

# **Final Report on Study on Cost of Milk Production**

*Submitted to:*

**National Dairy Development Board  
(NDDDB)**  
*Haiharbhawan, Lalitpur*

*Submitted by*

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## ABBREVIATIONS AND ACRONYMS

AI	Artificial Insemination
CAGR	Compounded Annual Growth Rate
CDCAN	Central Dairy Co-operative Association of Nepal
CFUGs	Community Forest User Groups
CLDP	Community Livestock Development Project
DCIP	Dairy Cattle Improvement Project
DDC	Dairy Development Corporation
DLP	Department of Livestock
DMPCU	District Milk Producers Co-operative Union
DoC	Department of Cooperatives
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GoN	Government of Nepal
HH	Household
KII	Key Informant's Interview
MoAD	Ministry of Agriculture Development
MPC	Milk Producers Co-operative
NARC	Nepal Agriculture Research Council
NDDB	Nepal Dairy Development Board
NEPC	Nepal Environment Protection center
NPC	National Planning Commission
SMP	Skimmed Milk Powder
SNF	Solid Non Fat
TS	Total Solids

## A. EXECUTIVE SUMMARY

Dairy is recognized as prestigious occupation among the other agriculture sub sectors and is contributing to pull in the urban capital to rural area twice a day. It has been a best cash generating occupation and attract youths and taken as an enterprise. In order to provide income and employment in larger scale, encouragement and facilitation to the people particularly, the small and marginal ones, in improved livestock keeping for milk production could be an appropriate approach. Moreover, the sector is not been able to accelerate the pace as the cost of production much higher compared to neighboring countries.

The overall objective of the study is to assess the cost of milk production and recommend appropriate price of raw milk to be purchased by the processors. The specific objectives were: assess the fixed (animal, sheds and other infrastructure) and variable costs (breeding, feeding, care, management, disease management) for milk production, assess the cost for collection and transportation up to the milk collection and chilling center and recommend appropriate price for raw milk.

Both secondary and primary sources of data and information were used to complete the study. While the secondary data and information were collected from the published/unpublished reports/records of the concerned institutions, the primary data and information were collected using both qualitative/participatory and quantitative research methods such as household survey, key informant survey and transect walk. Two milk production pocket areas in each district were identified and from each milk production pocket area, a total of 275 households were selected randomly for household survey. Moreover, the key informants i.e. authorities in District Livestock Service Office (DLSO) of sampled district, MPCs and tea shop owner and general consumers were interviewed to cross check the information.

### Major Findings

- Major source of income for livelihood was agriculture. It was revealed that agriculture was major source of income for 65.45 percent HH followed by wage for 10.55 percent HHs, business for 9.45 percent HHs, foreign employment for 8 percent HH and service for rest 6.55 percent HHs.
- Nearly one third respondents have land from 5 to 20 ropani followed by 17.09 percent have 20-30 ropani and 6.18 percent have more than 30 ropani.
- Of the total dairy farmers, only 21.09 percent farmers cultivated forage in farm land while 78.91 percent were relying on the concentrates, straws and grasses from terrace risers, bunds and communal land.
- Among the farmers cultivating forage in the farm land, 56.9 percent cultivate improved legume and non legume mixed while 22.41 percent cultivate improved non legume and 20.69 percent cultivate improved legume grass only.
- It was found that 58.18 percent farmers have improved milking cow and 26.18 percent have improved buffalo. Similarly, 13.09 percent have local buffalo and 2.55 percent local cow. It seems that, in the milk pocket area where MPCs are established, practice of keeping improved milking animal is very common, showing the commercial orientation among the farmers.

- Cow population is more in the milk potential area than the buffalo. It was found that out of a total of 473 lactating animals in the survey area, 59.41 percent were cow and 40.59 percent were buffalo.
- Average productivity of animal was 8.67 liter milk per day. The productivity of cow was 11.37 liter and that of buffalo was 5.97 liter per day.
- The average lactation period of cow was found 325 days. Lactation period of cow was 300 days and buffalo was 350 days
- Feeding cost constituted 57.6 percent of the total cost, Care and management constituted to 21.55 percent of total cost that also included labor cost, disease prevention and control accounted to 2.56 percent. Interest on the capital investment for cow and building was accounted to 8.87 percent and depreciation (animal and sheds) accounted to 6.67 percent, 1.58 percent for marketing, 0.8 percent for insurance and 0.67 percent for breeding (AI/bull and service charge).. Feeding cost incurred was 66.44 percent in case of buffalo and 53.62 percent in cow while disease prevention and control cost for cow was 3.53 percent and it was 0.41 percent in case of buffalo.
- Average cost of milk production was Rs. 34.92 per liter. The cost of cow milk was Rs. 33.62 and that of buffalo was Rs. 38.19.
- It was found that, 53.82 percent farmers use milk for both sale and HH consumption, 33.45 percent only sale only and 12.73 percent use only for HH consumption.
- It was learnt that 63.11 percent farmers sale milk to the MPC while 11.65 percent sale to local tea shop and 9.71 percent sale to the vendors. Other place of sale are private dairy and neighbors.
- On the prevailing market price farmers are getting Rs. 1.18 profit per liter of milk which is only 3.4 percent of investment in fixed cost.
- It was revealed that the household consumption of produced milk varies tremendously. About 43.57 percent of the consumers were found to be consuming 1-2 liter milk per day, 13.57 percent less than 1 liter, 12.86 percent 2-5 liters and 14.29 percent consume more than 10 liters milk per day.
- Out of the consumers 58.57 percent said that consumption is in increasing trend while 31.43 percent said consumption is usual i.e. neither increased not decreased and 10 percent said consumption is decreased.
- For the increment of milk consumption, 52.86 percent consumers suggested to reduce the milk price, 30.71 percent suggested to improve the quality milk and 16.43 percent suggested to increase the access i.e. increase sales center.
- It was found that 41.43 percent the consumer purchase milk directly from farmers, followed by 25.71 percent purchase from milk booth, 17.86 percent purchase from vendors and 15.0 percent consumer purchase from open fluid milk shop.
- Out of consumers who purchase milk from the milk booth i.e. formal sector, 38.89 percent purchase DDC brand, 33.3 percent from private dairy and 27.78 percent from cooperative processed milk. Still the DDC brand dominates the milk market
- It was confirm that 29.75 percent consumers felt milk is expensive, 18.64 percent felt that it is not tasty, 16.85 percent perceive that milk is adulterate with water, 16.13 percent claim that milk is not available in time and 12.54 percent said it is odorously. Hence, it is clearly

find out that consumers' complaint is primarily towards the quality and secondarily on price.

- Consumers provided suggestion to improve the milk market. Out of the consumers 31.76 percent said to reduce the price, 30.59 percent suggested to improve the quality, 22.35 percent said to provide milk in time and 15.29 percent suggested to conduct consumer education campaign.
- Present problems of dairy development in the surveyed area are related to livestock production and management. The production related problems include the lack of effective livestock extension services in terms of breeding, feeding and management of the dairy animals, inadequate veterinary health care services, lack of training to raise the awareness among the farmers about hygienic milk production, high input price and reluctance of insurance company to insure livestock. Similarly, haphazard pricing of milk, lack of incentive to high quality milk.
- Supports are required for improved livestock farming, livestock extension services, veterinary health care and breeding services; organization of cooperative and their management through imparting training programs; and for establishing milk collection, chilling and milk transportation facility.

### **Recommendations**

Based on the findings of study, major problems in the surveyed areas include the lack of supports for improved livestock farming and guaranteed and fair price for milk. Therefore, along with the implementation of program, the main recommendations for improving and commercializing livestock farming for increase production and productivity in the surveyed areas are as follows:

- The milk producers should be made aware and imparted knowledge through training programs on improved livestock production and management practice i.e. feeding, breeding care, livestock management and disease prevention and control.
- Productivity of animal is very low that is one of the major reasons for high milk production cost. Establish dairy animal resource center or support/ subsidize the commercial farms to produce breeding stock maintaining well established pedigree record.
- Keeping of improved milking animals should be promoted by launching an effective crossbreeding program with the distribution of improved breeding animals and providing efficient breeding services. The current service provided by DLS is inadequate and hence the DCIP intervention should be upscale for wider universe to increase availability of quality genotype for milk production.
- The livestock insurance process should be simplified and provide such service at the doorstep of the farmers.
- Farmers should be motivated to grow improved grasses and legumes. The farmers should be taught to feed these grasses and legumes as the supplementary feeding in appropriate quantity together with cereal straws after treatment and other feedstuffs. This will promote intake of quality roughages and will improve the efficiency of feeding at lower cost resulting in low milk production cost. Farmers shall coordinate with CFUG to cultivate forage in forest and use with appropriate policy at local level.
- So as to prevent animal diseases, it is necessary to step up the efforts of dairy extension, particularly in vaccination and drenching. Vaccination and drenching programs should be launched as a collaborative venture between government and the farmers' cooperatives. Provisions of sufficient veterinary medicines together with effective health care services are critically wanted in the surveyed

- The farmers should be paid with remunerative price for their milk. For this, a regular system of estimating and updating the farmers' cost of milk production should be established and milk price should be reviewed at regular intervals.
- As per our findings the cost per liter of milk at the farmer's level was approximately Rs.34.92 which is higher than the stated NDDB price of Rs. 32. At present farmers are getting 1.05 percent margin which is not justifiable. With the current value of money at least 10 percent margin for the investment is required. Thus the current milk price needs to be increased by Rs. 2.41 per liter.

## **1. BACKGROUND**

### **1.1 Introduction**

NDDB was established in 1992 to strengthen the dairy sector in Nepal through policy formulation and recommendation. Some of its functions include acting as a coordinating body between the private and public sector, formulating and recommending price fixing policies of milk to Government of Nepal (GoN), monitoring and evaluating dairy development programs and mobilizing funds for dairy sector development.

Milk production in Nepal is still carried out under the traditional production system, in the mixed farming system, with small non-commercial holdings. A persistent problem the dairy industry faces is poor milk quality. This is associated with lack of farmer awareness with regards to hygienic milk production which causes loss of income along the milk chain. Due to lack of a comprehensive policy that provides standards to be complied with during milk production, the quality of milk in Nepal has remained a big issue. The basic reasons are attributable primarily to the lack of hygiene and inadequate sanitation at the production level, since major milk producers are small, marginal and poor, living at the subsistence level.

Government of Nepal has policy to support and encourage farmers through subsidies, affordable and accessible veterinary service, cattle insurance, easy loans with lower interest rate, improved cattle supply etc but it is not enough. These activities are in a certain way being provided by the MPCs, DDC and private players; however it is limited and accessible only to few producers.

There has not been a very comprehensive and scientific study to calculate the cost of production of milk in Nepal. Moreover no studies have been undertaken to identify the best and flexible way to manage price fixation. Any study done to identify the pricing system should look at the cost of milk production keeping in mind the increasing fodder price, seasonal variations and the general market trend. These factors should be factored in while determining the price. There have been no studies on how a pricing system should be developed for small dairy farmers and how they can be linked with the formal market system. Identify ways in which all the stakeholders play supportive roles in order to create a sustainable community based integrated marketing system for milk which will create a win win situation for all stakeholders

NDDB conduct study on cost of milk production on regular basis and based on its study and discussion with concerns stakeholders recommend minimum price of milk to MoAD for necessary action. On the other hand, DDC evaluates the consumer price and sends it to the MoAD for approval. Usually the price fixing is done in a manner where 2/3rd of the price goes to the farmers and 1/3rd to the processors. After evaluation of these processes, the MoAD approves the consumer price of milk after which DDC implements it. Most of the private dairies more or less price their products as per the pricing system set by DDC.

## **1.2 Rationale for the Study**

Commercial dairy farming in Nepal is a very recent phenomenon and has not seen many success stories. This is mainly because of the high cost of production of milk that reduces the expected benefits of the farmers. Farmers often complain that most of the price they get from the sale of milk is ploughed back into purchasing feed for their livestock. Therefore, lower milk prices and increasing feed costs could jeopardize the economic viability of raising livestock. NDDDB evaluates the farmers' cost of production of milk and forwards the same to the MoAD. On the basis of this evaluation, Dairy Development Corporation (DDC) recommends the milk price based on the Fat and SNF content to its board for its approval. Once approved this price is taken as the benchmark. The price received by the farmers is widely reported to be just adequate to cover their production costs.

The cost of production of milk relates to many factors and therefore the milk price cannot be determined in isolation. Price the farmer receives for their milk is their most immediate concern, yet little seems to be known about the calculations and factors that go into determining farm-gate prices. The current pricing systems have drawn much flak thus; scientific pricing policy has to be rollout to improve and encourage development of this sector.

## **1.3 Objective & Scope of Work**

The overall objective of the study is to assess the cost of milk production and recommend appropriate price of raw milk to be purchased by the processors. Following are the specific objectives:

- Assess the fixed (animal, sheds and other infrastructure) and variable costs (breeding, feeding, care, management, disease management) for milk production
- Assess the cost for collection and transportation up to the milk collection and chilling center
- Recommend appropriate price for raw milk

## **2. METHODOLOGY**

### **2.1 Desk study and review of literatures**

Literatures related to dairy sector with special reference to milk production cost, milk pricing policy, practice and current status of production and marketing was collected and reviewed. Different websites specially the Indian National Dairy Development Board (NDDDB-India), Denmark and others was visited to bring in close insight on it. For the purpose, team of consultant visited to NDDDB, Department of Livestock Services (DLS), Dairy Development Corporation (DDC), CDCAN, NARC and other private dairies and reviewed the documents available.

### **2.2 Consultation with concern authorities in NDDDB**

The team of consultant visited to NDDDB and met with the concern authorities. This process provided clear insight on the mission, vision, and goal, objectives, working principles, strategies and activities of NDDDB in general and dairy sector in particular. This process provided gravity of different components in milk production and marketing in Nepal.

### 2.3 Preparation of questionnaire/ checklists

Based on the documents review and consultation with concern authorities, draft questionnaire was prepared. The questionnaire was duly discussed in NDDB and after incorporating the suggestions, it was finalized. For household survey, structured questionnaire was development while for Key Informant's Interview (KII) semi structured checklist was prepared. Thus finalized check-lists/ questionnaire were discussed and practiced during the training to enumerators. The approved check-lists/questionnaire was used to collect the information.

### 2.4 Training to the enumerators and Finalization of questionnaire/ checklists

One day training was organized to the enumerators on the objectives and methodology of the study. The consultant/professional team member facilitated the training/orientation on the practicality on the sample selection, household selection, data collection technique, sampling frame and quality control of the data collection.

### 2.5 Sampling and sampling frame

#### a) Sampling frame

Sample survey was done to undertake the study. Total universe of dairy potential area was stratified based on the geographical locations and potential milk-shed area (Table 1).

Milk Producer's Cooperatives (MPCs) was the basic entity to follow the sampling frame. Two cooperatives in each district were selected randomly for HH survey and from the vicinity of each cooperative at least 25 farmers households were selected randomly for information collection.

Similarly, 2-3 market centers including district headquarter from among the sampled district were selected for analyzing consumers. At least 25 consumers HHs from the vicinity of market center among the sampled districts were interviewed including tea shops.

**Table: 1 Sampling Frame of the Study**

Geographical regions	Districts
Hill	Kabre, Tanahu, Ilam
Terai	Chitwan, Banke

#### b) Sample size

Purposive and stratified random sampling method was used to select the survey area. Out of 35 milk potential districts, purposely 5 districts were selected for the study. These districts were selected to cover maximum geographical coverage and dairy potential regions. Following tables shows the sample size.

**Table: 2 Sample size for quantitative survey**

Categories	Chitwan	Kabre	Banke	Tanahu	Ilam	Total
Milk producer	55	55	55	55	55	275
Consumers	30	30	30	30	30	150
Total	85	85	85	85	85	475

**c) Sample size for Key informant interview in the district headquarter**

The authorities in District Livestock Service Office (DLSO) of sampled district, MPCs and tea shop owner and general consumers were interviewed to cross check the information. A total of 40 key informants were interviewed.

**2.6 Field Survey**

Field survey was undertaken as per sampling structure.

**2.7.1 Household survey**

Structured questionnaire was administered to the producers and consumers of six districts. Enumerators visited to sample households and administered the questionnaire to the household head and the professionals supervised their work.

**2.7.2 Key Informant’s Interview (KII)**

Available key informants were met and administered the approved checklist in each sampled district were interviewed. Key informants were among other District Livestock Service Officer (DLSO), MPC executive committee members, tea shops and general consumer. A total of 30 Key informants were interviewed.

**2.7.3 Transect walk/direct observation**

During the course of information collection enumerators and experts/professional of the study observed the production (breeding, feeding, care management, disease prevention control and milk delivery up to the collection center i.e. MPC and vendor. These processes back-up them to triangulate the information collected from different stakeholders and in reality from independent eyes.

**2.7.4 Quality control of the data collection**

Following attempts were undertaken for the assurance of quality of the information collected:

**a) Team Leader visit in the field**

The team leader visited to the field and observed the information collected by the researchers and clarified on the issues that were not clear to them. Each activity of stakeholders was observed by the experts/professional of the study to have clear insight on the threshold of the study.

#### **b) Consistency checking in the field**

The enumerators meet in the evening after coming back from the field for information collection and discussed on the data collection. They reviewed each of the survey questionnaires/ check lists and discuss whether they collected information correctly. They checked the information for consistency and completed the information collection process. The team leader also supported them in this regards.

#### **2.7.5 Data cleaning and entry**

After receiving the data from all the enumerators, they met together and checked the dully filled checklists. Whole study team (professionals and enumerators) met together and developed common consensus on the consistent information. The clean data was duly coded and enter in excel spreadsheet.

#### **2.7.6 Data analysis**

The designed tables were finalized by the professional team of the study and handed over to the software expert. Single and cross table, graphs, charts were designed and set the data in appropriate place.

#### **2.7.7 Report writing**

Having analyzed information, the team leader wrote draft report. Each of the researchers was assigned to write the report under their domain of professionalism. Report have been presented addressing each areas mentioned in objectives of the study.

### **3. LIMITATION OF THE STUDY**

- The study could not cover maximum milk potential district due to budgetary constraints and was carried out in a short timeframe.
- Farmers have either no or limited information on production cost i.e. has poor farm record and relies on recall. It was bit difficult to recall the information of whole FY 2069/70.

## 4. RESULT AND DISCUSSION

### 4.1 Overview of the Dairy Sector in Nepal

According to the Statistical information on Nepali Agriculture published by the MoAD, the annual production of milk in the year 2009/10, stood at 14,97,429 (1,495,879 MTs) wherein the ratio of cow milk to buffalo milk was 29:71. There were a total of 2,207,450 milking cows and buffaloes in the country. Among the total population improved cattle and buffalo are 10% and 25-30% respectively. The different breeds of cows are the local cows, and improved such as Jersey, Holstein, Brown-Swiss, Ayrshire and Sahiwal and their cross-bred cows; whereas the buffaloes are of local, improved such as Murrah and their crosses -bred kind.

**Table 4.1: Nepal dairy sector at a glance**

<b>Quick Facts</b>	
<b>GDP at Producer's Price 2009/10<sup>1</sup></b>	<b>NRs. 61,903 crores</b>
<b>AGDP<sup>1</sup></b>	NRs. 20,375 crores
Contribution of Dairy to AGDP - 2009/10 (%)	22.00%
Contribution of Dairy to AGDP - 2009/10 (Rs)	NRs. 4,500 crores
<b>Contribution of Dairy Sector to the GDP</b>	<b>7%</b>
<b>Population (In Mn) 2010 Est.<sup>2</sup></b>	<b>29.3</b>
<b>Real Per Capita Income 2009/10 (USD)<sup>3</sup></b>	<b>440</b>
<b>Inflation 2009/10<sup>4</sup></b>	<b>11.76%</b>
<b>Direct Employment<sup>5</sup></b>	<b>3000</b>
<b>Average Household size in Nepal<sup>6</sup></b>	<b>5.35</b>
<b>Beneficiary Households<sup>5</sup></b>	<b>&gt;300,000</b>
<b>Total Investment in the Sector<sup>5</sup></b>	<b>Approx NRs.900 crores</b>
<b>Annual Milk Production (2009/10 Est.)<sup>7</sup></b>	<b>1.5 Million Metric Tons</b>
<b>Ratio of Cow milk : Buffalo milk</b>	<b>30:70</b>
<b>Milk in MT<sup>7</sup></b>	
Cow Milk 2008/09	413,919
Buffalo Milk 2008/09	1,031,500
<b>No. of Milking Cows 2009/10<sup>7</sup></b>	<b>954,460</b>
<b>No. of Milking Buffaloes 2009/10<sup>7</sup></b>	<b>1,251,090</b>
<b>CAGR: 2005-2009</b>	
Cow	<b>1.38%</b>
Buffalo	<b>3.63%</b>
<b>Annual Deficit of Milk<sup>5</sup></b>	<b>133,800 Metric Tons</b>
Lean Season	108,000 Metric Tons
Flush Season	25,800 Metric Tons
<b>Distribution of Milk (%)<sup>5</sup></b>	
Formal	15%
Informal	35%
Household Retention	50%
<b>Consumption Per Capita<sup>5</sup></b>	
WHO	91 Litres
Nepal	52 Litres
<b>Ratio of Milk : Milk Products (Formal Market)<sup>5</sup></b>	<b>90:10:00</b>

**Import of Milk & Milk Products 2008/09<sup>8</sup>**

**NRs.100.3 Crores**

**Import of Milk & Milk Products 2008/09<sup>8</sup>**

**NRs. 95 Crores**

Product	Qty (Kgm)	Amount (NRs)
Cheese	113,023	38,420,000
Milk Products	62,740	7,701,000
Butter/ghee	713,561	102,209,000
Milk powder	4,451,194	800,226,000

\* SMP (Formal & Informal Import) > 6,000,000 Kgm Approx 150 Crores

**Export of Milk & Milk Products 2008/09<sup>8</sup>**

**NRs.11 Crores**

Product	Qty (Kgm)	Amount (NRs)
Fresh Milk	120,270	3,035,000
Cheese	59	56,000
Semi processed butter/ ghee	561,283	105,146,000
Other Milk Products	8,497	1,033,000

Capacity (Litres per Day) <sup>5</sup>	
DDC	225,000 lpd
Private	Nos.
>50,000 lpd	4
10,000-50,000 lpd	10
1,000-10,000 lpd	30
<1,000 lpd	700
Installed SMP production capacity	20 Tons/ Day

*Source:*

<sup>1</sup> Central Bureau of Statistics, National Account Estimates, 2010

<sup>2</sup> World Bank, World Development Indicators-Nepal, April, 2011

<sup>3</sup> World Bank National Accounts data & OECD National Accounts Data files, 2010

<sup>4</sup> Inflation in Nepal, Red Book, Nepal Rastra Bank, 2009/10

<sup>5</sup> Dairy Sector- An Overview, Nepal Dairy Development Board, 2010

<sup>6</sup> Nepal Rastra Bank-The fourth household survey conducted on mid nov 2005 to mid nov 2006

<sup>7</sup> Selected Indicators of Nepalese Agriculture & Population .Ministry of Agriculture & Co-operative, 2010

<sup>8</sup> Annual Report 2066/67 of Ministry of Finance-Department of Customs, 2011

As shown in Table 2., the ratio of milking cow to milking buffalo was 43:57 and that the compounded annual growth rate (CAGR) of milk production for the last ten years stood at approximately 3% and the CAGR of cows and buffaloes in the last 10 years stood at 1% and 3% respectively . The increasing preference over buffaloes to cows is mainly due to the value derived from the sale and resale of its meat as cows are not slaughtered for religious reasons.

## **4.2 Milk-Pricing System in Nepal**

### **4.2.1 Dual Axis Pricing (Fat and SNF system)**

Continuous development in the dairy sector has led to a shift in dairy rearing practices with improved cross bred cows slowly replacing buffalos and local cows. The 1980s witnessed this change in the farming system in Nepal as farmers realized the high cost of maintaining buffaloes despite its high fat content and the lack of high yielding cows which entitled them to receive lower rates for their milk.

The mixing and selling of cow and buffalo milk made it almost impossible to fix different rates for each kind of animal as it was practically impossible to differentiate between the two types of milk under field conditions. This gave rise to a need for a more scientific method for payment of milk, which gave rise to the dual axis payment system.

This method was based on fat and SNF content of the milk. A minimum level of fat (3%) and SNF (8%) was fixed. Also, this system was justified because the payments were made on the amount of total solids (fat and protein) present which is co-related with the yield of the milk products that can be derived from it. This method is being used till date. Further details and thorough analysis of this method is provided below.

### **4.2.2 Milk Pricing by Co-operatives**

DDC and Private Dairies purchase their milk from the co-operatives on the basis of Fat, SNF and TS. They also pay for the TS so as to enable the co-operatives to manage the operational and the administrative cost. Co-operatives purchase milk from its members and non-members on the same Fat and SNF basis. However there are a lot of co-operatives that pay the farmers on the basis of Fat only. This practice is common in the areas in Kavre and Tanahu where the cattle consists mostly of buffalos and buffalos have higher fat content and low SNF. Following are additional benefits provided by the co-operatives to their members.

- The co-operatives also share some portion of the amount received for TS with the member farmers.
- Also, the member farmers are entitled to the bonus from the profit made by the co-operatives.
- In addition to these, the co-operatives provide the farmers with other facilities like loans, cattle insurance, other inputs such as feed and medicine supply, AI services, vet services at a subsidized cost.
- Some cooperatives do strong bargaining with private dairies to get higher price than DDC. They also accept technical/financial or managerial and material support from private dairies to improve the quantity and quality of milk and provide such private dairies with a subsidized rate for raw fresh milk.

### 4.3 Producer's survey

#### 4.3.1 Number of respondents by district

There were a total of 275 milk producers HHs and 140 milk consumer households surveyed. The number of producer's HHs in Kabre district was only 44, as the farmers were not met while doing the survey. For detail see table 4.3.1.

**Table: 4.3.1 Number of respondents by district**

District	Producer		Consumer	
	HH	Percent	HH	Percent
Chitwan	59	21.45	31	20.71
Kabre	44	16.00	38	18.57
Banke	58	21.09	34	20.00
Tanahun	58	21.09	35	20.71
Ilam	56	20.36	32	20.00
Total	275	100.00	170	100.00

Source: Field Survey- 2070

#### 4.3.2 Major source of income of the respondents

The producer's HHs have different source of income for livelihood. It was found that 65.45 percent HH have received major income from agriculture, 10.55 percent HHs received from wage, 9.45 percent obtained from business, 8 percent HH obtained from foreign employment and rest 6.55 percent received from service. For detail see table: 4.3.2.

**Table: 4.3.2 Major source of income of the respondents**

Source of income	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Agriculture	30	10.91	30	10.91	40	14.55	40	14.55	40	14.55	180	65.45
Service	6	2.18	4	1.45	3	1.09	2	0.73	3	1.09	18	6.55
Business	7	2.55	3	1.09	4	1.45	6	2.18	6	2.18	26	9.45
Wages	9	3.27	5	1.82	6	2.18	6	2.18	3	1.09	29	10.55
Foreign employment	7	2.55	2	0.73	5	1.82	4	1.45	4	1.45	22	8.00
Total	59	21.45	44	16.00	58	21.09	58	21.09	56	20.36	275	100.00

Source: Field Survey- 2070

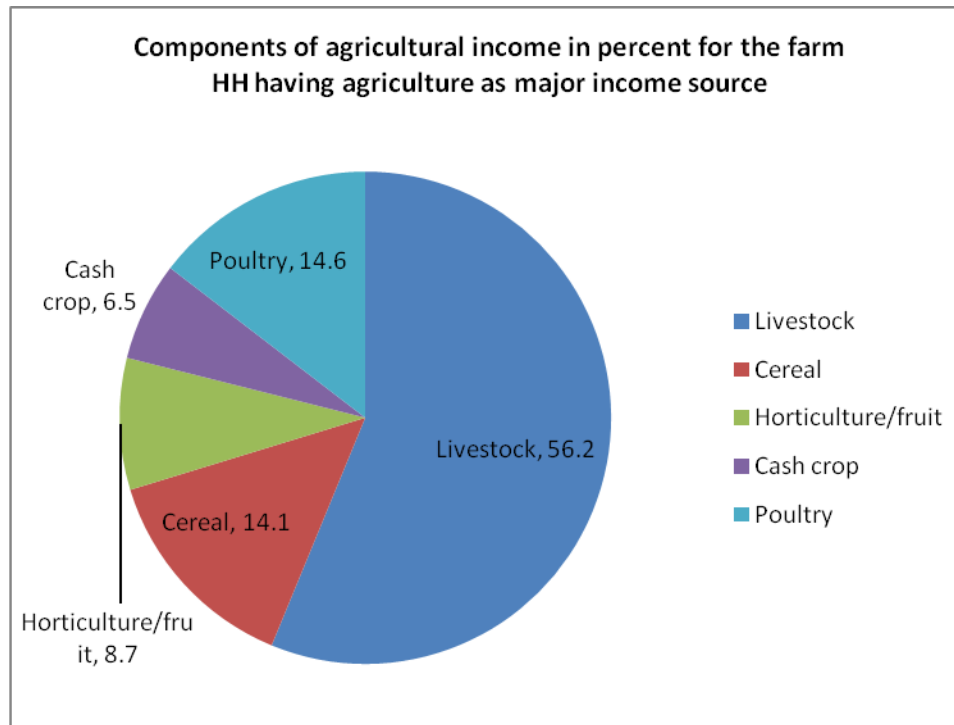
### 4.3.3. Components of agricultural income for the respondents who have agriculture as major income source

Those HHs having agriculture as a major source of income (N= 185), 56.22 percent said they obtained from livestock, 14.59 percent said from poultry, 14.05 percent said from cereal while 8.65 percent said from horticulture/fruits and 6.49 percent said from cash crop as major source of income. For detail see table: 4.3.3.

**Table: 4.3.3 Components of agricultural income for the respondents who have agriculture as major income source**

Major source of income	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Livestock	17	9.19	25	13.51	25	13.51	18	9.73	19	10.27	104	56.22
Cereal	9	4.86	5	2.70	4	2.16	5	2.70	3	1.62	26	14.05
Horticulture/fruit	3	1.62	3	1.62	2	1.08	4	2.16	4	2.16	16	8.65
Cash crop	2	1.08	2	1.08	1	0.54	3	1.62	4	2.16	12	6.49
Beekeeping	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Poultry	10	5.41	5	2.70	2	1.08	4	2.16	6	3.24	27	14.59
Total	41	22.16	40	21.62	34	18.38	34	18.38	36	19.46	185	100.00

Source: Field Survey- 2070



#### 4.3.6 Land holding of the households

From the survey, it was found that 29.09 percent each HH have 10-30 ropani of land, 17.45 percent have 1-5 ropani, 17.09 percent have 20-30 ropani, 6.18 percent have more than 30 ropani and 1.09 percent have no land. Landless were found in Chitwan, Tanahu and Ilam districts but it is insignificant. More land was found in the HHs from Tanahun followed by Banke, Ilam, Kabre. For detail see table 4.3.6.

**Table: 4.3.6 Land holding of the households**

Land holding	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
> 30 ropani	2	0.73	3	1.09	4	1.45	5	1.82	3	1.09	17	6.18
20-30 Ropani	10	3.64	10	3.64	9	3.27	8	2.91	10	3.64	47	17.09
10-20 Ropani	13	4.73	13	4.73	17	6.18	19	6.91	18	6.55	80	29.09
5-10 Ropani	21	7.64	10	3.64	20	7.27	16	5.82	13	4.73	80	29.09
1-5 Ropani	12	4.36	8	2.91	8	2.91	9	3.27	11	4.00	48	17.45
No land	1	0.36	0	0.00	0	0.00	1	0.36	1	0.36	3	1.09
Total	59	21.45	44	16.00	58	21.09	58	21.09	56	20.36	275	100.00

Source: Field Survey- 2070

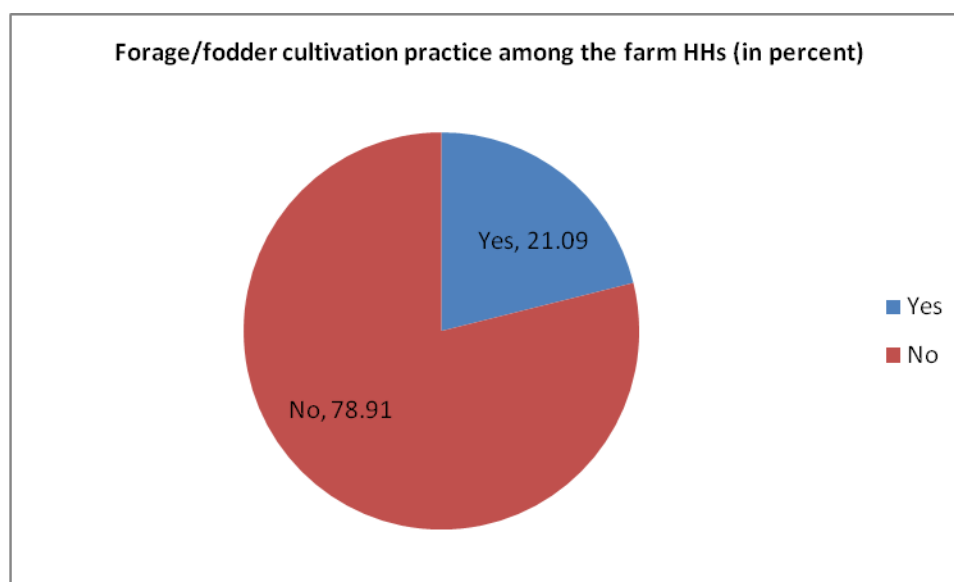
#### 4.3.7 Practice of forage/grass cultivation

It was found that only 21.09 percent farm HHs have practice of cultivating forage/fodder. Out of the forage/fodder cultivating farm HHs, 10.91 were from Ilam, 3.64 percent were from Tanahu and 2.91 percent were from Chitwan. Only 1.82 percent each farm HHs from Kabre and Banke were cultivating fodder/forage. For details see table: 4.3.7. Moreover, it was learnt that farmers cultivating forage in Community Forest and taking the consent from Community Forest User's Group (CFUG), farmers tried to compensate the green requirement for animal.

**Table: 4.3.7 Practice of forage/fodder cultivation**

Practice	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Yes	8	2.91	5	1.82	5	1.82	10	3.64	30	10.91	58	21.09
No	51	18.55	39	14.18	53	19.27	48	17.45	26	9.45	217	78.91
Total	59	21.45	44	16.00	58	21.09	58	21.09	56	20.36	275	100.00

Source: Field Survey- 2070



#### 4.3.8 Type of grass cultivated

Out of farm HHs cultivating fodder/forage, 56.9 percent cultivate mixed (legume and non legume), while 22.41 percent HH cultivating improved non legume and 20.69 percent cultivating improved legume. It was found that out of forage/fodder cultivating HHs, 51.72 percent were from Ilam, followed by 17.24 percent from Tanahu, 13.79 percent from Chitwan 8.62 percent each from Kabre and Banke districts. This directly related to milk production cost as Ilam has low cost of production compared to other districts. For detail see Table: 4.3.8.

**Table: 4.3.8 Type of grass cultivated**

Type of grass	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Improved legume	2	3.45	1	1.72	1	1.72	1	1.72	7	12.07	12	20.69
Improved non legume	2	3.45	1	1.72	1	1.72	2	3.45	7	12.07	13	22.41
Mixed	4	6.90	3	5.17	3	5.17	7	12.07	16	27.59	33	56.90
Total	8	13.79	5	8.62	5	8.62	10	17.24	30	51.72	58	100.00

Source: Field Survey- 2070

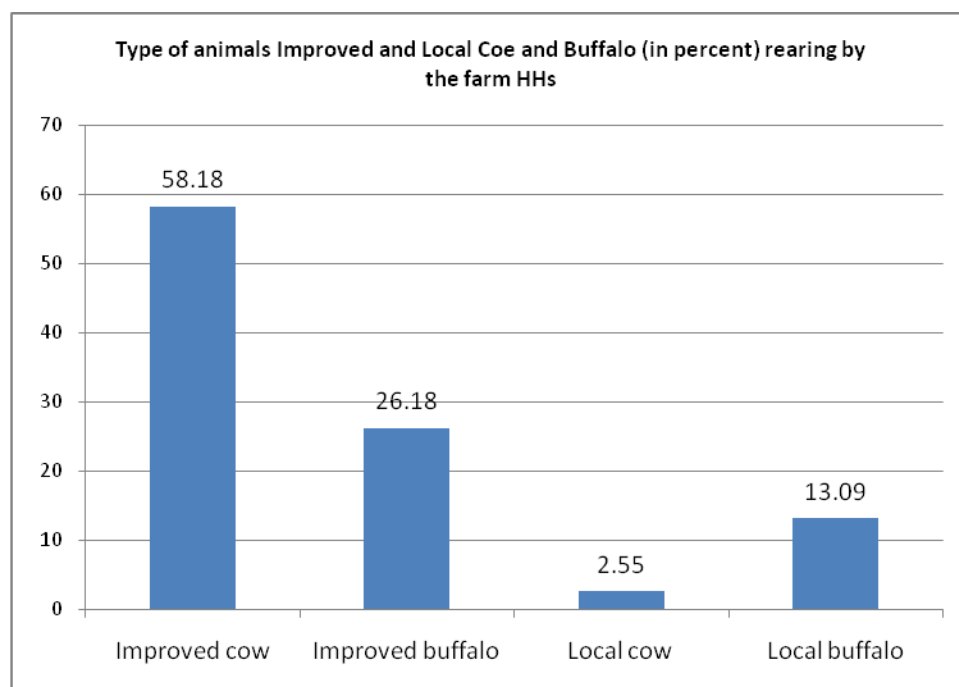
#### 4.3.9 Number of HH having lactating animal

From the survey, it was found that, 83.36 percent farm HHs having improved cow and buffalo constituting 58.18 percent cow and 26.18 percent buffalo. While on the other hand 15.64 percent farm HHs have local cow and buffalo constituting 13.09 percent having local buffalo and 2.55 local cows. Farm HH from Ilam did not have buffalo, while local cow was found in Banke and Tanahu. For detail see table: 4.3.9.

**Table 4.3.9 Number of HH having lactating animal**

Type of animals	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Improved cow	40	14.55	24	8.73	25	9.09	15	5.45	56	20.36	160	58.18
Improved buffalo	15	5.45	14	5.09	19	6.91	24	8.73	0	0.00	72	26.18
Sub Total	55	20.00	38	13.82	44	16.00	39	14.18	56	20.36	232	84.36
Local cow	2	0.73	1	0.36	2	0.73	2	0.73	0	0.00	7	2.55
Local buffalo	2	0.73	5	1.82	12	4.36	17	6.18	0	0.00	36	13.09
Sub Total	4	1.45	6	2.18	14	5.09	19	6.91	0	0.00	43	15.64
Total	59	21.45	44	16.00	58	21.09	58	21.09	56	20.36	275	100.00

Source: Field Survey- 2070



#### 4.3.10 Total lactating animal of the HHs by district

There were 473 lactating animal in the surveyed HHs. Out of them 59.41 percent were cow and 40.59 percent were buffalo. While analyzing by district, 24.52 percent lactating animals were from Kabre, 21.14 percent each were from Chitwan and Banke while 15.86 percent were from Ilam. HHs from Ilam has only cows. Out of HHs having buffalo, 12.05 percent were from Tanahu, 11.42 percent from Kabre, 11.21 percent from Banke and 5.92 percent from Chitwan. For detail see table: 4.3.10.

**Table: 4.3.10 Total lactating animal of the HH by district**

Type of animal	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Cow	72	15.22	62	13.11	47	9.94	25	5.29	75	15.86	281	59.41
Buffalo	28	5.92	54	11.42	53	11.21	57	12.05	0	0.00	192	40.59
Total	100	21.14	116	24.52	100	21.14	82	17.34	75	15.86	473	100.00

Source: Field Survey- 2070

#### 4.3.11. Milk production and productivity of animal by lactation

It was found that, productivity of cow was 11.37 liter and that of buffalo was 5.97 liter and average milk production was 8.67 liter per day. Productivity of cows in Kabre was 17.43 lits per day followed by Ilam 11.98 lits per day, Tanahun 11.44 lits per day, Chitwan 10.68 lits per day and Banke 7.85 lits per day. Similarly, the productivity of buffalo in Kabre was 7.24 lits, Chitwan 6.49 lits, Tanahun 5.89 lits and Banke 4.98 lits per day. For details see table: 4.3.11. To improve the productivity of cow and buffalo, DLS implemented Dairy Cattle Improvement Project (DCIP) that could be instrumental for improving in productivity. However, this project should be scale up for wider access to the dairy farmers.

**Table: 4.3.11 Milk production (Liter) of animal by lactation**

Type of animal	Districts/day											
	Chitwan	Lits	Kabre	Lits	Banke	Lits	Tanahu	Lits	Ilam	Lits	Total	Lits
Cow	244243.44	10.68	218201.56	17.43	170046.94	7.85	85800.00	11.44	294750.00	11.98	1013042	11.37
Buffalo	59600.52	6.49	112147.20	7.24	112045.18	4.98	117442.80	5.89	0.00	0.00	401236	5.97
Average	151921.98	8.59	165174.38	12.34	282092.12	12.83	203242.80	8.66	294750.00	11.98	1414278	8.67

Source: Field Survey- 2070

#### 4.3.12. Milk production and productivity of animal by lactation

The composite average lactation period of cows and buffalo was 325 days while the average lactation period of cow was 300 days buffalo was 350 days. For detail see table: 4.3.12.

**Table: 4.3.12 Average milk production calendar days in a year**

Type of animal	Districts					
	Chitwan	Kabre	Banke	Tanahu	Ilam	Average
Cow	301	298	301	300	300	300
Buffalo	353	352	346	350	0	350
Total	327	325	323.5	325	300	325

Source: Field Survey- 2070

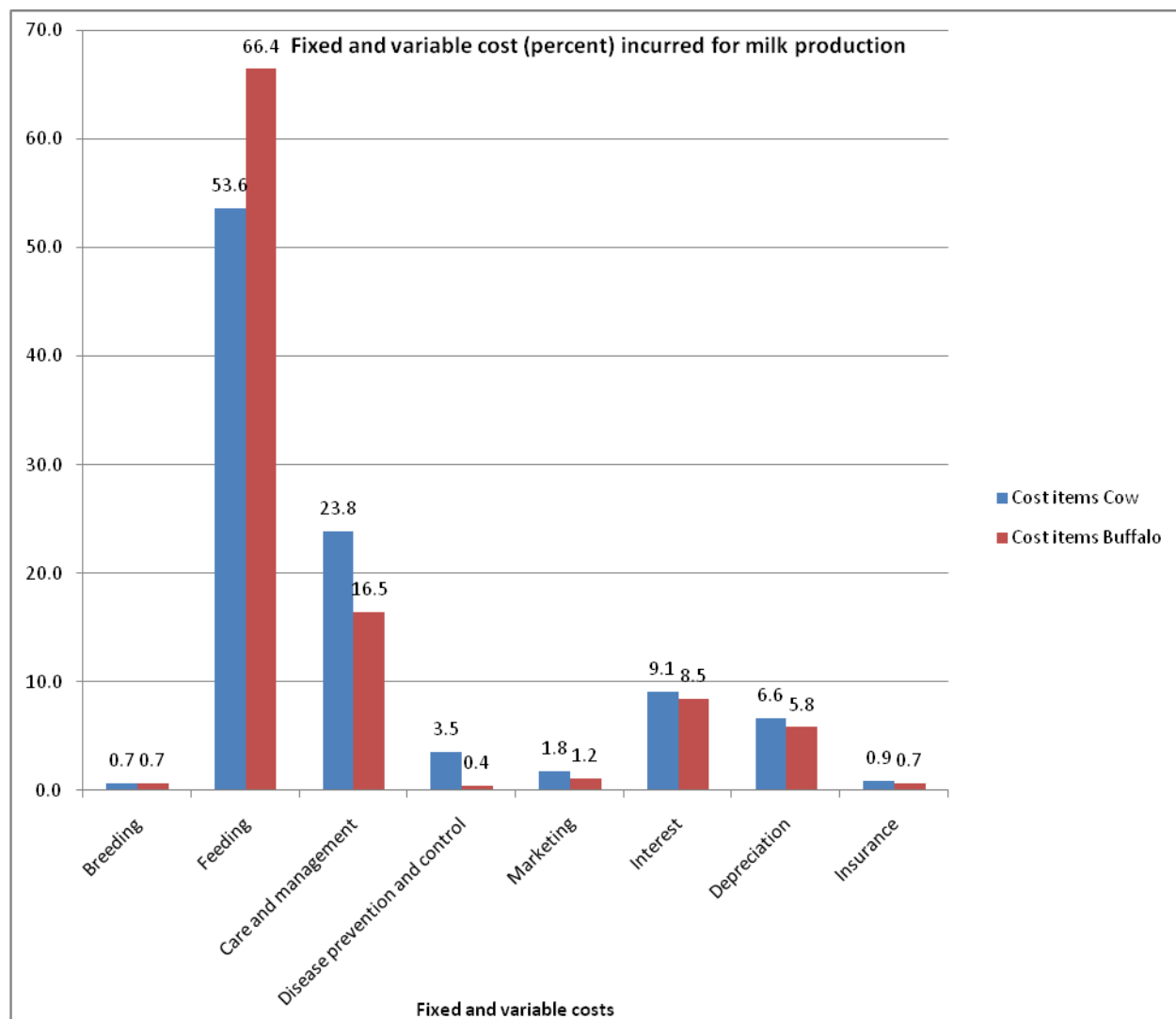
#### 4.3.13 Fixed and variable costs of milk production

Fixed and variable cost for milk production was calculated collecting information from the sample farm HHs. It was found that 57.6 percent of the total cost constituted by feed. Care and management constituted to 21.55 percent of total cost that also included labor cost, disease prevention and control accounted to 2.56 percent. Interest on the capital investment for cow and building was accounted to 8.87 percent and depreciation (animal and sheds) accounted to 6.67 percent, 1.58 percent for marketing, 0.8 percent for insurance and 0.67 percent for breeding (AI/bull and service charge). While calculating differently for cow and buffalo, feeding cost incurred was 66.44 percent in case of buffalo and 53.62 percent in cow while disease prevention and control cost for cow was 3.53 percent and it was 0.41 percent in case of buffalo. For detail see table: 4.3.13. National Dairy development Board (NDDB) and Community Livestock Development Project (CLDP) implemented different activities to decrease the cost of production particularly to reduce the feed cost, but it was not enough to bring about changes among the farmers to streamline grass to glass concept.

**Table: 4.3.13 Fixed and variable costs of milk production**

Cost items	Districts					
	Cow	%	Buffalo	%	Total	%
Breeding	243064.75	0.71	86401.00	0.56	329465.75	0.67
Feeding	18262330.00	53.62	10181755.00	66.44	28444085.00	57.60
Care and management	8118821.85	23.84	2521103.15	16.45	10639925.00	21.55
Disease prevention and control	1203804.00	3.53	62776.00	0.41	1266580.00	2.56
Interest	3086571.30	9.06	1295952.20	8.46	4382523.50	8.87
Depreciation	2253305.15	6.62	893470.12	5.83	3146775.27	6.37
Insurance	290170.13	0.85	106047.01	0.69	396217.14	0.80
Marketing	601654.00	1.77	176874.50	1.15	778528.50	1.58
Total	34059721.18	100.00	15324378.98	100.00	49384100.16	100.00
Breeding	243064.75	0.71	86401.00	0.56	329465.75	0.67
Feeding	18262330.00	53.62	10181755.00	66.44	28444085.00	57.60

Source: Field Survey- 2070



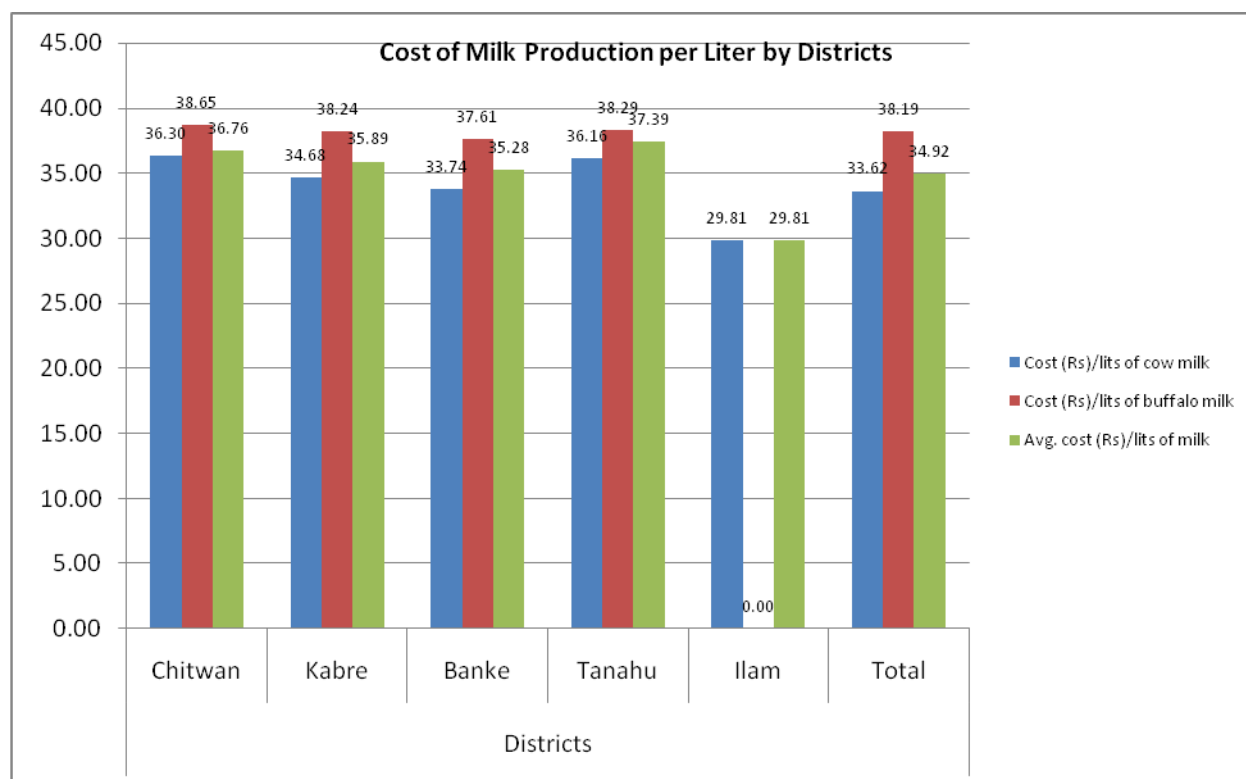
#### 4.3.14 Costs per liter of milk production

Average milk production cost was Rs. 34.92 per liter (cow milk Rs.33.62 and buffalo Rs.38.19 per liter). Milk production cost was comparatively high in Tanahu and low in Ilam. The production cost in Tanahu was Rs. 37.39 and Ilam was Rs. 29.81 per liter. Similarly, milk production cost was Rs. 36.76 in Chitwan, Rs. 35.89 in Kabre and Rs.35.28 in Banke. For detail see table: 4.3.14 and annex: 2. On the other hand, farmers are getting Rs. 32/liter of milk while the farmers in Tanahu getting Rs. 41/liter.

**Table: 4.3.14 Cost of milk production**

Particulars	Districts					
	Chitwan	Kabre	Banke	Tanahu	Ilam	Total
<b>Cow</b>	<b>8866745.90</b>	<b>7567268.80</b>	<b>5737259.22</b>	<b>3102197.58</b>	<b>8786249.68</b>	<b>34059721.18</b>
<b>Buffalo</b>	<b>2303632.78</b>	<b>4288866.15</b>	<b>4213839.96</b>	<b>4497443.97</b>	<b>0.00</b>	<b>15324378.98</b>
<b>Total cost</b>	<b>11170378.68</b>	<b>11856134.95</b>	<b>9951099.18</b>	<b>7599641.55</b>	<b>8786249.68</b>	<b>49384100.16</b>
Total Milk Cow	244243.44	218201.56	170046.94	85800.00	294750.00	1013041.94
Total Milk Buffalo	59600.52	112147.20	112045.18	117442.80	0.00	401235.70
<b>Total</b>	<b>303843.96</b>	<b>330348.76</b>	<b>282092.12</b>	<b>203242.80</b>	<b>294750.00</b>	<b>1414277.64</b>
Value of milk (cow)	7933026.93	7008634.11	5281657.96	3694750.49	8583120.00	32501189.48
Value of milk (buffalo)	2174822.97	4052999.81	3922701.75	7133822.28	0.00	17284346.81
<b>Total value of milk</b>	<b>10107849.91</b>	<b>11061633.92</b>	<b>9204359.71</b>	<b>10828572.77</b>	<b>8583120.00</b>	<b>49785536.30</b>
<b>Cow</b>	<b>36.30</b>	<b>34.68</b>	<b>33.74</b>	<b>36.16</b>	<b>29.81</b>	<b>33.62</b>
<b>Buffalo</b>	<b>38.65</b>	<b>38.24</b>	<b>37.61</b>	<b>38.29</b>	<b>0.00</b>	<b>38.19</b>
<b>Average</b>	<b>36.76</b>	<b>35.89</b>	<b>35.28</b>	<b>37.39</b>	<b>29.81</b>	<b>34.92</b>

Source: Field Survey- 2070



#### 4.3.15 Use of milk produced by the HHs

The milk produced was used for different purposes by the farm HHs. It was found that 53.82 percent farm HH both sale and for HH consumption while 33.45 percent only sale and 12.73 percent use only for HH consumption. For details see table: 4.3.15.

**Table : 4.3.15 Use of milk produced**

Uses	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
HH consumption	7	2.55	5	1.82	6	2.18	8	2.91	9	3.27	35	12.73
Sale	19	6.91	15	5.45	21	7.64	21	7.64	16	5.82	92	33.45
Both	33	12.00	24	8.73	31	11.27	29	10.55	31	11.27	148	53.82
Total	59	21.45	44	16.00	58	21.09	58	21.09	56	20.36	275	100.00

Source: Field Survey- 2070

#### 4.3.16 Preferred sales place of milk produced by the HHs

Those farm HHs who sale the milk, 63.11 percent preferred to sale to MPCs, 11.65 percent preferred to sale to tea shops, 9.71 percent preferred to sale to vendors, 8.74 percent preferred to sale to private dairies and 6.8 percent preferred to sale neighbors. Hence it is confirmed that, MPC is the most preferred sales place for the producers. For detail see table: 4.3.16.

**Table: 4.3.16 Preferred sale place (Multiple answer)**

Place	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Tea shop	8	2.59	8	2.59	5	1.62	10	3.24	5	1.62	36	11.65
Neighbor	7	2.27	2	0.65	2	0.65	3	0.97	7	2.27	21	6.80
MPC	47	15.21	31	10.03	37	11.97	37	11.97	43	13.92	195	63.11
Private dairy	2	0.65	4	1.29	9	2.91	10	3.24	2	0.65	27	8.74
Vendors	3	0.97	6	1.94	10	3.24	8	2.59	3	0.97	30	9.71
Total	67	21.68	51	16.50	63	20.39	68	22.01	60	19.42	309	100.00

Source: Field Survey- 2070

#### 4.3.17 Time spent to sale milk (up to the delivery point)

From the information collected, 61.76 percent farm HHs can sale the produced milk spending less than 20 minutes while 32.72 percent farm HHs needs to spent less than 1 hrs and 5.51 percent HH spent more than 1 hour to sale the milk. For detail see table: 4.3.17.

**Table: 4.3.17 Time spent to sale the milk (up to the delivery point)**

Time	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
< 20 minute	49	18.01	25	9.19	31	11.40	25	9.19	38	13.97	168	61.76
30 min- 1 hr	10	3.68	15	5.51	18	6.62	31	11.40	15	5.51	89	32.72
> 1 hr	0	0.00	4	1.47	9	3.31	2	0.74	0	0.00	15	5.51
<b>Total</b>	<b>59</b>	<b>21.69</b>	<b>44</b>	<b>16.18</b>	<b>58</b>	<b>21.32</b>	<b>58</b>	<b>21.32</b>	<b>53</b>	<b>19.49</b>	<b>272</b>	<b>100.00</b>

Source: Field Survey- 2070

#### 4.3.18 Quantity and value of dung produced out of lactating animal

The total value of dung produced by the lactating animal was Rs. 2096193.58. Out of which Rs. 1155224.24 was from cow and Rs. 940969.34 was from buffalo. It was found that, the cow produces 11.26 kg and buffalo produce 13.43 kg dung per day. For detail see table: 4.3.18.

**Table: 4.3.18 Quantity and value of animal byproduct (Dung)**

Dung (kg)	Districts					
	Chitwan	Kabre	Banke	Tanahu	Ilam	Total
Cow	265483.45	287401.00	213888.54	93075.00	295376.25	1155224.24
Buffalo	140104.96	272165.54	256340.60	272358.26	0.00	940969.34
<b>Total</b>	<b>405588.41</b>	<b>559566.54</b>	<b>470229.14</b>	<b>365433.26</b>	<b>295376.25</b>	<b>2096193.58</b>
Value of dung (Rs 1/kg)						
Cow	265483.45	287401.00	213888.54	93075.00	295376.25	1155224.24
Buffalo	140104.96	272165.54	256340.60	272358.26	0.00	940969.34
<b>Total value of dung</b>	<b>405588.41</b>	<b>559566.54</b>	<b>470229.14</b>	<b>365433.26</b>	<b>295376.25</b>	<b>2096193.58</b>

Source: Field Survey- 2070

#### 4.3.19 Value of product and byproduct and minimum price to cover milk production cost

From the current milk price received by the farmers, benefit from a liter of milk was Rs. 1.05. While it is expected that, the farmers needs to get 10 percent of the total cost as profit that would be Rs. 3, thus the difference between the proposed benefit is Rs. 2.41 per liter. For details see table: 4.3.19.

**Table: 4.3.19 Value of product and byproduct of animal and minimum price of milk to cover cost and benefit on investment**

Particulars	Districts					
	Chitwan	Kabre	Banke	Tanahu	Ilam	Total
Total value (Rs) of product (cow)	<b>8198510.38</b>	<b>7296035.11</b>	<b>5495546.50</b>	<b>3787825.49</b>	<b>8878496.25</b>	<b>33656413.72</b>
Total value (Rs) of product (Buffalo)	<b>2314927.93</b>	<b>4325165.34</b>	<b>4179042.35</b>	<b>7406180.54</b>	<b>0.00</b>	<b>18225316.16</b>
Total Value (Rs) of product	10513438.31	11621200.45	9674588.84	11194006.02	8878496.25	51881729.88
Benefit (Rs)/lits	0.94	0.98	0.97	1.47	1.01	1.05
Proposed profit (10% of total cost) Rs	2.6	2.7	2.8	3.9	3.4	3.0
Price to be increase (Rs/lits)	2.92	2.29	2.03	1.53	2.98	2.41

Source: Field Survey- 2070

#### 4.3.20 Pricing system of the milk

Dual Axis Pricing (Fat and SNF system) has been operating in general as 88.0 percent respondents affirmatively said that dual axis pricing has been applied. It was found that 7.27 percent farm HHs sale milk in lump sum basis and 4.73 percent sale based on fat content only. For detail see table: 4.3.20.

**Table: 4.3.20 Pricing system of the milk**

Pricing system	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Fat	1	0.36	4	1.45	2	0.73	4	1.45	2	0.73	13	4.73
Fat + SNF	52	18.91	36	13.09	52	18.91	51	18.55	51	18.55	242	88.00
Lumpsum	6	2.18	4	1.45	4	1.45	3	1.09	3	1.09	20	7.27
Total	59	21.45	44	16.00	58	21.09	58	21.09	56	20.36	275	100.00

Source: Field Survey- 2070

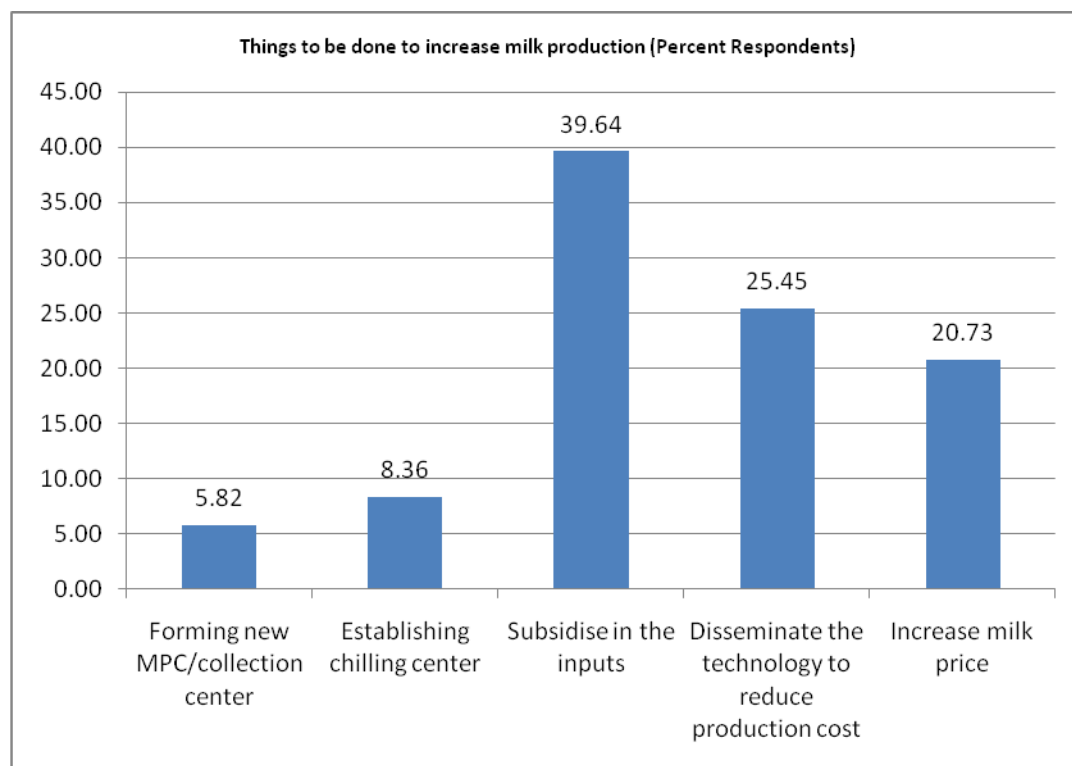
#### 4.3.21 Things to be done to increase the milk production and collection

The farm HHs recommended anchoring different intervention to increase milk production. Out of the respondents 39.64 percent said that it is required to increase extension service to farmers, 25.45 percent said to disseminate the technology to reduce production cost, 20.73 percent said to increase milk price, 8.36 percent said to establish chilling center and 5.82 percent said, it is required to increase collection center. Thus the farmers are seeking more technology support and grant subsidy system in the inputs incurred. For detail see table: 4.3.21.

**Table 4.3.21 Things to be done to increase the milk production and collection**

Particulars	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Forming new MPC/collection center	3	1.09	2	0.73	4	1.45	6	2.18	1	0.36	16	5.82
Establishing chilling center	2	0.73	5	1.82	6	2.18	6	2.18	4	1.45	23	8.36
Increase extension service to farmers	26	9.45	14	5.09	21	7.64	19	6.91	29	10.55	109	39.64
Disseminate the technology to reduce production cost	16	5.82	12	4.36	15	5.45	14	5.09	13	4.73	70	25.45
Increase milk price	12	4.36	11	4.00	12	4.36	13	4.73	9	3.27	57	20.73
<b>Total</b>	<b>59</b>	<b>21.45</b>	<b>44</b>	<b>16.00</b>	<b>58</b>	<b>21.09</b>	<b>58</b>	<b>21.09</b>	<b>56</b>	<b>20.36</b>	<b>275</b>	<b>100.00</b>

Source: Field Survey- 2070



#### 4.4 Consumers survey

##### 4.4.1 Daily milk consumption

Milk consumption pattern was different in different districts. However, it was found that 43.57 percent consumer HH consume 1-2 liter of milk, 15.71 percent consume 5-10 liters, 14.29 percent consume more than 10 liters and 13.57 percent consume less than 1 liter milk in a day. The consumers who consume 5 to more than 10 liters were the tea shops and small hotels. For detail see table: 4.4.1. Average HH size was 4.5 and hence it can be said that, average consumption is 444 milligram per day.

**Table: 4.4.1 Daily milk consumption**

Qty	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
< 1 lits	5	3.57	3	2.14	2	1.43	5	3.57	4	2.86	19	13.57
1-2 Lits	13	9.29	11	7.86	14	10.00	12	8.57	11	7.86	61	43.57
2-5 Lits	3	2.14	4	2.86	5	3.57	3	2.14	3	2.14	18	12.86
5-10 Lits	4	2.86	5	3.57	3	2.14	4	2.86	6	4.29	22	15.71
> 10 Lits	4	2.86	3	2.14	4	2.86	5	3.57	4	2.86	20	14.29
Total	29	20.71	26	18.57	28	20.00	29	20.71	28	20.00	140	100.00

Source: Field Survey- 2070

##### 4.4.2 Milk consumption pattern

From the survey, it was found that consumption pattern of milk has been changed. Out of the consumers surveyed, 58.57 percent said that consumption is in increasing trend while 31.43 percent said consumption is usual i.e. neither increased not decreased and 10 percent said consumption is decreased. For detail see table: 4.2.2.

**Table: 4.2.2 Milk consumption pattern**

Particular	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
As usual	11	7.86	7	5.00	8	5.71	12	8.57	6	4.29	44	31.43
Increase	15	10.71	16	11.43	17	12.14	15	10.71	19	13.57	82	58.57
Decrease	3	2.14	3	2.14	3	2.14	2	1.43	3	2.14	14	10.00
Total	29	20.71	26	18.57	28	20.00	29	20.71	28	20.00	140	100.00

Source: Field Survey- 2070

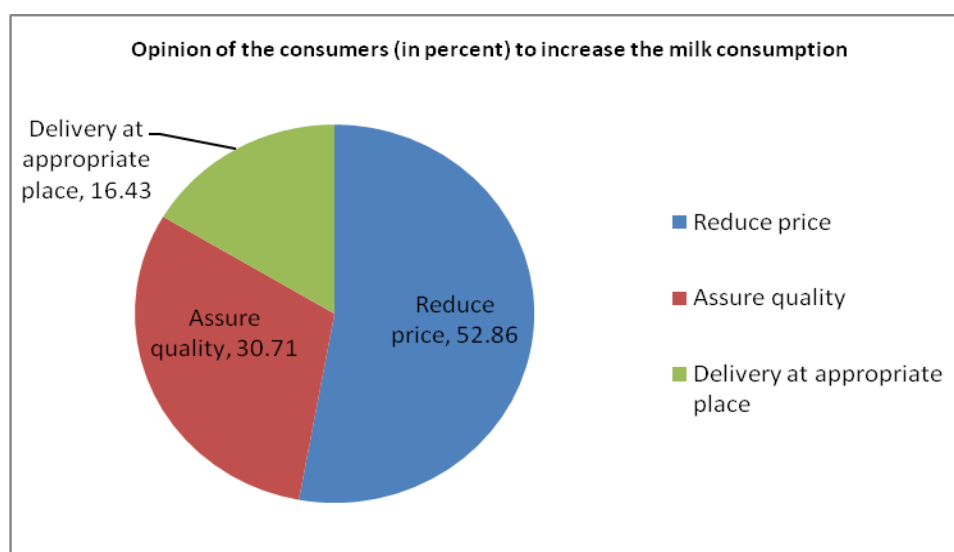
##### 4.4.3 Opinion of the consumer to increase the milk consumption

From the survey, it can be said that the current price of milk is high. It revealed that, 52.86 percent respondents said that the milk price should be reduced. On the other hand 30.71 percent said that there should be good quality milk and 16.43 percent said to increase the access i.e. increase sales center. For detail see table: 4.4.3.

**Table: 4.4.3 Opinion of the consumers to increase the milk consumption**

Particulars	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Reduce price	17	12.14	13	9.29	15	10.71	19	13.57	10	7.14	74	52.86
Assure quality	10	7.14	9	6.43	7	5.00	6	4.29	11	7.86	43	30.71
Delivery at appropriate place	2	1.43	4	2.86	6	4.29	4	2.86	7	5.00	23	16.43
Total	29	20.71	26	18.57	28	20.00	29	20.71	28	20.00	140	100.00

Source: Field Survey- 2070



#### 4.4.4 Source of Milk Purchase

It was found that, 41.43 percent the consumer purchase milk directly from farmers, followed by 25.71 percent purchase from milk booth, 17.86 percent purchase from vendors and 15.0 percent consumer purchase from open fluid milk shop. For detail see table: 4.4.4. It entails that until now, consumer preferred to purchase directly from farmers. It is hence, required to motivate the consumers to take processed milk.

**Table: 4.4.4 Source of Milk Purchase**

Particular	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Directly from farmers	12	8.57	11	7.86	13	9.29	10	7.14	12	8.57	58	41.43
Vendors	8	5.71	5	3.57	4	2.86	5	3.57	3	2.14	25	17.86
Milk booth	7	5.00	6	4.29	8	5.71	9	6.43	6	4.29	36	25.71
Open fluid milk shop	2	1.43	4	2.86	3	2.14	5	3.57	7	5.00	21	15.00
Total	29	20.71	26	18.57	28	20.00	29	20.71	28	20.00	140	100.00

Source: Field Survey- 2070

#### 4.4.5 Brand of Milk Purchase

The consumers who purchase milk from the milk booth i.e. formal sector, 38.89 percent purchase DDC brand, 33.3 percent from private dairy and 27.78 percent from cooperative processed milk. Still the DDC brand dominates the milk market. For detail see table: 4.4.5.

**Table: 4.4.5 Brand of packet milk purchase**

Brand	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
DDC	3	8.33	2	5.56	2	5.56	5	13.89	2	5.56	14	38.89
Private dairy	2	5.56	4	11.11	1	2.78	2	5.56	3	8.33	12	33.33
Cooperative	2	5.56	0	0.00	5	13.89	2	5.56	1	2.78	10	27.78
Total	7	19.44	6	16.67	8	22.22	9	25.00	6	16.67	36	100.00

Source: Field Survey- 2070

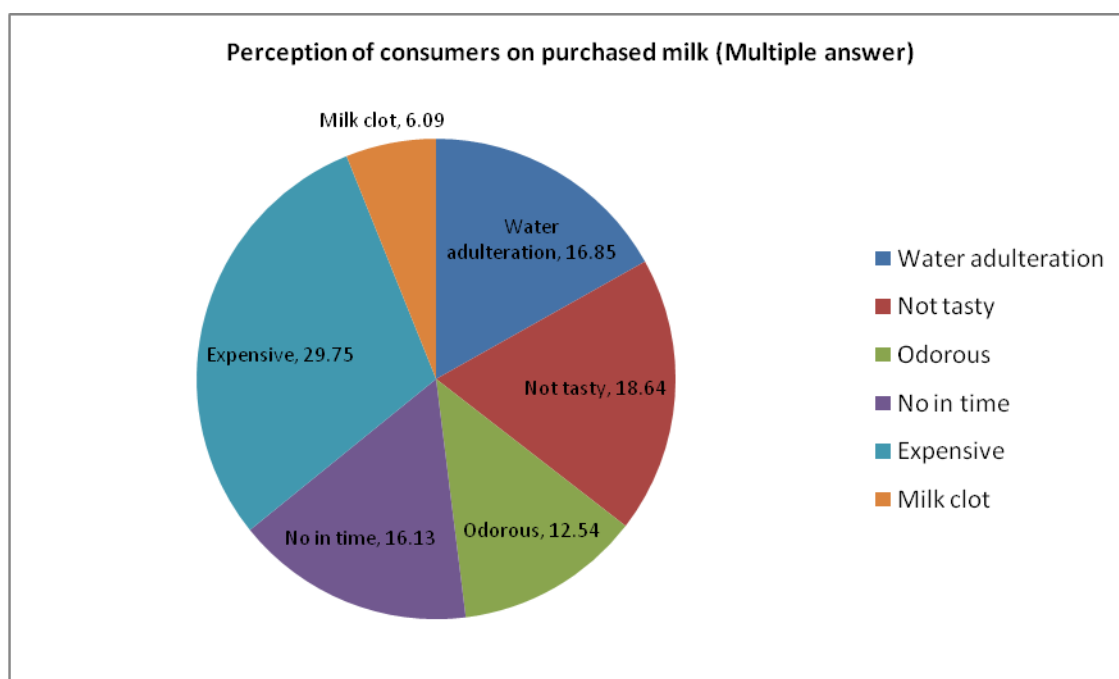
#### 4.4.6 Perception of consumer on purchased milk

The consumers were not much satisfied with the milk they have consuming. They have different complaints as 29.75 percent said that the milk is expensive, 18.64 percent said that it is not tasty, 16.85 percent said that milk is adulterate with water, 16.13 percent said milk is not available in time and 12.54 percent said it is odorously. Hence, it is clearly find out that consumers' complaint is primarily towards the quality and secondarily on price. For detail see table: 4.4.6.

**Table: 4.4.6 Perception of consumers on purchased milk (Multiple answer)**

Particulars	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Water adulteration	8	2.87	11	3.94	9	3.23	12	4.30	7	2.51	47	16.85
Not tasty	10	3.58	11	3.94	10	3.58	11	3.94	10	3.58	52	18.64
Odorous	5	1.79	8	2.87	9	3.23	8	2.87	5	1.79	35	12.54
No in time	7	2.51	9	3.23	11	3.94	10	3.58	8	2.87	45	16.13
Expensive	15	5.38	19	6.81	18	6.45	22	7.89	9	3.23	83	29.75
Milk clot	3	1.08	5	1.79	4	1.43	3	1.08	2	0.72	17	6.09
Total	48	17.20	63	22.58	61	21.86	66	23.66	41	14.70	279	100.00

Source: Field Survey- 2070

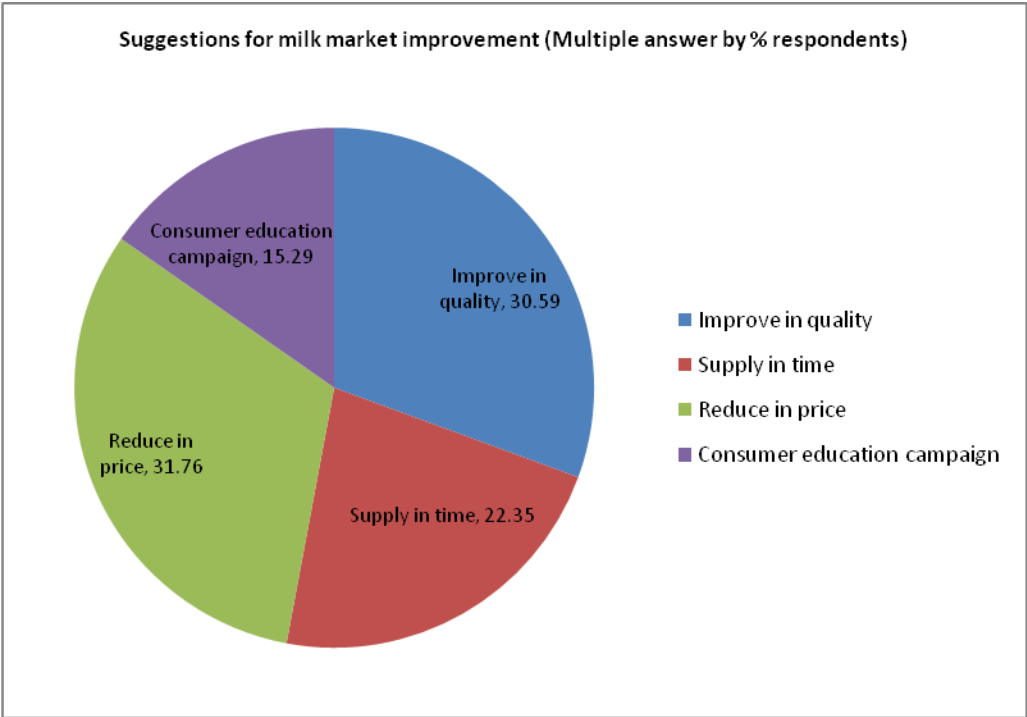


#### 4.4.7 Suggestions for milk market improvement

Consumers provided suggestion to improve the milk market. Out of the consumers 31.76 percent said to reduce the price, 30.59 percent suggested to improve the quality, 22.35 percent said to provide milk in time and 15.29 percent suggested to conduct consumer education campaign. For detail see table: 4.4.7.

**Table: 4.4.7 Suggestions for milk market improvement (Multiple answer)**

Particulars	Districts											
	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Improve in quality	11	6.47	16	9.41	10	5.88	9	5.29	6	3.53	52	30.59
Supply in time	5	2.94	7	4.12	8	4.71	9	5.29	9	5.29	38	22.35
Reduce in price	9	5.29	10	5.88	12	7.06	12	7.06	11	6.47	54	31.76
Consumer education campaign	6	3.53	5	2.94	4	2.35	5	2.94	6	3.53	26	15.29
Total	31	18.24	38	22.35	34	20.00	35	20.59	32	18.82	170	100.00



## **5. CONCLUSION AND RECOMMENDATIONS**

### **5.1 Conclusion**

Dairy sector development is one of the potential area for rural employment generation. Transfer of technology in breeding, feeding, care, management, disease prevention and control and marketing could be the tool to improve in milk production, reduce in production cost and increase profit margin to the entrepreneurs/farmers.

Commercial dairy farming shall transform dairying as enterprise and farmers as entrepreneur. Enterprise shall functionalize cash transaction that motivates the people to undertake it as occupation. Dairy cooperatives in Nepal have a strong presence from the primary level to the federation level and become strong pressure group. However, there is many things to do to transform the dairy sector as enterprise and dairy farmers to entrepreneur. Once this will be establish as enterprise, it would be transform to prestigious occupation and the stakeholders hear their voices.

After the transformation to enterprise and entrepreneur scientific and systematic dairy animal keeping system will be evolved. The farmers will seek new technology in breeding, feeding, care, management, disease prevention and control and marketing. This would be breakthrough for record keeping of inputs and outputs of the enterprise. Whereas at present farmers are not well inform how much they are spending and how much they are getting. Once the income and expenditure will be identified, entrepreneurs will be serious to reduce the cost and maximize the benefit. This will open the rooms for tracking the technology and use the best technology. On the other hand, data for researcher shall be available that could be the themes for technology development.

In this regards, government should place great reliance on the dairy cooperative movement as to establish dairy enterprises at grass root level and functionalize means for its poverty alleviation efforts. Since the small and marginal farmers are the plentiful and poorest of the population, attempts should be made to increase livestock and especially milk production by assisting them in every possible manner. Such a policy has both the social as well as a commercial purpose since it provides rural employment, more cash income and diversification away from traditional crop production; and it also enhances the utilization of potential family labor. The farmer cooperative system has proved to be an effective channel for livestock development in general and for dairy development in particular in the rural areas of many developing countries.

The dairy cooperatives provide small farmers with an organizational arrangement at the grassroots level to assist them in planning, decision-making and implementing schemes that involve them and their families to raise their socio-economic standards. They also have been recognized as an important means of organizing the supply of agricultural inputs, processing and marketing of agricultural produce and providing agricultural credit in many developing countries of Asia and the Pacific Region. They have proved to be a strong economic institution and a medium for improving the condition of the disadvantaged rural population.

At present cost of milk production is much high compared to the neighboring countries as cost of 1 liter milk production in India is Rs. 12 and China are is Rs. 7 respectively and we should compete with these neighboring countries under WTO undertaking. On the other hand, it is estimated that switching from small holder dairy farming to commercial farming in Nepal can bring the cost down to as low as NRS 12-15. We have used Rs.29.04 to evaluate the profit margin for each stakeholder. Most of the cost has been incurred in feed and feeding while the interest of capital, depreciation, insurance costs compounded to swell the production cost. Policy administration to address the issues could be instrumental to reduce the milk price and increase the consumption.

## 5.2 Recommendations

- Approved technology in cattle and buffalo production and management could be an instrument to increase production and productivity. Hence it is recommended to conduct functional tailored made training on feeding, breeding care, management, disease prevention and control, record keeping and marketing.
- The study identified that, productivity of animal is very low that is contributing for high production cost. This is due to poor quality genotype with respect to milk production. In this regards, scientifically maintained cow and buffalo resource center should be established in the long run and facilitate the farmers to import good genotype cattle in the short run. The government should manage such farm or import quality cow and provide to farmers in subsidized rate or the government should involve private sector to establish resource center or import license providing subsidy.
- It is equally important to improve the productivity of available gene pool augmenting cross breeding campaign. The government should provide technical support through its extension activities in cheaper rate. Separate additional AI mission shall be articulated with the extension services and upscale the DCIP intervention to cover wider universe.
- The livestock insurance process should be simplified and provide such service at the doorstep of the farmers.
- Farmers should be motivated to grow improved grasses and legumes. The farmers should be taught to feed these grasses and legumes as the supplementary feeding in appropriate quantity together with cereal straws and other feedstuffs. Also through the extension services, campaign for preservation of grass and legume should be undertaken. This will promote intake of quality roughages and will improve the efficiency of feeding at lower cost resulting in reduction in milk production cost. Farmers shall coordinate with CFUG to cultivate forage in forest and use with appropriate policy at local level.
- So as to prevent animal diseases, it is necessary to step up the efforts of dairy extension, particularly in vaccination and drenching. Vaccination and drenching programs should be launched as a collaborative venture between government and the dairy cooperatives. Provisions of sufficient veterinary medicines together with effective health care services are critically wanted in the surveyed
- The farmers should be paid with remunerative price for their milk. For this, a regular system of estimating and updating the farmers' cost of milk production should be established and milk price should be reviewed at regular intervals.
- As per our findings the cost per liter of milk at the farmer's level was approximately Rs.34.92 which is higher than the stated NDDDB price of Rs. 32. At present farmers are getting 1.05 percent margin which is not justifiable. With the current value of money at least 10 percent margin for the investment is required. Thus the current milk price needs to be increased by Rs. 2.41 per liter.

**ANNEXES:**

**Annex: 1.1 Household Survey Questionnaire in Nepali**

**कृषक घरघुरी सर्वेक्षणको लागि प्रश्नावली**

(सुचना संकलन गर्दा २०६९ साउन देखि २०७० असार सम्मलाई आधार मान्ने)

**(क) सामान्य परिचय**

- (१) उत्तरदाताको नाम: (२) ठेगाना: (३) लिङ्ग  
(४) उमेर: (५) परिवार संख्या:  
(६) शिक्षा:  
(क) निराक्षर (ख) साक्षर मात्र: (ग) प्राथमिक: (घ) माध्यामिक:  
(ङ) उच्च माध्यामिक:

**(ख) सामाजिक/आर्थिक अवस्था**

- (१) तपाईंको मुख्य आमदानीको श्रोत के हो ?  
(क) कृषि (ख) सेवा (ग) व्यापार (घ) मजदुरी  
(ङ) वैदेशिक रोजगार (च) अन्य (खुलाउनुहोस्)  
(२) यदि कृषि हो भने तपाईंको सबै भन्दा भरपर्दो आमदानीको श्रोत के हो ?  
(क) पशुपालन (ख) अन्न खेति (ग) फलफुल खेति (घ) नगदेवाली  
(ङ) माछापालन (च) माहुरीपालन (छ) कुखुरापालन (ज) अन्य (खुलाउनुहोस्)  
(३) तपाईंको जम्मा जमीन कति रोपनी/विघा छ?  
(क) खेत :..... रोपनी  
(ख) पाखो :..... रोपनी  
(४) कति जमिनमा घांस खेती गर्नु भएको छ ? .....रोपनी  
(५) कुन कुन घांस लगाउने गर्नु भएको छ ?

(६) तपाईंले कतिवटा गाई/भैसि पाल्नु भएको छ ?

(क) जम्मा गाई..... दुहना गाई:..... जात:.....

(ख) जम्मा भैसी..... दुहना भैसी:..... जात:.....

(७) तपाईंको गाई/भैसिले एक दिनमा कति लिटर दुध दिन्छ ? (यो प्रश्न प्रश्न नं १९ संग मिलाउनुपर्छ)

(क) गाई

पहिलो २ महिना २ महिना देखी ६ महिना सम्म ६ महिना देखी माथि

.....

(ख) भैसी

पहिलो २ महिना २ महिना देखी ६ महिना सम्म ६ महिना देखी माथि

.....

(८) सालाखाला व्यापछि कति दिन दुहुनु हुन्छ ?

गाईमा.....महिना

भैसीमा.....महिना

(९) तपाईंले उत्पादन गरेको दुध के गर्नुहुन्छ?

(क) घरमा नै खाने (लिटर) ..... (ख) वेच्ने (लिटर) .....(ग) अन्य (खुलाउनुहोस्)

(१०) तपाईंले गत साल कति लिटर दुध वेच्नु भयो?

.....लिटर

(११) कुन कुन महिनामा सबभन्दा वढि तथा कुनकुन महिनामा सबभन्दा कम दुध वेच्नुहुन्छ ?

वढि वेचिने महिनाहरु:

कम वेचिने महिनाहरु:

(१२) तपाईं दुध कहाँ वेच्नु हुन्छ?

(क) स्थानीय चिया पसल/होटल (ख) छिमेक (ग) दुध उत्पादक सहकारी संस्था

(घ) ग्वाला (ङ) निजी डेरी (च) अन्य (खुलाउनुहोस्)

(१३) तपाईले दुध वेच्ने ठाउंसम्म पु-याउन कति समय लाग्छ?

(१४) तपाई कति रुपैया लिटरमा दुध वेच्नुहुन्छ?

गाईको: रु                      भैसीको: रु.....

(१५) तपाई कसलाई दुध वेच्न रुचाउनुहुन्छ?

(क) स्थानीय चिया पसल/होटल    (ख) छिमेक            (ग) दुध उत्पादक सहकारी संस्था

(घ) घरघरमा लगि विक्री गर्ने व्यक्ति            (ङ) अन्य (खुलाउनुहोस्)

(१६) सोभै उपभोक्तालाई विक्री गर्दा र डेरी उद्योगहरूमा विक्री गर्दा प्रति लिटर दुधको मल्यमा कति फरक पर्छ?

(१७) दुध बाहेक अन्य दुग्ध पदार्थहरू पनि विक्री गर्नुहुन्छ की ?

यदि विक्री गर्ने भएमा:

दुग्ध पदार्थ:

वार्षिक विक्री परिमाण:

विक्री वाट वार्षिक आय रु :

(१८) तपाईको पशुवाट प्रति लिटर दुध उत्पादन लागत कति पर्छ ?

क्रस	खर्चको विवरण	गाई (खर्च रु मा)	भैसी (खर्च रु मा)
१	प्रजनन (सिमेन/ साढे , प्राविधिकको खर्च)		
२	घास, दाना, पानी, तथा अन्य खुराक		
क	हरियो घास		
ख	पराल		
ग	दाना, चोकर		
घ	भिटामीन, लवण		
३	स्याहार सुसार खर्च (श्रम/ज्याला)		
४	औषधि उपचार (खोप, प्राविधिक खर्च, औषधि खर्च जोडेर राख्ने)		

५	अन्य सामग्री (कोदालो, सावेल, क्यान, ब्रस, दाम्लो, वाल्टी, गोठ सफा गर्ने डिटरजेन्ट, गोठ तथा भाडा निर्मलीकरण गर्ने पदार्थ आदी)		
६	पानी, विजुली आदी		
७	स्थिर पुजी लागत		
क	दुधालु पशु खरिद वा त्यसको मुल्य		
ख	गोठ निर्माण वा त्यसको मुल्य		
८	स्थिर पुजीको व्याज		
९	पशु तथा गोठको ढस कट्टी		
१०	पशुको विमा		
११	दुध वजार सम्म ल्याउने खर्च		
१२	अन्य भए खुलाएर लेख्ने		
	जम्मा		

(१९) दुध विक्रीवाट तपाईंको सालाखाला वार्षिक आमदानी कति हुन्छ? (दैनिक निकाल्ने, त्यसपछि वार्षिक गराउने)

क्रस	विवरण	गाई ( रु मा)	भैसी ( रु मा)
१	दुध उत्पादन (लिटरमा)		
२	दुधवाट आफुले पाएको मुल्य		
३	यस जनावरले कति गोवर दिन्छ		
४	गोवरको मुल्य		
	जम्मा आमदानी		

(२०) दुधको मुल्य कसरी निर्धारण हुने गर्दछ?

(क) फ्याट/एस.एन.एफ दुवै (ख) फ्याट मात्र (ग) आपसी समजदारी (घ) एस.एन.एफ मात्र

(२१) दुधको रकम भुक्तानी प्रक्रिया

क) दैनिक (ख) साप्ताहिक (ग) अर्धमासिक (घ) मासिक (ङ)अन्य

(२२) गाईभैसीपालनमा तपाईंलाई भोग्नु परेका प्रमुख समस्याहरु (प्राथमिक क्रमको आधारमा)

क)

ख)

ग)

घ)

(२३) तपाईंको विचारमा खर्च कटाएर लगानीको कति प्रतिशत नाफा जोडी मुल्य पाउनु पर्छ ? प्रतिशतमा लेख्ने ।

.....

(२४) तपाईंलाई के कस्तो सहयोग भएमा दुध उत्पादन बढ्छ जस्तो लागेकोछ?

(क) नयाँ संकलन केन्द्र/सहकारी खोलेर (ख) चिस्यान केन्द्र खोलेर (ग) पशुलालन तथा पशु स्वास्थ्यमा सेवा थपेर (ङ) अन्य (खुलाउनुहोस्)

(२५) दुध तथा दुध पदार्थकौ वजार व्यवस्थापनमा भोग्नु परेका प्रमुख समस्याहरु

क)

ख)

ग)

घ)

ङ)

**Annex 1.2: Questionnaire for Consumers Survey**

**उपभोक्ता सर्भेक्षणको लागि प्रश्नावली**

१. उपभोक्ताको नाम : २. व्यवसाय:  
३. वार्ड नं: ४. गाउँ/टोल  
५. शिक्षा: ६ जम्मा परिवार संख्या  
७. आफ्नै घर वा डेरामा बस्ने :

८. दैनिक दुध उपभोग:

९. दुध बाहेक अन्य दुग्ध पदार्थको दैनिक उपभोग:

१०. विगत केही वर्ष देखी दुध खपत

क) उस्तै छ ख) बढेको छ ग) घटेको छ

११ खपतमा घटवट हुनाका कारण के होला ?

१२ कुन अवस्थामा दुध तथा दुग्ध पदार्थ खपतमा वृद्धि गर्नुहुन्छ ?

मुल्य घटेमा गुणस्तरबारे विश्वस्त हुन सकेमा अन्य

१३ दुध उपलब्धतामा केही समस्या पाउनु भएको छ ?

१४ दुध खरिद श्रोत

क) सिधै पशुपालक कृषकबाट ख) घरघरमा लगी दुध विक्री गर्न विक्रेताबाट

ग) प्याकेट दुध विक्री बुथबाट घ) खुला दुध विक्री गर्न पसलबाट

१५. प्याकेट दुध किन्ने भएमा कुन ब्राण्डको दुध किन्नु हुन्छ र किन?

क) डि.डि.सि ख) अन्य निजि डेरी ब्राण्ड

किन?

१६ दुधको गुणस्तरमा कुनै गुनासाहरु छन्की ?

१७ दुध बजार व्यवस्थापनमा सुधारको लागि केही सुझावहरु छन्की ?

**Annex: 1.3 Key Informant's Survey Checklist/Questionnaire in Nepali**

**मुख्य सूचनादाता सर्वेक्षणकालागि प्रश्नावली**

१. सूचनादाताको नाम : २. पद/व्यवसाय:
३. कार्यालय/गा.वि.स: ४. वार्ड नं: ५. गाउँ/टोल
६. शिक्षा:

१. तपाईंको गाउँमा दुध उत्पादक सहकारी संस्था छन् वा छैनन्? छन भने तिनीहरुको नाम के के हुन?/कतिबटा छन्?
२. तपाईंका गाउँको कुन ठाउँमा दुध उत्पादक सहकारी संस्था स्थापना भएमा बढी दुध संकलन हुन सक्छ?
३. तपाईंलाई थाहा भएको कुन गाउँमा बढी दुध संकलन हुन सक्छ जस्तो लाग्छ? र त्यो गाउँबाट मोटर बाटो सम्म पुग्न कति समय लाग्छ?
४. तपाईंको गाउँमा गाई वा भैसी के को दुध बढी उत्पादन हुन्छ ? किसानहरुले उन्नत वा स्थानीय कुन जातका पशु पाल्ने गर्दछन?
५. तपाईंको गाउँमा पशुहरुको मुख्य आहार के हो ? घास, पराल, दुटो, चोकर, संतुलित दाना, पिठो आदी ।
६. तपाईंका गाउँका किसानहरुले धाँस खेति गर्ने गरेका छन कि छैनन? छैनन भने किन र छन भने कस्ता खालका (डाले वा भुईँ) धास खेति गर्दछन ?
७. तपाईंको गाउँमा पशुपालन वा दुग्ध व्यवसायमा देखा परेको मुख्य मुख्य समस्या के के हुन्?
८. तपाईंलाई थाहा भए सम्म तपाईंको गाउँमा पशुपालन वा दुध व्यवसाय सम्बन्धि काम गर्ने कुनै स्थानीय, राष्ट्रिय वा अन्तराष्ट्रिय गैह्र सरकारी संस्थाहरु छन्? छन भने तिनिहरुले कस्ता खाले सेवाहरु उपलब्ध गराउने गरेकाछन्?

९. कस्तो खाले सेवा र सहयोग पाएको खण्डमा दुध व्यवसाय लाभदायिक हुन्छ जस्तो लाग्छ ? र उक्त सेवाहरु कसको माध्यमबाट प्रदान गर्न उपयुक्त हुन्छ?
१०. तपाईंको गाउँबाट मोटरबाटो सम्म भारी बोकेर पुग्न कति समय लाग्छ? वा कति किलोमिटर हिड्नु पर्छ ?
११. तपाईंको गाउँ वा तपाईंले दुध उत्पादन बढी हुन सक्छ भनेको गाउँमा विजुली वतिको सुविधा छ / छैन?
१२. दुध संकलन हुन सक्ने सवै ठाउँहरुबाट पायक पर्ने सवै भन्दा नजिकको विजुली र मोटर बाटो भएको ठाउँ कुन हो ?
१३. तपाईंको गाउँबाट सवै भन्दा नजिकको विजुली र मोटर बाटो भएको कुन ठाउँमा चिस्थान केन्द्र खोल्न उपयुक्त हुन्छ?
१४. तपाईंहरु के को माध्यमबाट दुध संकलन हुने ठाउँबाट चिस्थान केन्द्र सम्म दुध ढुवानी गर्नुहुन्छ? र ढुवानी खर्च कति लाग्छ ?

**नोट: मुख्य सुचनादाता निम्न अनुसार हुनसक्नेछन् ।**

- जिल्ला पशु सेवा कार्यालयका प्रतिनिधि ।
- जिल्ला दुध उत्पादक सहकारी संथाका प्रतिनिधि ।
- दुग्ध विकास सस्थानका प्रतिनिधि ।
- निजी तथा सहकारी डेरीका प्रतिनिधि ।
- सक्रिय कृषक समुहका प्रतिनिधि ।
- गै.स.स प्रतिनिधि ।
- जे.टी/जे.टी.ए ।
- दुग्ध सहकारी वा अन्य सहकारीका प्रतिनिधि ।
- गै.स.स प्रतिनिधि ।
- शिक्षक ।
- अगुवा महिला कार्यकर्ता ।



**ANNEX: 2 DETAIL OF INCOME AND EXPENDITURE OF THE FARMERS**

Fixed cost												
Animal purchase	Chitwan	%	Kabre	%	Banke	%	Tanahu	%	Ilam	%	Total	%
Cow	5422248.00		4157534.00		3254891.00		1724327.50		4785675.00		19344675.50	
Buffalo	1069572.00		1968018.66		1955700.00		2076510.00				7069800.66	
Sub Total	6491820.00		6125552.66		5210591.00		3800837.50		4785675.00		26414476.16	
Shed construction											0.00	
Cow	1790568.00		1467478.00		1052706.00		549575.00		1516425.00		6376752.00	
Buffalo	589491.00		1025892.00		1020303.00		1094115.00				3729801.00	
Total cost	2380059.00		2493370.00		2073009.00		1643690.00		1516425.00		10106553.00	
<b>Interest on money (12%)</b>	<b>285607.08</b>	0.58	<b>299204.40</b>	0.61	<b>248761.08</b>	0.50	<b>197242.80</b>	0.40	<b>181971.00</b>	0.37	<b>1212786.36</b>	2.46
<b>Cow</b>	<b>865537.92</b>	1.75	<b>675001.44</b>	1.37	<b>516911.64</b>	1.05	<b>272868.30</b>	0.55	<b>756252.00</b>	1.53	<b>3086571.30</b>	6.25
<b>Buffalo</b>	<b>199087.56</b>	0.40	<b>359269.28</b>	0.73	<b>357120.36</b>	0.72	<b>380475.00</b>	0.77	<b>0.00</b>	0.00	<b>1295952.20</b>	2.62
<b>Sub total</b>	<b>1064625.48</b>	2.16	<b>1034270.72</b>	2.09	<b>874032.00</b>	1.77	<b>653343.30</b>	1.32	<b>756252.00</b>	1.53	<b>4382523.50</b>	8.87
Depreciation		0.00		0.00		0.00		0.00		0.00	0.00	0.00
Cow (10% annual)	542224.80	1.10	415753.40	0.84	325489.10	0.66	172432.75	0.35	478567.50	0.97	1934467.55	3.92
Buffalo (10% annual)	106957.20	0.22	196801.87	0.40	195570.00	0.40	207651.00	0.42	0.00	0.00	706980.07	1.43
<b>Sub total</b>	<b>649182.00</b>	1.31	<b>612555.27</b>	1.24	<b>521059.10</b>	1.06	<b>380083.75</b>	0.77	<b>478567.50</b>	0.97	<b>2641447.62</b>	5.35
Shed (5% annual)		0.00		0.00		0.00		0.00		0.00	0.00	0.00
Cow	89528.40	0.18	73373.90	0.15	52635.30	0.11	27478.75	0.06	75821.25	0.15	318837.60	0.65
Buffalo	29474.55	0.06	51294.60	0.10	51015.15	0.10	54705.75	0.11	0.00	0.00	186490.05	0.38
<b>Sub total</b>	<b>119002.95</b>	0.24	<b>124668.50</b>	0.25	<b>103650.45</b>	0.21	<b>82184.50</b>	0.17	<b>75821.25</b>	0.15	<b>505327.65</b>	1.02
Insurance (1.5%)		0.00		0.00		0.00		0.00		0.00	0.00	0.00
Cow	81333.72	0.16	62363.01	0.13	48823.37	0.10	25864.91	0.05	71785.13	0.15	290170.13	0.59

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Buffalo	16043.58	0.03	29520.28	0.06	29335.50	0.06	31147.65	0.06	0.00	0.00	106047.01	0.21
<b>Sub total</b>	<b>97377.30</b>	0.20	<b>91883.29</b>	0.19	<b>78158.87</b>	0.16	<b>57012.56</b>	0.12	<b>71785.13</b>	0.15	<b>396217.14</b>	0.80
<b>Total fixed cost</b>	<b>1536369.90</b>	3.11	<b>1474447.53</b>	2.99	<b>1249419.10</b>	2.53	<b>924536.50</b>	1.87	<b>1108777.50</b>	2.25	<b>6293550.53</b>	12.74
Variable cost												
<b>Water, electricity</b>												
<b>Cow</b>	30965.51	0.06	26664.74	0.05	20213.60	0.04	10751.91	0.02	32255.74	0.07	120851.50	0.24
<b>Buffalo</b>	7553.22	0.02	14566.92	0.03	14297.16	0.03	15376.20	0.03	0.00	0.00	51793.50	0.10
<b>Sub total</b>	<b>38518.73</b>	0.08	<b>41231.67</b>	0.08	<b>34510.76</b>	0.07	<b>26128.11</b>	0.05	<b>32255.74</b>	0.07	<b>172645.00</b>	0.35
Feed												
Cow												
Straw	462528.00	0.94	398288.00	0.81	301928.00	0.61	160600.00	0.33	481800.00	0.98	1805144.00	3.66
Concentrate	3532032.00	7.15	3041472.00	6.16	2305632.00	4.67	1226400.00	2.48	3679200.00	7.45	13784736.00	27.91
Green grass	670140.00	1.36	577065.00	1.17	437452.50	0.89	232687.50	0.47	698062.50	1.41	2615407.50	5.30
<b>Sub Total (cow)</b>	<b>4664700.00</b>	9.45	<b>4016825.00</b>	8.13	<b>3045012.50</b>	6.17	<b>1619687.50</b>	3.28	<b>4859062.50</b>	9.84	<b>18205287.50</b>	36.86
Buffalo												
Straw	196224.00	0.40	378432.00	0.77	371424.00	0.75	399456.00	0.81	0.00	0.00	1345536.00	2.72
Concentrate	981120.00	1.99	1892160.00	3.83	1857120.00	3.76	1997280.00	4.04	0.00	0.00	6727680.00	13.62
Green grass	306600.00	0.62	591300.00	1.20	580350.00	1.18	624150.00	1.26	0.00	0.00	2102400.00	4.26
<b>Sub Total (buffalo)</b>	<b>1483944.00</b>	3.00	<b>2861892.00</b>	5.80	<b>2808894.00</b>	5.69	<b>3020886.00</b>	6.12	<b>0.00</b>	0.00	<b>10175616.00</b>	20.61
Micro nutrients												
Cow	14760.00	0.03	12276.00	0.02	9964.00	0.02	5125.00	0.01	14917.50	0.03	57042.50	0.12
Buffalo	840.00	0.00	1440.00	0.00	1750.00	0.00	2109.00	0.00	0.00	0.00	6139.00	0.01
<b>Sub total</b>	<b>15600.00</b>	0.03	<b>13716.00</b>	0.03	<b>11714.00</b>	0.02	<b>7234.00</b>	0.01	<b>14917.50</b>	0.03	<b>63181.50</b>	0.13
Breeding -Al/bull												
Cow	61992.00	0.13	54064.00	0.11	40420.00	0.08	21713.75	0.04	64875.00	0.13	243064.75	0.49
Buffalo	12600.00	0.03	24354.00	0.05	23797.00	0.05	25650.00	0.05		0.00	86401.00	0.17
<b>Sub total</b>	<b>74592.00</b>	0.15	<b>78418.00</b>	0.16	<b>64217.00</b>	0.13	<b>47363.75</b>	0.10	<b>64875.00</b>	0.13	<b>329465.75</b>	0.67

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<b>Other materials</b>												
Tying chain	10999.14	0.02	12752.55	0.03	11082.39	0.02	9022.00	0.02	8173.91	0.02	52030.00	0.11
Bucket	53550.18	0.11	62116.18	0.13	53448.81	0.11	44071.82	0.09	40245.00	0.08	253432.00	0.51
Milk can	31197.57	0.06	36185.64	0.07	31138.54	0.06	25663.47	0.05	23390.80	0.05	147576.00	0.30
Brush	10022.87	0.02	11631.07	0.02	9980.30	0.02	8187.63	0.02	7478.13	0.02	47300.00	0.10
Grooming brush	10318.68	0.02	11975.13	0.02	10279.71	0.02	8438.13	0.02	7707.35	0.02	48719.00	0.10
Detergent/cleaning	8503.36	0.02	9862.29	0.02	8523.46	0.02	6959.49	0.01	6356.41	0.01	40205.00	0.08
Shawel	3730.48	0.01	4335.14	0.01	3730.48	0.01	3074.55	0.01	2809.35	0.01	17680.00	0.04
Spade	5938.73	0.01	6891.97	0.01	5961.23	0.01	4867.40	0.01	4459.67	0.01	28119.00	0.06
Trolley	37961.09	0.08	44054.27	0.09	38284.62	0.08	31005.15	0.06	28434.87	0.06	179740.00	0.36
Disinfectants	10988.74	0.02	12752.55	0.03	11118.81	0.02	8917.94	0.02	8251.96	0.02	52030.00	0.11
<b>Sub total</b>	<b>183210.84</b>	<b>0.37</b>	<b>212556.79</b>	<b>0.43</b>	<b>183548.34</b>	<b>0.37</b>	<b>150207.58</b>	<b>0.30</b>	<b>137307.45</b>	<b>0.28</b>	<b>866831.00</b>	<b>1.76</b>
<b>Cow</b>	<b>155729.21</b>	<b>0.32</b>	<b>180673.27</b>	<b>0.37</b>	<b>156016.09</b>	<b>0.32</b>	<b>127676.45</b>	<b>0.26</b>	<b>116711.33</b>	<b>0.24</b>	<b>736806.35</b>	<b>1.49</b>
<b>Buffalo</b>	<b>27481.63</b>	<b>0.06</b>	<b>31883.52</b>	<b>0.06</b>	<b>27532.25</b>	<b>0.06</b>	<b>22531.14</b>	<b>0.05</b>		<b>0.00</b>	<b>130024.65</b>	<b>0.26</b>
<b>Labor charge</b>												
<b>Cow</b>	1897416.00	3.84	1651990.00	3.35	1219720.50	2.47	657912.50	1.33	1834125.00	3.71	7261164.00	14.70
<b>Buffalo</b>	384710.00	0.78	650430.00	1.32	638385.00	1.29	665760.00	1.35	0.00	0.00	2339285.00	4.74
<b>Sub total</b>	<b>2282126.00</b>	<b>4.62</b>	<b>2302420.00</b>	<b>4.66</b>	<b>1858105.50</b>	<b>3.76</b>	<b>1323672.50</b>	<b>2.68</b>	<b>1834125.00</b>	<b>3.71</b>	<b>9600449.00</b>	<b>19.44</b>
<b>Vaccination</b>												
Cow	57377.78	0.12	49404.91	0.10	37468.01	0.08	19932.17	0.04	59774.12	0.12	223957.00	0.45
Buffalo	2743.37	0.01	5292.94	0.01	5193.22	0.01	5586.47	0.01	0.00	0.00	18816.00	0.04
<b>Sub total</b>	<b>60121.16</b>	<b>0.12</b>	<b>54697.86</b>	<b>0.11</b>	<b>42661.22</b>	<b>0.09</b>	<b>25518.64</b>	<b>0.05</b>	<b>59774.12</b>	<b>0.12</b>	<b>242773.00</b>	<b>0.49</b>
<b>Veterinary service</b>												
Cow	111587.91	0.23	96082.33	0.19	72867.52	0.15	38763.95	0.08	116248.30	0.24	435550.00	0.88
Buffalo	3331.24	0.01	6427.14	0.01	6306.05	0.01	6783.57	0.01	0.00	0.00	22848.00	0.05
<b>Sub total</b>	<b>114919.15</b>	<b>0.23</b>	<b>102509.47</b>	<b>0.21</b>	<b>79173.56</b>	<b>0.16</b>	<b>45547.52</b>	<b>0.09</b>	<b>116248.30</b>	<b>0.24</b>	<b>458398.00</b>	<b>0.93</b>
<b>Treatment</b>												

Report on Cost of Milk Production

Cow	139448.89	0.28	120071.92	0.24	91060.89	0.18	48442.43	0.10	145272.87	0.29	544297.00	1.10
Buffalo	3078.13	0.01	5938.81	0.01	5826.91	0.01	6268.15	0.01	0.00	0.00	21112.00	0.04
<b>Sub total</b>	<b>142527.02</b>	<b>0.29</b>	<b>126010.72</b>	<b>0.26</b>	<b>96887.80</b>	<b>0.20</b>	<b>54710.59</b>	<b>0.11</b>	<b>145272.87</b>	<b>0.29</b>	<b>565409.00</b>	<b>1.14</b>
<b>Milk delivery</b>												
<b>Cow</b>	154143.75	0.31	132724.87	0.27	100656.71	0.20	53547.21	0.11	160581.45	0.33	601654.00	1.22
<b>Buffalo</b>	25788.30	0.05	49754.80	0.10	48817.36	0.10	52514.04	0.11	0.00	0.00	176874.50	0.36
<b>Sub total</b>	<b>179932.06</b>	<b>0.36</b>	<b>182479.67</b>	<b>0.37</b>	<b>149474.08</b>	<b>0.30</b>	<b>106061.25</b>	<b>0.21</b>	<b>160581.45</b>	<b>0.33</b>	<b>778528.50</b>	<b>1.58</b>
<b>Total cost</b>												
<b>Cow</b>	<b>8866745.90</b>	17.95	<b>7567268.80</b>	15.32	<b>5737259.22</b>	11.62	<b>3102197.58</b>	6.28	<b>8786249.68</b>	17.79	<b>34059721.18</b>	68.97
<b>Buffalo</b>	<b>2303632.78</b>	4.66	<b>4288866.15</b>	8.68	<b>4213839.96</b>	8.53	<b>4497443.97</b>	9.11	<b>0.00</b>	0.00	<b>15324378.98</b>	31.03
<b>Total cost</b>	<b>11170378.68</b>	<b>22.62</b>	<b>11856134.95</b>	<b>24.01</b>	<b>9951099.18</b>	<b>20.15</b>	<b>7599641.55</b>	<b>15.39</b>	<b>8786249.68</b>	<b>17.79</b>	<b>49384100.16</b>	<b>100.00</b>
Total Milk Cow	244243.44	0.49	218201.56	0.44	170046.94	0.34	85800.00	0.17	294750.00	0.60	1013041.94	2.05
Total Milk Buffalo	59600.52	0.12	112147.20	0.23	112045.18	0.23	117442.80	0.24	0.00	0.00	401235.70	0.81
<b>Total</b>	<b>303843.96</b>	<b>0.62</b>	<b>330348.76</b>	<b>0.67</b>	<b>282092.12</b>	<b>0.57</b>	<b>203242.80</b>	<b>0.41</b>	<b>294750.00</b>	<b>0.60</b>	<b>1414277.64</b>	<b>2.86</b>
Value of milk (cow)	7933026.93	16.06	7008634.11	14.19	5281657.96	10.70	3694750.49	7.48	8583120.00	17.38	32501189.48	65.81
Value of milk (buffalo)	2174822.97	4.40	4052999.81	8.21	3922701.75	7.94	7133822.28	14.45	0.00	0.00	17284346.81	35.00
<b>Total value of milk</b>	<b>10107849.91</b>	<b>20.47</b>	<b>11061633.92</b>	<b>22.40</b>	<b>9204359.71</b>	<b>18.64</b>	<b>10828572.77</b>	<b>21.93</b>	<b>8583120.00</b>	<b>17.38</b>	<b>49785536.30</b>	<b>100.81</b>
	<b>36.30</b>		<b>34.68</b>		<b>33.74</b>		<b>36.16</b>	0.00	<b>29.81</b>		<b>33.62</b>	0.00
	<b>38.65</b>		<b>38.24</b>		<b>37.61</b>		<b>38.29</b>	0.00	<b>0.00</b>		<b>38.19</b>	0.00
	<b>36.76</b>		<b>35.89</b>		<b>35.28</b>		<b>37.39</b>		<b>29.81</b>		<b>34.92</b>	
Dung (kg)												
Cow	265483.45		287401.00		213888.54		93075.00		295376.25		1155224.24	2.34
Buffalo	140104.96		272165.54		256340.60		272358.26		0.00		940969.34	1.91
Total	405588.41		559566.54		470229.14		365433.26		295376.25		2096193.58	4.24
Value of dung (Rs 1/kg)											0.00	0.00
Cow	265483.45		287401.00		213888.54		93075.00		295376.25		1155224.24	2.34

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Buffalo	140104.96		272165.54		256340.60		272358.26		0.00		940969.34	1.91
<b>Total value of dung</b>	405588.41		559566.54		470229.14		365433.26		295376.25		2096193.58	4.24
<b>Dung (Kg)/animal</b>											0.00	0.00
<b>Total value of product (cow)</b>	<b>8198510.38</b>		<b>7296035.11</b>		<b>5495546.50</b>		<b>3787825.49</b>		<b>8878496.25</b>		<b>33656413.72</b>	68.15
<b>Total value of product (Buffalo)</b>	<b>2314927.93</b>		<b>4325165.34</b>		<b>4179042.35</b>		<b>7406180.54</b>		<b>0.00</b>		<b>18225316.16</b>	36.91
<b>Total Value of product</b>	10513438.31		11621200.45		9674588.84		11194006.02		8878496.25		51881729.88	105.06
<b>Benefit/lits</b>	0.94		0.98		0.97		1.47		1.01		1.05	
<b>Current profit %</b>	2.6		2.7		2.8		3.9		3.4		3.0	
<b>Proposed profit (10% of total cost)</b>	2.92		2.29		2.03		1.53		2.98		2.41	
<b>Price to be increase</b>	1.98		1.31		1.06		0.05		1.97		1.36	

