



Government of Nepal  
Ministry of Agricultural Development  
**High Value Agriculture Project in Hill  
and Mountain Areas (HVAP)**



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**A Report on**  
**VALUE CHAIN ANALYSIS OF GOAT**

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## ABBREVIATIONS

ADB	Agricultural Development Bank
AEC	Agro Enterprises Centre
ANSAB	Asia Network for Sustainable Agriculture and Bioresources
CBO	Community Based Organization
CLDP	Community Livestock Development Project
DADO	District Agricultural Development Office
DCCI	District Chambers of Commerce and Industry
DDC	District Development Council
DFO	District Forest Office
DLSO	District Livestock Service Office
FGD	Focus Group Discussion
FNCCI	Federation of Nepalese Chamber of Commerce and Industry
GOS	Government Organizations
HPI-N	Heifer Project International Nepal
HVAP	High Value Agricultural Product in Hills and Mountain Areas
IB	Inclusive Business
IFAD	International Fund for Agriculture Development
INGOs	International Non-Governmental Organizations
MoAC	Ministry of Agriculture and Cooperatives
NARC	Nepal Agriculture Research Council
NEAT	Nepal Economic Agriculture and Trade
NGOs	Non-Governmental Organizations
NRs	Nepalese Rupee
PACT	Project for Agricultural Commercialization and Trade
TLDP	Third Livestock Development Project
VAHW	Village Animal Health Worker
VDC	Village Development Committee

## EXECUTIVE SUMMARY

Goat is one of the most dominant ruminants in Nepal. Goat keeping is an integrated approach for majority of Nepalese farmers as they keep couple of goats as part of the farming system. It is also regarded as the handy source of money in need and is considered to be attractive for poverty reduction and improvement of family food security and livelihood of the poor in developing countries. This report analyses goat meat value chain and is prepared by Asia Network for Sustainable Agriculture and Bioresources (ANSAB) as a support to High Value Agriculture Project in Hills and Mountain Areas (HVAP) in designing the project's activities for the promotion of the value chain. This study is focused in HVAP districts along the three road corridors - Chhinchu-Jajarkot, Surkhet-Dailekh and Surkhet-Jumla – and suggests possible interventions to the project. Findings of this study are validated through sharing meetings and interactions with stakeholders at district, regional and national levels.

The total population of goat in Nepal for 2008/09 was 8.8 million with an average annual growth rate of 3.31 per cent. Goat meat is widely consumed over the country with the highest cost per unit weight. It stands as the second largest consumed meat after the buffalo meat, and contributes about one fifths of the total meat produced in the country. Goat also stands as the major livestock in the project districts with significant amount of annual meat production. Seven districts – Surkhet, Dailekh, Jajarkot, Jumla, Kalikot, Salyan and Achham – have more than 1.11 million goats with an annual meat production of more than 9 thousand tons. With the traditional rearing practice by the farmers to generate household level income and support their livelihood system, and the increasing demand of the goat meat with development of market centres; there is scope of the goat sector for economic and business activities to the small and mid-scale producers to boost their capacity towards commercialization of this sector.

Farmers rear goats in a traditional system where stall-feeding or grazing in the near-by forest is the common methods. Feed supply in terms of standard ration is uncommon practice. The cost of rearing practice is not based on recording system, and thus the production related costs reflect the general idea of the farmers reflecting a typical pattern of feeding. The estimated cost of production based on group of production scheme is calculated to be NRs.140; however, it largely varies due to location, size of rearing and local market price of the ingredients and variables. According to farmers' response, based on their memory recall, the cost calculation of goat rearing varies from NRs. 114 in Chhinchu-Jajarkot to NRs. 233 in Surkhet-Jumla. In Jumla, it requires 3 to 4 years of rearing to obtain weight of 30 kg and the costs of ingredients and variables are also high. Likewise, the cost of sold margin also varies from location to location and between actors to actors. The gross margin is recorded NRs. 10 for trader in Dailekh Baazar, Dailekh whereas NRs. 125 for butcher in Salli Bazaar, Salyan. There is minimum processing involved while butchering whereas live goat traders handle the selling process by using trucks/bus or other means but are unfriendly and against the existing rules of transporting goats. Some processing in frozen form is observed in Nepalgunj where approximately 219 MT of processed frozen meat is prepared and is mostly supplied to Kathmandu.

The study has analysed major constraints and opportunities of the goat sector value chain in the project districts in order to arrive to some possible intervention measures. The major constraints that also covers specifically for women, dalit/janajatis and marginalized communities regarding goat rearing include: (a) improper technology for a large and

commercial scale of production orientation; (b) low or no provision of appropriate feeding management for snowy winter harsh condition, especially in mountain districts; (c) insufficient technology on housing management (space, air flow, and slot management); (d) lack of goat resource centre to supply elite doe and buck to the farmers (based on Khari, Sirohi or Jamunapari blood level standardized crosses); (e) poor facility of loan disbursement from government part to both producers and traders; (f) low priority of Banking sector to collateral lands and property in the rural areas, high interest rate; (g) poor quality collection centres (and are limited in number and small in size) with no reconditioning facility; (h) transportation means undefined; (i) no subsidy or support on means of meat/live animal transportation; (j) less number of extension/VAHW workers and coverage, and (k) limited market information.

Opportunities in goat sector development include: (a) scope of rendering health service through private sector led support services such as Agro-vets, and related shops that are opening even in the remote parts of the districts; (b) potentiality of community forestry and public land (leasing for agro forestry) to serve as large resource for feeding management for a larger scale of goat rearing; (c) possibility of getting loan locally with easy access as local cooperatives have been establishing in most of the project districts with the intrusion of development Banks that could have prosperous and supporting environment in flow of capital investment to the goat production and trading business; (d) existing opportunities to improve marketing system even in the remote parts of the project districts due to developing road corridors which would mean to have an easy access to transport production means as well as flow of live goats and meat to the distance market; big cities; (e) there exists potentials to strengthen producers' group and their activities for large scale of dealing whereas associations of traders (if developed) would pave ways to regulate policies and to make enabling environment.

After analysing the VC constraints and opportunities, the suggested interventions include both short-term and long-term solutions. Accordingly, the short-term interventions include: (a) plantation of 10-20% fodder trees in plantation site annually in collaboration with DFO to deal with the acute shortage of fodder and to explore nutritious feed from community forest; (b) introduction of basic supports (e.g. veterinary health care, such as dipping against ecto-parasites and supply of medicines against endo-parasites (drenching), forage-fodder seeds, mineral mixture) as per category of rearing; (c) support to the scientific shed management considering better air flow, space management and litter management for goats reared in the mountain district, and slot improvement, space management and feed utilization by the use of scientific rack in the other project districts; (d) introduction of hay and silage making practices through demonstration scheme; (e) promotion of transportation system in trucks for distance market by designing sound model of truck/van; (f) establishing collection centres with the facilities of larger scale of holding also covering reconditioning scheme/facilities of goats to maintain their body weight against handling and transportation loss; (g) organizing training (covering health management, feeding, appropriate breeding, and housing) to facilitate larger scale of production, and (h) introduction of visit programme to the model farm and specific pocket area observation.

Similarly, the long-term interventions suggested include: (a) support in establishing community based goat resource centres. This is possible to achieve by mobilizing/organizing progressive goat keeping farmers in the respective potential and established pocket areas to rear elite doe and buck. This needs training on scientific breeding plan along with help for preparing scheme of resource centre development; (b) support to in-

depth study aiming to explore climate and niche specific potentials to increase overall production so that larger farms would be possible to establish in the future; (c) support in establishment of a model of large scale rearing system with demonstration effect so that farmers would be attractive towards large scale of scientific goat rearing, and (d) support in the introduction of goat insurance/animal-wealth protection scheme to safeguard farmers' investment and to attract large scale entrepreneurs into this sector. As joint involvement of male and female for goat rearing is prominent regardless of social strata, gender roles and ethnicity, gender and social inclusiveness related specificities are not visible and are not spelled out in detail in terms of constraints, opportunities and intervention strategies whereas common concern has been well covered considering goat rearing situation. Moreover, challenge lies to increase existing scale/level of production, especially in the northern mountain districts, and in creating enabling environment in order to bring much of the goats reared in the areas into the marketing channel connected to the road corridors, such as that of Surkhet - Jumla, and Chhinchu - Jajarkot.



## 1. INTRODUCTION

### 1.1 BACKGROUND

In a joint initiation of the Government of Nepal/Ministry of Agriculture and Cooperatives (MoAC) and the International Fund for Agriculture Development (IFAD), a six-year High Value Agriculture Project in Hill and Mountain Areas (HVAP) is being implemented since July 2010 in partnership with SNV Netherlands Development Organisation and Agro Enterprises Centre (AEC/FNCCI) for the reduction of poverty and vulnerability of women and men in Mid-Western Development Region (MWDR). The project covers ten districts: Achham, Dailekh, Jajarkot, Jumla, Kalikot, Salyan, Surkhet, Dolpa, Mugu and Humla of Far-Western and Mid-Western Development regions served by three north-south roads: Chhinchu-Jajarkot, Surkhet-Dailekh and Surkhet-Jumla. The project follows Inclusive Business and Value Chain Development approach in the geographic boundaries demarcated by accessibility to roads. To support in designing the project's activities, Asia Network for Sustainable Agriculture and Bio-resources (ANSAB) carried out value chain analysis of four different products – turmeric, timur, goat meat and vegetable – in the project area.

ANSAB is an independent, non-profit, civil society organization committed to biodiversity conservation and economic development through community-based enterprise oriented solutions, and is working in South Asia since 1992. Since its establishment, ANSAB has implemented a variety of innovative approaches to promote natural products-based enterprises and value-chain interventions in Nepal. ANSAB has also provided different expert services to stakeholders working in Nepal and other neighbouring countries.

This study is one of the four value chain studies carried out by ANSAB from November 2011 to June 2011. This study analyses the status and potential of the goat meat value chain in the project districts.

Livestock is an integral part of rural livelihoods of Nepal. Buffalo, sheep, goat, pig, chicken and duck are reared for various purposes including meat products in the country (Devkota, 2007; 2010). Among livestock, goats are mostly raised in hills for meat (Kolachhapati and Devkota, 2010). All hilly districts of HVAP i.e. Surkhet, Salyan, Dailekh, Jajarkot and Acham have good population of goat and hence meat products. Among the mountainous districts, Jumla and Kalikot have good production of local hilly goat meat whereas Mugu, Humla and Dolpa have comparatively less production of the same but have contribution of *chyangra* as of local meat. Mutton (sheep meat) is equally popular in these mountainous districts due to favourable climatic conditions and pastureland for sheep rearing and grazing.

### 1.2 OBJECTIVES

The main objective of this assignment is to provide sufficient understanding on the current status and future potential of the goat meat value chain and to identify specific bottlenecks and opportunities that can be addressed through the project intervention thereby increasing production, income and employment of rural poor. The specific objectives are as follows:

- Prepare value chain maps of each product that depicts the chain actors and their functions and inter-relationship.
- Identify major production pockets, growth potential, market trends and competitiveness of the selected value chains (supply and demand) including its future prospects within the country and abroad.
- Identify and examine constraints and opportunities within the selected value chains and recommend interventions to overcome constraints, and make use of opportunities to promote inclusive and sustainable pro-poor economic growth and competitiveness.
- Analyse dynamics of processing and value creation, reward distribution, value chain governance and power relation structures and knowledge transfer.
- Identify the underlying policy, institutional, and infrastructural issues that affect the competitiveness of the selected value chains with reference to the role of government and private sectors in the regions of focus.
- Identify institutions and organisations working for selected value chains from national to local levels (local, regional, national organisations from GOs, NGOs and private sector) that can contribute to pro-poor value chain development.
- Analyse gender and social inclusion/pro-poor perspective at all steps of value chain mapping that enquire about the relative proportions of women and men, caste/ethnic communities at each node and between nodes.

### 1.3 METHODOLOGY

#### 1.3.1 STUDY AREA

The study sites include Dailekh, Jajarkot, Jumla, Kalikot, Salyan, and Surkhet of Mid-Western Development Region and Achham of Far Western Development Region served by three north-south corridors: Chhinchu-Jajarkot, Surkhet-Dailekh and Surkhet-Jumla roads.

**Figure 1 Map showing the study area**



Source: HVAP, 2011

The study team visited 22 market centres and 31 production pockets along the major three road corridors within the project districts. The details of market centres and production pockets visited and places of FGD conducted are presented in Annex 2.

### 1.3.2 Data Collection and Analysis

The study has applied both qualitative and quantitative research methods for obtaining information on goat subsector. Both primary and secondary sources were used for the collection of data for this purpose.

A brief description of the preparatory activities, data collection and analysis are given below:

**Preparatory Activities:** Initially, review of literatures and consultation with HVAP was conducted for detail planning. Three separate sets of checklists for farmers, traders and stakeholders were developed. Similarly, two sets of questionnaires, one for farmers and one for traders, were developed to obtain household level data. The checklists and questionnaires along with travel plan were finalized in consultation with HVAP team.

**Data Collection:** Interviews, focus group discussions (FGDs), observations, stakeholders' consultations/meetings, checklists and questionnaires and sharing and validation workshops were conducted to gather information at each level of value chains. Prior to commencing ground study, an inception workshop was conducted in Birendranagar, Surkhet, which provided insights on the concept, scope of the study including study approach and methodology to the team members and enumerators and prepared field mobilization plan.

A dedicated team (See Annex 1) for goat study having designated value chain expert, research assistant and enumerators was mobilized in the field for 25 days covering all the three road corridors. Market centres and production pockets of these road corridors were visited where the team conducted interviews with traders and farmers and filled up questionnaires. Focus group discussions were conducted with traders and farmers in some strategic market centres and production pockets respectively covering all sectors of people, such as women, poor and marginalized in the same discussion. Details on market centres and production pockets visited and surveyed are presented in Annex 2. Meetings were conducted with DLSO, DDC, DCCI and other relevant supporting organizations of visited districts. Publications and other relevant documents were also collected from the stakeholders.

A district level consultation and sharing workshop was conducted in Narayan Municipality, Dailekh where the preliminary findings were presented to participate commercial farmers, traders, processors, input suppliers, and representatives from DLSO, DCCI, DADO, DDC, associations and facilitating organizations. The participants provided their inputs, which were noted and compiled.

The team also visited major regional market centres namely Birendranagar, Nepalgunj, Dhangadi, Butwal and Kathmandu and conducted interviews and focus group discussions with traders, processors, exporters and butcher and goat market associations for getting insights of regional trade.

A 2-day "Regional Value Chain Consultation and Intervention Strategy Development Workshop" was conducted in 15-16 February 2012 in Nepalgunj to share and validate the collected

information. In the workshop, group exercises were conducted with farmers, traders/processors and other stakeholders, which provided further detailing of intervention strategies. The comments, suggestions and inputs from the workshop were compiled and incorporated in the study. Likewise, a half-day National validation focusing on policy issues was conducted in Kathmandu on 6 April 2012 with the related stakeholders including those representing from Ministry level. Verified issues were finally standardized based on inputs.

**Data Analysis and Report Preparation:** The collected data are analysed systematically in order to obtain the objective of the study. A detailed value chain map of the goat meat in the study areas is prepared. Economic analysis is done to present the situation of production and value addition of the goat meat including cost of production and distribution of margin along the chain. Market trends and competitiveness analysis is conducted to provide details on end markets, supporting markets, enabling environment and inter-firm cooperation between VC actors. Similarly, analysis of governance structure is done to present the status of power relationship and trust in the value chain along with gender issues and inclusiveness. The constraints are analysed through initial understanding of opportunities and identification of the factors that prevent in reaping the opportunities. Market based solutions are suggested to address the constraints. The analysis of market-based solutions is done which provided with the list of possible areas of project interventions. The suggested interventions are then prioritized and discussed in details.

Qualitative data of the study is summarized and presented in a descriptive form in the report. Tables, figures and graphs are also used for the presentation of data. Triangulation and validation of the data are done to the extent possible with use of different sources including publications, websites and workshops.

## 2. VALUE CHAIN ANALYSIS

### 2.1 INTRODUCTION TO THE VALUE CHAIN

Goats are distributed all over the world because of their great adaptability to varying environmental conditions and the different nutritional regimes under which they were evolved and subsequently maintained. They proved useful to human throughout the ages due to their productivity, small size, and non-competitiveness with human for food. It is believed that goats were among the first farm animals to be domesticated. As indicated by the archaeological evidence, they have been associated with human in a symbiotic relationship for about 10,000 years (Ensminger and Parker, 1986). Goats are the most prolific domesticated ruminants; farmers are increasingly relying on goats as means of survival and a way of boosting their income (Peacock, 2005). Goats can withstand heat stress and can endure prolonged water deprivation. They have additionally great adaptability to adverse climatic and geophysical conditions, where cattle and sheep cannot survive. Moreover goats can efficiently utilize poor quality forage; their peculiar feeding habits make it easier to choose diets to meet their requirements. It is also learned that farmers and pastoralists are increasingly relying on goats as means of survival and a way of boosting their income (Peacock, 2005).

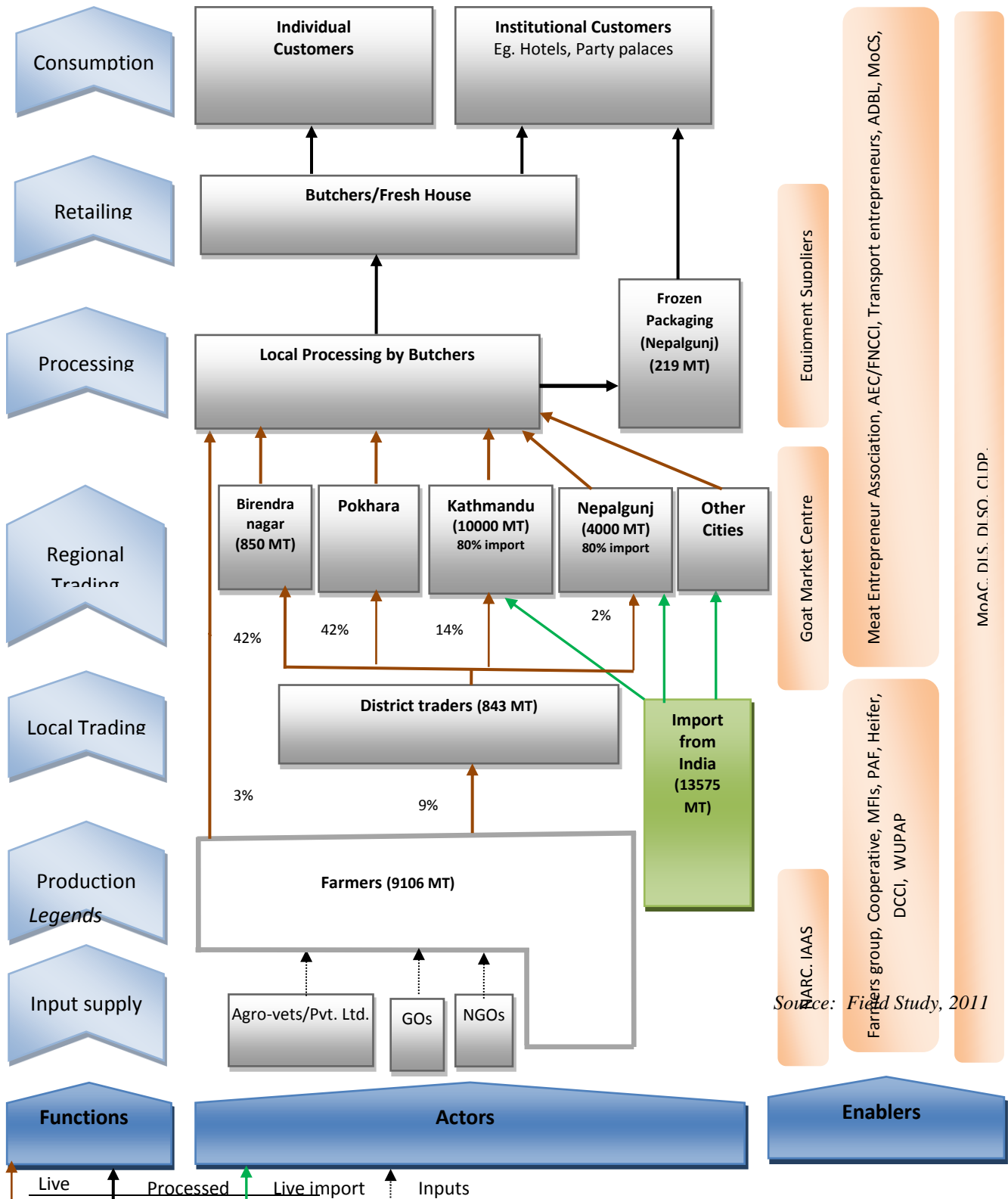
The increasing frequency of droughts, with long-term environmental degradation is causing pastoralists to change from cattle or sheep to camels or goats whereas overgrazing makes rangelands increasingly suitable for browsing species such as goats. Goats are considered intelligent, independent, agile, and tolerant to many diseases and parasites, with their characteristics of look after themselves much better than other livestock species. Goat enterprises suits the landless, marginal and small farmers equally since it provides substantial income and helps to create employment to the farm family, including women and children with comparatively low input demanding. Moreover, goat is regarded as the handy source of money in need and is considered as the living bank for marginal and small farmers to supply the immediate need of cash. Indeed several reasons make goats particularly attractive for poverty reduction and improvement of family food security and livelihood of the poor in developing countries.

There are, however, several challenges associated with increasing meat production including consumer and producers' education, lack of slaughter and processing plants and lack of organized breeding programs, markets and developed marketing channels. The importance of this valuable genetic resource is underestimated and its extent of contribution to the livelihood of the poor is inadequately understood. Goat meat has a immense potential in terms of demand and price.

### 2.2 VALUE CHAIN MAP

Figure 2 illustrates the value chain map of goat meat in the Mid-Western region of Nepal. The map presents the various functions, actors and enablers of the value chain and their descriptions are made in subsequent paragraphs.

**Figure 2 Value chain map of goat meat\ from project districts<sup>1</sup>**



<sup>1</sup> Indicative quantity are calculated based on interaction with stakeholders

### 2.2.1.1 *Actors and functions*

It has been identified that major functions involved in goat value chain are input supply, production potentials and local level butchering at the farmer/village level; collection, domestic trading and supply to the distance market at the traders' level; and often preliminary processing, and or value addition by butchering and or refrigerating at regional or at the national level with limited practice.

The actors in relation to the goat meat value chain are described below:

**Input suppliers:** Common inputs include salt, minerals, concentrates, veterinary medicines, forage/fodder tree seeds and saplings (*Artocarpus lakoocha*; *Bauhinia purpuria*; *Ficus* spp. and so on) that are mainly managed and supplied by the private venture such as from agro vets. Government agencies and non-governmental agencies working at district level such as the DLSO and local NGOs provide technical knowledge and inputs as per provision to the farmers, whereas flow of inputs and knowledge/technology are limited. For traders, handling related materials such as threads, rope, holding places with limited feeds and forages are major inputs.

**Farmers:** In this study the term farmer refers to a person or his/her family members who have been keeping and selling goat for meat. Mainly two types of farmers are engaged in goat keeping: (a) Small farmers with scattered and low level of production, and (b) semi-commercial farmers characterized by 5-10 goats keeping and targeting the market for selling. In general, the goats from the small farmers rarely enter the market, and it is very limited, especially in the local market or in the villages that is handled by the local butchers. Semi-commercial farmers sell most of their goats to the various market intermediaries through local collection centres.

**Local butchers:** Local butchers are either unorganized and perform the butchering business as and when it is available, or often located in the local market/town by establishing butchering shops. Local butchers directly buy goats from the farmers and often hold in their own collection/holding centre in order to supply as per the local demand of the meat. In some cases they also deal with the live goat selling to the large buyers/traders and serves as an intermediaries.

**District traders:** Three types of district traders have been identified in the study: (a) those who buy, hold/collect in the collection centre and send to the distance markets (Pokhara, Kathmandu) as quickly as possible with their agents in the destination to deal with the further selling activities (example-Chhinchu in Surkhet), (b) those who collects goats from the villages and involves himself/herself in the further selling process by taking the goats to the big cities and market such as Kathmandu (example-Baddichaur in Surkhet), and (c) those who collects the goats from the villages, holds in the collection centre/holding rooms and supply to the near- by market in the road-corridors; sell to the local butchers, and often sends some goats to the distance market such as Kathmandu (example-Salli bazaar in Salyan). In the case of (b) and (c) traders often involve with credit purchase with the farmers and pay them back once the goats are sold in the distance market. Horizontal linkages exist between farmers and traders in line with collecting and selling process. These road-head traders are mainly located in market centres. Khalanga (Jajarkot), Salli Bazar, Baddichaur and Chhinchu are the major

market centres in the Chhinchu-Jajarkot corridor; Birendranagar, Guranse, Ratanagla, Chupra and Dailekh bazaar are dominating market centres in the Surkhet-Dailekh road corridor and Birendranagar, Rakam, Jite/Hulma, Manma, Nagma, Urthu and Khalanga (Jumla) are the most promising and potential market centre in Surkhet-Jumla road corridor.

**Sub-national traders:** The traders in this category handle and sell the collected goats at the sub-national/regional centres, such as in the Birendranagar. Process include live goat selling to the butchers/fresh houses.

**National traders:** The traders who have been active in trade of goat in Kathmandu, Pokhara are called national traders. They collect goats from district traders and sell live goats in the national market mainly to the butchers/fresh houses.

**Retailers:** Retailers are butchers/ fresh housekeepers who process the live goats and sells meat directly to the consumers, *sekuwa* corners, restaurants, hotels in the big cities and market. This could be taken as the end market from the national market perspectives. Some fresh houses in Nepalgunj are involved in processing of the meat. Processing usually consist of cleaning, removing head and legs and wrapping in plastic for storage. The meat is stored in deep freeze for longer time and is delivered to customer mainly to Kathmandu using the insulated vans.

## 2.2.2 Enablers and facilitators

Major functions at the enabler level include activities as public research and related technology development, agreement on professional standards/rules/norms, provide promotional services through extension activities, advocacy and other related service providers.

### Enablers in production and local level butchering

District Livestock Service Office (DLSO) and Nepal Agriculture Research Council (NARC) are mainly working to develop and disseminate different production and management related goat-rearing technologies. Similarly co-operatives and goat keeping farmers' groups are often involving to facilitate goat-rearing activities. In the production process, microfinance institutions and cooperatives assist farmers by providing loans whereas such practices are slowly emerging. I/NGOs as Heifer Project International and PACT project of Government of Nepal-DLS are involved in providing technical and financial assistance to the cooperatives as well as directly to the farmers to support/encourage local level production. Goat rearing is a dynamic activity that requires substantial attention to feed, house and breed management. Thus gender roles and involvement are mostly done in a mutual understanding instead of men only or women only. Due to lack of enough feed resources, often-medium level resource holding farmers are more inclined to goat rearing rather than resource poor but it is not limited to resource rich only. Thus financial and technical access in terms of women, poor and marginalized is not visible at household level that is taking the shape of joint involvement for prominent activities.

### Enablers in trading

At trader's level, District Chamber of Commerce and Industries (DCCI), cooperatives, DLSO and some of the financing institutions such as Agriculture Development Bank Limited (ADBL)

are involved in somehow supporting the traders. At higher level, the Ministry of Agriculture and Cooperative (MoAC), Department of Livestock Service (DLS), Federation of Nepalese Chambers of Commerce and Industries (FNCCI) and the Ministry of Commerce support the trading business through lobbying, policy formulation, but with limited scope. The details on each enablers and facilitators are described in Annex 3.

### **2.2.3 Policy Framework**

Government of Nepal has a policy of increasing meat production as is reflected in the government plans and policies. Besides trading, government policy equally emphasizes for high value products and chain development in meat production and trading. Here are some of the critical reflections:

#### **Three year plan (67/68 – 69/70)**

Nepal government has implemented three years plan that well covers the livestock sector emphasizing production and consumptions of milk and meat by its people. Major facets of the plan include:

- Launching international standard 'quality certificate' of food items that include livestock products
- Emphasis to the value chain in agricultural products by incorporating different levels of actors in the chain, and emphasis in high value agricultural production
- Improvement in quality and in the standard of agricultural products through period and relevant amendments in existing Acts/laws, and by-laws, also considering international provisions, laws/Act and associated context.

Among other critical considerations in the Plan, agribusiness promotion policy supports to the farmers in making enabling environment for production. For example, it has a policy on to rebate on electricity bills (25 %) for the operation of slaughterhouse, cold or frozen chamber, milk chilling vat, wholesale market, and collection centre for the first 10 years.

#### **Tenth Plan**

Nepal government has given strong emphasis on livestock sector in the Tenth Plan so that this sector would achieve growth as per expectation. Several areas for priority and functions have been identified whereas major target lies on the increment of total meat production from 227,000 MT to 260,000 MT.

#### **Animal Slaughterhouse and Meat Inspection Act, 2055 B.S (1999)**

Whereas it is expedient to establish slaughterhouse and arrange for meat inspection to safeguard the health and welfare of the people in general and to control adulteration in meat and meat products and to maintain reasonable standard of meat by protecting the wholesomeness, quality and adequacy of meat; now, therefore, the parliament has enacted this Act. The details of this Act are presented in Annex 4.

#### **Slaughterhouse and Meat Inspection Regulation, 2057 (2001)**

In exercise of the power conferred by section 23 of the Slaughterhouse and Meat inspection Act, 2055 (1999), Government of Nepal has framed the following Rules:

"Establishment of Slaughterhouse in Non-governmental sector: (1) A person or institution desiring to establish and operate a slaughterhouse in a non-governmental sector shall have to submit, for license, an application along with a proposal of plan and a recommendation of Local body to the Office in the format of Schedule – 1

A person who or an institution which establishes and operates slaughterhouse in a non-governmental sector, himself/itself has to provide for meat inspector required by the Act and this Regulation for slaughterhouse established and operated by him/it.

A slaughterhouse established before the commencement of this Regulation shall also have to obtain a license within six months from the date of the commencement of this Regulation."

### **Meat transport (means)**

The means of transportation of meat from one to another place should be of enclosed type with the provision of use of non-rusting metal with the capacity of absorption of water, easy to clean and with disinfectants friendly. Doors and windows should be with proper closing and opening system. There should be provision of adjustment in temperature while transporting meat

### **Norms and standards**

The inner core of the container used in transporting meat should be cleaned, with no rust, and dirt. One should use enclosed type of container in transportation whereas means of transportation must be disinfected before its use in meat transport. Meat should not, at any cost, touch land surface as well as other external ailments and person involved should be healthy and free from contagious diseases.

### **Policy perspectives for inclusion of different strata of people**

Government of Nepal in its periodic plan has emphasized involvement of all strata of people in income generating activities that also covers rearing of goats. Accordingly, pro-poor policies are advocated that largely visible in its 10<sup>th</sup> five year plan with the initiation of goat distribution programme to the poor, dalit, marginalized and women in the country. However, poverty reduction and household income generation by rearing goats are often hard to achieve in isolation, as it is a strong component of crop-livestock integrated farming system that reflects couple of goats rearing per household in general. On the other hand, goat value chain development requires enough production of goat meat at farm level which has been limited due to several constraints and perhaps also due to low investment in this sector. Accordingly, government policies are not effectively working in relation to the promotion of excluded and marginalized people whereas it has been a continued effort that also reflects through the HVAP project activities of the government of Nepal.

## **2.3 ECONOMIC ANALYSIS**

### **2.3.1 Production and productivity**

Goat keeping is an integrated approach for majority of the farmers in Nepal as they keep couple of goats as part of the livestock sub-system in the households where crops, vegetables and fruit trees integrate the whole system in a unique and subsistence way. Farmers in the

study districts also consider goats as one of the essential components of the farming system, but in majority of the cases it was limited to the small scale and scattered in the nature. Nevertheless, farmers highly value goat keeping as an option to generate household level income and to support their livelihood system. Developing road corridor and increasing demand of goat meat has provided favourable environment to the small to mid-scale of producers to boost their capacity towards commercialization of this sector.

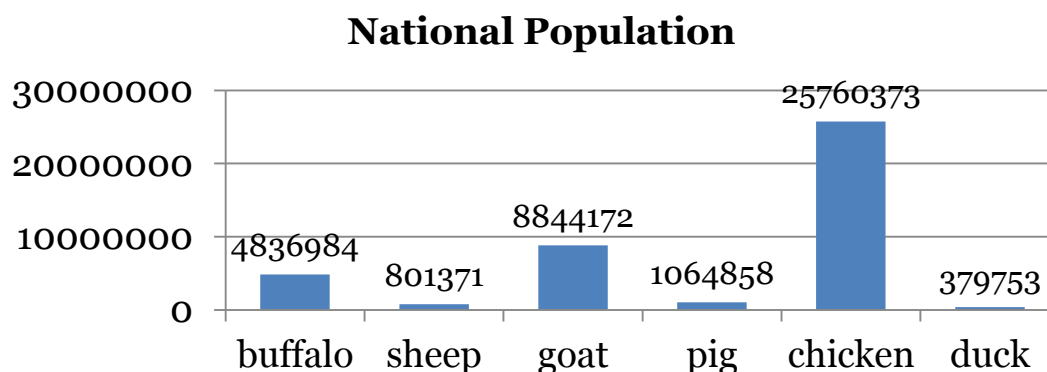
Production system is traditional in most of the cases where goats are either kept stall-feeding or are grazed in the near- by forest. Most of the farmers keep goats based on partial feed supply (maize grits, wheat bran) and fodder from farmland & forest. Housing system varied in high altitude districts where goats are kept inside the barn (closure type of room with poor ventilation and space management) whereas in the mid-hills it is semi-open in nature but with unscientific slot and space management.

Productivity of goats was found largely varied due to breed (Khari and Jamunapari crosses dominant in Surkhet-Dailekh road corridor, Khari and Sirohi (Ajmeri) dominant in Chhinchu-Jajarkot and Surkhet areas; Khari and Sinhal dominant in the Kalikot and Jumla road corridor section of Surkhet-Jumla corridor); rearing system (forest grazing versus stall feeding) and other management practices mainly feeding, health and breeding management. Majority of the farmers in the high altitude districts and in the districts with low level of extension services (such as Jajarkot, Achham) have been indulging with poor breeding management, especially while tackling with in-breeding hazards whereas unscientific feeding and improper veterinary care has resulted often poor productivity. Accordingly, Khari goat reaches to about 25 kg live weight in 16-18 months of rearing whereas Sirohi and Jamunapari crosses would make the live weight of about 30 kg in the similar time of rearing. Sinhal in the Jumla area takes very slow growths (~8-10 kg in a year period).

### 2.3.2 Production status

Goat production shares about 3.99% on total AGDP (MoAC, 2006). Figure 3 show that goat is one of the most dominant ruminants in Nepal with its total population of 8.8 million. Indeed goat population comes after poultry bird whereas its population is comparatively higher than buffaloes, sheep and pigs (Figure 3).

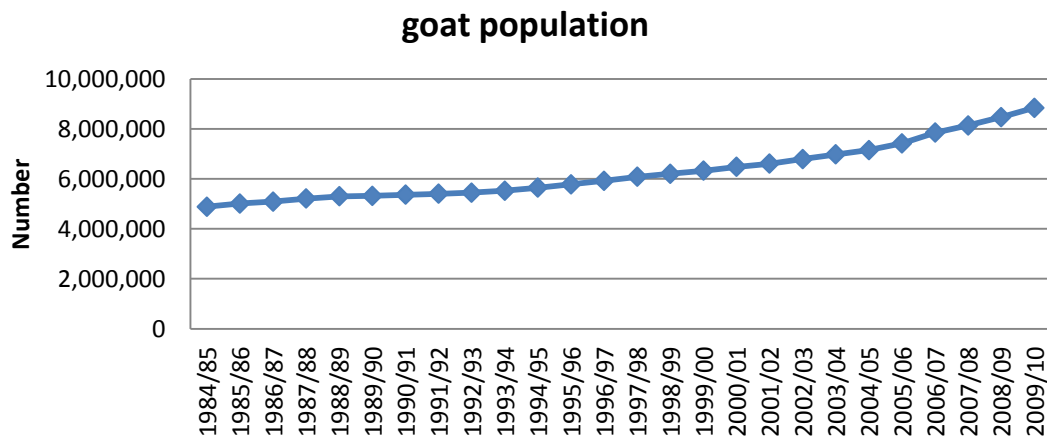
**Figure 3 National populations of livestock in Nepal (2009/10)**



Source: Statistical Year Book, 2009/10

The total number of goats in the world has been increasing since 1990 by about 1% to 4% each year reflecting the emergence of goats as a major livestock species, resulting to the increase of 146% of the total goats in 1990 (590.1 million). Similar significant increasing trend has also been observed in Nepal with an average annual growth rate of 3.31 per cent (MoAC, 2008). In Nepalese context, goat production and its pricing has moved in an increased trend as shown by the Figure 4 and 8. The trends shows increased as of 1984/85 to date with comparatively higher number since 2006/07 that matches well to the total meat production and its contribution over the last two decades in Nepal (Figure 7).

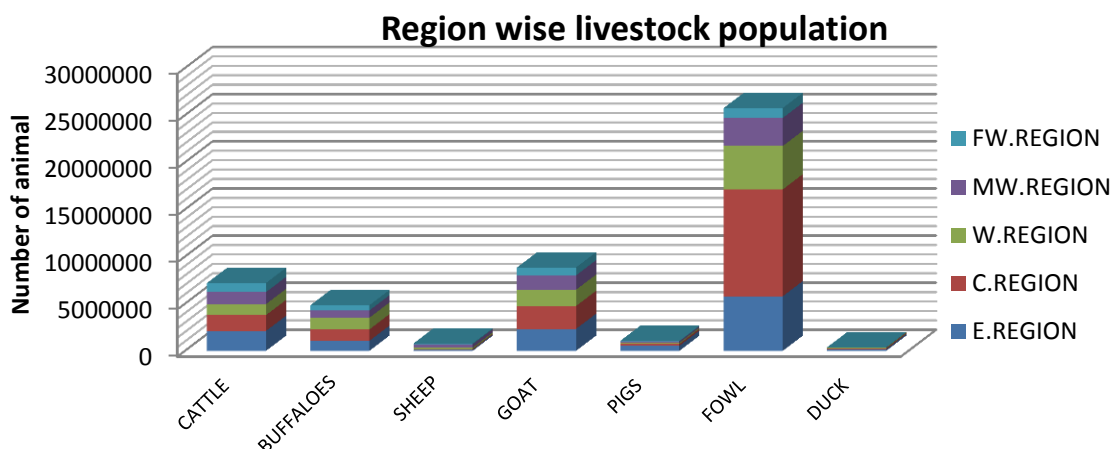
**Figure 4 Trends of goat population over the last 25 years in Nepal**



Source: Statistical Year Book, 2009/10

The Nepalese scenario of livestock rearing has been unique in the sense that it is fortified with several ruminants such as cattle, buffaloes, goats, sheep, and non-ruminants such as pigs and poultry.

**Figure 5 Region-wise distribution of livestock in Nepal**



**Source:** Statistical Year Book, 2009/10

Accordingly poultry excels to the other species in number with the highest in eastern region whereas goat comes after the poultry, which has been well distributed in all the development regions. Comparatively the population of goat is higher in eastern and central, followed by western and mid-western regions (Figure 5).

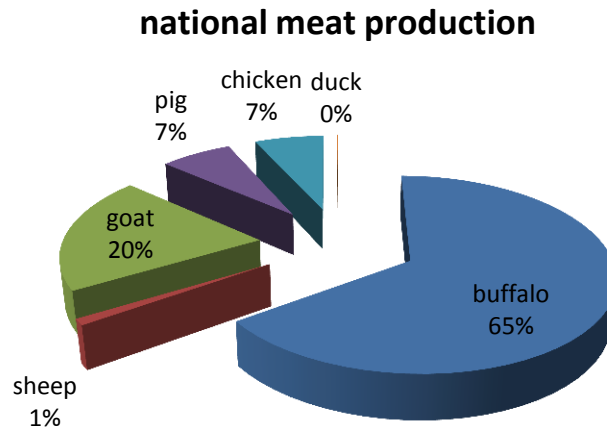
The production and productivity status of goats in the study districts are found quite varied due to several reasons; most importantly with the breeds and feeding/grazing management. On an average 40 kg live weight was found recorded while rearing goats for 16-18 months, except in Jumla where growth is slow and reaches 30 kg only at third or fourth year of rearing. General trend of goat selling was often found ~30-35 kg regardless of its productivity. Scientifically goats should reach to 30 kg weight by 14-16 months of age, thus productivity, although varied (better in Surkhet, Salyan and comparatively low in Jumla) but found within satisfactory zone in general compared to low level of inputs provided. Gaining certain weight in certain duration of rearing is a result of the combined efforts thus it is hard to isolate effect of one major component, such as breed. However, farmers were found achieving reasonably good productivity (in the sense of gaining standard weight in a reasonable time frame of keeping) compared to the relatively low level of inputs they offer in goat keeping.

### 2.3.3 Meat value and market price

Goat meat is widely consumed all over the developing countries. According to FAOSTAT (2008), total meat inventory was about 280 million MT during 2008, with the goat meat representing only 2% of the total. The developing countries produced approximately 97% of the total produced, reflecting the great importance of goat meat to feed millions of people in these countries. China leads the world in producing goat meat, accounting for 38% of the world total goat meat produced.

In Nepal, available statistics shows that goat contributes as the second largest sector in meat production (Figure 6).

**Figure 6 Status of meat produced in the country**

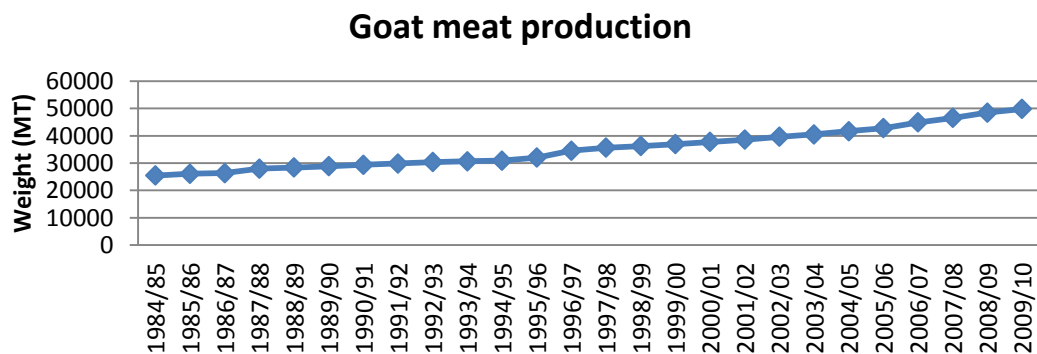


**Source:** Statistical Year Book, 2009/10

Accordingly it supports 1/5<sup>th</sup> of the total produced which comes second after buffalo meat. Considering its huge potentials in supporting meat need of the country there is an immense scope of this sector for economic and business activities.

The Figure 7 shows the increased trend of goat meat production.

**Figure 7 Trends of goat meat production over the last 25 years in Nepal**



**Source:** Statistical Year Book, 2009/10

The detail on the total goat population and its meat production within the project districts in 2067/68 is presented in Table 1.

Table 1 Total goat and meat production (tons) of study districts (2067/068)

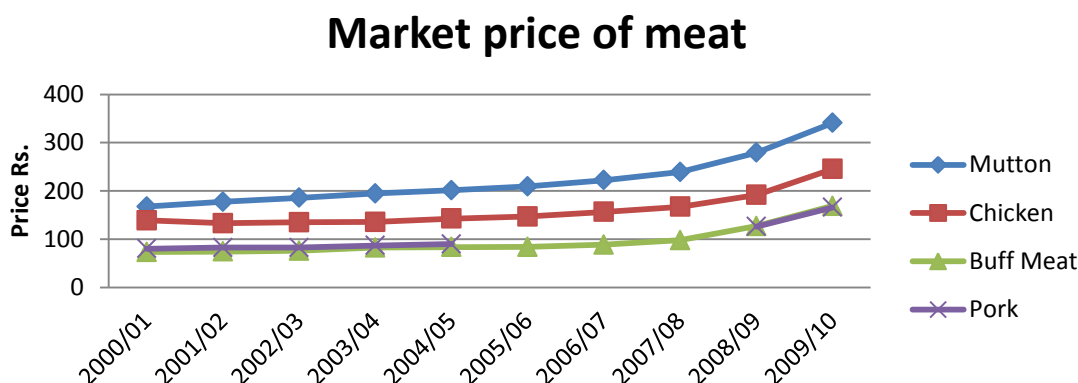
Project districts	Total goat population	Meat produced (t/year)
Surkhet	214,684	1,294
Dailekh	224,463	196
Jajarkot	92,782	1,195
Jumla	88,123	249
Kalikot	46,634	263
Salyan	406,814	5,909
Achham	37,000	1,212

**Source:** Regional Directorate of Livestock Services, Surkhet (2067/68)

Among all types of the consumed meat, mutton has the highest cost per unit weight, followed by the chicken. This also shows the scope of goat meat that reflects the gross return of per kg goat meat to match with the production costs.

Most of the goats produced by smallholder in Nepal are marketed by private entrepreneurs/traders who, operating as a marketing chain, collect, hold and distribute/sell the

**Figure 8 Market price of meat covering major sources of meat production in Nepal**



*Source: Statistical Year Book, 2009/10*

goats to terminal markets. Although the marketing chain is well known, the economic and institutional barriers to goat marketing (transportation costs, quality standards, inadequate and uncoordinated goat meat market information systems) limit its development. The potential exists for an improved and well-functioning market through value chain and economic study that will enable producers as well as traders to derive greater benefits from their production and marketing activities through suggested interventions.

#### 2.3.4 Breeds

Khari is the dominating breed, which is considered as a native breed of Nepal and has been widely reared in the Terai to the mid-hills. Besides, Jamunapari and Sirohi crosses are also common in the mid hills and western valleys, such as Surkhet whereas Sinhal, Chyangra are commonly reared in the high altitude districts such as Kalikot and Jumla.

*Khari*: Khari is also called hill goats, which has been long way adapting in the mid-hills and foothills of Nepal including valleys. Khari has distinct coat colour ranging from brown, black, mixed type with its typical twining ability, ability to graze in the mountains and is distinct with the capacity to resist common diseases. Khari can withstand climatic variation and adapt to the local context based on low level of inputs and poor management.

*Jamunapari crosses*: Jamunapari is the Indian origin breed with it relatively large body size and higher growth potentials, but can't perform better grazing in the hills and mountain. Khari crossed with Jamunapari with varied level of Jamunapari blood are partially available in different parts of the country. Certain level of Jamunapari blood (10-20%) is found suitable to target higher growth, but it is more susceptible to the diseases and needs better management for higher growth rate.

*Sirohi crosses*: Locally named as Ajmeri, but descent of Sirohi, an Indian originated goat breed is commonly found in Surkhet and in the periphery districts which is typical with khari cross breed concept. Certain level of Sirohi blood has been found mixed with Khari goat, without its distinct body characteristics, but is reflecting in the higher growth and body weight gain. In depth study is required to determine its combining ability with Khari for a better production.

*Sinhal*: Sinhal is the mountain goat mainly adapting to the cool climate of Jumla, Kalikot and other mountain districts of Nepal. Its growth is relatively slow due to cool climate and weather condition but can withstand transhumance system of grazing. Sinhal is also considered local breed for high-Mountain with its capacity to grow and produce relatively better output in a low level of feeding management.

### 2.3.5 Cost of production

Farmers rear goats in a traditional system of where common method of stall-feeding or grazing in the nearby forests for 4-5 hours a day is common. Feed supply in terms of standard ration is uncommon practice whereas majority of the farmers offer limited amount of maize grit (40-60 gm./day/goat), often wheat bran (20-30 gm./day/goat) is customary. Both maize grit and wheat bran are not provided at a time whereas minimum amount of salt is given in the liquid slurp, especially for lactating and newly kidded one. The cost of rearing practice is not based on recording system, and thus the production related costs reflect the general idea of the farmers reflecting a typical pattern of feeding. On an average, maize grit would cost NRs 15-20 per kg so as the wheat bran. A packet of salt would cost NRs 15. Farmers reported that they would charge on an average of NRs 100-130 per person as labour cost for a mature goat (weighing 30-40 kg) and NRs 100-120 as part of the veterinary health care including medicine purchase. The detail estimated cost of production based on a group production scheme is presented in Table 2.

**Table 2 Estimated cost of production\***

S N	Descriptions	Quantity	Unit	Rate	Total (NRs)
<b>Cost of production</b>					
<b>A</b>	<b>Shed cost</b>	1	lump sum	2418	<b>2,418</b>
<b>B</b>	<b>Inputs</b>				<b>79,638</b>
1	Cost of young goat**	30	head	1,681	50,418

S N	Descriptions	Quantity	Unit	Rate	Total (NRs)
2	Feed (maize grit, salt)	1440	kg	18	25,920
3	Medicines and vaccines	30	head	110	3,300
<b>C</b>	<b>Labour</b>				<b>48,000</b>
1	Grazing/herding, feeding	480	man days	100 <sup>†</sup>	48,000
	<b>Total expenses on shed, inputs and labour</b>				<b>130,056</b>
<b>D</b>	Estimated income/benefit from manure	1440	per kg	3	4,320
	<b>Total cost of production</b>				<b>125,736</b>
	<b>Cost of production per goat</b>				<b>4,191</b>
	<b>Cost of production per kg (estimated 30 kg live weight per goat)</b>				<b>140</b>

\* Calculation based on assumption of gaining weight of 30 kg in duration of 16 months

\*\*Detail estimated cost calculation of commercial production of young goat is presented in Annex 5

<sup>†</sup>the rate is comparatively low as it requires only 4-5 hours and during herding the labourer utilizes his time in other activities like firewood collection

Source: Field Study, 2011

The given estimation presented in Table 2 for group of production scheme is general calculation based on overall scenario of costing whereas it largely varies due to location, size of rearing and local market price of the ingredients and variables.

Table 3 presents the farmers' response of cost calculation that reflects pattern of goat rearing in the study districts. These costs are based on the memory recall of the farmers and are not as per the record value thus variation exists.

**Table 3 Cost of production at farmers' level**

Corridor	Cost of production (Rs/Kg)	Selling price (Rs/Kg)	Gross margin (Rs/Kg)	Remarks
Chhinchu-Jajarkot	114	200	86	Mean of Bisagaira, Surkhet and Ghajanpipal, Salyan
Surkhet-Dailekh	140	204	60	Mean of Baddichaur, Surkhet, Chhupra Jumla and Khursanibari, Dailekh
Surkhet-Jumla	233	342	109	Mean of Patmara, Jumla and Badalkot Kalikot Highest sell: Rs 400-450/kg in Jumla

Source: Field Study, 2011

Table 3 shows that the unit cost of production is higher in Surkhet-Jumla corridor. It is mainly due to long rearing period, higher labour charge and other associated cost. In Jumla, it requires 3 to 4 years of rearing to obtain weight of 30 kg and the costs of ingredients and variables are also high. The cost in Chhinchu-Jajarkot corridor is the lowest mainly due to comparatively higher commercial farming and easy access to markets. Farmers in Jajarkot if allowed maximum of forest cost and reduce the associated feed cost would eventually lower the unit cost of production.

To match with the higher cost of production per unit, the selling price was also higher in Surkhet-Jumla corridor and associated districts that resulted higher high gross-margin of per kg meat produced. Study also revealed that per kg margin would be lower in Surkhet-Dailekh road corridor and associated districts indicating scope of increased in volume of sale which would also supports the consumer in paying comparatively lower cost for an unit of meat purchase. On the other hand, from the farmers' perspective, farmers in Surkhet-Jumla would fetch higher return per unit of meat sell (Table 3).

### 2.3.6 Cost of margin at traders' level

Two types of traders have been identified in goat meat selling-those who purchase goats from the farmers directly, handle goats as of collection centre and sell the live goats either to the local butcher or to the distance market, and those who purchase goats from the collectors/traders and sell the meat by butchering in the local market. Minimum processing is involved while butchering whereas live goat traders handle the selling process by using trucks/bus or other means but are unfriendly and against the existing rules of transporting goats. In the local market, obviously butchers are in higher profit margin compared to the live goat traders due to increased dressed meat price and low volume of trading by the butcher. Live goat seller would have to invest on handling, holding (collection centre fees) goats, about NRs. 5-10 per mature goat (~30-40 kg weight), costs for load, unload, rope, threads (5-10 NRs. per goat) whereas large sum of costs would born by transporting goats to the distance market, but this cost would be involved only to those involving in the end market.

Table 4 presents the cost of sold, selling price and gross margin as obtained in various market centres. Here again, traders for Chhinchu-Jajarkot would fetch higher per unit gross margin than other corridors but that does not significantly differ in terms of margin fetched. On the other hand, butcher would fetch more than five folds higher margin compared to the live goat selling traders.

**Table 4 Cost of sold margin at traders' level in local market**

Corridor	Cost of sold (including purchase)/kg goat	Selling price (per kg) goat	Gross margin /kg goat (NRs.)	Remarks
Chhinchu-Jajarkot	211	238	27	Rs 40 in Chhinchu; Rs 15 in Salli Butcher in Salli (live-dressed meat sequence)
	225	350	125	
Surkhet-Dailekh	340	350	10	Dailekh bazaar
Surkhet-Jumla	315	335	20	420-450-30 (Jumla) 210-220-10 (Baddichaur)

*Source: Field Study, 2011*

An example of detailed estimated margin calculation among various actors while trading from Surkhet to Kathmandu is presented in Annex 6.

### 2.3.7 Value addition along the chain

#### Process & product

Goat meat is one of the least processed items that are considered as product in the form of fresh meat directly sold to the consumer. Butchers usually remove viscera and that's too considered part of the consumable meat in the local market. Besides, percentage of bone

includes ~25-30% whereas neat meat selling is a rare practice. Most of the butcher sells meat including skin (except in the Dailekh bazaar where de-skinned meat selling is a common practice) considering taste factor of the customer. No visible product processing was found during the study. Nevertheless, couple of attempts have been found establishing product processing centres in the Nepalgunj market (which does not fall within the study corridor of the project districts) with the provision of deep refrigerating meat for distance market and also the use of meat for products processing such as dried meat, sausages etc. Fresh Hygiene Food, Nepalgunj is one of such attempts that use insulated van to transport meat to the distance market.

### **2.3.8 Distribution of income along the actors**

Value chain is less developed in goat meat production and marketing as compared to the other commodities. Especially in the project district, most of the people involved in the chain are farmers/producers and local and or town/collection centre oriented traders. Obviously larger proportion of the income goes to the farmers/producers (~65-70%) of the total margin including initial fixed costs whereas remaining proportion of the income would be distributed to the traders. This scenario differs in the case of butcher who makes profit margin better than farmers and live goat traders (Table 4). In the Table, it is also important to note that labour cost has been calculated as varied cost for all scale of rearing (based on memory call response of farmers and not by record) whereas purchasing cost is considered as fixed cost that has not been used in the calculation.

### **2.3.9 Income and employment created**

Goat keeping is an integral part of the agricultural system, especially that of livestock-sub-system in the project districts. Interaction with the farmers in the study districts revealed that goat contributes ~30-60% of the household income that creates employment to about 30% of the household members (average family size of 6). The amount varies as per volume of dealing and rearing. On an average a goat sell would fetch NRs 6000 (in case average selling price per kg goat is NRs 300). This figure varies depending on whether goats are reared in the mid-hills with the semi-commercial scale, or are reared in the high altitude districts. Production remained dominating nod in the value chain map where farmers involves all the way in a year from kid rearing to feeding, housing, grazing and veterinary care. Semi-commercial scale of rearing provides better option of employment due to large size flock and associated income from it whereas small scale of rearing provides employment as part of the other sub-sectors that often related to the crop production. Grazing involves continued demand of shepherd whereas stall-feeding would require part of the labour force to supply all the year round fodder/forages to feed the goats. Farmers having larger grazing areas, such as in Badalkot, Kalikot and Khalanga adjoined villages in Jajarkot would be more benefitted in terms of scaling up of the rearing size due mainly to available grazing land but farmers with less scope of forest grazing would lead to the higher level of production cost and with limited scope of scaling up. Nevertheless, Nepalese goat rearing system has not been developed as of goat based farming only. It is a part of crop-livestock integrated farming where goats composed of livestock species such as cattle, buffaloes, sheep, and poultry bird. Thus status of number of farmers' involvement as of semi-commercial and commercial status is not possible to be identified and so as the case of number of goat based employment only in a typical household.

Income distribution to the traders depends upon the size of volume traded in a year. It is however, emerging slowly as comparatively fewer traders are involved in this business. Moreover, much of the goats produced in the high mountain districts such as Jajarkot, Jumla and Kalikot are not brought into the road head corridor due to long time involvement in transportation coupled with unreliable road services.

Women are found visibly involved in goat rearing activities whereas very few women are also involved in trade, such as in Sallibazar, Salyan. Only one woman has been involved in goat meat butchering in Sallibazar. Majority of the women involved in goat keeping provides part of their services in goat rearing, especially for fodder collection, litter management and associated activities that accounts about 75% of their involvement in the production processes. Men are mainly involved in disease treatment and health care related services (10% involvement) and marketing activities (10% involvement). Children also contribute about 5% of their involvement (as of total) in fodder collection and watering. Male are visible in broader activities outside the household, such as trading and marketing. Nevertheless, income from the goat selling goes to the common basket in the family with the major saying of male member in deciding the pattern of expenses from the earning. Joint involvement of male and female members in decision is emerging slowly in most of the project districts depending on exposure to the outside world, education and family environment. Poor and *dalit* are more towards joint decision compared to other caste and ethnicity.

Involvement of poor and *dalit*/janajatis are also seen in goat keeping that includes of about 10-15% in terms of the total produce of the project districts. Social harmony exists in majority of the cases where socially excluded and marginalized people are also involved in production pattern but not visibly in the trade. Such activities are visible to be carried out as and when it is feasible for them, mainly due to the reason of available resources and capital to invest.

Gender and social group based productivity differences as revealed in the focus group discussion were not noticed in the study project areas. Since services provided by the government and non-governmental organizations are not visible and are not comprehensive, it is not the access to the services but the overall low level of productivity and lack of appropriate goat rearing technology available irrespective to the gender, social group and rearing categories. Exact pattern and status, however, requires scientific investigation with specific objective.

## **2.4 MARKET TRENDS & COMPETITIVENESS ANALYSIS**

The major market centres are those related to the established road-network areas whereas the northern road corridor of Dailekh-Jumla and Chhinchu-Jajarkot has not been utilized for the cause of market and market centre. Accordingly, most of the goats from the interior districts do not come into the established road corridor based collection centre. It effects in competitiveness in the business as demand is always supporting local production and perhaps larger volume of the produced meat is yet to come out of the production areas so that market competitiveness would be developed. Trend in pricing is such that national scenario reflects continued rise in per unit meat price in market with ~20% per annum in general whereas similar increment in price also exists in the local market such as in Khalanga-Jumla. Exception

is in Khalanga- Jajarkot where goat is sold not by weighing, but by estimating the weight, has resulted comparatively lower meat price per unit along with some other un-visible reasons.

### 2.4.1 End markets

The major end markets at local, sub-national and national levels are as follows:

Types	Major end markets
Local	Chhinchu (Surkhet); Khalanga (Jumla); Khalanga (Jajarkot): Narayan Municipality (Dailekh): Manma (Kalikot)
Sub-national	Birendranagar, Nepalgunj
National	Pokhara and Kathmandu

Product differentiation does not exist in the end market whether it is at the local, sub-national, or national level due to the fact that only fresh meat is supplied to the consumer elsewhere in the market. There is no possibility of export market for goat meat, at least from the study districts as demand is well supporting the supply situation at the local and national market. Nevertheless, farmers/producers as well as traders are following their own system of informal communication to learn pricing in the distance market whereas common standard norms of buying and selling price do exist in all the local and national market centres.

#### 2.4.1.1 Marketing channels

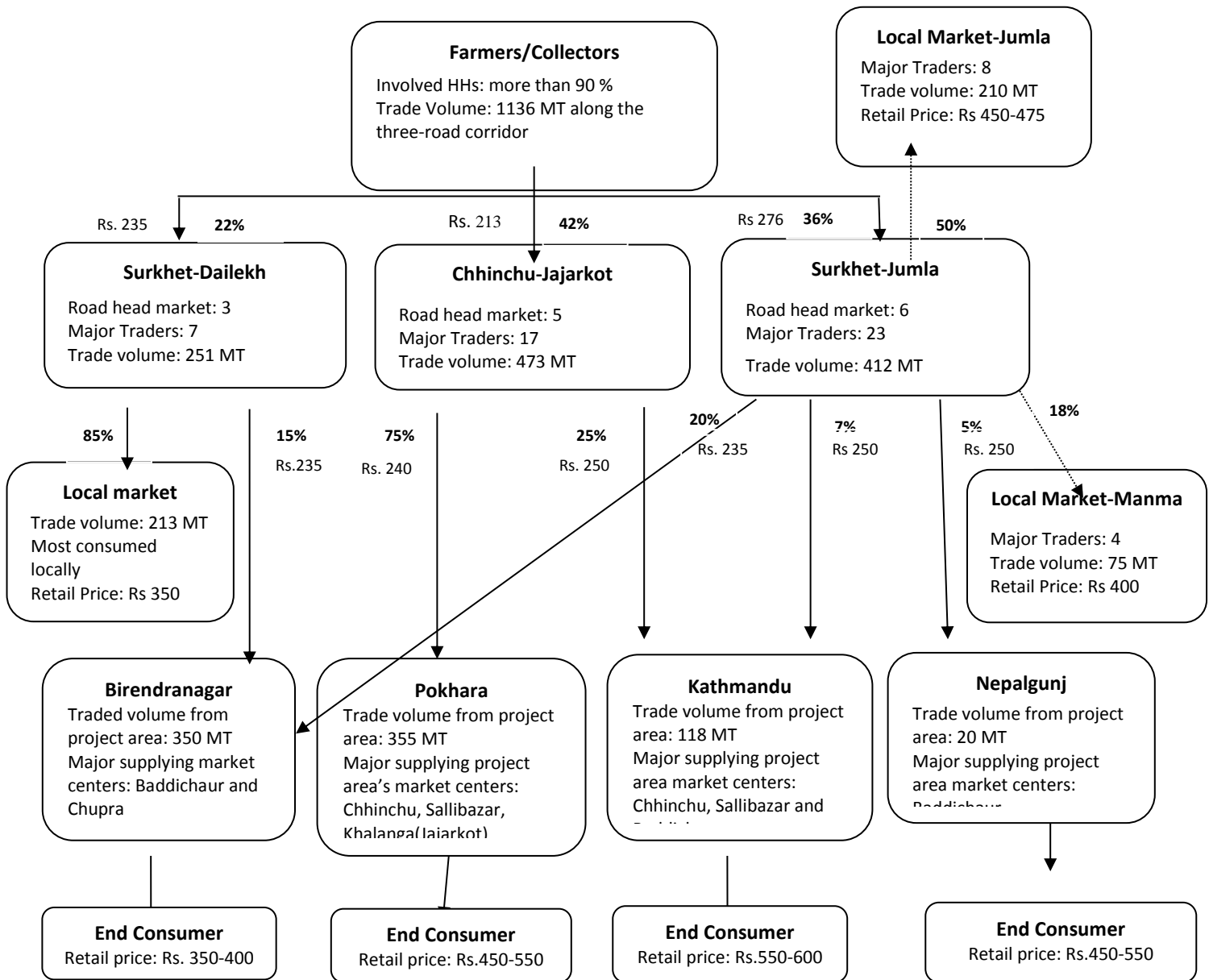
Marketing channel is found established mainly based on road head corridor and proximity of the collection centres to the production areas/villages. The visible channels of the product flow from the producer/farmers to the end consumers in the study districts are presented below, that shows the developing nature of channel with the straightforward pattern only. In this pattern of marketing channel, Kohalpur and Nepalgunj serve only as regional centre but not as of road corridor guided by the methodology.

- Chhinchu → Kathmandu (end market)
- Chhinchu → Pokhara (end market)
- Chhinchu → Birendranagar (local)
- Baddichaur → Birendranagar (domestic) - Consumers
- Baddichaur → Kathmandu (end market)
- Khalanga (Jajarkot) → Salli → Chhinchu (intermediary)
- Salyan → Salli → Chhinchu (intermediary)
- Ratanangle, Gurnese, Chupra → Surkhet (domestic) or Dailekh bazar

It was learned from the traders that out of the total number of goats collected in Chhinchu (from Sallibazar, Birendranagar and near- by production pockets), 80% are traded to Pokhara and the remaining 20% goes to Kathmandu. For the goats collected in Baddichaur, 90% goes to Kathmandu market and remaining 10% to Birendranagar. This clearly shows that Chhinchu is the dominating market centre in the region whereas Kathmandu and Pokhara as distinct end markets.

As stated earlier there exist import substitution potentials considering large areas to keep goats, developing market/collection centres, and growing demand of the national market. However import substitution potential largely depends on- large scale of commercial farming; developed competitiveness (low production cost); good enabling environment-support system (rearing technology, selected breeding, proper feeding/grazing, housing and marketing management) and the good governance.

**Figure 9 Marketing channel of Goat from project area**



\* All the prices are in Nepalese Rupees per kg of live goat meat except for the "Retail price" (presented inside box).  
"Retail price" are those of processed meat sold to customer. Source: Field Study, 2011

Large scale of farming would only eventually establish stable market with the tangible sharing of benefits by the producers and also by the traders without jeopardizing cost burden to the consumer. This could eventually help to substitute import, as demanded volume of meat would be available at reasonable pricing in the market. Commercial farming is not possible without developing a good enabling environment of larger scale of production whereas basic requirements for this would involve sound breed management supported with feeding and nutrition, housing and veterinary services. Private sectors involvement in these technology

related issues are bleak thus this necessitates support from government, I/NGO sector that would provide better path of production.

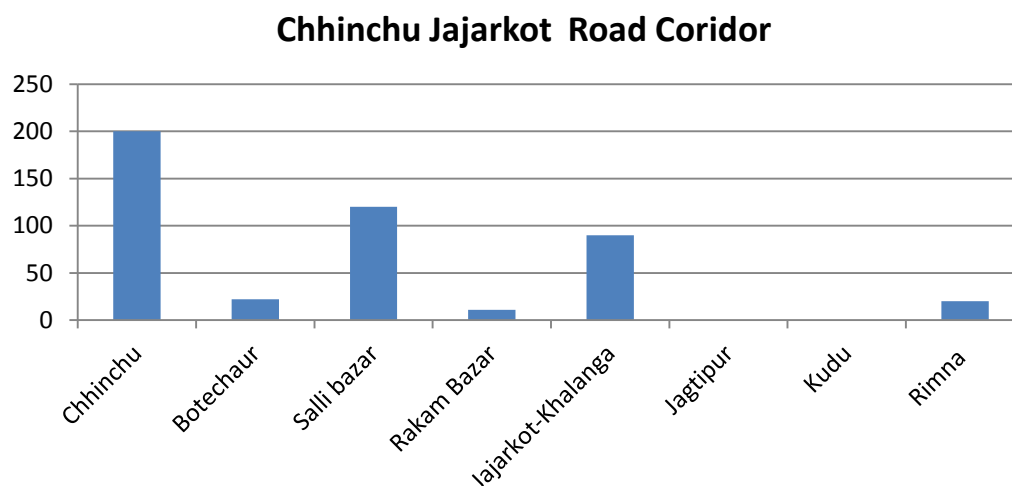
#### 2.4.1.2 Domestic and regional market

Domestic market is the major market for goat. The characteristics of the market centres as per the road corridor are presented in the following headings:

##### **Chhinchu-Jajarkot road corridor:**

This road corridor has comparatively higher trading of goat with a large number of traders as well as commercial producers. The estimated quantity of trading of goat per year as observed during the study was more than 473tons. It is observed that Chhinchu, Salli bazar, Jajarkot, and Khalanga market centres have the highest volume of goat transaction. Based on the data obtained from field, the approximate quantity of goat transacted in various market centres is presented in Figure 10.

**Figure 10 Quantity of goat traded in major market centres of Chhinchu-Jajarkot road corridor**



Source: Field Study, 2011

A large number of goats from this corridor are supplied to the regional markets of Pokhara, Kathmandu and Birendranagar. The major goat production pockets supplying to these market centres are:

**Table 5 Major production pocket of Chhinchu-Jajarkot road corridor as per major market**

Market Centres	Major Production pockets
Chhinchu	Lekhaparajul-3,5, Chhinchu, Ramghat, Matela -6, Neta-7, Rajena,
Sallibazar	Bame, Salyan, Ghajaripipal, Mulkho
Jajarkot Khalanga	Jhaga, Melpani, Saldhara, Salgadi, Garapani, Risang
Botechaur	Dharapani, Salyan Kalimati, Shahare-2
Rimna	Dandagaun, Shakla, Rokayagaun, Nayakbada, Rami Danda
Rakam bazar	Bagetichaur-5, Khani choh-3

Source: Field Study, 2011

Details on some major market centres of the Chhinchu-Jajarkot road corridor is presented in following paragraphs:

**Chhinchu:** Chhinchu is one of the largest dealing trade centres in Surkhet district that lies in the Chhinchu-Jajarkot road corridor. Traders in this trading centre deal with about 4800-6000 goats per year depending on the flow of goats and seasons. Purchasing price varied from NRs 200-220 per kg for castrated goat and NRs 200 for uncastrated buck.

Major pocket areas for the flow of goats include Simta, Bajedichaur, Sallibazar, Dharapani, Melarani, Ghumkhare, Baddichaur, Babiyachaur, Rajena, Cholpa, Dandakhali, Khanikhola, Neta and Pomka whereas major flow of goats comes from Salli bazaar, Botechaur, Dasharatpur, Lekhparajul, Tolikhola and Mehelkuna. Among the collected goats, about 75% goes to Pokhara and about 20% in Kathmandu. Major flow to Pokhara is because of the relatively easy dealing in business, due to comparatively better price and high level of trust among the traders.

**Salli bazaar:** Salli bazar is one of the most potential sites for the production and marketing of goats. Most of the collected goats in Salli bazaar are sold to Chhinchu (80%) and Kathmandu (20%). Major flows of goats are from near-by VDCs such as Suikot, Mulkhola, Ghajeri, Devsthal and Chade. Likewise goats are also collected from Majkara, Mel khola, Bagchaur, Khari khola and Kupinde. On an average, approximately 250 goats per month are traded from this centre whereas about 50-60 goats per months are consumed in the local markets as dealt by the local butchers.

Several opportunities exist in Salli Bazar in dealing with goats as it is expanding in size and has been developing as major market centre in the road corridor. Neighbouring VDCs have potentials to keep more goats due to fodder availability and due to system of local haat bazaar

**Khalanga (Jajarkot):** Jajarkot district, especially Khalanga is promising market centre in the Chhinchu-Jajarkot road corridor where all the VDC in the district are potential in keeping goats. There was about 5.8 MT meat produced and supplied to the market during 2067/68<sup>2</sup>. The figure largely contributes by the supply of 1,147 doe, 270 buck and 759 castrated<sup>3</sup>. This figure however could vary due to continued changes in the number of goats, as farmers are dynamic in holding and maintaining the size of keeping.

### **Surkhet-Jumla road corridor**

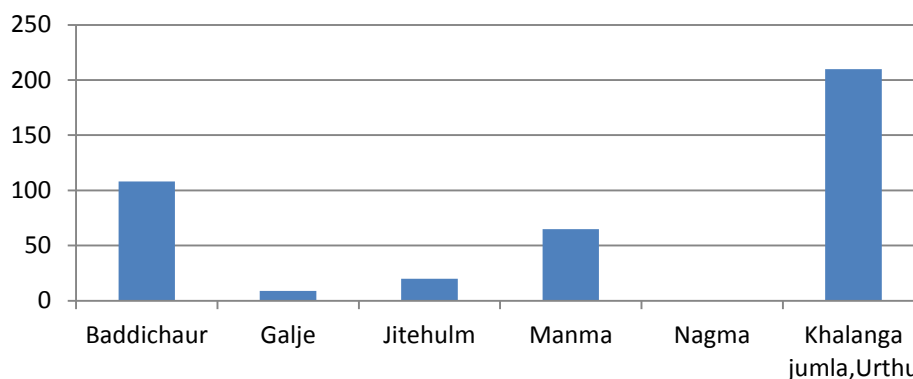
This is the longest among the three corridors and has the highest number of market centres. Most of the goats produced are consumed locally. The market centres and marketing channels are not well developed along the road corridor. According to field survey, the estimated total goat transaction from this road corridor is 412 MT. The major market centres and their estimated goat transaction volume are presented in following Figure 11.

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<sup>2</sup>DLSO, Jajarkot

<sup>3</sup>DLSO, 2067/68, Jajarkot

**Figure 11 Quantity of goat traded in major market centres of Surkhet-Jumla road corridor**



Source: Field Study, 2011

From the field study, it is found that Khalanga (Jumla) Urthu, Baddichaur and Manma have comparatively more trading of goat. Baddichaur is emerging as a collection centre for goat with comparatively high volume of goat trading. The major regional markets are Pokhara, Kathmandu and Birendranagar.

**Table 6 Major production pockets supplying to the market centres of Surkhet-Jumla road corridor**

Market Centres	Major production pockets
Baddichaur	Kunathari, Sundari, Baddichaur, Salkot, Babiyachaur, Pokharikanda, Lekhgaun
Galje	Galje, Chhapre
Jite/Hulma	Varta, Polipali, Naretol, Hulma
Manma	Badalkot, Baratu, Manma, Chilkhaya, Malkot, Mehal, Nanikot
Nagma	Bhuimahadev, Tal Naksal, Talichaur
Khalangajumla, Urthu	PatmaraVDC, Chandannatha, Mahatbada, Chhina, Micha, Urthu, Sinja, Patrasi

Source: Field Study, 2011

Table 6 presents the major production pockets supplying to market centres of Surkhet-Jumla road corridor:

Details on some major market centres of the Surkhet-Jumla road corridor is presented in following paragraphs:

**Khalanga (Jumla):** Khalanga of Jumla is one of the largest markets in the Surkhet-Jumla road corridor that consumes almost all the produced goat of the district as marketing channel to the road corridor and possible marketing centre is slowly developing and has not been established. Local *lekali* (Sinhali) goats are dominating in all the 30 VDCs of Jumla with the pocket area emerging in goats such as that in Bunramadichaur VDC, Patrasi, Patmara, Kanikasundari, Padargufa, Sanni village, Tampti VDC. Katik swami, Chandannath and Talyum are also potential pockets for goat keeping

Khalanga is comparatively better thus local produced has been consumed in the local market in reasonably high price per unit of meat, which is expensive in the entire northern region.

**Manma:** Surkhet-Jumla road corridor has linked Kalikot district where Manma is the potential and locally developed market centre. Manma is the only market centre where limited numbers of local traders are involved in the business. It was learned that most of the goats collected in the Manma are from several VDCs of Bajhang, Bajura and the VDC in the Kalikot such as Chilkhaya, Badalkot, Mumra, and Rupsa. Often goats from Manma are also sent to Jumla Khalanga (~150 goats/year). About 2500 goats are annually consumed in the local Manma market. Traders have been following the practice of grazing collected goats in the near-by forest instead of holding them in the collection centre, which is not yet constructed. There is no slaughterhouse in the Manma thus only fresh meat is sold to the consumer. Baratu is the adjoining village of Badalkot VDC from where most of the goats are supplied to the Manma all the year round. Farmers in Baratu purchase goats from Ramankot, Shyuna, Rupsa, and Mumra VDCs as and when needed. Jimjyadi of Badalkot VDC has a great potential of establishing goat resource centre to promote large scale of rearing.

**Baddichaur:** Baddichaur is one of the most promising goat production sites in Surkhet district in the Surkhet-Jumla road corridor. Although, Nagma, Jite/Hulma, Rakam and Tunibagar are other market centres in the corridor, Baddichaur is ever established and comprises large scale of dealing both in terms of collecting goats from surrounding VDCs and also for distance marketing, especially to the Kathmandu. FGD with traders revealed that ~2700 goats are sent to Kathmandu annually from Baddichaur that varies largely according to the production status and season of the trade. About 50% goats collected in the Baddichaur are also traded to Birendranagar and Chhinchu<sup>4</sup>. Traders collect goats from Lagam, Betan, Palaite, Salkot, Babiyachaur, Kunathari and Baddichaur with the dominating collection from Babiyachaur and Kunathari (~60% of the total).

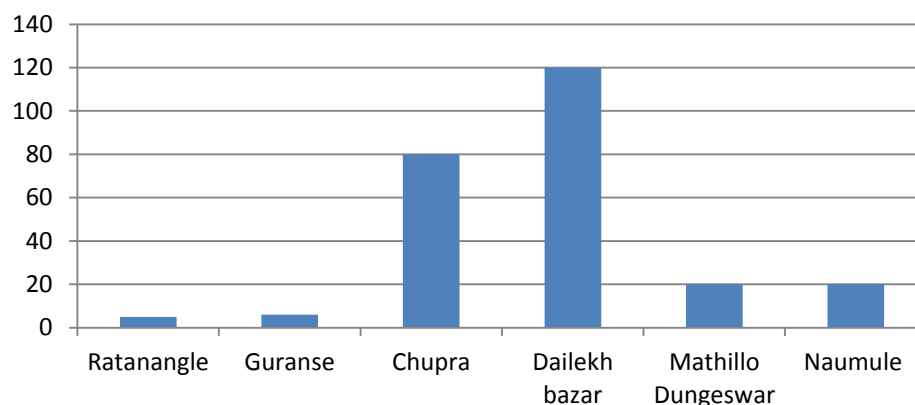
### **Surkhet-Dailekh road corridor**

This road corridor is the shortest among the three and has good road condition. There is comparatively low numbers of commercial goat farmers. Farmers usually sell to local markets as well as to Birendranagar and Narayan Municipality. The estimated quantity traded in this road corridor is around 251 tons. The major market centres and their estimated quantity of goat trading are provided in Figure 12.

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<sup>4</sup>DLSO, 2066/67, Surkhet

**Figure 12 Quantity of goat traded in major market centres of Surkhet-Dailekh road corridor**



*Source: Field Study, 2011*

Figure 12 reveals that Dailekh Bazar (Narayan Municipality) has the highest transaction of goat in the road corridor. This road corridor has more potential for goat keeping due to established market network, short road corridor to link with Surkhet and also due to available resources to keep large number of goats per household. The major production pockets supplying to the market centres of this road corridor are as follows:

**Table 7 Major production pockets of Surkhet- Dailekh as per major market centres**

Market centres	Major production pockets
Dailekh Bazar	Narayan Municipality, Rawthkot, Raniwan, Khurssanibari
Chupra	Belpata, Jagannatha, pagnath, Bindhabasini, Katti, Malika, Kalbhairab, Lakuri,
Mathillo Dungeswar	Dandaparajul, Awalparajul
Naumule	Churatha, Salleri, Dawari, Baluwatar

*Source: Field Study, 2011*

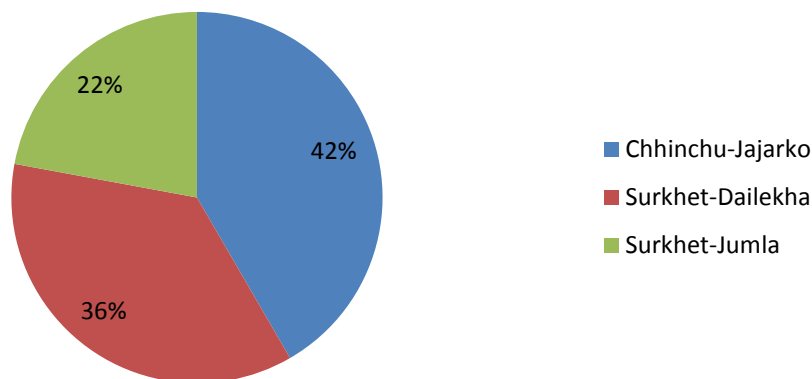
Details on some major market centres of the Chhinchu-Jajarkot road corridor is presented in following paragraphs:

**Chupra:** Chupra is one among the potential market centres, which is connected with several potential goat-rearing sites that comprised of Dandaparajul, Lakuri, Gauri, Kalbhairab from where goats are supplied to both Birendranagar and Narayan Municipality. Local khari breed is dominating in the district with the prevalence of Jamunapari cross and Sirohi (Ajmeri) crosses. Belpata alone produces significant number of goats as on an average every household keeps 5-7 goats that are targeted to the local Chupra market.

### **Market share percentages of road corridor**

As per the field study, the Chhinchu-Jajarkot corridor occupies an approximate of 40% share of the total transaction of goat among the three road corridors. Similarly, Surkhet-Jumla road corridor has an approximate of 36% and Surkhet-Dailekh road corridor has an approximate of 22% of the total share

**Figure 13 Market share of three road corridors in goat transaction (In share %)**



*Source: Field Study, 2011*

### **Regional Market centres**

**Birendranagar:** There are approximately 40 retail shops of goat meat in Birendranagar each of which sells approximately 60 kg of meat per day in an average. The major supplying areas for the municipality are in and around VDCs, especially Baddichaur, Chupra, Latikoili. Goats are supplied from this market centre to regional market especially to Pokhara and Kathmandu.

**Nepalgunj:** Nepalgunj is one of the major trade hubs for goat meat. India is the major supplier of goat to Nepalgunj. Though official figure is unable, the total trade of Nepalgunj is estimated to be approximately 4000 MT and around 80% of it is imported from India. Comparatively very less quantity (approximately 2%) is supplied to Nepalgunj from the project districts.

Most of the trade done is of a live goat; however, there are some cold stores such as DK Cold Store and Fresh Hygienic Food who supply the processed meat in insulated vehicle to other regional market, mainly to Kathmandu. The estimated supply volume of such processed meat is 219 MT annually. The processing mainly consists of cleaning, removing head and legs and finally wrapping by plastic. The processed meat is then stored in -45 degree centigrade. The major customers for these kinds of processed meat are catering houses, hotels and restaurants. The purchase price of goat meat for the processor is NRs. 350-360 and sells the processed meat in NRs. 450 in Kathmandu. Mostly Muslim communities are involved in butchering activities.

**Kathmandu:** It is estimated that around 10,000 MT of goat meat is traded in Kathmandu<sup>5</sup>. Kalanki Goat Market Centre is the major trading centre of Kathmandu from where the goats are supplied to mainly two sub market centres in Bijulibazar and Tukucha/Bhirkutimandap. According to vice president of the Centre, around 80% of the total goats traded in the Centre are supplied from India. According to him, around 25 trucks with capacity of 250 goats per truck enter in this market per week. During, Dashain and wedding seasons about 200 trucks enter in this market.

#### 2.4.2 Enabling environment

##### Local

Local level of production status is mainly limited due to poor local context which is reflected through small scale of dealing whereas traders have challenges for smooth transaction because of undefined taxes, levy and weak rules and regulation both at collection point as well as while transport locally from point of production/rearing to the next destination. Often such taxes and levy accounts to about NRs 5-7 per kg goat. Moreover, in the local context, there are prevailing challenges because of inadequate or unscientific collection centres that require scientific dealings in terms of feeding for re-conditioning, space management, and with the provision of common yard in front of collection centre. Among these constraints, lack of re-conditioning facilities/opportunities is quite visible that could render about 20% loss in body weight that is a serious issue in dealing with trading. Similarly both farmers and traders are also facing problems with poor or un-reliable /underdeveloped road network, especially in the Chhinchu-Jajarkot and Surkhet- Jumla road corridor. This is one of the major reasons for weak flow of goats from high mountain districts to the potential market centres.

##### National

To make enabling environment for large scale production of goats and to have a higher quantity of meat at the market, it needs serious attentions that should be viewed in terms of dealing with unscientific/unseen tariff; poor tax policies (e.g. lack of subsidy in transportation; lack of tax exemption in road charge etc.) and the creation of sound environment. At national level there are limited regulations with poor support system for the large-scale production. On the top, existing rules often does not work and both farmers and traders have to go with panic situation due to poor enforcement of rules and regulation, especially those that support to develop enabling environment. Moreover private sector's involvement in this business is scattered and unorganized which has been hampering in the total process of enterprise development. This context is often found indulged with lack of producers' strong group that deprives them for a strong advocacy and to develop sound environment.

#### 2.4.3 Inter firm cooperation

**Vertical linkages:** Considering the goat meat value chain, vertical linkages slightly exist sporadically between traders and farmers as traders they often supports producers in lending loan through their efforts with cooperatives/development banks at district level (e.g. in Khalanga, Jajarkot). Similar situation is also found between traders in Salli bazaar and farmers

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<sup>5</sup> Information as per vice president of Chaupaya Kharid Kendra, Kalanki

in the pocket areas as farmers sell goats in credit whereas traders pay back the sum once goats are sold. However, in general when looked from national perspectives, there is still a poor and unorganized vertical linkage between producers and traders.

**Horizontal linkages:** It can be seen at the producers' level where there are various goat keepers' groups in the districts pocket areas. It is expected that members of goat keeping groups would talk, decide and share about the status of production for a better marketing and profit, but such scenario are poorly established, as a result farmers are not benefitting from horizontal linkages which would otherwise help them generate economies of scale that would improve their competitiveness and bargaining power. At the traders level as well they are scattered and less united reflecting the similar situation to that of farmers.

#### **2.4.4 Supporting markets**

Supporting sectors can be learned more considering production sector, trading sector and consumer sector. Accordingly production sector looks pretty scattered and slowly developing in their bid to produce more with commercial volume. This is visible in all the project districts with the variation in degree. Nevertheless, farmers' motto towards producing more within a reasonable time looks slowly developing. It is also depending to the flow of goat flock. Farmers around Baddichaur are relatively organized and are enthusiastic compared to the farmers in other districts. It is thus rather un-definable/unpredictable.

At traders level there exist weak regulations and support whereas unhygienic competitiveness also often emerges due to ignorance reason or lack of proper knowledge of marketing and trading. It is also characterized with poor flow of finance and banking services. Moreover traders are also facing the problem due to lack or inadequacy of, among others, such as roads, electricity, weighing stations, slaughtering as well as processing facilities. This situation is associated to the rise in cost mainly in transaction and exacerbates information asymmetries between farmers and traders, and discourages investment in processing. Likewise at consumer sector, among others, consumers are probably getting unhygienic meat due to lack of slaughtering facilities. Moreover there is a poor pricing mechanism, which is perhaps only based on demand and supply.

#### **2.4.5 Firm level upgrading/dynamics of value creation and growth potential**

The goat meat value chain can be defined as the full range of activities required bringing a product (e.g. live animals, meat, leather, fibre, manure) to final consumers passing through the different phases of production, processing and delivery (IDRC, 2000). This definition, however, implies only partly in our study as leather, fibre and manure related detail values are not developed in our context. It can also be defined as a market focused collaboration among different stakeholders who produce and market value added products. In this sense firm/producers' level dynamics of value creation depends on several factors whereas in the case of goat meat value chain in the study districts activities related to the processing and delivery are weakly developed, mainly due to poor value chain developed.

Value creating mainly depends on larger supply, whereas production status of goat looks curtailed due to several constraints that are well linked to value creation constraints, thus there is a limited scope of value creation under the present context as nod in value chain are shot

compared to the other commodities. Moreover, Nepalese goat industry is largely focused to the fresh meat consumption, even though scope exists to develop product processes related chains and the involvement of different actors including women and people from different sector of society. Even under this bleak context, some of the attempts are emerging that aims to develop product process and transport to the distance market of frozen meat with its further processing or industry related potentials. This could be taken as market led development that is slowly initiated. For example processing and transport of deep fridge meat from Nepalgunj to Kathmandu could explore further potentialities in establishing dynamism in value creation. It is noteworthy that 'DK Cold Store', and 'Fresh Hygienic Food' supply frozen meat to Kathmandu, and Pokhara by using the insulated van; ~600kg/day; (500kg DK Cold store and 100 kg fresh Hygienic food). Total volume as of yearly basis, however, is not yet available due to newly initiated business. In the similar ways visible gaps have been identified in relation to product, process and function establishment in the value chain. Accordingly at producers' level there is a crucial lacking of appropriate technology on commercial production followed by poorly available veterinary care and management which is related to poorly available breeding plan and policies. On the other hand, vast potentials exist to improve in forage/fodder supply by exploring fodder from community forestry, and by integrating goat keeping with commercial crops, spices so that maximum utilization of available land resource would be possible. Overall emphasis, and potential, however, lies in developing elite flock and resource centres in the appropriate places. At present there is no any resource centre established in the project district as envisaged by the study findings

At collectors/traders level gap exist in promoting volume of trade due to lack of support in developing collection/holding facilities; lack of standard norms and practices of reconditioning for growth attainment and poor pricing norms and market information. Moreover traders are suffering due to lack of appropriate means of live goat transportation to the end and distance market. These areas of critical consideration would mean to address for the potentialities in supporting/developing value creating functions and improvement in the processes.

## **2.5 GOVERNANCE FOR EMPOWERMENT**

Good governance is essential also in order to empower actors in the value chain. Empowering poor smallholders, men and women would be critical from the over-all prospectus of value chain which is equally applicable in livestock sector (IDRC, 2000) including goats, so that they can provide high quality, sustainable livestock production with an identified market destination. It is possible by assuring adequate access to basic production inputs, credit, capacity building, market related information among others (IDRC, 2000). As reflected in this study governance pattern and market activities are slowly developing. Market channels, however, has several constraints, mainly in relation to its least effect in terms of efficiency and equity. Although the marketing chain is slowly visible, the economic and institutional barriers to goat marketing, mainly in terms of transportation costs, quality standards, inadequate and uncoordinated livestock market information systems limit this sector development, with a consequent negative impact on the welfare of the large population of smallholder producers and others who depend on the sector for their livelihoods (IDRC, 2000). Moreover, goat rearing and marketing is found governed by resources whereas resources poor and marginalized are falling behind in general. Nevertheless potential exists for an improved and well functioning market

that will enable smallholder producers to derive greater benefits from their production activities.

### **2.5.1 Gender issues/inclusiveness**

General impression regarding gender issues and or inclusiveness is such that management aspect such as fodder collection, feeding, shed management is largely dominated by female involvement whereas pricing and marketing related activities are mostly done by male. Moreover joint involvement in decision is visible and developing slowly. Besides, excluded and marginalized people are equally involved based on available resources whereas social harmony exists among the people with different ethnic origins.

Goat keeping including its marketing is reflective to the pro poor people where gender balance looks prominent in management issues. In a typical family structure, the social and gender inclusion issues are developing with a sound power relationship and trust among the family members. Accordingly, decision on goat production, scale of rearing and management related issues are jointly done regardless of social status, caste, ethnicity and social group. Nevertheless, degree of involvement is quite varied as of male and female alone done job as discussed earlier-majority of the production related works are done by women whereas health care and marketing related activities are done by male members regardless of ethnic group, strata and social group in general.

At producers' level marketing channel related involvement if mainly found dominated by the male members regardless of family structure and ethnic origin whereas it is often critically viewed for a better efficiency through joint involvement in the decisions. Socially excluded people, women and children are functioning as actors in their respective contribution from production, selling and also for the sharing of benefits in the family. At traders' level, however, male are more dominating in majority of the functions related in the processes development and execution of the activities through a defined decision making process.

As described earlier, decision-making process is largely governed by the activity of the family members also due to assigned other works in the family. Both male and female member jointly decides on scale of rearing whereas rules for trade is undefined as reflected in the majority of the cases involved in the study.

Goat trading is a regular mechanism of producing and bringing to the traders, which is often facilitated by the traders as they approach to the producers in their yard. In this sense rules for trade is not governed by the strong functionalities-largely determined due to availability and need of the household.

Both male and female members in the households were found to have access to resources and opportunities in terms of social, economic, material and so on. There is not a clear-cut role defined in terms of accessing the resources, except larger access of women in forest resources while collecting fodder. On the other hand, land tenure is mostly credited to the male members so they have better access to finance and loan except to the single women headed family. This, however, does not exclude female members in achieving the task to be done. On the other hand, usually male gets control over to the benefits, but most of the income/benefits goes to

the family basket for the welfare and need of the family members-that are jointly decides in majority of the cases.

Both men and women are in general not restricted while accessing to the enabling factors at macro level as it could be reflected in terms of cultural settings, values and norms. General belief and value of male member's domination in accessing to the enabling factors are slowly changing also in the favour of female members in the family mainly at the household level.

## **2.6 CONSTRAINTS AND OPPORTUNITIES**

General constraints as described by the IDRC (2000) are quite applicable in goat meat value chain in the study area. These constraints are-external constraints: adverse macroeconomic conditions (high taxes, high interest rates), lack of institutional support; quality constraints: little understanding of traders' requirements, lack of laboratories and facilities for quality control, price and quality of the veterinary services; financial constraints: lack of capital to invest in assets, equipment and inputs that would improve quality; infrastructure constraints: lack or inadequacy of, among others, roads, electricity, weighing stations, slaughtering and processing facilities (which raises transaction costs, exacerbates information asymmetries between producers and traders, and discourages investment in processing); information constraints: limited access to market related information (e.g. on prices, value chains, competitors, consumer preferences); and skills and knowledge constraints: lack of business management skills (e.g. production planning) and, in particular, inadequate access to the knowledge and technologies needed to meet rising sanitary standards, making it extremely difficult for smallholders to gain credible certification of compliance with marketing requirements. These general constraints are however, positively guided by the emerging opportunities as reflected in the social and resource available context. Table 8 presents glimpse of constraints that are particularly based on the study context and site-specific situation.

**Table 8 Opportunities and constraints**

<b>Type</b>	<b>Opportunities</b>	<b>Constraints</b>
<b>Market access</b>	<ul style="list-style-type: none"> <li>• Developing road corridors even to the remote districts</li> <li>• Local market potentials, big cities</li> <li>• Product processing/butchers' activities could be increased</li> <li>• Huge / Unmet market demand and very easy to sell</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonal, underdeveloped road</li> <li>• General strikes</li> <li>• Limited number of collection centres</li> <li>• Lack of slaughter houses in emerging city areas</li> <li>• Lack of meat fridge centres</li> <li>• No commercial market channel</li> <li>• Farmers don't know about market price.</li> </ul>
<b>Technology &amp; product development</b>	<ul style="list-style-type: none"> <li>• Deep fridge techniques would support for distant marketing</li> <li>• Value addition such as dried meat, sausages is possible</li> </ul>	<ul style="list-style-type: none"> <li>• Poor supply, low investment</li> <li>• Improper technology (feed, health, breed, shed)</li> <li>• Lack of scientific model shed</li> <li>• Poor breeding activities for improvement; lack of cross breeding facilities and plan with local breeds</li> <li>• Limited products diversification</li> <li>• Limited training to the farmers on improved rearing</li> <li>• Low motivation to commercial production</li> <li>•</li> </ul>
<b>Management and Organization</b>	<ul style="list-style-type: none"> <li>• Producers' group would strengthen their activities for large scale of dealing</li> <li>• Associations of traders (if developed) would pave ways to regulate policies and to make enabling environment</li> <li>• Suitability of climate and availability of sufficient grazing land and fodder</li> <li>• Availability of improved goat breeds for crossbreeding</li> <li>• Farmer groups saving and credit</li> <li>• Local NGOs and line agencies are interested to support</li> </ul>	<ul style="list-style-type: none"> <li>• Scattered production &amp; marketing practices</li> <li>• Producers' poor efforts, lack of linkages to service providers</li> <li>• Lack of coordination among producers, traders and consumers</li> <li>• Limited market information (price, volume traded etc.)</li> <li>• Limited or poor attraction of youth in goat keeping</li> <li>• Weak or underdeveloped organizational arrangements</li> </ul>
<b>Regulatory (policy)</b>	<ul style="list-style-type: none"> <li>• Development of standard norms for pricing might help producers and traders to increase in scale</li> <li>• Government policy: goat keeping should be prioritized for commercial scale of rearing by facilitating through taxing exemption, strong regulatory policies against levy and unseen taxes; establishing goat insurance policy etc.</li> <li>• Pro-poor policies: e.g. in Community forestry at least 35% of Community</li> </ul>	<ul style="list-style-type: none"> <li>• Low level of priority from GoN, Less number of extension/VAHW workers and coverage</li> <li>• Transportation means undefined</li> <li>• Lack of plan for emergency and rescue dealing during disease outbreak</li> <li>• No subsidy or support on means of meat/live animal transportation</li> <li>• Lack of animal wealth protection policy and or insurance</li> <li>• Lack of minimum pricing policy while</li> </ul>

Type	Opportunities	Constraints
	<p>forestry User Group fund should mobilized for pro-poor activities; land allocation system within Community Forestry which can be tapped for goat producer</p>	<p>selling live goats</p> <ul style="list-style-type: none"> <li>• Poor monitoring mechanism on meat slaughtering and trading</li> <li>• Poor implementation of meat Act (certification, inspection)</li> <li>• Transport / vehicle for transportation of live goat (3 storey) and also meat -refrigerated</li> </ul>
<b>Access to finance</b>	<ul style="list-style-type: none"> <li>• Local cooperatives establishing;</li> <li>• Development Banks establishing in various districts and are working locally</li> <li>• MFIs are available</li> <li>• NGOs can facilitate for package loan in low interest rate</li> </ul>	<ul style="list-style-type: none"> <li>• Low or no investment from private banks (Traders &amp; Farmers); even no access in case of women and marginalized community. Low knowledge on the process to access fund; if provided interest rate is high</li> <li>• Less capacity of loan disbursement from ADB and S/C Coops</li> <li>• Poor facility of loan disbursement from government part</li> <li>• High interest rate</li> <li>• Low priority of Banking sector to collator lands and property in the rural areas</li> <li>• Lack of group fund mobilization</li> </ul>
<b>Input supply</b>	<ul style="list-style-type: none"> <li>• Agro-vets, and related shops are establishing even in the remote parts of the districts</li> <li>• Trained V.A.H.W in districts by several organisations</li> <li>• Community forestry and leasehold forestry as promoted by DFO through LFLP and WUPAP project could be used as potential source of feed/fodder management,</li> <li>• DLS could work as an enabling body to regulate processes and to support for goat keeping</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of provision for winter feeding (especially in Jumla and Kalikot)</li> <li>• No enough fodder/forage seeds' volume and quality</li> <li>• Not enough supply of medicine</li> <li>• Lack of goat resource centre to supply elite doe and buck to the farmers (based on Khari, Sirohi or Jamunapari blood level standardized crosses)</li> <li>• Agro-vet does not have adequate knowledge of diseases and treatment methods.</li> <li>• Due to the limited resources, DLSO is often unable to provide technical support in remote area.</li> <li>• CFUGs have band to goat grazing in Community Forest areas</li> </ul>
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>• Road corridor developing, I/NGOS, may provide supporting services</li> <li>• Collection centres would encourage producers and traders for large scale of dealing</li> </ul>	<ul style="list-style-type: none"> <li>• Unorganized slaughter house</li> <li>• Inadequate and poor quality collection centres, Dipping and drenching tank with no scientific reconditioning facility at the collection centre</li> </ul>

### 2.6.1 Top ranked constraints on market perspectives

#### Input supply/production

- a) **Improper technology for a large and commercial scale of production orientation.** This is reflected in terms of breeding plan and policies-such as lack of knowledge on appropriate type of exotic blood intrusion while crossing with khari; lack of plan to deal with inbreeding hazards; especially in mountain districts, and insufficient technology on housing management (space, air flow, and slot management).
- b) **Lack of provision for winter feeding and no enough fodder volume and quality.** Low or no provision of appropriate feeding management for winter harsh condition,
- c) **Lack of goat resource centre** to supply elite doe and buck to the farmers (based on Khari, Sirohi or Jamunapari blood level standardized crosses).
- d) **Low level of priority from GoN.** This is mainly reflected in terms of having inadequate number of extension/VAHW workers. Accordingly limited number of livestock extension service providers at the grass-root level has to cover larger areas, which are often difficult to provide services in practice.
- e) **Lack of knowledge/skills and efforts** in processing and storage such as slaughterhouse in emerging city areas, deep fridge/cooling centre etc.
- f) **Limited market information.** Both producing farmers and traders are curtailed with poor knowledge and information mainly about price, scope of volume to be traded and market context with fluctuating market price in the region as well as in the big city market.
- g) **Poor facility of loan disbursement** from government part for both producers and traders; low priority of banking sector to collateral lands and property in the rural areas; high interest rate.

#### Marketing

- a) **Poor quality collection centres** (limited in number and small in size) with no reconditioning facility. Lack of reconditioning would mean loss of weight up to 20% while handling and transporting them to the distance market.
- b) **Transportation means undefined** no subsidy or support on means of meat/live animal transportation.

### 2.6.2 Top ranked opportunities on market perspective

#### Input supply/production

- a) Agro-vets and related shops are establishing even in the remote parts of the districts whereas community forestry could serve as large resource for feeding management for a larger scale of goat rearing.

- b) Producers' group would strengthen their activities for large scale of dealing whereas associations of traders (if developed) would pave ways to regulate policies and to make enabling environment.

### **Marketing**

- a) Local cooperatives are being established in most of the project districts with the intrusion of development banks that could provide prosperous and supporting environment for the flow of capital investment to the goat production and trading business.
- b) Developing road corridors even to the remote districts would mean easy access to transport production means as well as flow of live goats and meat to the distant market and big cities.

### 3. MARKET BASED SOLUTIONS

#### 3.1 IDENTIFICATION OF MARKETBASED SOLUTIONS

The following table presents the market-based solutions for addressing the value chain constraints of goat meat:

**Table 9 Market Based Solutions**

<b>VC constraints</b>	<b>Market based solutions</b>	<b>Solution providers</b>
1. Improper technology for a large and commercial scale of production orientation	Categorization of producers as of scale of rearing by emphasizing to pocket area concept in order to provide necessary technical support also through VAHWS/ Extension agents and lead farmers. Support should focus on feed, breed, housing, animal health related services and improving to market network through appropriate rules and regulations efforts that encourages for larger scale of rearing, such as in transportation; tax exemption; policy against unseen levy etc.	<ul style="list-style-type: none"> <li>• CBOs and I/NGOs, DLS</li> <li>• DLS</li> <li>• Department of Livestock Services</li> <li>• Private sectors-traders, group of business people</li> <li>• Lead farmers, Agro-vets</li> </ul>
2. Lack of knowledge/skills and efforts (slaughtering, deep fridge etc.)	Model scheme development by encouraging entrepreneurs/ firms for possible initiation of slaughter house, deep fridge/cooling centre	<ul style="list-style-type: none"> <li>• Private sectors,</li> <li>• Entrepreneurs, Traders Association/groups</li> </ul>
3. Limited market information	Provision of easy accessibility of market information on price, volume traded, market context etc.	<ul style="list-style-type: none"> <li>• MIS providers</li> </ul>
4. Poor facility of loan disbursement	Extension system to be dynamic and flexible in accordance to lobby to financial institutions to flow loans with flexible collator system and with best possible low interest rate. It can also be achieved by promoting local co-operatives for financing in goat keeping	<ul style="list-style-type: none"> <li>• DLS, VDCs, Farmers' Assoc.</li> <li>• Traders, Agro-vets</li> <li>• DLS, DCCI</li> </ul>
5. Lack of goat resource centre	Establishing elite flock based resource centre	<ul style="list-style-type: none"> <li>• DLS, VDCs, Agro-vets,</li> <li>• Private entrepreneurs, I/NGOs e.g., HPI, Nepal,</li> </ul>

<b>VC constraints</b>	<b>Market based solutions</b>	<b>Solution providers</b>
		Government • Project-PACT
5. Transportation means undefined	Promotion and or designing and provision of such vehicle- e.g. trucks, especially for goats transportation and by deducting or exempting custom charges/tariff	• Traders/entrepreneurs or their groups • Department of Livestock Services
6. Poor quality of collection centres	Establishing and strengthening of collection centre with space management and reconditioning facilities	• VDCs; stakeholders should closely work with entrepreneurs/traders
7. Low level of priority from GoN; duplication in support and in programme execution by the GOs/I/NGOS and other service providers	Organize similar programme in goats with the common modality of support and intervention by not duplicating in efforts, sites and approach	• DDC, DLSO and DCCI

### 3.2 ASSESSMENT OF MARKET BASED SOLUTIONS

In the Table 9, an assessment of market-based solutions is presented. Assessment of market-based solution was performed on the basis of set criteria focused mainly on potential to increase income and numbers of beneficiaries. In this analysis, the fee based services, embedded and subsidies were also considered to cover the cost of proposed market based solutions (by identifying who does and who pays, potential private sector solution providers, existing situation of supply and demand; commercially viable or not and identifying constraints to the supply and demand of the targeted solutions).

**Table 10 Assessment of Market-based Solution**

<b>Market based solutions</b>	<b>Supply and demand analysis</b>	<b>Service provider and users</b>	<b>Constraints of service providers and users</b>	<b>Possible areas of project intervention/facilitation</b>
Categorization of producers as of scale of rearing by emphasizing to pocket area concept in order to provide necessary technical support also through VAHWs/ Extension agents and lead farmers	<ul style="list-style-type: none"> <li>• Willingness of private entrepreneurs towards establishing goat resource centre</li> <li>• High demand of superior stock of male and elite female</li> <li>• Need to improve in overall productivity of goats</li> </ul>	<ul style="list-style-type: none"> <li>• DLSO, district level I/NGO, private entrepreneurs, government projects</li> <li>• Goat producers/keepers</li> </ul>	<ul style="list-style-type: none"> <li>• No specific breeding policy</li> <li>• No breeding plan followed</li> <li>• Lack of training on scientific breeding plan and scheme to potential entrepreneurs</li> <li>• Goat producers/keepers do not have access to elite doe and buck</li> <li>• Technical support are lacking in terms of encouraging farmers for large scale of rearing (feeding, housing and nutrition aspect)</li> </ul>	<ul style="list-style-type: none"> <li>• Organizing specific breeding policy and by developing breeding plan supported by housing and nutrition in order to develop identified and superior stock of male and elite female</li> <li>• Mobilizing/organizing progressive goat keeping farmers to rear elite doe and buck and providing them training on scientific breeding plan along with help for preparing scheme of resource centre development</li> <li>• Linking goat producers/keepers to goat resource centre</li> <li>• Policy develop regarding social inclusion at VDC level so that women, poor and marginalized people would be incorporated in the development paradigm</li> </ul>
Model scheme development by encouraging entrepreneurs/ firms for possible initiation of slaughter house, deep fridge/cooling centre	<ul style="list-style-type: none"> <li>• Commercial farmers are interested in large scale rearing</li> <li>• Producers, traders as well as consumers can benefit from such slaughter house</li> </ul>	<ul style="list-style-type: none"> <li>• DLSO, NGOs</li> <li>• Producers/collectors</li> <li>• Traders/entrepreneurs</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of budget</li> <li>• Low technical knowledge and support scheme for establishing slaughter house and deep fridge system</li> <li>• Low level of concern about pro-poor and marginalized people focused nature of development and support programme</li> </ul>	<ul style="list-style-type: none"> <li>• Provide financial and technical support towards establishment of a model slaughter house and deep fridge system</li> <li>• Encourage traders/ entrepreneurs in establishing slaughter house with hygiene condition</li> <li>• Cover every strata of people while developing model scheme of entrepreneurs</li> </ul>
Provision of easy accessibility of market information on price, volume traded, market	<ul style="list-style-type: none"> <li>• Both farmers and traders are critically lacking knowledge on goat market, pricing and trend in price changing</li> </ul>	<ul style="list-style-type: none"> <li>• DLSO, I/NGOs</li> <li>• Goat keepers' association; traders' association</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of critical attempts</li> <li>• Low or no system of trading through standard marketing channel</li> <li>• Lack of concrete policy of providing market</li> </ul>	<ul style="list-style-type: none"> <li>• Establish market information net work through DLSO and other I/NGOs working in the respective areas/site</li> <li>• Educate farmers about benefit of market information and standard price of trading (buying/selling)</li> </ul>

<b>Market based solutions</b>	<b>Supply and demand analysis</b>	<b>Service provider and users</b>	<b>Constraints of service providers and users</b>	<b>Possible areas of project intervention/facilitation</b>
context etc.	<ul style="list-style-type: none"> <li>Farmers and traders are eager in using standard weighing system as governed by rules and regulation</li> </ul>		information	
Extension system to be dynamic and flexible in accordance to lobby to financial institutions to flow loans with flexible collator system and with best possible low interest rate	<ul style="list-style-type: none"> <li>Farmers and traders are willing to have easy financial access for rearing as well as trading goats</li> <li>Such practice can be established with a concrete efforts</li> </ul>	<ul style="list-style-type: none"> <li>Local banks/ Development banks; local level cooperatives</li> </ul>	<ul style="list-style-type: none"> <li>Existing rule is not friendly to provide loan to the traders</li> <li>Collator is a must to flow loans</li> <li>Cooperatives not developed / established in remote areas</li> </ul>	<ul style="list-style-type: none"> <li>Lobby to the banking institutions to invest in goat rearing and trading</li> <li>Encourage bank to facilitate loan with soft and easy criteria</li> <li>Develop appropriate insurance policy to safeguard the basic investment</li> <li>Organizing and strengthening of women and marginalized groups, building their capacity to follow process and prepare appropriate documents to be capable for loan taking</li> </ul>
Promotion and or designing and provision of such vehicle-e.g. trucks especially for goats transportation and by deducting or exempting custom charges/ tariff	<ul style="list-style-type: none"> <li>Vehicle body fabricators are available within country</li> <li>Willingness of traders to purchase such vehicles</li> </ul>	<ul style="list-style-type: none"> <li>Vehicle body fabricators</li> <li>Dept. of Livestock</li> <li>Traders/entrepreneurs</li> </ul>	<ul style="list-style-type: none"> <li>Lack of idea on designing such vehicle</li> <li>Lack of subsidy from government; less availability</li> </ul>	<ul style="list-style-type: none"> <li>Work with vehicle body fabricators to design sound model of truck/van specific for goat transportation for distance market</li> <li>Facilitate in deducting or exempting custom charges/tariff for such vehicles</li> <li>Support through appropriate policy for such provision</li> </ul>
Establishing and strengthening of collection centre with space management and reconditioning facilities	<ul style="list-style-type: none"> <li>Collection centre establishment are initiated in some road corridor</li> <li>Traders are more eager to the full and effective use of collection centres</li> </ul>	<ul style="list-style-type: none"> <li>DLSOs</li> <li>Traders / entrepreneurs</li> <li>I/NGO and government project such as PACT</li> </ul>	<ul style="list-style-type: none"> <li>Only model collection centres are established perhaps due to budget constraints</li> <li>Often land / site of establishing centres are limited</li> <li>Poor efforts of traders</li> </ul>	<ul style="list-style-type: none"> <li>Support to develop/ establish at least reasonable size of collection centre with open yard, feeding and reconditioning facilities (demonstration effect) in major market centres and collection point</li> <li>Encourage traders and entrepreneurs to invest in establishing collection centres in probable areas in the road corridor</li> </ul>

<b>Market based solutions</b>	<b>Supply and demand analysis</b>	<b>Service provider and users</b>	<b>Constraints of service providers and users</b>	<b>Possible areas of project intervention/facilitation</b>
				<ul style="list-style-type: none"> <li>• Help in establishing rules and regulation of collection centre operation</li> </ul>
Organize similar programme in goats with the common modality of support and intervention by not duplicating in efforts, sites and approach	<ul style="list-style-type: none"> <li>• Sporadic approaches are followed by the service providers which is possible to consolidate</li> <li>• Farmers can be supported through single basket policy</li> </ul>	<ul style="list-style-type: none"> <li>• DLSO</li> <li>• DDC, NGO federation</li> </ul>	<ul style="list-style-type: none"> <li>• Low level of efforts in minimizing duplication in support</li> <li>• Pilot based activities; often project tenure bound</li> </ul>	<ul style="list-style-type: none"> <li>• DLSO and DDC can take a lead in the district to utilize support / development fund through single basket approach</li> <li>• Pocket area concept can be materialized while prioritizing the support that would also encourage for large scale of niche specific potential rearing</li> </ul>

## 4. STRATEGIC AREAS OF INTERVENTIONS

Areas of interventions are well-described based on demand and supply analysis as well as from the perspectives of service providers taking account of the possible approaches. In this regard, some strategic areas of interventions are presented in this chapter. Details on the beneficiaries/activities (i.e. whom, how, and where) and suggested sites for specific interventions are provided in Annex7.

Enhancing scale of production is imperative. This could be achieved by **exploring climate and niche specific potentials and by focusing specifically to increase production through large scale of production**. There are several niches specific potentials (supported of large areas of forest/bushes for goat grazing) that can be harnessed for larger scale of production.

Farmers have been rearing goats with the traditional and limited knowledge on scientific rearing. Therefore it is necessary to **develop and or establish a model of large scale rearing system to facilitate the demonstration effect** so that a wide scale of farmers' involvement would be possible in goat rearing that will lead more of the product into the market channel through traders' continued efforts in goat business.

Often feeding is a constraint to improve scale of rearing. The shortage of feed in the areas with the potential of goat rearing can be strengthened by initiating **collaborative works with the DFO with a provision to plant 10-20% fodder trees in the plantation site each year**. This would improve in overall availability situation of feed all the year round from forest resources as well. Likewise, **establishing and strengthening collection centres** would mean to facilitate better trading. This would also help in reconditioning of the goat weight against long walk from the villages to the collection centre if appropriate and scientific collection centres are established as of model effect. Likewise, **introducing goat insurance/animal-wealth protection scheme** would safeguard both farmers and traders in the goat business whereas **organizing training, visit and specific pocket area observation programme** would help to promote large number of producers and to bring them into value chain. Moreover **community based goat resource centre establishment** would be the centre point of intervention that would provide scientific knowledge about goat breeding, feeding as well as housing management to boost goat rearing in general.

### 4.1 SHORT- TERM INTERVENTIONS

The following are the short-term intervention:

#### **Input supply/production**

- a. **Plantation of 10-20% fodder trees in forestland:** This can be done in collaboration with the DFO to deal with the acute shortage of fodder and to explore nutritious feed from community forests. Farmers in the study districts often complain on lack of feeding materials whereas forest/bush land has remained as one of the areas for the extraction of the forages. Plantation of fodder trees from the plantation forestry scheme would mean increased availability of fodder all the year round. This would help farmers to collect extra fodder from the forest plantation areas.

- b. **Basic supports for larger scale of rearing can be introduced in package as per the category of rearing:** This would initially, include veterinary health care, such as dipping against ecto-parasites and supply of medicines against indo-parasites (drenching) to all the possible pocket areas in the project districts. Agro vets and VAHW can be mobilized with subsidy support and pay for service scheme. This scheme if covered to the entire project districts, and if support system are very specific and as per the need of the farmers, the farmers would be encouraged for larger scale of rearing.
- c. **Support to the scientific shed management:** This would include correcting major facets of shed such as air flow, space management and litter management for goats reared in the mountain district to improve their health and production, whereas slot improvement, space management and feed utilization by the use of scientific rack would be possible to intervene in the other project districts. Since shed management is one of the critical areas in goat rearing, such support would strengthen farmers' existing traditional system of shed management by allowing healthy and hygiene condition.
- d. **Dealing with seasonal fodder deficit during winter in the mountain districts:** This can be best dealt by introducing hay and silage making practices through demonstration scheme. Hay making is a traditionally done activity in the mountain region whereas farmers prepare hay by not following scientific practices largely due to lack of knowledge to improve its quality as well as quantity. If demonstration activities are introduced considering scientific hay preparation, farmers would be encouraged to prepare nutritious hay during August-September (before snow falls). Silage making procedure may be also introduced provided surplus fodder is available considering goat feeding.
- e. **Support in facilitating and organizing training (covering health management, feeding, appropriate breeding, and housing):** This would help strengthen larger scale of production. It is because training is considered instrumental to the farmers especially when comprehensive knowledge on housing, feeding and health care is provided in package. Training would also help to clarify the issues that farmers are facing at present in rearing goats. It enables better environment of learning through sharing of the knowledge.
- f. **Support or organize visit to the model farm and specific pocket area observation program:** This would help to promote goat keeping with large number of producers. Visiting to the model farm would help farmers to gain knowledge that they would find from the specific site observation. It also creates environment of sharing among the participant farmers, as they will be involved in groups.

## Marketing

- a. **Promotion of transportation system in trucks for distance markets:** This is possible by designing sound model of truck/van. Existing national rules don't allow bus as means of transport whereas traders lack appropriate means of transport such as specially designed truck or van. Introduction of double decker truck would facilitate farmers to invest for appropriate means of transport. Moreover there could be multiplier effect of such trucks to the other traders in the nation.

- b. **Support in establishing collection centres with facilities for large holding capacity:** The project may support in establishing collection centres with large holding capacity. For example, DCCI Jumla has shown interest to build such collection centre. Approach can be copied in the other districts as well. Collection centre is the place where traders keep their goats until they are transported to the distant market. Lack of appropriate collection centre would mean visible constraints in dealing with large scale of business. Therefore introduction of scientific collection centre with the provision of reconditioning facilities would encourage traders.
- c. **Support in reconditioning scheme/facilities of goats to maintain their body weight against handling and transportation loss:** This is again related to the establishment of collection centre. Goats often lose weight about 10-20% due to long day walk from the village while collecting them to the centre. Lack of reconditioning facilities, especially space and provision of energy rich concentrate feeding and comfort space would further worsen their weight. Therefore creating re-conditioning facilities is a must to this effect.

#### 4.2 LONG- TERM INTERVENTIONS

- a. **Establishing community based goat resource centres:** This is possible to achieve by mobilizing/ organizing progressive goat keeping farmers in the respective potential and established pocket areas to rear elite doe and buck. This needs training on scientific breeding plan along with help for preparing scheme of resource centre development. Establishing at least one community based resource centre in the potential pocket areas in each district would facilitate farmers in rearing productive breed of doe with sound buck management. Such resource centre in long run would have a multiplier effect to the neighbouring villages.
- b. **Exploring climate and niche specific potentials to increase production.** Study findings revealed that there exists vast potential for large scale rearing of goats. Favourable climate and developing marketing channel support this concept. Niche specific potential thus needs to be harnessed by exploring possibilities for large scale rearing of goats. This scheme though needs technical support as well as motivation of farmers, it is possible to create sound environment in the future.
- c. **Establishment of a model of large scale rearing system with demonstration effect:** Large scale of rearing scheme can be introduced in the specific pocket areas with the support to the basic inputs for rearing. If farmers are encouraged and supported by different scheme based on scale of rearing, they would opt for larger rearing. Such support should be specific and based on annual plan (depending to the budget and provision from the service providers) so that specific problems in the rearing would be best dealt in long run.
- d. **Introduction of goat insurance/animal-wealth protection scheme:** Farmers are often at risk due to epidemic and periodic out-breaking of acute diseases such as PPR. This creates large loss at the point of production, which will curtail to the market flow of goats. Several approaches can be introduced to safeguard farmers against such situation including paying for compensation and introducing animal wealth protection/ insurance scheme. This

would be further effective provided local consent from the farmers are taken, and users' groups be mobilized while formulating protection scheme.

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# **ANNEXES**

## **Annex 1**

### **Study team**

The entire study team was led by Dr. Bhishma P. Subedi, Executive Director of ANSAB who provided necessary guidance to the study and mobilized team for conduction of ground study. Mr. Puspa Lal Ghimire, Program Manager, ANSAB played a role of Deputy Team Leader for this study and coordinated entire study activities. Each value chains (total of four) were led by expert in the relevant field and were mobilized independently throughout the study. The goat study was coordinated by Prof. Dr. Naba Raj Devkota and was assisted by Mr. Pradeep Majgaiyan Research Assistant, ANSAB for the conduction of field study and data compilation whereas service of several local enumerators and Local Resource Persons were sought for conduction of household questionnaire survey. Mr. Ritu Panta, Data Analyst/Statistician, looked over the data analysis. He was also involved actively throughout the questionnaires and checklists preparation and provided guidance in collection of data in the field. Dr. Durga Devkota, Gender and Social Inclusion Expert, made contribution in designing of the study ensuring the generation and compilation of gender and social inclusion disaggregate data. She also trained and mobilized the teams so as to make study inclusive and with greater reflection in gender equity and social inclusion issues of the region. Mr. Prakash Katwal, Senior Programme office, and Mr. Kabir Ratna Sthapit, Program Officer assisted in several ways in mapping the value chain of goat.

## Annex 2

### Visited and surveyed market centres and production pockets

Road Corridor	Market Centres Visited	Market Centres Surveyed	Production Pockets Visited	Production Pockets Surveyed
Chhinchu -Jajarkot	Khalanga (Jajarkot), Rimna Bazar, Ramghat, Salli Bazar (Salyan), Chhinchu, Jagtipur	Khalanga (Jajarkot), Salli Bazar, Chhinchu, Jagtipur, Ramghat, Rimna Bazar, Bhur, Kalyan, Debasthal, Risang, Khagenkot, Sakala	Lekhaparajul, Ghajaripipal, Khalanga, Jagtipur, Melpani, Melpata, Bayaldada, Khamunechaur, Aapkholi, Debasthal, Risang, Kalyan, Jhapra, Bhur	Khalanga, Sima, Chhinchu, Lekhaparajul, Ghajaripipal, Jagtiopur, Melpata, Bayaldada, Khamunechaur, Aapkholi, Debasthal, Risang, Kalyan, Jhapra, Bhur, Bisgaura, Sunjabali, Bayaldadhi, Jhaga, Melpani, Saldhara, Risang, Rawatgaun, Bhurchaur, Rawatgaun, Kudu
Surkhet-Dailekh	RataNagla, Guranse, Chupra, Dailekh Bazar, Mathillo Dhungeswar	Rata Nagla, Guranse, Chupra, Dailekh Bazar, Mathillo Dhungeswar, Seri, Gauri, Kunathari, Narayan Municipality,	Belpata, Sier, Khursanibari, Rata Nagla, Guranse, Narayan Nagarpalika, Kunathari, Gauri	Khursanibari, Seri, Gadi, Jarbuta, Dandaparjul, Seri, Belpata, Narayan Nagarpalika, Kunathari, Gauri Kunathari, Rata Nangla, Mathillo Dhungeswar
Surkhet-Jumla	Baddichaur, Jite-Hulma, Khidkijula, Manma, Nagma, Urthu, Khalanga Bajar, Tallo Dhungeswar, Tunibagar, Rimna Bazar,	Varta, Manm, Bhuimahadeb, Syouna, Balkot, Patmara, Chandannath, Mahat, Mahatim, Kunathari Baddichaur, Jite-Hulma, Khidkijula, Manma, Nagma, Urthu, Khalanga Bajar, TalloDhungeswar, Tunibagar, Rimna Bazar	Varta, Bhuimahadev, Badalkot, Baratu, Kunathari, Patmara, Chandannath, Baddichaur,Urthu	Varta, Bhuimahadev, Badalkot, Baratu, Kunathari, Patmara, Chandannath, Polipali, Naretol, Hulma, Chaur, Vikma, Tal Naksha, Baratu, Baddichaur, Sundari, Urthu, Sahantinagar,

### **FGDs conducted in market centres and production pockets**

<b>Road Corridor</b>	<b>FGDs conducted in Market Centres</b>	<b>FGDs conducted in Production Pockets</b>
Chhinchu-Jajarkot	Chhinchu and Salli Bazar	Lekhparajul and Aapakholi (Salyan),
Surkhet-Dailekh	Chupra Bazar and Narayan Municipality	Belpata VDC and Khursanibari (Dailekh)
Surkhet-Jumla	Patmara VDC (Jumla), Manm Bazar (kalikot) and Baddichaur (Surkhet)	Patmara VDC, (Jumla), Badalkot VDC (Baratu) and Kunathari VDC (Surkhet)

## **Annex 3**

### **Details on Enablers and Facilitators**

#### **Government Organizations and Projects**

**Department of Livestock Service (DLS):** DLSO operates under Ministry of Agriculture and Cooperative and is functional in all 75 districts. DLSO are at the centre of all activities related to livestock species including goats in associated districts. DLSOs are implementing various activities on promotion/supply mainly focusing at the production level. Group formation, technical advice to the goat keepers, model shed construction, as of demonstration are some of their activities. DLSO also provides critical inputs mainly veterinary medicine and forage/fodder seeds and related trainings. Due to budgetary constraints, however, DLSOs are unable to provide the needed level of support to the farmers as per expectation.

**Nepal Agricultural Research Council (NARC):** NARC is responsible for agricultural and livestock related research and to generate appropriate technologies. Bovine Research Unit, Animal Nutrition Laboratory, and Division of Forage and Pasture Research in Khumaltar are actively involved in generating scientific technology suited to the farmers at production level. Besides, Goat Research Centre, Bandipur, Tanahu, and Buditola, Dhangadi have been serving as resource centres and also to generate specific production technology in the respective sites.

**Tribhuvan University, IAAS, Rampur:** IAAS at Rampur often involves in generating goat related modern technology through its research at the Livestock Farm, Rampur, Chitwan. National and regional level researches are often conducted at IAAS by its faculty members to meet the need of farmers through action and applied research. Such research had have been conducted with goats in Chhinchu, Dasaratur, Ramghat in Surkhet district with the financial assistance of National Agriculture Research and Development Fund (NARDF).

**Community Livestock Development Project (CLDP):** CLDP under the DLS has been working largely to promote livestock activities in its project districts with the objective to develop entrepreneurship as an approach to commercialize livestock sector. Specific support and demonstrative works have been carried out under the project that also covers feeds and feeding improvements related to the goats. CLSO supported forage development schemes are visible in Gulmi, Palpa, Nawalparasi and other district in the east.

**Project for Agricultural Commercialization and Trade (PACT):** The main development objective of the PACT is to improve the competitiveness of smallholder farmers and the agribusiness sector in selected commodity value chains in 25 districts all over the country. Besides covering agriculture and rural business development, food quality management, project management, monitoring and evaluation, there exists direct coverage of goat production as an enterprise for small-scale producers in the project covered districts.

#### **Non-government Organizations and Projects:**

**AEC/FNCCI:** FNCCI has created the Agro Enterprise Centre (AEC). It has its own optimal guidelines and policies whereas a separate Board comprising of FNCCI executive members, representative from District Chambers of Commerce and Industry, Commodity Associations, and permanent invitee from various related government agencies, gives programme approval. The mission of this centre is to expand and strengthen market-oriented private sector driven agro-enterprises in order to increase the value and volume of high-value products sold domestically and at national markets.

**HPI-N:** Heifer Project International (HPI)-Nepal has been actively working as INGO for last 14 years in Nepal with its initial focus in Chitwan and Nuwakot districts. HPI-N focuses to its partner NGOs in the project districts whereas its famous programme-"Passing On the Gift" is popular with the goat among the rural communities. At present HPI-N has been launching two major activities, one of them include commercial scale of goat rearing that covers Surkhet district among others. HPI-N provides necessary technical supports with its social mobilization scheme-'Corner Stones' that is quite popular at the farmers level.

#### Annex 4

### **Animal Slaughterhouse and Meat Inspection Act, 2055" (1999)**

**Definition:** Unless the subject or context otherwise requires, in this Act,-

- a) "Animal" means castrated or un-castrated goat, sheep, Himalayan goat (*chyangra*), pig, wild pig, he buffalo, rabbit or the females of Buffalo, goat, sheep, Himalayan goat, pig, or rabbit which are fit for meat other than a cow, an ox, bull, and this word also includes poultry, ducks, pigeon or other species of beasts and birds kept for meat purpose.
- b) "Meat" means meat of animals, which is fit for human consumption.
- c) "Meat Inspector" means the Meat Inspector appointed or specified under Section 6.
- d) "Meat Supervisor" means the Meat Supervisor specified under Section 7.
- e) "Slaughterhouse" means the house or place where animals are slaughtered for meat purpose.
- f) "Meat Seller" means a person who sells meat professionally.
- g) (g) "Prescribed" or as prescribed "means prescribed or as prescribed in the Rules framed under this Act.
- h) No Establishment of a Slaughter house or Selling of Meat be Made Without Licence Establishment of Slaughterhouse; (1) Government of Nepal may establish slaughterhouse in any area of the Kingdom by publishing a notice in Nepal Gazette. Notwithstanding anything contained in sub-section (1) Government of Nepal may give permission as prescribed to the non -governmental sector also to establish a slaughterhouse.

The terms and conditions to be followed and the specification to be met at the time of under sub-section (1) or (2) shall be as prescribed.

**Appointment of Meat Inspector:** (1) In order to examine animal and meat, His Majesty's

Government may appoint or designate a person who is at least a graduate in veterinary science as a Meat inspector. The other functions, duties and powers of the Meat Inspector in addition to the functions, duties and powers mentioned in this Act, shall be as prescribed.

**Designation of a Meat Supervisor:** (1) Government of Nepal may designate a Meat Supervisor to any civil servant who is at least a graduate in veterinary science, for the supervision of the slaughterhouse management as well as for the supervision of the functions of the Meat Inspector.

**Examination of Animals before Slaughtering (Ante-Mortem Examination)**; (1) Any animal to be slaughtered shall be produced for ante- mortem examination at the slaughterhouse where such place is established and where slaughterhouse has not test been established at the site as specified by the Meat Supervisor The procedure examination of animal shall be as prescribed .

Examination of Meat of the Slaughtered Animal: (1) The Meat Inspector shall have to inspect the meat of the slaughtered animal under section 9 as prescribed. (2) If any defect or disease is found in the meat sub-section (1), the Meat Inspector may partially or completely prohibit the sale or distribution of such meat. For The purpose of this Section Government of Nepal may specify a laboratory for the examination or meat.

Stamp or Marking of Meat: (1) The Meat Inspector shall have to affix clearly visible stamp or mark as prescribed at the time of giving permission for the sale of meat after the examination of meat of the animal.

Punishment: (1) A person who violets sub-section (1) or (3) of Section 8, Section 9, sub-section (2) of Section 10, sub-section (3) of Section 11 or sub-section 92) of Section 12 shall be liable to a fine unto five thousand rupees for the first time and ten thousand rupees or an imprisonment of one month or both from the second time and onwards for each offence.

### Annex 5

#### Estimated calculation on investment cost per one young goat

SN	Description	Quantity	Unit	Rate	Total (NPR)
<b>A</b>	<b>Initial investment on purchase and construction</b>				<b><u>224,400</u></b>
	<i>Purchase of breeding doe</i>	30	head	6000	180,000
	<i>Purchase of breeding buck</i>	1	head	7200	7,200
	<i>Shed construction @ 2 sq. m per goat</i>	62	sq. meter	600	37,200
<b>B</b>	<b>Investment required per breeding (assuming breeding and preparation time of 1 year; 8 breeding cycle during lifetime)</b>				
<b>a)</b>	<b><u>Fixed cost investment per breed</u></b>				<b><u>25,760</u></b>
	<i>On purchase of goat</i>				23,400
	<i>Shed depreciation @ 5 %</i>				1,860
	<i>Shed maintenance cost</i>				500
<b>b)</b>	<b><u>Variable cost per breed</u></b>				<b><u>59,620</u></b>
	<i>Labour</i>	365	man days	100	36,500
	<i>Feed (maize grit, salt)</i>	1095	kg	18	19,710
	<i>Medicines and vaccines</i>	31	head	110	3,410
<b>c)</b>	<b><u>Financial charge ( interest on 70% loan taken for "A")</u></b>				<b><u>18,850</u></b>
	<i>Financial charge per breed</i>	157080		12%	18,850
<b>d)</b>	<b><u>Income</u></b>				<b><u>3,395</u></b>
	<i>Income from goat manure per breed</i>	1131.5		3	3,395
	<b>TOTAL COST PER BREED</b>				<b>100,835</b>
<b>C</b>	<b>Production of young in one breed</b>				<b>60</b>
	<b>COST PER YOUNG GOAT</b>				<b>1,681</b>

Source: Field Study, 2011

### Annex 6

#### Estimated margin calculation among various actors (From Surkhet to Kathmandu retail shop)

Farm Gate	Qty	TOTAL	Local Market (Local traders)	Qty	TOTAL	To Kathmandu (Regional Trader)	Qty	TOTAL	Kathmandu Khasi Bazaar (Wholesaler)	Qty	TOTAL	Retailing in Kathmandu	Qty	TOTAL
Cost of production @ 140/kg	30 kg	4,200	Purchase price @ 200/kg	30 kg	6000	Purchase price@ 240/kg	29 kg	6960	Purchase price @ 300/kg	28 kg	8400	Purchase price @ 310/kg	28 kg	8680
(See Table 2 for details)			Local transportation cost @2/kg	30 kg	60	Health certificate @ 5 per goat	1 nos	5	Fodder, grain and feed (@ 3 kg per goat	3 kg	90	Processing expenses @ 113 per goat‡	0.25 day	113
			Handling and holding fees @ 7 per goat	1 nos	7	Load unload, rope @ 10 per goat	2 times	20	Rent and other cost @ 45 per goat †	1 nos	45	Weight decrease during processing@30% of live weight	8.4 kg	2604
			Weight loss @1 kg per goat	1 kg	200	Transportation cost @ 60 per goat	1 nos	60				(legs, viscera, head and other wastages)		
						Unofficial expenditure @5 per goat	1 nos	5				Rent and other cost @ 167 per goat*	1 nos	167
						Fodder, grain and feed @ 2 kg per goat and 1 kg=30 Rs	2 kg	60						
						Entry fee to Goat market @15 per goat	1 nos	15						
						Handling and holding fees (per goat)	1 nos	10						
						Other cost during transportation per goat (@ NRs 4000 per trip	1 nos	16						
						Weight loss during transportation @ 1	1 kg	240						

Farm Gate	Qty	TOTAL	Local Market (Local traders)	Qty	TOTAL	To Kathmandu (Regional Trader)	Qty	TOTAL	Kathmandu Khasi Bazaar (Wholesaler)	Qty	TOTAL	Retailing in Kathmandu	Qty	TOTAL
						kg per goat								
<b>Total Expenses</b>		<b>4,200</b>	<b>Total Expenses</b>		<b>6,267</b>	<b>Total Expenses</b>		<b>7391</b>	<b>Total Expenses</b>		<b>8,535</b>	<b>Total Expenses</b>		<b>11,564</b>
<b>Selling price @200/kg</b>	<b>30</b>	<b>6,000</b>	<b>Selling price @240/kg</b>	<b>29</b>	<b>6,960</b>	<b>Selling price @300/kg</b>	<b>28</b>	<b>8400</b>	<b>Selling price @310/kg</b>	<b>28</b>	<b>8,680</b>	<b>Income from selling of viscera, legs, head</b>	<b>2.9</b>	<b>882</b>
												<b>Selling price to consumer (@600/kg)</b>	<b>19.6</b>	<b>11,760</b>
												<b>Total Income</b>		<b>12,642</b>
<b>Profit per kg</b>		<b>60</b>	<b>Profit per kg</b>		<b>23</b>	<b>Profit per kg</b>		<b>35</b>	<b>Profit per kg</b>		<b>5</b>	<b>Profit per kg</b>		<b>39</b>

†calculated on basis of @ Rs 20000/month at average selling of 15 goat per day

#labour charge for 2 hours @ 450/day

\*calculation on basis of @ Rs 12000/month with average selling of 2 goats per day

Source: Field Study, 2011

## Annex 7

### Beneficiaries/activities details on suggested interventions

Interventions	Beneficiaries/activities detail			Remarks /Site specific interventions
	Whom	How	Where	
1. Exploring climate and niche specific potentials and to focus specifically to increase production through large scale of production	All goat keepers (medium to large scale)	Based on DLS profile and pocket areas and related support schemes	Dailekh Surkhet Kalikot Jajarkot Salyan	Dandaparajul, Dullu, Dwari-Baluwa Naumule, Dungeshwors, and Chupra (Dailekh) Baddi and Babiyachaur, Simta, Bajedichaur and Lekhparajul (surkhet) Chilkhaya, Mumra, Nanikot, Daha, Badalkot and Mehlumudi (Kalikot) Bhur, Darneta-Khalanga, Salma, Dandagaun, Laha, Bhagabati (Jajarkot) Kalimato-Rampur, Kupinde daha, Majhkanda, Siddiswori, Bame, Mulkhola, Kotmaula Sijwoltakura (Salyan)
2. Develop and or establishment of a model of large scale rearing system to facilitate demonstration effect	Commercial farm	By establishing model farm	At least one in each project district	Baddichaur (Surkhet) Badalkot (Kalikot) Urthu (Jumla) Dadaparajul or lower/upper Dungeshwor (Dailekh) Majhkanda (Salyan) Bhur, or Darneta-Khalanga (Jajarkot)
3. Collaborative work with DFO with the provision to plant 10-20% fodder trees in plantation site, each year	All possible and related VDCs	By planting fodder trees, annually; by establishing fodder nursery in the plantation site(s) annually	In the respective planting site of each district, guided by DFO/ DLSO and community users	Collaborative efforts

4. Establishing and strengthening collection centres	Trader/farmers	Technical and logistic support	Manma, Tunibagar, Baddichaur, Chhinchu, Surkhet, Salli, Khalanga, Chupra, Khalanga-Salyan, Dhungeshwors, Khalanga-Jumla	Emphasis on spacing, ventilation, size of holdings, vet-care
5. Introducing goat insurance/animal-wealth protection scheme	Traders and producer farmers	By formulating rules and by implementing proper schemes	All possible pocket areas; major collection centres	Government efforts in the past/ producers sporadic attempts in other sector as an example and guidelines to be followed
6. Organize training, visit and specific pocket area observation programme to promote large number of producers and to bring them into value chain	Selected and prosperous producers with different scale of rearing	By organizing exposure visit and by conducting related training on technical and financial issues	At least by selecting 10 farmers from each project district based on scale of rearing (covering prosperous and small to large scale)	Training could be organized during visit of a given site to facilitate sharing of production related information mainly that of feed, breed and health management
7. Community based goat resource centre establishment	Focusing to the best pocket areas in each project district by targeting all possible producers/goat keepers	By organizing specific breeding policy and by developing breeding plan supported by housing and nutrition in order to develop identified and superior stock of male and elite female	In the potential pocket areas of each project district (1-3 depending on demand)	DLSO, district level I/NGO, such as HPI Nepal; PACT (upon proposal from community based organizations)

## Annex 8

### **List of Key Informants Interviews**

<b>S.NO</b>	<b>Name of participants</b>	<b>Organization</b>	<b>Address</b>	<b>Mobile No.</b>
1	Khushilal Shaha	DLSO	Jajarkot	9748013834/ 9848009790
2	Devendra Bhagat	DLSO	Jumla	9849136325
3	Ajay Kumar Shaha	DLSO	Salyan	
4	Dirgha Natha Dhungana	DLSO	Dailekh	
5	Prachand Khadka	DLSO, Acting chief	Dailekh	9748018727
6	Prabin Giri	NEAT	Jajarkot	
7	Tula Ram Pande	KIRDARC	Kalikot	9848301462
8	Dependra K. Joshi	Fresh Hygienic Food	Nepalgunj	9848027087
9	Shyam Karki	Meat co food Nepal	Kathmandu	01-4109666
10	Dilip Sonkar	D.K. Cold Meat Supplier	Nepalgunj	9858021095
11	Surendra Yadav	Livestock Development Officer	Surkhet	9804536379
12	Gobinda Pathak	Khashi Bazar Kalanki	Kathmandu	9841294448
13	Deepak Kafle	NEAT	District Coordinator, Dailekh	9845205198
14	Jaban Singh Bom	DLSO	Kalikot	
15	Krishna Lal Bahtta	DLSO	Surkhet	

## Annex 9

### Attendance Sheet of Goat Meat Value Chain Stakeholders Consultation and Validation Workshop (Dec 27, 2011 Dailekh)

S.N	Name of participants	Organization	Position	Mobile No.
1	Pren Bahadur Chalaune	Livestock Service Center, Gaidabajar	JTA	9748040599
2	Kripa Ram Regmi	Livestock Service Sub-center, Deshigade	JTA	9848007122
3	Bal Krishna Khadka	Basanta mala Agro vet	Agro vet	089420337
4	Ramesh Kumar K.C	Jwala Agro Vet	Agro vet	089-420313
5	Mukunda Bahadur Khadka		Farmer	9848172275
6	Dilli Prashad Sharma	Belaspur Agroveter centre	Agro vet	9848020634
7	Chandra Bahadur Thapa	Belpata -7	Farmer	9748030644
8	Bimala Sharma	Gramin Sewa Kendra, Dailekh	President	9848064096
9	Shyam Bahadur Rana	Belpata	Farmer	9748020714
10	Prachand Khadka	DLSO	Chief	9748018727
11	Youbraj Timalsina	Community Agricultural and Livestock Service Centre	Coordinator	9848094333
12	Nanda Bahadur Thapa Magar		Farmer	9748030210
13	Siya Bahadur Bista	DLSO	JT	9848054601
14	Deepak Kafale	NEAT	District Coordinator	9845205198
15	Padam Bahadur Sapkota	DDC	Planning Officer	9842037963
16	Rudra Prasad Subedi	Kushapani VDC	JTA	9848065042
17	Prasanta Hamal	Meat trader	Trader	9748030781
18	Sab Bahadur Thapa	Meat Trader	Trader	9848007577
19	Ganesh Hamal	Meat Trader	Trader	9748030781
20	Chndra Bahadur khadka	Agro vet club, Dailekh	Executive Director	9848069832
21	Surendra Kumar Thapa	DADO, Dailekh	Officer	9848030634
22	Bhupendra Kumar Khadka	District Coop Org. Dailekh	Coordinator	9848121747
23	Surya Natha Yogi	DADO, Dailekh	Executive Director	9748034872
24	Pradeep Majgaiyan	ANSAB	Researcher	9803007881
25	Puspa L. Ghimire	ANSAB	Manager	9851051225
26	Naba Raj Devkota	ANSAB	Team leader	9845053927
27	Keshab B. Karki	AEC	VCD Officer	083-520038
28	Shanti Prasad Sharma	FNCCI	President	9858051261
29	Lokendra Regmi	Maikot	JTA	9748020571
30	Shiris Pun	HVAP	Program Officer	9847030013

## Annex 10

## **Focus Group Discussion Participants List**

### FGD with Traders in Chhinchu

<b>S.N.</b>	<b>Name of participants</b>	<b>Organization</b>	<b>Address</b>	<b>Mobile No.</b>
1	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
2	Naba Raj Devkota	ANSAB	Kathmandu	9845053927
3	Take Bahadur Khatri	Trader	Chhinchu	9848245709
4	Som Raj Dhakal	Mahila Jagaran Manch	Chhinchu -7	9848037252
5	Tilak Khatri	Chhinchu VDC	Chhinchu VDC	
6	Karna Bahadur Gaha Magar	Traders	Kalyan VDC	9741075065
7	Rafik Roresi		Chhinchu -7	9848121292
8	Surendra Khatri		Chhinchu -7	9848115736
9	Dilli Nupane	Trader	Chhinchu -7	9848005586
10	Bhoj Prasad Chapai	Livestock Service Sub-center	Chhinchu -7	9848027356
11	Chandra Acharya	Heifer International	Surkhet	9848140386
12	Lakshami Regmi	Mahila Jagaran Mancha	Chhinchu -7	9848248493
13	Tul Bahadur Shrestha	Trader	Pokhara	9848047971
14	Ganesh Pun		Chhinchu -7	
15	Jay Bahadur Gharti		Chhinchu -7	9848075938
16	Khudra Bahadur Oli		Chhinchu -7	9848050291
17	Surendra Yadav	Livestock Development Officer	Surkhet	9804536379
18	Puspa L Ghimire	ANSAB	Kathmandu	9851051225

### FGD with Farmers in Lekhparajul

<b>S.N</b>	<b>Name of participants</b>	<b>Organization</b>	<b>Address</b>	<b>Mobile No.</b>
1	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
2	Naba Raj Devkota	ANSAB	Kathmandu	9845053927
3	Dusman Kumar Sharma	Farmer	Lekhparjul-2 Bisgaira	9748028925
4	Nirmal Paudel	Farmer	Lekhparjul, Kakuri	
5	Bijay Nepali	Farmer	Lekhparjul -2 Bisgaira	
6	Harikala Sharma	Farmer	Lekhparjul -2 Bisgaira	
7	Gopal Gautam	Farmer	Lekhparjul -2 Bisgaira	
8	Kashi Rawat	Farmer	Lekhparjul -1 Bisgaira	
9	Sharita Budha	Farmer	Lekhparjul -1 Bisgaira	
10	Kausila Thapa	Farmer	Lekhparjul -2 Bisgaira	
11	Batu Thapa	Farmer	Lekhparjul -2 Bisgaira	
12	Tul Sara Thapa	Farmer	Lekhparjul -2 Bisgaira	

FGD with Traders in Sallibazar

S. N.	Name of participants	Organization	Address	Mobile No.
1	Ganjaman Budha	Dasharatha Agro vet Centre	Salli Bajar-7	9748540985
2	Krishna Chapain	Livestock Service Center, Mulkhola	Mulkhola -4	9817502070
3	Rim Bahadur Budha	Farmer	Debasthal-7 Salli	
4	Birendea Kumar Budhathoki			9815574455
5	Puskar B.C	Pravakar Secondary School	Debasthal	9748520836
6	Ghanshyam B. C	Shree Krishna cooperative	Debasthal-7 Salli Bajar	9748514912
7	Pradeep Pudel	Trader	Debasthal -7	
8	Purnima Shahi	Meat Processor		
9	Bharat Oli	Traders	Baluwa Sangrahi	
10	Ser Bahadur Oli	Processor	Salli Bajar	9758000193
11	Kul Dev Pokharl	Processor	Debasthal -7 Salli	9815577818
12	Rabindra Shahi	Trader	Sangrahi-7	9748004870
13	Krishna Budha	Trader	Sangrahi-7	
	Narayan Basnet	Livestock Service Centre		
14	Krishna Budha	Trader	Debasthal -7	
15	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
16	Naba Raj Devkota	ANSAB	Kathmandu	9845053927

FGD with Farmers in Aapakholi Salyan

S.NO	Name of participants	Organization	Address	Mobile No.
1	Tul Bahadur B.C	Salli Saving and Credit cooperative	Ghajaripipal-6	9748046357
2	Lok Bahadur B.C		Ghajaripipal-6	9816536656
3	Top Bahadur B.C	Salli Saving and Credit cooperative	Ghajaripipal-6	9848508012
4	Nim Bahadur B.KA	Salli Saving and Credit cooperative	Ghajaripipal-6	
5	Ram Bahadur Budha Magar	Farmer	Ghajaripipal-5	9741119792
6	Take Bahadur Basnet	Farmer	Ghajaripipal-9	
7	Dal Bahadur Budhamagar	Farmer	Ghajaripipal-5	

8	Dhan Bahadur B.KA	Farmer	Ghajaripipal-7	
9	Tul Bahadur Budha Magar	Farmer	Ghajaripipal-6	9745046446
10	Man Bahadur Budha Magar	Farmer	Ghajaripipal-5	
11	Dilli Bahadur Budha Magar	Farmer	Ghajaripipal-9	9638960652
12	Vim Bahadur B.KA	Farmer	Ghajaripipal-6	
13	Chitra Bahadur B.KA	Farmer	Ghajaripipal-6	
14	Take Bahadur Budhathoki	Farmer	Ghajaripipal-6	
15	Kul Bahadur Budha	Farmer	Ghajaripipal-6	
16	Chakra Bahadur B.C	Farmer	Ghajaripipal-6	
17	Man Budha	Farmer	Ghajaripipal-6	
18	Sher Bahadur Shahu	Farmer	Ghajaripipal-9	
19	Chandra Bahadur shahu	Farmer	Ghajaripipal-9	
20	Lil Man Pun	Farmer	Ghajaripipal-9	
21	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
22	Naba Raj Devkota	ANSAB	Kathmandu	9845053927

FGD with Traders in Patmara VDC, Jumla

S.N	Name of participant	Organization	Address	Mobile No.
1	Dhan Bahadur Bista	Trader	Patmara -9	9848040690
2	Hansh Bista	Trader	Patmara -9	086-690345
3	Man Bahadur Bista	Trader	Patmara -9	
4	Dal Bahadur Budha	Trader	Patmara -9	
5	Hari Bahadur Bista	Trader	Patmara-3	
6	Birkha Bahadur Khatri	Trader	Patmara-3	
7	Bir Bahadur Thapa	Trader	Patmara-3	
8	Khadak Bahadur Budha	Trader	Patmara -7	
9	Surendra Yadav	Livestock Development Officer	Surkhet	9804536379
10	Pradeep majgaiyan	ANSAB	Kathmandu	9803007881
11	Naba Raj Devkota	ANSAB	Kathmandu	9845053927

FGD with Farmers Patmara VDC, Jumla

S.N	Name of participant	Organization	Address	Mobile No.
1	Kali Bahadur Thapa	Himali Bakhrapalan samuha	Patmara -1	
2	Raju Budha	Himali Bakhrapalan samuha	Patmara -1	9748905751

3	Dan Bahadur Budha	Durga Devi Female saving and Credit Cooperative	Patmara -4	9748911404
4	Suba khadka	Durga Devi Female saving and Credit Cooperative	Patmara -1	086-6990204
5	Rama Bahadur thapa	Himali Bakhrapalan samuha	Patmara -9	
6	Durga Bista	Himali Bakhrapalan samuha	Patmara -6	
7	Bir Bahadur khadka	Himali Bakhrapalan samuha	Patmara -3	086-690204
8	Suk Bahadur Rokaya	Bakrapalan samuha	Patmara -3	
9	Lek Bahadur Thapa		Patmara -9	
10	Hari Bahadur Bista	Bakhrapalan Samuha	Patmara -8	
11	Jay Krishna Mahatara	PAF	Patmara -3	9748902949
12	Sita Rokaya	Bakhrapalan samuha	Patmara -3	
13	Padam kali Mahatara	Bakhrapalan samuha	Patmara -3	
14	Padam Bahadur Budha	Bakhrapalan samuha	Patmara -3	
15	Karna Bahadur Bista	Mother Group	Patmara -3	
16	Rupkali Mahatara	Pahadi Bakhra palan samuha	Patmara -8	
17	Gobi Chandra Bista	Pahadi Bakhra palan samuha	Patmara -9	
18	Kali Bahadur Rokaya	Pahadi Bakhra palan samuha	Patmara -3	
19	Ramila Bista	Pahadi Bakhra palan samuha	Patmara -9	
20	Surendra Yadav	Livestock Development Officer	Surkhet	9804536379
21	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
22	Naba Raj Devkota	ANSAB	Kathmandu	9845053927

FGD with Traders in Manm Bazar (Kalikot)

S.N.	Name of participant	Organization	Address	Mobile No.
1	Loru Bahadur Shahi	Trader	Manm -5	
2	Datta Bahadur Malla		Manma-5	
3	Mahendra Bahadur Malla		Manma-5	9848331921
4	Ruplal Malla		Manma-5	
5	Til Bahadur Shahi		Manma-5	9848329690
6	Bhairab Bahadur Shahi		Manma-5	9848301664
7	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
8	Naba Raj Devkota	ANSAB	Kathmandu	9845053927

9	Surendra Yadav	Livestock Development Officer	Surkhet	9804536379
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FGD with Farmers in Badalkot,VDC Baratu

S.N	Name of participants	Organization	Address	Mobile No.
1	Hemraj Giri	President of Community Forest User Group (farmer)	Badalkot -1 Baratu	9848306180
2	Min Raj Giri	Member of FUG (Farmer)	Badalkot -1 Baratu	9848327583
3	Netra Raj Giri	Secretary of FUG	Badalkot -1 Baratu	
4	Asal Bharati	Farmer	Badalkot -1 Baratu	9848347768
5	Padam Raj Giri	Farmer	Badalkot -1 Baratu	
6	Nara Bahadur Varati	Farmer	Badalkot -1 Baratu	
7	Padam Raj Bharati	Farmer	Badalkot -1 Baratu	9848330282
8	Man Bhahadur Bharati	Farmer	Badalkot -1 Baratu	9848320885
9	Shyamsundar Bharati	Farmer	Badalkot -1 Baratu	9848320885
10	Puspa Raj Giri	Farmer	Badalkot -1 Baratu	
11	Take Raj Giri	KIRDARC	Badalkot -1 Baratu	9848307074
12	Birendra Bahadur Giri	Farmer	Badalkot -1 Baratu	9848174650
13	Keshab Raj Giri	Farmer	Badalkot -1 Baratu	9848350364
14	Shiba Lal Giri	Farmer	Badalkot -1 Baratu	9848310951
15	Ram Sara Giri	Farmer	Badalkot -1 Baratu	9848335315
16	Take Bahadur Bharati	Teacher	Badalkot -1 Baratu	
17	Koila Giri	Farmer	Badalkot -1 Baratu	
18	Lok Raj Baharati	Farmer	Badalkot -1 Baratu	9848327566
19	Pradeep majgaiyan	ANSAB	Kathmandu	9803007881

20	Naba Raj Devkota	ANSAB	Kathmandu	9845053927
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FGD with Traders in Kunathari, Baddichaur (Surkhet)

S.N.	Name of participants	Organization	Address	Mobile No.
1	Surat Bahadur Thapa	Traders	Kunathari -4	9848114980
2	Ganga Ram Neupane	Traders	Kunathari-5	9748027877
3	Umesha Gautam	Traders	Kunathari-4	9848119932
4	Lok Raj Kandel	Traders	Kunathari-4	9848156834
5	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
6	Naba Raj Devkota	ANSAB	Kathmandu	9845053927
7	Surendra Yadav	Livestock Development Officer	Surkhet	9804536379

FGD with Farmers in Kunathari, Baddichaur, Surkhet

S.N	Name of participants	Organization	Address	Mobile No.
1	Dal Bahadur Kadel	Nabajoti Krishi Samuha	Kunathari-4 Sundari	
2	Chetan Prasad Chalise	Kalika Kriśi Samuha	Kunathari-4 Sundari	9848138783
3	Basudev Upadyay	Kalika Kriśi Samuha	Kunathari-4 Sundari	
4	Mani Ram Sharma	Kalika Kriśi Samuha	Kunathari-4 Sundari	
5	Sukdev Chalise	Kalika Kriśi Samuha	Kunathari-4 Sundari	
6	Ganga Ram Lamichhane	Kalika Kriśi Samuha	Kunathari-4 Sundari	9848117173
7	Durga Prasad Paudel	Kalika Kriśi Samuha	Kunathari-4 Sundari	9848139314
8	Puspa Koirala	Kalika Kriśi Samuha	Kunathari-4 Sundari	9848093947
9	Chandra Bahadur Sijali	Chetabna Samuha	Kunathari -3	9848208144
10	Chandra Bahadur Sijapati	Namuna Samuha	Kunathari-3	9844807424
11	Nava Raj Shahi	Namuna Samuha	Kunathari-4	
12	Lok Raj Kandel	Namuna Samuha	Kunathari-4	9848156834
13	Gauri Chapai	Namuna Samuha	Kunathari-4	9848025544
14	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
15	Naba Raj Devkota	ANSAB	Kathmandu	9845053927

16	Surendra Yadav	Livestock Development Officer	Surkhet	9804536379
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FGD with Traders in Belpata, Chupra

S.N.	Name of participants	Organization	Address	Mobile No.
1	Kabi Raj Rawat	Trader	Gairi -4	
2	Dharma Raj Bhandari	Trader	Kalbhairab-5	9748029389
3	Dil Bahadur	Trader	Belpata-5	9848211671
4	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
5	Naba Raj Devkota	ANSAB	Kathmandu	9845053927
6	Puspa L. Ghimire	ANSAB	Kathmandu	9851051225

FGD with Farmers in Belpata, Dailekh

S.NO	Name of participant	Organization	Address	Mobile NO.
1	Yam Bahadur Thapa	WUPAP	Dailekh	9848069502
2	Rabindra Dangi	Farmer	Belpat-9	9748010246
3	Fatta Bahadur Dangi	Farmer	Belpat-9	9848057717
4	Dambar Bahadur Dangi	Farmer	Belpat-3	9848021794
5	Top Bahadur Khatri	Farmer	Belpat-3	9848044225
6	Deepak Bahadur Parajuli	Farmer	Belpat-3	9848093601
7	Man Bahadur Thapa	Farmer	Belpat-7	9848213040
8	Chandra Bahadur Thapa	Farmer	Belpat-5	9748020763
9	Nanda Thapa Magar	Farmer	Belpat-9	9748030210
10	Lok Bahadur Dangi	Farmer	Belpat-9	9848053975
11	Gayan Bahadur parajuli	Farmer	Belpat-2	9748034298
12	Ganesh parajuli	Farmer	Belpat-2	
13	Thir Bahadur Parajuli	Farmer	Belpat-3	
14	Bhakta Bahadur K.C	Farmer	Belpat-5	9848040844
15	Thir Bahadur Khatri	Farmer	Belpat-3	
16	Lok Bahadur Malla	Farmer	Belpat-7	
17	Nanda Nupane	Farmer	Belpat-7	
18	Chandra Bahadur Thapa	Farmer	Belpat-7	9748030644
19	Deurupa Aryal	Farmer	Belpat-7	9815533881
20	Dil Bahadur Rana	Farmer	Belpat-5	9849101502
21	Rayan Bahadur Karki	Farmer	Belpat-5	9848211066
22	Deepak Panta	Farmer	Belpat-7	9848139754

23	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
24	Naba Raj Devkota	ANSAB	Kathmandu	9845053927
25	Puspa L. Ghimire	ANSAB	Kathmandu	9851051225

FGD with Farmers in Khursani Bari, Dailekh

<b>S.N.</b>	<b>Name of participants</b>	<b>Organization</b>	<b>Address</b>	<b>Mobile No.</b>
1	Udaya Pande	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	9848072543
2	Tapu Prasad Sharma	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	9848171568
3	Durga Prasad Koirala	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	9848121671
4	Vabani Prasad koirala	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
5	Hari Prasad Sharma	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	9848002574
6	Devi Ram Neupane	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	9848242330
7	Prajapati Dhamala	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
8	Parbati Pande	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
9	Bishanu Pande	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
10	Gaura Pande	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
11	Vim Kumari Sharma	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
12	Purna Prasad Sharma	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	9848063096
13	Dilli Prasad Sharma	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
14	Man Bahadur K.C	Namuna Goat-raising Group	Narayan Municipality-3	9848277607

			Khursani Bari	
15	Bishanu Prasad Jaishi	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
16	Kripa Ram Regmi	DLSO	Dailekh	9848007122
17	Lakshami Prasad Pande	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	9848022325
18	Purna Bahadur Nepali	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
19	Bali Ram Regmi	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
20	Gauri Pande	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
21	Nabin Sharma	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	9848066006
22	Tika Ram Acharya	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
23	Narendra Yami	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	9848040225
24	Bahabani Prasad Neupane	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
25	Dilli Prasad sharma	VAHW	Narayan Municipality-3 Khursani Bari	9748020634
26	Tara kisor Dhamala	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
27	Hari Prasad Neupane	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
28	Moti Ram Neupane	Namuna Goat-raising Group	Narayan Municipality-3 Khursani Bari	
29	Dhansara G C	LRP	Surkhet	
30	Naba Raj Devkota	ANSAB	Kathmandu	9845053927
31	Puspa L. Ghimire	ANSAB	Kathmandu	9851051225

FGD with Traders in Narayan Municipality, Dailekh

S.N.	Name of participants	Organization	Address	Mobile No.
1	Upendra Khan	Narayan Meat	Narayan	9848284236

		Cooperative	Municipality	
2	Prachanda Khadka	DLSO, Acting Chief	Dailekh	9778018746
3	Gita kumara Mahatara	Narayan Meat Cooperative	Narayan Municipality	9848242460
4	Sharba Raj Thapa	Narayan Meat Cooperative	Narayan Municipality	9848007566
5	Ganesha Bahadur Thapa	Narayan Meat Cooperative	Narayan Municipality	9848211424
6	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881

FGD/Interaction with District level Stakeholders in Jajarkot

S.N.	Name of participants	Organization	Address	Mobile No.
1	Khushilal Shaha	DLSO	Jajarkot	9748013834/ 9848009790
2	Prabin Giri	NEAT	Jajarkot	
3	Krishna Bahadur B.C	Local NGO		
4	Basudev Shahi	Local NGO		
5	Kisor Shrestha	Local NGO		
6	Surendra Yadav	Livestock Development Officer	Surkhet	9804536379
7	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
8	Naba Raj Devkota	ANSAB	Kathmandu	9845053927

FGD/Interaction with district level Stakeholders in Patmara VDC, Jumla

S.N	Name of participants	Organization	Address	Mobile No.
1	Godhai Rawal	FNCCI	Jumla	9848300395
2	Bhabani Pradsad Neupane	FNCCI	Jumla	9848076148
3	Vim		Jumla	9848313002
4	Puri Chandra Devkota	FNCCI	Jumla	9858320679
5	Deepak Shahi	FNCCI	Jumla	9741073245
6	Rajjab Ali	FNCCI		9858020252
7	Motilal Rawat	FNCCI		9848302211
8	Anil Rokaya	FNCCI		9848302814
9	Lal Bahadur Budha			086520229
10	Dan Bahadur Thakuri	RCDS	Jumla	9741023885
11	Hari Bahadur			9848204417
12	Debendra Bhagat	DLSO	Jumla	9849136325
13	Pradeep Majgaiyan	ANSAB	Kathmandu	9803007881
14	Naba Raj Devkota	ANSAB	Kathmandu	9845053927
15	Surendra Yadav	Livestock Dev. Officer	Surkhet	9804536379