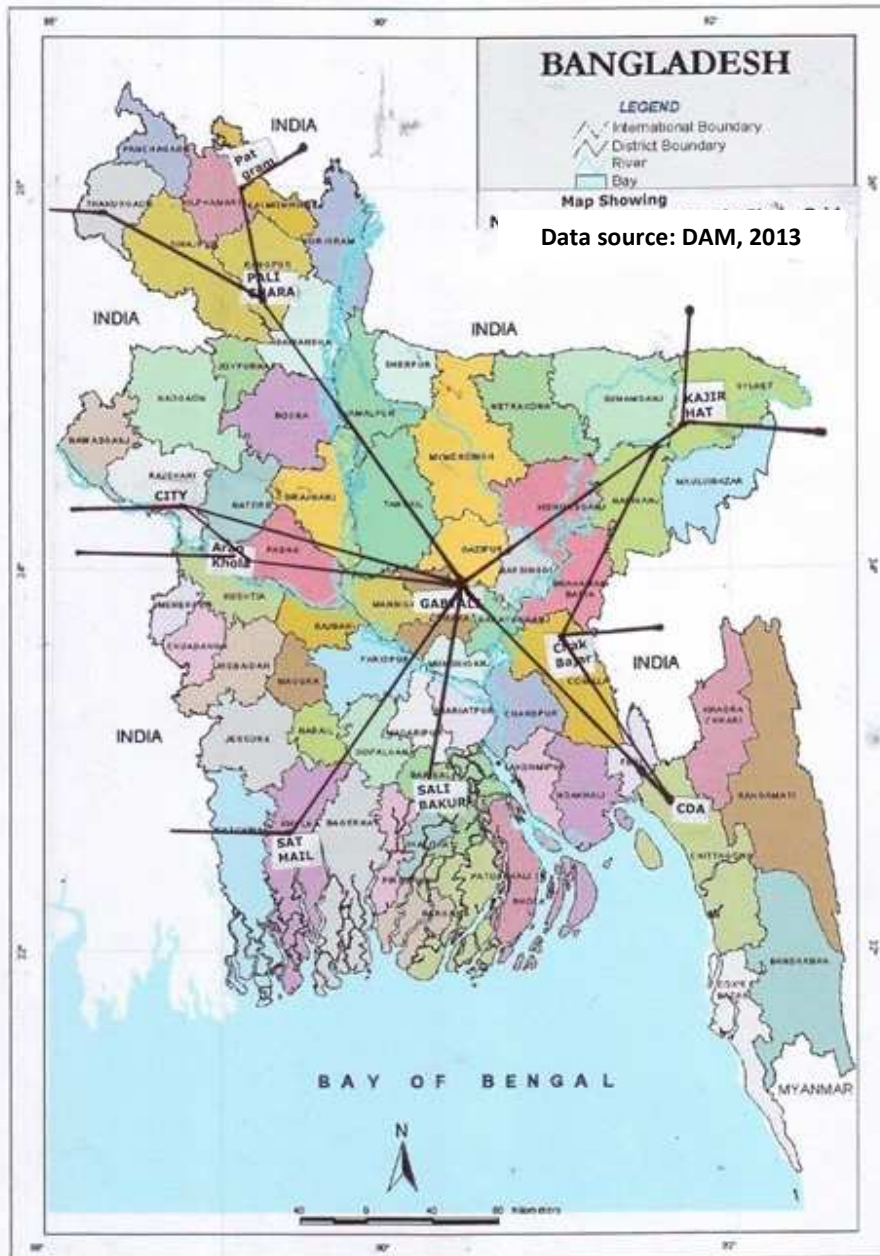
There are only two industrial scale meat processing industries namely Bengal Meat in Pabna and Pabna Meat in Dhaka. As claimed both are processing Halal way and safe or organic meat. Their processing capacity is 200 and 25 cattle per day respectively. They claim to operate at 25 and 20 % capacity respectively. Market of Bengal meat is in Dhaka as well as cities of Middle East. Currently, it is negotiating with Malaysia. Pabna Meat is selling meat in local markets and is trying to enter into export market. Both of them have very weak supply chain. As a result, they are unable to operate optimally in spite of strong demand at home and abroad as reported by them. Smallholders are not integrated with processing and export grid. Smallholders are not likely to meet their standards of bull as well as supply conditionality. About 40% of the total animals slaughtered in Bangladesh are added to the grid from India through cross border trade.

#### 4.6 Beef Sector SWOT Analysis

Strengths	Weaknesses	Opportunities	Risks
<ul style="list-style-type: none"> <li>• Millions of landless marginal and small farmers are engaged in beef fattening</li> <li>• Low cost beef fattening with un/underutilized family labor</li> <li>• A large number of NGOs are supporting beef fattening all over the country with TA and finance</li> <li>• A large number of domestic consumers (80% population)</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of proper husbandry knowledge and skills</li> <li>• Cattle markets are not organized</li> <li>• Industrial process of beef processing has not progressed</li> <li>• Slaughter houses are not organized to make commercial use of wastes</li> <li>• Cool chain did not develop to maintain quality of meat</li> <li>• Lack of beef sector development policy</li> <li>• Short supply of vaccines</li> <li>• Long value chain: intermediaries absorbs profit margins</li> </ul>	<ul style="list-style-type: none"> <li>• Prepared feed easily available</li> <li>• Grass cultivation became profitable</li> <li>• New beef breed, Brahman tested and proved to be successful</li> <li>• Market demand of fresh and processed beef has been increasing fast</li> <li>• Global demand of halal meet is increasing</li> <li>• Expanding global market</li> </ul>	<ul style="list-style-type: none"> <li>• Sudden disease outbreak</li> <li>• Frequent natural disaster</li> <li>• Sudden increase of cross boarder import of beef cattle carrying diseases and depressing price</li> </ul>

#### **4.7 Key Observations**

- Traditionally cow rearing and beef fattening go hand in hand. As such it is compatible.
- Cost benefit ratio of cross breed cow rearing for one lactation period is 146.03% while that of beef fattening for the same period (8 months, two cycles) is 111.83%. Cow rearing is more profitable with the great advantage of providing daily cash flow which is of great benefit to the poor to meet cash need for meeting daily expenses
- Use of by-products of beef such as skins, bones, manure, slaughterhouse blood and offal etc, could make cattle rearing more profitable and lowering customer prices.
- Small holders cattle farmers have been facing a plethora of constraints related to genetics or breed, artificial insemination, veterinary service, nutrition, fodder, farm practices, management and marketing of cattle
- The hard core national grid of cattle constitutes 4 whole sale cattle markets located in the large consumer markets namely Gabtaly in Dhaka, CDA market in Chittagong and Kazir hat in Sylhet and Chakbazer in Comilla. This grid is also extended to Barisal. From supply side there are few large assembly markets such as Satmail in Khulna, Arankhola in Pabna, City market in Rajshahi, Haripur in Thakurgaon, and Patgram in Lalmanirhat districts which are linked with the grid. About 40% of the total animals slaughtered in Bangladesh are added to the grid from India through cross border trade.
- There are only two industrial scale meat processing industries namely Bengal Meat in Pabna and Pabna Meat in Dhaka. As claimed both are processing Halal way and safe or organic meat. Their processing capacity is 200 and 25 bulls per day respectively. At present they claim to operate at 25 and 20 % capacity respectively. Smallholders are not likely to meet their standards of bull as well as supply conditionality.





## V. VALUE CHAIN ANALYSIS

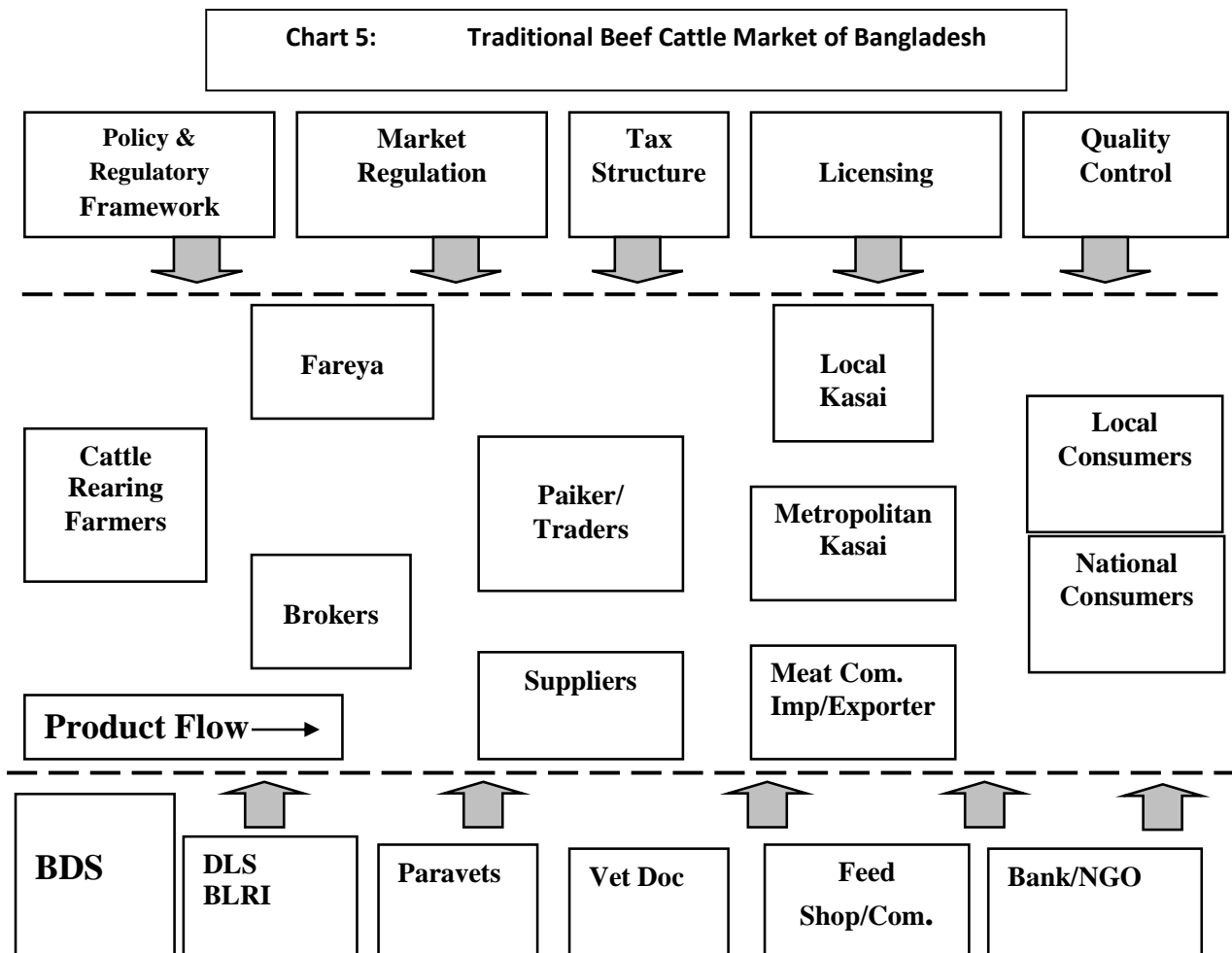
### 5.1 Concept and Perspective of Value Chain

Value chain is perceived as a chain of individuals and or enterprises adding value to a product act as a chain of business operations. Operation as a chain is of utmost importance when a product needs to be developed in its totality, when cost and quality need improvement to remain competitive in the market and when a company intends to develop and maintain a brand of its own. This is required because a product when move producers to consumers passes many individuals or enterprises. Unless all of them improve their operations, reduce waste or cost the product is not developed or remain competitive or a company would not be able to establish a brand or maintain a brand or remain competitive in the market. In realizing this essentiality all development programs and practitioners as well as large private companies and multinationals are leaning toward value chain development approach to fulfill their development or business objectives. This study also focused to value chain analysis to identify the appropriate package of interventions across the chain in order to achieve overall improvement of the beef sector of Bangladesh

Before analyzing the beef value chain there is a need to understand the traditional beef cattle market of Bangladesh. Cattle are bought/sold life until it reaches to the consumers when *Kosais* slaughter and sell fresh meat to the consumers. Meat processing, storage, distribution and retailing on an industrial scale have just a beginning in Bangladesh without any dent in the market. Earlier we have seen that about 99% consumers prefer to buy fresh cuts in front of their eyes due to lack of trust on content and quality. Only about 1% customers have access to packed and frozen meat but they are also not happy with their quality. Even newly emerging supermarkets follow the same practice as followed by the *Kosais*.

In the traditional beef cattle market all stakeholders operates individually and independently (**Chart 5**). Product flows from farmers to consumers through a number of small (*fareya*/brokers) or large (*paikers*) traders eventually to *Kosai* who slaughter and sell to the consumers at local or in the distant city markets. In this process all stakeholders try to maximize their benefits even with utter disregard to the interest of fellow stakeholders, animals and consumers' interest and safety. Use of harmful chemicals are reported to make quick fattening, meat extension and enlargement and selling deteriorated unsold meat a day or two days later. This situation calls for immediate initiative to change and improve business practices across the chain to ensure supply of safe meat to the consumers of home and abroad.

Considering the gravity of the situation a few international agencies like Practical Action and Intercooperation, World Bank financed NAT project have been trying to develop beef value chains to increase production as well as safety of products through promoting beef fattening as IGA in specific locations in limited area and among limited number of beneficiaries.



## 5.2 An Upazila Based Beef Cattle Value Chain

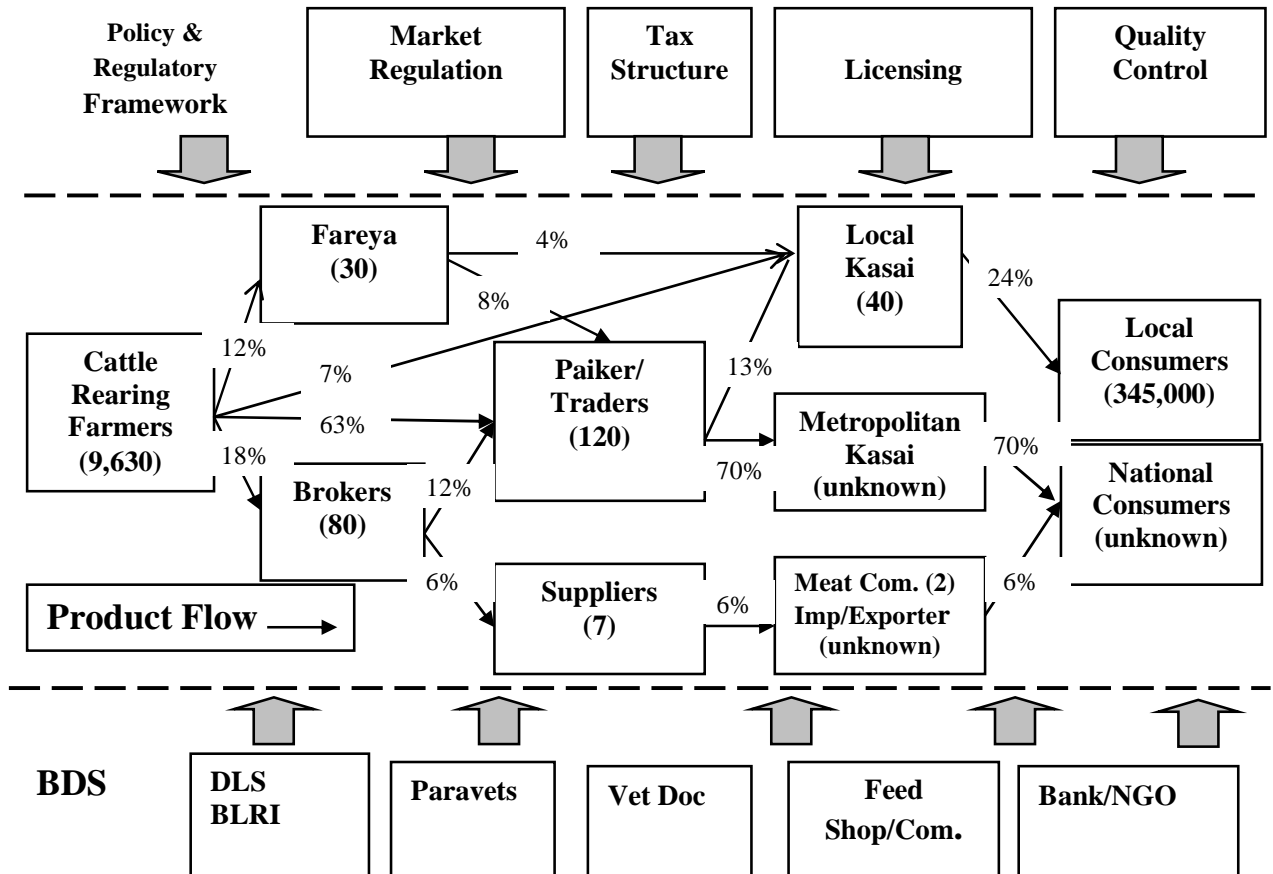
### 5.2.1 Concept, Number of Actors and Product Flow

A beef cattle value chain is perceived as a chain of operations of all those individuals and/or enterprises who add value to beef cattle from its production and to consumption extended up to disposal of wastes. In a traditional market value chain is likely to exist if actors have by-lateral or multilateral contacts, formal or informal contracts, relation and exchange of information to maximize the benefit of all. Such status of operation is most likely to exist at upzila level where they meet, talk and exchange information during business transactions. As the operation goes at district, regional or national level such interactions are blurred becoming limited to few enterprises, mostly resulting a syndicate of few large enterprises influencing or monopolizing policy environment and business development services. Considering its practicality the consultants analyzed the value chain at upazila level to ascertain their nature of operations.

In an upazila there are about 10 thousand beef fatteners, 30 *foreyas*, 80 brokers, 120 traders, 40 local *kosai* and 345,000 beef consumers assuming 80% population consume beef (**Chart 6**). Product flows through three alternative channel to local and national consumers. The proportion of product flow through channel has been shown in **Chart 6**. It is observed that the largest proportion of product 63-70% flows through farmers-*paiker*-metropolitan *kosai*-national consumers in the north-western region where intensity of beef

fattening is reported to be high compared to other parts of the country. Significant change can occur through improvement along this channel.

**Chart 6: An Upazila Based Beef Cattle Value Chain Analysis showing Product Flow and Number of Stakeholders**

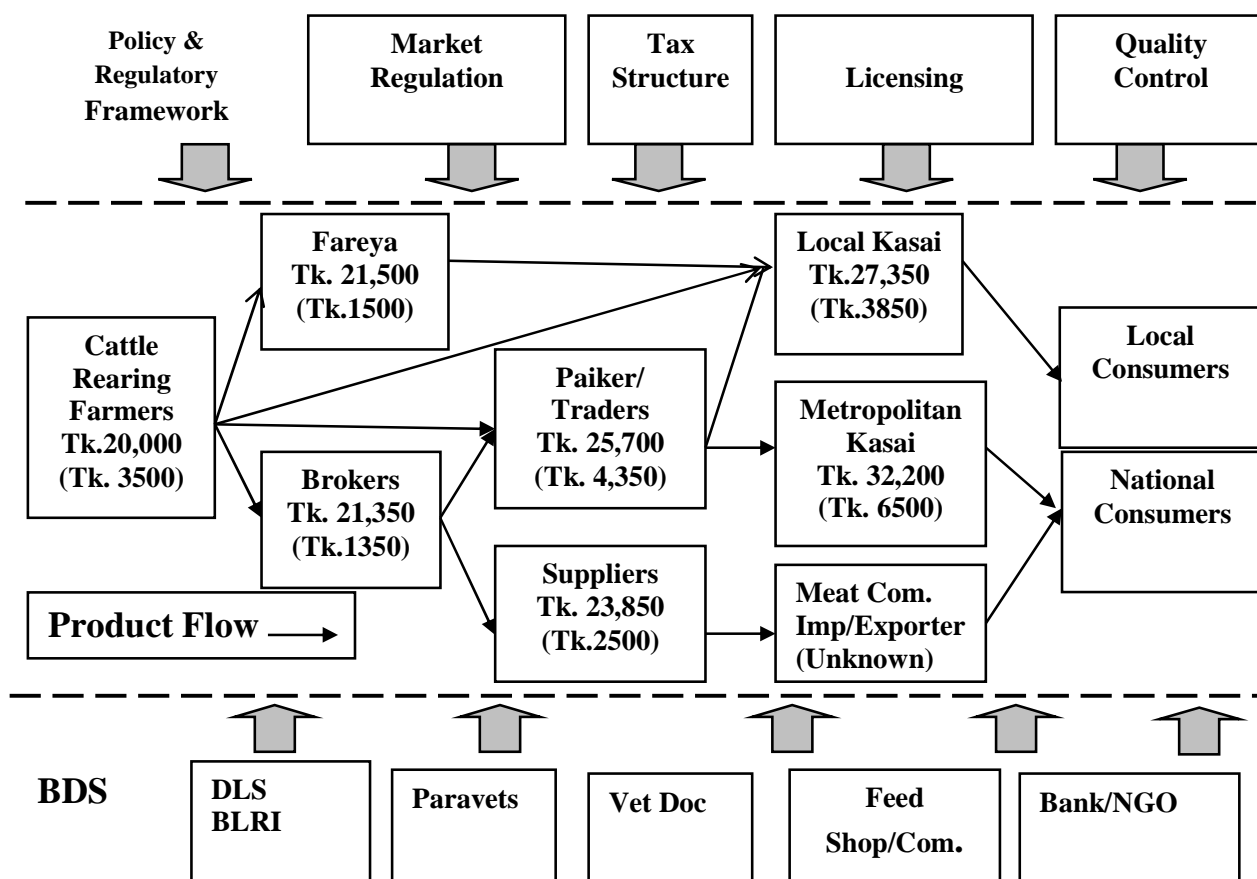


Data source: Consultants' own survey

### 5.2.2 Value Addition

The consultants attempted to assess value addition at different levels of stakeholders presented in **Chart 7** by deducting purchase value from sale value of a 100 kg live weight bull. It includes input and labor cost and margin of the stakeholders. As the number of each group of stakeholders is high market is highly competitive accruing very little profit margin. It is observed that the Metropolitan *kosais* added the highest value (Tk. 6500) per 100 kg bull followed by Paikars (Tk. 4,350), local *kosai* (Tk. 3,850), farmers (Tk. 3,500), foreyas (Tk.1500) and brokers (Tk.1350). The discontentment expressed by farmers that they are not getting fair price of the beef cattle to a great extent true. In fact they are getting 28.69% of the total value addition on beef cattle because of long value chain. Elimination of one or two tiers is likely to increase their share of the value.

Chart 7: An Upazila Based Beef Cattle Value Chain Analysis Showing Sale Prices and Value Addition at different levels of stakeholders per 100 kg (meat) Bull



. Data source: Consultants' own survey

Distribution of profit margins among the stakeholders is not equitable. Value addition activities in beef cattle are limited to fattening, transportation to high demand market and selling meat as fresh cut. The question of equitable distribution of profit margin is not relevant as stakeholders operate in different markets and at different levels of value addition. Estimate shows that highest profit margin is accrued to metropolitan *kosai* followed by *paiker*, farmer, local *kosai foreya* and brokers.

Table 11: Approximate Value Addition and Profit Margin of Different BVC Actors

Stakeholders	Purchase Price	Value Addition (Tk.)	Profit Margin (Tk.)	Total Margin (Tk.)	Sale Price (Tk.)
Farmer	16,500	1,500	2,000	3,500	20,000
Foreya	20,000	500	1,000	1,500	21,500
Broker	20,000	350	1,000	1,350	21,350
Paiker	21,350	1,350	3,000	4,350	25,700
Supplier	21,350	1,000	2,000	2,500	23,850
Local Kasai	23,500	850	3,000	3,850	27,350
Metropolitan Kasai	25,700	2,500	4,000	6,500	32,200



### 5.3 Contact, Relationships and Exchange of Information among Actors

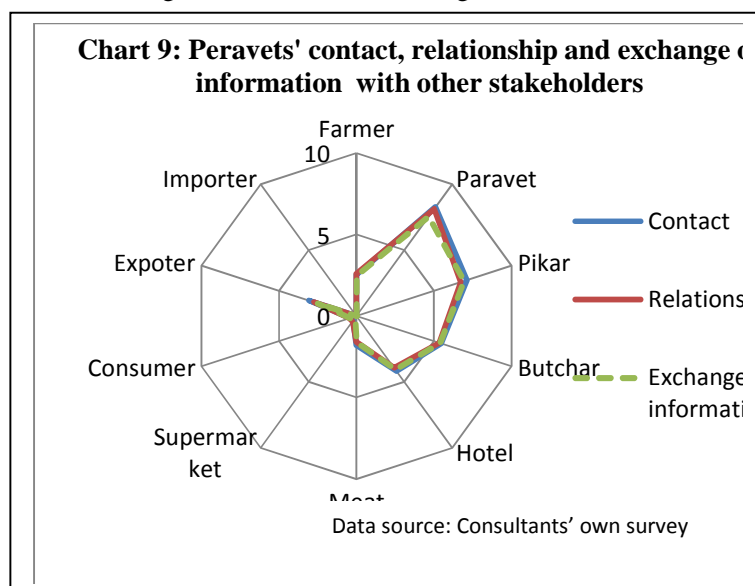
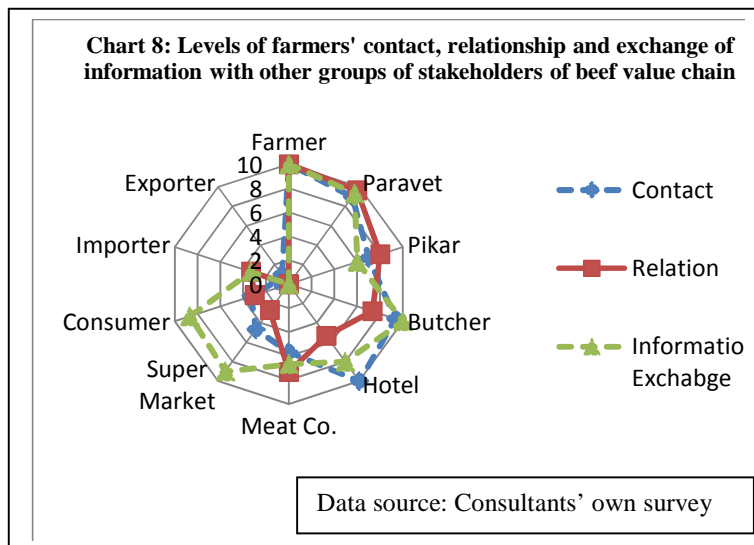
Contact, relationships (among actors along the horizontal linkages/relationships of the beef value chain) and exchange of information are the three major elements of a value chain. If it does not exist then there is no value chain or it is very weak to affect the development of the product. The consultants evaluated the status of operation and existence of contact, relationships and exchange of information among the stakeholders of the beef value chain using a scale from 0 to 10. A stakeholder was asked to evaluate his/her contact, relationships and exchange of information with members of other stakeholder groups. The profile of each stakeholder groups and their level of contact, relationships and exchange of information among each other are presented graphically in this section of the report.

**Farmers:** Farmers have been rearing 1-2 bulls for commercial purpose on an average for last 7-8 years. Some of them also rear cows. Their motivation is to increase wealth; some for mere earning to live and some for milk. The duration of rearing is 6-7 months. It is found that only 30% rearers used to feed company's readymade feed as feed supplement, 6% used urea-molasses straw and only 3% used to feed both urea-molasses straw and company made feed. About 60% get loan from different sources (Wife, Relative, and

NGO) on average 18% interest which meets 40% of their needs. Farmers have high level of contact among themselves, Paravets, butchers and hotels mostly informal having no verbal or written contracts. Relationship is also high with themselves and the Paravets (**Chart 8**). They do not have contact with importer, exporters or supermarket. Contacts and exchange of information are informal because there was no institutional mechanism for contact and exchange of information. Though there are contacts but relationship is relatively low with butchers, hotels and consumers. It seems that there is ample scope of improving contact, exchange of information and relationship with other groups of stakeholders

In order to improve the contact, relation and exchange of information with other stakeholders farmers suggested holding frequent meetings, conducting trainings, more discussions, and encouraging practice of truthfulness, good conduct, coordination, transparency and communication.

**Paravet:** Paravets were found to be



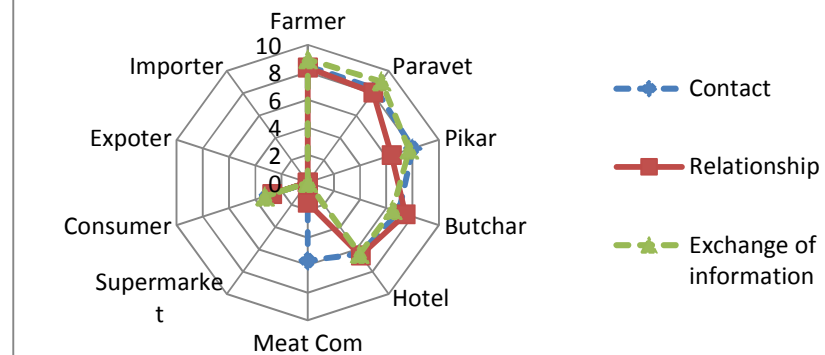
of middle age (32 Yr), having on an average 12-13 years of schooling and 7-8 years of experience on practicing veterinary services. All of them received long term training (1-3 months) from Department of Youth Development and some of them from BLRI also. Only 20% were member of a Paravet Association. It seems that Paravet Associations are not well organized in those regions. Only about 7% had access to credit with 12% interest from private sources. Among them 27% had medicinal shops on the top of practicing veterinary services having monthly income on an average Tk. 6000 from medicine and Tk. 22,325 from practice. About 53% were practicing treatment at home and the remaining from some specific centres/medicine shops. 95% of them expressed willingness to modernize their shops and practices and have capacity to invest Tk. 120,000 from their own resources. They expressed their need for more training, support and supplies from the Department of Livestock and expansion of market of milk and meat. Their contact, relation and exchange of information with all stakeholders including farmers seem to be poor (**Chart 9**). They feel the necessity of improving contact, relation and exchange of information will all through outside supports.

**Traders:** Traders includes *foreyas*, brokers and *paikers*. They are lumped together as they perform similar businesses. Cattle traders are also relatively young (40 yr. ages) having education of 5-9 years and are engaged in this business for about 15 yrs. They have been trading 7-8 cattle a week investing about Tk.210,000 and are selling the cattle with a margin per animal Tk. 2,637. They need loan of Tk 200,000 a week. They do not have access to finance except in Pabna where one could manage a loan of Tk. 52,000 from BKB which met 50% of his need at interest of 26%. All of them expressed willingness to modernize their business and are capable to invest Tk. 200,000 from his own resources.

They have good contact, relation and exchange of information with farmers, butchers, *paikers* and hotels (**Chart 10**). They have contact with meat companies but no relation and exchange of information. Linkages with most of the stakeholders are very weak or none.

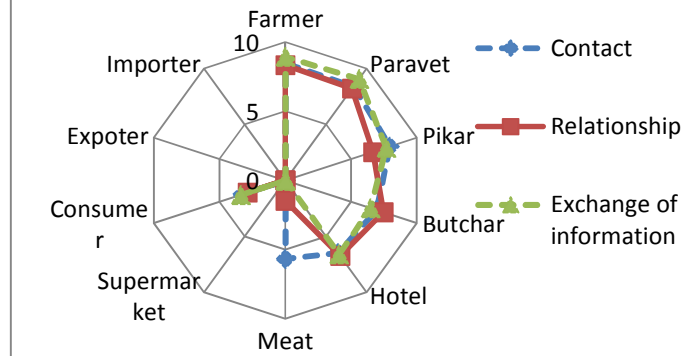
**Butchers:** Butchers are not animal slaughterers in real sense. They are in fact retailers of meats of mostly cattle. On an average they are middle aged (43

**Chart 10: Tradeders's Level of contact, relationship and exchange of information with other stakeholders of the value chain**



Data source: Consultants' own survey

**Chart 11: Butchers' level of contact, relationship and exchange of information with othe groups of stakeholders of beef value chain**



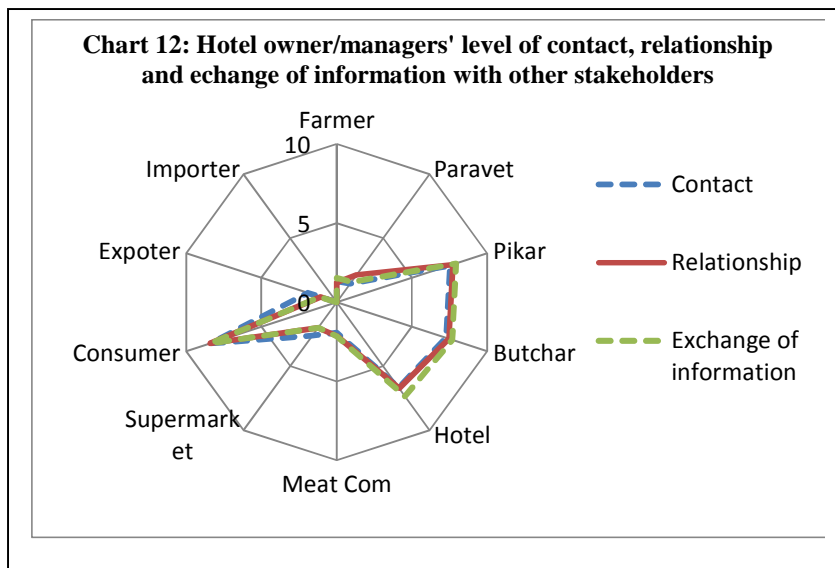
Data source: Consultants' own survey

yr.) having 4-5 years of schooling but with long professional experiences (15 yr.). They retail 1-5 cattle in a week investing about Tk. 300,000 a week.

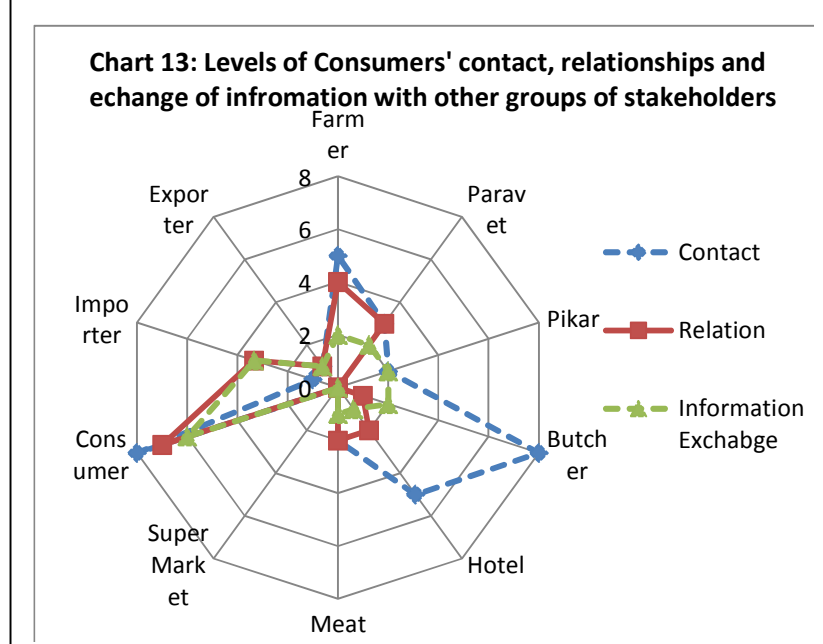
About 73% butchers have access to credit on an average about Tk. 50,000 which meets their 55% need at about 20% interest from NGOs or friends and relatives. They exhibited a substantial level of contacts relationship and exchange of information with farmers, *paikers*, hotels and consumers but have no or little contact with importers, exporters, supermarkets and meat companies (**Chart 11**). They are alleged to soak meat in water increasing the weight of meat though consumers are ready to pay as they reported 15-20% more for fresh cut. There is an enormous scope to improve the retailing operation of beef in terms of adulteration, correct weight, cool chain and preservation.

**Hotels:** Hotels are the local institutions of processing, cooking and serving to the consumers on a day to day basis. Hotel owners or managers interviewed were on an average 39 year age with 6-7 years schooling and 5-10 years of experience in hotel business. On an average a hotel in those regions uses to buy 10 kg meat of which 40-45% is beef. Beef consumption predominantly lager in those regions as compared to other types of meat. Sales of beef went down during 2010-11 due to fear of Anthrax but it is now increasing. Estimate shows that hotels add 40% value to meat by cooking and serving to the customer. Findings show that over 80% of hotels had access to credit of about Tk.50,000 at 21% rate of interest which fulfilled 67% of their credit need. All of them expressed their interest to modernize their hotel management and have the capacity to invest Tk. 50000 to Tk. 100,000 from their own resources. Hotels seem to operate in isolation from other stakeholders of beef value chain and seemed to have contact and relation with themselves and to some extent with *Paikers*, butchers and consumers (**Chart 12**)

**Consumers:** A sample of 30 consumers representing, day labor, technicians, small



Data source: Consultants' own survey



traders, petty service holders, high level service holders, and businessmen were interviewed to ascertain their level of beef consumption and the problems and constraints they were facing. Per day consumption of beef is estimated as 60 gm. The most frequently encountered problems were unavailability of quality meat, high and increasing price of meat, unsold beef kept in refrigerators are sold as fresh cut and faulty weighing machine. About 90% consumers buy fresh cut from the butchers. Customers have high level of contacts among themselves and with butchers only and to some extent contact with hotels (**Chart 13**). Their relationship and exchange of information is relatively low with all other stakeholders of the beef value chain. They expressed the necessity of improving the relation and exchange of information through regular discussion and communication and encouraging the culture of being man of word, well behaved and truthfulness ensuring supply of quality meat.

#### **5.4 Interventions for Improving Relations**

The primary requirement of improving relation is to increase contact for direct communication, discussion and exchange of information, sharing of experiences among the stakeholders. During FGDs the stakeholders suggested the contacts should be formal and once in a month. In such dialogue and discussions the stakeholders should promote transparency, mutual supports, honesty, and commitment and establish code of conduct. The stakeholders jointly try to enhance provision of financial assistance appropriate disease diagnosis, increased capacity of Paravets, lowering cost of treatment through advice, meeting, seminar, training, etc. The operation of brokers should be contended with agreed code of conduct and commission. In all these aspects Local office of DLS may take lead and play a significant role for which they need orientation and facilitation skill training.

#### **5.5 Business Development Services**

Development of cattle in general and beef sector in particular depends greatly on the availability and quality of business development services such as technology, inputs and finance and education of farmers to use those services effectively and profitably. In this respect several organizations and institutions play significant role. These are briefly as follows:

**Technology:** The primary source of technology is BLRI and the task of dissemination is performed by the Department of Livestock Services. The BLRI is reported to have no program in north-west region involving cattle farmers to solve their problems related to nutrition, disease, meat quality improvement and cattle marketing. The local offices of the DLS have great responsibility to act as bridge between BLRI and the cattle farmers but their contact with cattle farmers as well as BLRI is limited due to inadequate field personnel, logistics and funding. Farmers hopelessly watch that their cattle are not growing in spite of feeding all day long, health is not improving in spite of available treatment, cows are not conceiving in spite of repeated AIs. They have no access to analytical and diagnostic facilities to ascertain the reasons and their remedial measures.

**Veterinary Services:** Public sector veterinary services are highly inadequate due to insufficient manpower. Only one veterinary surgeon is available for each of the upazilas. There are 1 CDIL, 8 FDIL, 64 District Veterinary Hospitals and 487 Upazila/metropolitan Livestock offices in the country to provide veterinary services which is highly inadequate to serve a very large farming population. To provide some veterinary services like vaccination, development of feeding practices & management and primary treatment can be ensured to rural cattle farmers by the Paravets. The ULO office can organize the Paravets and support them making them efficient by training, follow-up training, advice and monitoring. Skilled Paravets can perform those duties in the rural areas effectively. Paravets have grown in number and are organized as a recognizable body everywhere and they are the only so-called Vets available to poor and destitute cattle farmers who have no access to public sector facilities. It is the Paravets who are providing door step services. Unfortunately their services are neither recognized nor improved to an

acceptable level. Should millions of farmers wait for services till DLS is adequately staffed and if and when adequately staff would they be available at call. There are no such evidences of those public sector organizations which are heavily staffed. There is no alternative to training, recognition and support to the Paravets for rapid growth of cattle with particular reference to beef sector development.

**Quality Inputs:** The basic inputs of beef sector are quality young bulls, feeds, grass and medicines. All rearers expressed their high concern of poor breed, unavailability of quality bulls and their inability of selecting right type which have potential to grow fast. The source of male calves is the dairy pockets like Shajadpur, Pabna where calves are produced in large numbers where as male calves are neglected and the calve mortality is reported to be as high as 15% or more. There are no farms or institutions which produce rear and market quality calves. Farmers struggle hard to buy the best ones available in the local markets. Success is said to be 50:50. Organized effort is necessary to reduce calve mortality, proper rearing including feeding milk supplement and marketing in beef cattle rearing regions. In breed improvement the most important input is quality seamen. DLS and BRAC have been cleverly maintaining monopoly of production, supply and administration of AIs on the pretext of quality control. But almost every rearers complains about quality of semen, its preservation and administration of AIs. A blame game is observed but the complains of failure of conceptions after repeated AIs is a fact and no one is heeding to it. As regard the prepared feed, feed ingredients and medicine there are many national and multinational companies and their local offices, dealers and sales agents. Their prices are soaring up. Farmers are complaining about their quality and effectiveness as well as adulteration which are evident from the health of the animals. Again no one is heeding their complain or there is no initiative of objective investigation revealing the fact and providing solution to the farmers.

**Financing:** Financing is an important support to run a business. Assessment showed that 7-86% members of different stakeholder groups have access to credit from banks, NGOs and relatives fulfilling about 40-100% needs of the individuals (**Table 10**). Paravets are the least loan receivers followed by traders and farmers. A large proportion of loan needs are fulfilled with particular reference to Paravets and traders limiting their ability to and sell or to give veterinary services effectively.

**Table 12. Extent of Stakeholders’ credit need fulfilled**

Stakeholders	Access to Loan (%)	Interest Rate (%)	Need Fulfilled (%)	Sources
Farmer	57	18	40	Relatives & NGO
Paravet	7	12	100	Association
Trader	13	15	55	NGO, BKB
Kosai	73	20	65	Relatives & NGO
Hotel	86	21	67	Banks
Range	7-86	12-21	40-100	Banks, NGOs and Relatives
<b>Data source: Consultants’ own survey</b>				

## 5.6 Policy and Regulatory Framework

**Development Policy:** Government has livestock development policy and poultry development policy in the country. There is no separate policy for beef development. The livestock development policy mainly emphasizes on improving milk production, artificial insemination for breed up gradation for more milk production. There is no direction for beef development. Dual purpose breeding policy is still followed. The policy emphasized enforcement of Animal Slaughter Act, Animal Feed Act in order to promote hygienic production of quality meat. It emphasized training of butchers, development of beef breed,

backward and forward linkages to help improvement of existing cattle fattening system in private sector, encouraging private sector investment in meat processing, and encouraging local government establish slaughter houses.

**Tax Structure:** There is tax leverage in importation of cattle feed and machineries of livestock industries and imposition of moderate tax on meat import as in Para 4 Chapter IV. Contrary to taxation on import government has been providing 25% cash incentive for export

**Market Regulation and Licensing;** Agriculture markets including specialized cattle markets are under multiple controls of the Department of Agriculture Marketing, municipalities, City Corporation, local governments and land ministries. As a result, markets are mismanaged and market actors are in conflict of interests. To improve the system about 400 markets are brought under the market regulation Acts but very little improvements were made. Cattle markets are more mismanaged. As a result marketing cost of cattle is above a thousand Taka per cattle.

### **5.7 Favorable Programs**

- Training provided by DLS, DYD, and NGOs are useful for farmers and Paravets though very limited coverage
- Road improvement and mechanization of rural transport and communication system made movement of cattle to distant places easier
- Partial vaccine supply by the DLS at reasonable price though limited is useful
- Service of ULOs for technology transfer though limited but serve useful purpose
- One home one farm program emphasizing cattle rearing in the homestead
- Loan provision in all banks and NGOs
- Limited AI support through DLS and BRAC
- Vaccination campaign organized by DLS as well as NGOs
- Advice from Upazila Vet Doctors at the time of emergency treatment
- Slaughter house with provision of supervision of Veterinary Doctor and Huzur for Slaughtering

### **5.8 Unfavorable Program**

- High toll and harassment for toll collection for sales of cattle due to lack of control on cattle market which often leads to sell at home and at lower prices
- There is no control on import of diseased, old aged and poor quality Indian cattle which often flatten market price of local cattle causing loss of domestic cattle fattening
- There is claim that there is treatment facilities at UP level but it is too poor and inadequate and also difficult for poor having one or cows to access from remote areas
- As the demand of feed increasing the companies and commission agents and dealers increases prices of feed without any rationality
- This is now reality that Paravets are providing health and treatment services at the door step of farmers but their services are not recognized and supported by the DLS and often restricted by local officials
- Meatless day does not serve any purpose rather deprive poor who buys on day to day basis

## 5.9 Private Sector Intervention for Commercialization

Local and international NGOs can identify potential areas of beef fattening, the areas which have high land, low rainfall and low humidity, have record of low incidence of diseases, not being flooded ordinarily, have opportunity to cultivate grasses, and encourage small and marginal farmers for investment in beef fattening year round in a 4-month rearing cycle, adding one bull every month in order to have income in every month as a means of livelihood in a proper planning on area basis with provision of electricity, safe drinking water and proper housing to accommodate 4 cattle at a time.

The companies should come forward individually or in group, study nutrition status of cattle and formulate and manufacture low cost balanced feeds using low cost grains and their wastes, recycling industrial waste of fruits and vegetables or promoting cultivation of low priced high protein grains like sorghum and triticale in relatively less fertile land or char land and organize bulk sales through producers' groups and associations.

Medicine companies individually or in groups in association with Paravet Associations and local governments (UPs) may organize routine vaccination and de-worming campaigns as a part of their product promotion and corporate social responsibility programs. They may also in the same way and same purpose conduct method demonstrations, technical, disease control and treatment training and provide technical assistance.

Banks, NGOs and financial institutions may re-examine their loan portfolio, terms of the loan (interest and repayment schedule including insurance) and design an innovative loan portfolio which is friendly to small holder beef fattening.

## 5.10 Beef Market and Supply Chain Structure

**Potentiality and challenges:** Traditional beef market has been described in **Para 5(1)** in which no existence of formal and informal value chain was observed. There is high potentiality of developing beef value chain at upazila level as the value chain actors are identifiable and have scope of establishing contact, contract, and relation among them as they locate in the same locality and exchange of business information in order to improve the sector and establish consumer confidence of quality beef through creating win win situation for all stakeholders. The greatest challenge will be to gain acceptance of the concept of value chain, inspiring investment for improvement of everybody's operation and establish mutual trust and confidence. Practical Action proved its success in Dinajpur, Gaibandha, Faridpur and Magura on beef as well as in dairy. This however requires to some extent long term (5 years) facilitation inspiring and supporting the stakeholders for mutual benefits.

**Market infrastructure and management:** Market is the most critical factor to make sector or value chain development successful. It has been observed that consistent facilitation may bring the some actors together but sales become stuck and market remain non-responsive. All livelihood development programs of the NGOs are suffering from this problem. Central Government and local governments like municipalities and city corporations have been earning quite a lot of revenue from the agricultural markets but do little to improve infrastructure and management styles causing immense miseries to both sellers and buyers of agricultural commodities. A very glaring example is Rajshahi city cattle market feeding all major markets of the country for which Rajshahi people and the concerned officials are proud of. The consultants did not find anything to be proud of. The market location is an unfilled low land, a dumping ground of municipality garbage with no shade. Thousands of cattle remain standing every day very closely to each other on muddy ground under rain or scorching sun shine. It is not unlikely that any healthy cattle get infected after standing on the garbage carrying FMD germs. With varying degree of difference same situation prevails in all cattle markets of Bangladesh. There is a market management

committee to resolve conflicts and perhaps assisting the organized gangs of labors, truck/vehicle arranging agents, brokers, commission agents, local traders, toll collectors and local influential to exploit both sellers and buyers. The route of this problems is the multiple ownerships, inadequate market management ACTs and weakness of the Department of Agricultural Marketing. All national and international NGOs working for livelihood development programs should come together, study the situation and engage in intensive advocacy for bringing necessary changes in the Acts to make agriculture markets producer-consumer friendly.

### **5.11 Financial and Technical Resources**

Available financial and technical resources are no doubt inadequate as compared to need or demand of a large number of investors in beef sector but not scarce. Rural branches of almost all commercial banks including specialized banks like BKB, RAKUB, employment bank, cooperative banks and association all small and large NGOs funded by PKSF as well as some government departments like DYD, DoWA have been providing investment loans in agribusiness. A large proportion of it is for beef fattening, e.g. TMSS is administering Tk. 125.00 for agribusiness fund of which 20.55 crore to 33,987 beneficiaries for beef fattening and ASA is providing Tk. 54.34 crore for agribusiness of which 20.55 to 29,947 beneficiaries for beef fattening. Same is the focus of BRAC, Grameen Bank, etc. They also have provision of providing technical assistance. The DLS with its all limitations is also providing technical assistance. Besides, thousands of Paravets have earning their livelihoods by providing veterinary services to the cattle farmers. Limitation of these services as alleged by the stakeholders that both credit and technical services are not user friendly in terms of cost and quality.

**Potentiality of commercialization though leverage from actors:** Organized beef fattening began about a decade ago and significantly increase during last 5-6 years through proliferation of livelihood support programs of local NGOs supported by INGOs. During this period extensive training was imparted among the poor particularly women. During field survey it has been observed that women beneficiaries demonstrated ability to rear cattle and have expressed desire to expand their cattle herd. It is argued that up to 4 bulls they can manage by family labor but they lack financing. If financed, most of them have ability as well as mental preparedness to increase the herd from 1-2 to 4-5 bulls. It should be noted that Practical Action has demonstrated that a women beneficiary can raise 4 bulls adding one in every month with capital and insurance support from partner NGOs. On the other hand domestic demand for beef has been increasing significantly. Bengal Meat has proved export potential. In this background of demand and supply potentiality of smallholder commercial rearing of bulls has been increased if supply of basic inputs of young bulls, quality feed and veterinary services are geared up through Paravets.

**Strategies for attracting private sector:** In fact entire beef production including veterinary service, trading, processing and retailing is in the private sector except public sector monopoly of manufacturing and supply of certain vaccines and AI services. There should be strong advocacy to privatize those two inputs as government alone cannot meet the demand and thereby holding back the rapid growth of this sector. The process can be hastened if facilities of industrial processing are increased. With proper orientation and technical support many new entrepreneurs will be willing to invest in industrial processing of beef as market is growing fast for industrially processed meet.



### 5.12 Key Interventions Across the Different Layers of the Beef Value Chain

Stakeholders	Key Interventions
<b>Policy &amp; Regulatory Framework</b>	
Market Regulation	Market Regulation Act needs up gradation with provision of fixed fees, commissions and charges and should be strictly implemented by market management committees having representation of all groups of actors with change of rules and procedures of using the markets
Tax Structure	There is no need to change of tax structure
Licensing	There is no need to change of licensing. Presently all commercial operators need to have trade licenses from either UP, municipal, city corporation or Department of Agriculture Marketing for Regulated Markets
Quality Control	Slaughtering, disease control and feed Acts should be strictly implemented
<b>Value Chain Actors</b>	
Cattle Rearing Farmers	Provisions of training, asset support for poor, vaccine availability, control of fees for veterinary services, marketing support and subsidy for feed
Fareya	Loan provision for buying cattle
Brokers	Fixed fees or commissions
Paiker/Traders	Loan provision for buying cattle and specialized trucks
Suppliers	Support to have contract production and supply system on behalves of meat companies/large traders
Local Kosai	Training on slaughtering, meat quality, preservation and provision for loan to have modern cool chain and mechanical cutting meats and bones
Metropolitan Kasai	Training on slaughtering, meat quality, preservation and provision for loan to have modern cool chain and cutting meats and bones with electric saw
Meat Companies	Support making review of their business operations and accordingly design intervention package and encouraging new entrepreneurs to invest through loan and technical support package
Importers	Import should be discouraged by increasing tax structure
Exporter	Support with credit and Technical assistance identification of export market and creation safe and hygienic facilities
Consumers	Awareness creation for buying safe and quality meat
<b>Business Development Services</b>	
DLS	DLS should be encouraged for privatization of vaccine and semen production, supported to implement Acts and recognize the services of Paravets
BLRI	Should be supported to extend the research and analytical facilities to cattle rearing farmers
Paravets	Provision should be made to train them up to a level which will help them get recognition as Paravet with provision of making changes in Vet Service Act
Vet Doc	Provision of more Vet Doc with logistic supports
Feed Shop/Com.	Encourage feed companies to abide by feed act and to do research to find out cheaper feed by recycling agricultural wastes like skins of jackfruits or wastes of fruits and vegetables
Bank	Assisted to identify producer friendly loan portfolio for beef fattening with provision of insurance and encourage location specific value chain financing

### 5.13 Key Observations

- In the beef cattle market all stakeholders operates individually and independently. Product flows from farmers to consumers through a number of small (*fareya*/brokers) or large (*paikers*) traders eventually to *Kosai* who slaughter and sell to the consumers at local or in the distant city markets. In this process all stakeholders try to maximize his/her benefits even with utter disregard to the interests of fellow stakeholders, animals and consumers' interest and safety.
- In an upazila there are about 10 thousand beef fatteners, 30 *foreyas*, 80 brokers, 120 traders, 40 local *kosai* and 345,000 beef consumers assuming 80% population consume beef. Product flows through three alternative channel to local and national consumers. It is observed that the largest proportion of product 63-70% flows through farmers-paiker-metropolitan kosai-national consumers in the north-western region where intensity of beef fattening is reported to be high compared to other part of the country.
- It is observed that the Metropolitan *kosais* added the highest value (Tk. 6500) per 100 kg bull followed by Paikars (Tk. 4,350), local *kosai* (Tk. 3,850), farmers (Tk. 3,500), *foreyas* (Tk.1500) and brokers (Tk.1350). The discontentment expressed by farmers that they are not getting fair price of the beef cattle to a great extent true. In fact they are getting 28.69% of the total value addition on beef cattle because of long value chain. Elimination of one or two tiers is likely to increase their share of the value.
- Contact, relationships and exchange of information among stakeholders exists but are partial, informal and very weak to affect the development of the product.
- Development of cattle in general and beef sector in particular depends greatly on the availability and quality of business development services such as technology, inputs and finance and education of farmers to use those services effectively and profitably.
- Banks, NGOs and financial institutions may re-examine their loan port folio, terms of the loan (interest and repayment schedule including insurance) and design an innovative loan portfolio which is friendly across the value to small holder beef fattening.

## VI. STRATEGIES FOR SUSTAINABLE LIVELIHOODS

Bangladesh is a thickly populated land scarce country. Livelihoods of increasingly more people will depend on non-crop agriculture. Cattle rearing with particularly focus on beef cattle rearing are one of the best suited vocations for sustainable livelihoods of future if the country sustainably pursues some appropriate policies and strategies. It is best suited because all rural people rich or poor are quite accustomed with art and culture of rearing cattle and its products meat and milk increasing domestic and global demands.

### 6.1 Protection of Smallholders Production

Smallholders' production (up to 10 cattle commercial farms) has to be protected by imposing tax on large farms and import of beef both processed meat and live animals. Present tax structure of processed meat seems to be rational. Import of live cattle along the border with India should be institutionalized for administering an effective tax structure. There is a need to undertake a national level advocacy role as to how important is to protect the livelihoods of smallholders - landless, marginal and small farmers who constitute 80% of the total farming households. Similar advocacy should also be undertaken encouraging people for consumption of quality beef of bulls through strong publicity in both print and electronic media.

## **6.2 Development of Processing Industries**

Peoples with particular reference to affluent customers, whose intensities are increasing in not only metropolitan cities but also in suburban, towns and commercial centres as well as in rural villages are being accustomed with processed, packed, frozen and assorted meat and their demands will increase rapidly. Country should be prepared to meet the demands. Otherwise she will have to indulge in import sacrificing the scope of improving lives and livelihoods of millions of producers, traders, workers associated with this industry. The businesses of the two meat processing industries should be analyzed and based on the analysis a support program should be designed to help them overcome their problems and constraints which are limiting their operation below 30% capacity. New entrepreneurs should also be encouraged in this industry through workshops and seminars and investors should be assisted with technical and financial assistance. There are two prerequisites for promoting export of meat. Firstly, there should be provision of HACCP certification and monitoring compliance through DLS. Secondly, there should be assistance to meat processing industries to establish contract production system to establish traceability of meat which is a requirement for export.

## **6.3 Organizing the Smallholders' Production System**

Numbers of smallholders are very large, 80% of farming community and scattered all over the country. It will be extremely difficult to provide business development services individually at doorstep such as quality feeds, medicines, veterinary services, technology dissemination, advisory and extension services, training, campaigns, etc. Therefore, smallholders must be organized as self managed groups federated as association/cooperatives to facilitate easy passage of the business development services as well as help emerge institutions of smallholders for contracts and negotiations with market forces and service agencies through strong technical and leadership development programs.

## **6.4 Use of Paravet Forces**

Time is running out making the tasks more difficult in future. Our competitors are growing faster than us and it will be increasingly difficult to protect the smallholders' interest by restriction and control in the era of free market economy. A large number of Paravets have been developed with the support of DLS and a large number of national and international NGOs to provide primary veterinary services all over the country. They are now better organized and equipped. They can be facilitating to organize the cattle farmers all over the country in a shortest possible time in order to expand and strengthened their own businesses. It is reported that a model of organizing cattle farmers by Paravet has been tried successfully by Practical Action in Birampur upazila of Dinajpur district and is being replicated by local offices of DLS in an adjacent upazila. This is indeed a low cost initiative to organize cattle farmers and provide them opportunities to access the services with little effort of DLS for support, supervision and monitoring. These will also facilitate ease access to input and output companies to smallholders for business transactions. It requires a long term training of Paravets to make them capable for primary treatment including AIs and recognition of their services as Paravets by the government.

## **6.5 Enforcement of Code of Conduct among Market Operators**

There are many complains at all times and everywhere of harassment and exploitation of smallholders by market actors. It is a de-motivating factor for production as well as financial loss of the poor and destitute. Something must be done. A least thing that could be done is to prepare code of conducts of all market actors including fixed commissions, rates and charges for all transactions and services in a market place to be inserted in the market regulation acts with provision of astringent punishment for violations. The role and responsibilities of the market management committees also need to be restructured empowering to monitor and dispose complains as per provision of the Acts.

## **6.6 Orient and Equip the DLS and BLRI as Facilitators not as Providers**

Traditionally DLS and BLRI tend to preserve their rights as sole institutions providing veterinary inputs and services all over the country. They have expanded as country wide institutions but with meager infrastructure, facilities and manpower. Demand of veterinary services has been increasing very fast quantitatively and qualitatively. In no way it can be met by DLS even it is adequately equipped and staffed reaching millions of smallholders partly due to government bureaucracy and partly due to inadequate funding. Human and behavioral aspects of government staff will be an added limitation. Rather DLS should act as facilitator of private sector companies, institutions and individuals which have demonstrated capacity to serve cattle farming population and the institutions supporting them. This will have a strong multiplier impacts on growth and development of cattle industries of the country much more rapidly.

## **6.7 Support from Various Agencies Including Heifer in Future**

In the background of those strategies different agencies have responsibilities to support the government and the value chain actors in order to implement the strategies for development of the beef cattle sector of the country. The local NGOs in association with international NGOs should support the value chain actors to organize themselves and link with each other to perform their respective responsibilities so that they can solve the problems and remove constraints with unity. Local branches of Banks should assess the credit needs of beef sector and develop beef cattle friendly uniform loan portfolio for providing adequate loan to all value chain actors for up-gradation and improvement of their operations. Development partners should form a consortium to support local initiatives for the development of beef cattle sector with assets support for marginal farmers, financing, and promotional activities, assist DLS to orient and equip for playing facilitating role and privatization of vaccine and semen production and distribution of appropriate beef cattle breed and administration of AIs. Heifer International, as a key player of beef cattle sector development may provide supports to a few selected NGOs to design and implement a smallholder commercial beef cattle business model to demonstrate a shift from rearing beef cattle as IGA to a commercial rearing of small herd of beef cattle as described in this report using Paravets as key actors for organizing farmers and establishing service points in order to provide door step veterinary services to the cattle farmers. It should also support DLS to organize and support Paravets as an extension of its arm to reach smallholders cattle farmers with proper and uniform training and transfer of knowledge and skills. It can also work with the Department of Agriculture Marketing to formulate code of conduct of the actors of cattle markets and bring necessary changes in Market Regulation Acts. It should also conduct few studies on cattle nutrition, effectiveness of AIs and semen qualities and preservation system, role and effectiveness of Paravet services and their training needs and assist DLS implementation of feed, slaughtering and disease regulation Acts. It can also support BLRI Scientists or University teachers for conducting a research to identify low cost feed ingredients and formulate low cost feed formula for commercial production of low cost feeds for different groups of cattle e.g. calves, adult bulls and drying and milking cows etc.

## 6.8 Key Observations

- In order to ensure sustainable livelihood of farmers, traders and other stakeholders and worker in this sector there is a need to adopt the following strategies:
  - Protection of Smallholders Production
  - Development of Processing Industries
  - Organizing the Smallholders' Production System
  - Use of Paravet Forces
  - Enforcement of Code of Conduct among Market Operators
  - Orient and Equip the DLS and BLRI as Facilitators not as Providers
  - Support from Various Agencies Including Heifer International in Future
- Government has adopted a number of Acts related to disease control, feed and slaughtering which need implementation effectively
- Heifer International among other studies can also support BLRI Scientists or University teachers for conducting a research to identify low cost feed ingredients and formulate low cost feed formula for commercial production of low cost feeds for different groups of cattle e.g. calves, adult bull and cows, milking and dry cows etc.

## VII. KEY RECOMMENDATIONS

The consultants reviewed the beef cattle sector as a whole and analyzed the beef cattle value chain with particular focus to North-western regions. They also examined the scope and potential of integration of stallholders, and postulated the strategies of sustainable livelihoods of those associated with beef cattle sector. There are indications of observations and recommendation in all those expositions. However, the consultants are summarizing the key recommendations to pinpoint certain issues for the development of beef cattle sector of Bangladesh.

- Protection of Smallholders Production System by adopting policy of discouraging growth of large farms (more than 10) and import of processed or live cattle by increasing tax structure through institutionalization of cross boarder cattle import
- Organizing the smallholders' production system with formation of producers' groups, provisions of training, asset support for poor, vaccine availability by privatizing vaccine production and distribution, control of fees for veterinary services through passing an Act, marketing support through groups and establishing code of conduct of market actors through market regulation Acts and subsidy on feed
- Provision should be made to train the Paravets up to a level which will help them get recognition as Paravet with provision of making changes in Vet Services Act
- Market Regulation Act should be upgraded inserting Code of Conduct among market operators with provision of fixed fees, commissions and charges and should be strictly implemented through market management committees having representation of all groups of actors with change of rules and procedures of using the market
- Orient and Equip the DLS as Facilitators not as Providers by using services of NGOs, Paravets and their associations and feed and medicine companies and their dealers and commission agents
- Government should strictly implement the adopted Acts related to disease control, feed and slaughtering of animals

- NGOs and banks should be assisted to identify producer friendly loan portfolio for beef fattening with provision of insurance and encourage location specific value chain financing by making provision of a loan portfolio for all value chain actors for production, trading and retailing of meat and for buying specialized trucks for cattle transportation
- Provision should be made for training on slaughtering, meat quality improvement, preservation and provision of loan for *Kosais* to have modern cool chain and cutting meats and bones mechanically
- Meat companies should be supported for making review of their business operations and accordingly design intervention package and encouraging new entrepreneurs through dialogue and discussion with potential entrepreneurs to invest through loan and technical support package. They should also be supported to have contract production and supply system in suitable locations in association with NGOs working for beef fattening programs. There is no standard contract farming model or system. It is a negotiated terms and condition of production, quality, supply schedules and pricing mechanism between producers and buyers which can be amended on request of either side, if and when necessary.
- DLS should be encouraged for privatization of vaccine and semen production, supported to implement Acts, Provision of more Veterinary Doctors with logistic supports and recognize and use the services of Paravets as supporting hands
- BLRI should be supported to extend the research and analytical facilities to cattle rearing regions operating on cost sharing basis
- Companies and their dealers and commission agents should be encouraged to abide by feed Act and to do research to find out cheaper feed by recycling agricultural wastes through dialogues, discussions and technical assistance by using volunteer services
- A mass campaign program should be adopted to create awareness among consumers for buying safe and quality meat through print and electronic media
- Heifer International among other studies can also support BLRI Scientists or University teachers for conducting a research to identify low cost feed ingredients and formulate low cost feed formula for commercial production of low cost feeds for different groups of cattle e.g. calves, adult bull and cows, milking and dry cows etc.

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