# Gender and Social Dynamics in Livestock Management: A Case Study from Three Ecological Zones in Nepal

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## EXECUTIVE SYMMARY

This paper presents evidence from a study of intra and inter-household gender and social dynamics in sustainable management of livestock from ten different communities of three main agro ecological regions (high hills, mid hills and lowland) in Nepal. The research was carried out by a research team of the project entitled Livestock Technology Change, Livelihood Impacts and Policy Lessons (LTIP), Nepal (co-financed by DFID-Livestock Production Programme (LPP). This study employed both qualitative and quantitative approach for data collection and analysis. Sample household survey method employing semi-structured questionnaire was used for intrahousehold level, whilst a range of Participatory Rural Appraisal (PRA) tools ( wealth ranking, key informant and focus group discussion, observation, group meetings, gender calendar individual testimonial etc.) were employed for eliciting information at inter-household level. A total of 283 sample interviews representing different socioeconomic groups (rich, medium, poor and women) were carried out from ten communities in three agroecological regions. Out of this number, half of the interviewees were female and nearly one-third of them were from poorer groups. These household sample interview data were supplemented and triangulated by qualitative and participatory studies wherever possible.

The findings of the study show that livestock play important roles in household income and the livelihood of the study communities of lowland plains, mid-hills and high hills. They are important not only for household economic activities, but also their role in gender mainstreaming and addressing the concerns of disadvantaged groups. Though rich and resourceful farmers and higher caste groups raise more of large ruminant (buffalo and cattle) for dairy milk purpose, poorer and disadvantaged ethnic groups tend to raise more of micro-livestock such as goats, pigs and poultry.

Women from different agroecologies and socioeconomic groups have higher participation in livestock management, higher decision making in the sale of micro livestock (e.g. poultry products), more knowledge, skills and capabilities for managing livestock production. They are also main identifier, adopter and utilizers of livestock feeds (grasses and fodders). However women's decision making power in major livestock product sale, investment and veterinary services are limited. Women have access to home consumption and many activities related to management of livestock but they have less control over major livestock business, trade and investment activities. In addition, they have a very limited role in community based decisions and development activities.

In some of the livestock management and inter and intra household activities, gender interacts across wealth group and ecologies. Women from resource poor groups have more decision making role and control over sale of poultry products (chicken, eggs) and by-product of livestock (e.g. manure). Similarly women from poor groups in lowland Chitwan have more decision making role in some of the traditional male activities such as expenditure, education, health and livestock breeding using natural and artificial means. Females are mainly identifier of technologies but in some cases they are also equally utilizer/ adopter of improved animals (e.g.Chitwan). But women lack adequate capital assets and information to use their decision

making power in their livelihood improvement through adequate livestock technologies and management techniques.

The findings show higher percent of women from poorer groups are involved in various livestock management activities as compared to those of resource medium and rich groups. Women are overburdened and time-restrained with agricultural works and household chores and hence they need ways and technologies to relieve part of this burden in order to free them to participate in community decisions and management activities. Specific targeted women groups in disadvantaged communities have not been yet formed or if formed remain non-functional due to lack of awareness, poverty, and inadequate technical and managerial support in addressing specific priorities of these groups. Women from disadvantaged groups are still marginalized and vulnerable in playing their active roles in making decisions at both intra and inter household levels. Some of them are so poor that they live on a day-to-day basis working on other's farms or off-farm activities with no assets and with no opportunity for future assets building.

The analysis also revealed that women are not the homogenous categories. Women farmers with different socioeconomic categories have different priorities, skills, knowledge and role in livestock management and inter and intra household resources.
However, current government support services are designed without adequate gender considerations and differences in the needs and priorities of difference socioeconomic groups. This requires a move away from blanket approach in which one size is assumed to fit all. The policy action should be guided by the principle that development initiatives should incorporate the priorities and needs of both women and men and give them equal opportunities to access benefits and services.

Finally, the study findings conclude that livestock choices and access to intra and intrahousehold resources are determined by gender, ethnicity and institutions. Despite the fact that over a decade of focus on pro-poor and pro-women issues in national and international arenas, not much progress has been achieved so far. Women's decision-making power in intra and inter household level regarding livestock trade, investment and spending of household income obtained from livestock marketing are limited. Women have access but they have limited control over these resources. The poor particularly women from low caste and disadvantaged groups remain poor and highly vulnerable in terms of improving their livelihoods. The study has given insight that when the different roles and needs of women and men from different socioeconomic strata are not taken into account in project design and implementation, development interventions are less effective. Above all, the study has increasingly come to recognize that social inclusion and economic advancement of rural women from disadvantaged group is critical to achieve social equity, reduction of poverty and food security. In all these studies in lowland (Chitwan), mid hills (Lalitpur) and high hills (Mustang), women have demonstrated their enormous potential for becoming agents of change in various community groups and local institutions. This field study has provided ample information related to perspectives of gender relations, roles and women's empowerment issues in relation to pro-poor and pro-women livestock technology and policy development. These will include following aspects:

1. Policy on empowering women farmers in planning, management and decision making of livestock and other intra and inter household /community resources. This will require sensitization, mobilization and skills enhancement of women.

2. Research strategies to understand women's time allocations and input of labor saving devices for household and livestock activities. Appropriate gender friendly technology need to be designed and improved to relieve women farmers from their time burden in order to free them to participate in community decisions and management activities.

3. Promotion of micro-livestock programs and technologies to address priorities of disadvantaged communities and women through inclusion in government policies, research and development strategies.

4. Development and promotion of locally proven packages of low cost technologies to rural poor and women that can enhance productivity and production of livestock whereby they can earn more cash income from livestock farming. A right-based approach to technology development and women empowerment is essential for this.

5. Develop programs and projects to train women particularly from poorer disadvantaged groups in livestock entrepreneurial activities and operational skills, and identify the specific training needs of different categories of women (depending on ecological region, ethnic community and economic status). Training in animal breeding, livestock selection, processing and marketing including birth care, pregnancy and veterinary services are essential.

6. Provision of credit and information support services accessible to poorer group of women and disadvantaged groups in livestock production and marketing.

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## I. BACKGROUND

### The context

Nepal is a pluralistic society with diverse ethnic, caste, linguistic and religious communities. Currently Nepal has about 60 recorded caste and ethnic groups (mostly Indo-Aryan and Mongol) and 70 languages and dialects (mostly Indo-Aryan and Tibeto-Burman). There are many indigenous ethnic ("Janajaties") and caste ("Dalits") groups who have been historically disadvantaged, and who continue to lag behind in their income and asset levels, educational achievements and human development indicators, and to the extent to which they are represented in the power structure (NPC, 2003). According to 2001 census, about 51% populations are women. The data also indicate that a bulk of population (37%) is indigenous ethnic groups (Janajaties) and 13% are dalit or untouchable caste groups (CBS, 2001).

A recent survey data in Nepal (NLSS 2003/2004) indicated that the estimated population below poverty line in Nepal has declined from 42 percent in 19996 to 31 percent in 2004, a decline of 11 percentage points. However poverty incidence is still widespread and severe in rural areas and among disadvantaged social groups particularly in Dalits and indigenous ethnic groups (Janajatis). In the rural area poverty incidence is 34.6% as against 9.5% in urban areas. Similarly about half (48%) of Hill Dalits and (43%) of Hill Janjatis fall below the poverty line as against only 12 % for higher caste Brahmins (NLSS, 2003/2004, Bannette, 2005). The poverty level is also more severe among women (irrespective of caste and ethnicity), due to lack of their ownership rights and control over basic household resources such as land, livestock and financial assets. Available evidence (Census data, 2001) indicates that, only 11 percent of women in Nepal own land and six percent had shared ownership of a house. Only seven percent reported female ownership of livestock—even though livestock rearing is traditionally a female task and many credit institutions and microfinance programmes have recently targeted women for loans to purchase livestock to increase their family incomes (Bannette, 2005). Much of the work by women in Nepal remains ‘invisible’ as it falls outside the production boundary developed for industrialized economies for defining work or economic activity. Women are mainly confined to non-market (unpaid) work in the care economy and family enterprises.

### Importance of Livestock

Livestock is an important sector of Nepalese economy. It contributes about 30 percent of agricultural Gross Domestic Product (GDP) in the country. Livestock has not only been a key source of household cash income for the rural people, but it has also been the main suppliers of nutrients for growing field crops and users of crops by-products. It plays crucial role in sustaining rural livelihoods, particularly poor disadvantaged rural households and women, who have limited land and other economic assets. The contributions of livestock production

to overall development include income and employment generation, poverty alleviation, and improvement of human nutrition and health.
Livestock is an integral component of mixed farming systems in Nepal. Livestock recycles nutrients on the farm, produce valuable output such as milk and meat from land that is not suitable for sustained crop production, and provide energy and capital for successful farm operation. The production system involves diverse activities, such as production, processing and marketing, and several technologies at each level in the commodity chain that makes up the system. The major players in the production, processing and marketing of these products as well as in subsistence mixed farming systems are women. The Agricultural Perspective Plan (APP)-the key government policy document of Nepal envisages that the expansion of the livestock sector, driven by rising incomes, offers the single most important opportunity to bring women into the commercial production system and to raise their incomes. Women contribute 70 percent f the work effort in livestock raising and are more knowledgeable than men about treating sick animals (Sharma and Awasthi, 1993 cited in APP 1995). It is because of the fact that women play critical role in both subsistence mixed farming systems and commercial production, processing and marketing, gender differences have significant role in enhancing rural livelihood and reducing poverty from the rural areas.

**Rationale**

Gender differences in livestock management occur because of the diversity in cultural, caste and religious systems and practices in Nepal. Differences exist between male and female farmers in livestock care, management, processing and marketing of livestock products. Men's and women's separate and joint choices and bargaining process and their relationship affect the ways in which livestock management choices are made, and their success and failure. The greater the expertise and a control a man or women has over a resources or production process, the greater his or her comparative advantage to make decision regarding the use of the resource or product (Fernandez, 1997). The participation of men and women is influenced by cultural, social, economic and agro-ecological divisions as well as political structure and status (Bajracharya, 1998). Women have varying degrees of control over their own labour and different bargaining skills to negotiate the use of that labour (Lawrence et al, 1999).

Gender inequality is viewed as both a root cause of poverty and an expression of social injustice. Addressing gender inequalities and building women's capabilities are essential conditions for achieving impact on poverty and malnutrition worldwide (IFAD, 2003).The full and equal participation of women in rural institutions and decision-making and specific measures to improve the status of women are still critical to any strategy aimed at the improvement of the situation of rural women (United Nations, 1999). However, currently most government policies, programs and projects are being developed in consultation with only men despite greater role of women in livestock as well as various household and community management activities. This has made many past investments in livestock research and development ineffective. Understanding the gender constraints and opportunities, therefore will enable us to find more effective and equitable way to protect, transform and create more sustainable livelihood systems. This is essential to understand and explore complete perspectives on gender relations, roles and women's empowerment issues in relation to pro-poor technology and policy development. However, the complexity of gender dynamics within intra and inter household management of livestock and livelihoods within

the communities is not well understood among communities from different ecological regions of Nepal (lowland plains, midhills and high hills) though some information are available from high hill mountain communities of Mustang district (Gurung, 2005). In addition, identifying the constraints and opportunities that shape gendered differences in livestock management in different economical, social and cultural group and traditional practices is necessary for designing poverty reduction measures and addressing social inclusion and gender equity issues.

Although the role of women in Nepal has been well documented, mostly in agriculture (Gurung, 1999; Acharya and Bennett, 1981; Ojha, 1989) not enough attention has been paid to documenting specific gender roles in livestock production as an integral part of the farming system. Addressing gender concerns in livestock management is important in view of differences in the roles, responsibilities and decision making of men and women in livestock management. Women play key role in livestock management in rural areas of Nepal, and the gender dynamics at intra and inter household will have important implications in appropriate technology generation and policy choices. Some attempts have been made to identify gender roles in decision making, labor division, time allocation, indigenous knowledge base, and cash income generating activities in Nepal focusing on male and female hierarchy (Tulachan and Neupane, 1999; Gurung, 1999; Bhatt and et al, 1994; Tulachan and Batsa, 1994; Bajracharaya, 1998). However, detail comparative information on gender dynamics in livestock management focusing on inter and intrahousehold level across different ecologies and wealth group is not available from different communities in Nepal. Therefore, this study creates a framework to understand the gender and social dynamics focusing at the inter and intrahousehold levels on the management of livestock and livelihood activities of the communities in three LTIP project sites of three agroecological region of Nepal. The specific objectives of the study are:

## II. PROJECT PURPOSE

This study aims to provide more complete perspectives of gender relations, roles and women's empowerment issues for Nepal in relation to pro-poor technology and policy development. It also attempts to outline how social dynamics and changing gender relations influence livestock technology choices and livelihood opportunities. The outputs of the study will facilitate and assist in pro-poor and pro-women policy dialogues, training and orienting policy/decision makers and planners in pro-poor livestock policy making with the goal of improving the livelihoods of landless and poor, and women headed families through livestock farming. This would lead to formulating pro-poor and pro-women policy choices and strategies in partnership with relevant institutions/organizations for removing the existing barriers where by pro-poor livestock policy strategies can contribute to reducing poverty and thus enhancing the livelihoods of the livestock dependent poor farmers.

**Specific Objectives are;**

1. Study general socioeconomic conditions and livelihood opportunities of people living in mountain, hill and lowland region in Nepal

2. Analyze gender differences in workload and participation in different livestock management activities by socio-economic groups

3. Explore extent of women's participation and decision making in intra and inter-household system that relate to various livestock management activities

4. Analyze differences in the knowledge, skills and capacity of men and women in livestock management activities

5. Identify men's and women's roles in access to and control over household and community resources

6. Explore gender differences in identifying and utilizing livestock technology among different communities of hills, lowland and mountains in Nepal

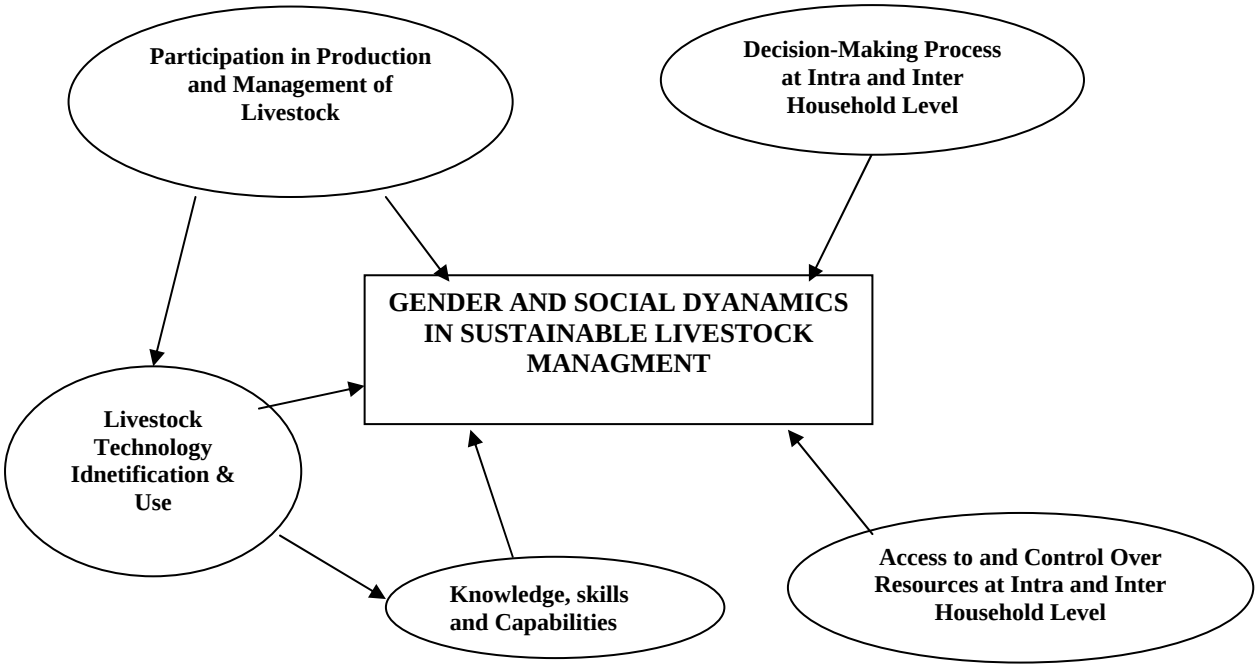
7. Compare the findings across agroecologies and suggest implication of intra and inter household gender relations in livestock technology design, policy choices and overall women welfare.

**Framework of the study**

Analysis of inter and intra-household gender relations in livestock management and livelihood opportunity of rural people is a complex issue. Gender roles and relations are dynamic and changes with inter and intra household decision making process which is expected to evolve with technological change and changing economic opportunity and social norms. In the changing context of male migration and feminization of agriculture in rural Nepal, women often must undertake new responsibilities without adequate knowledge, technologies, resources and time. They are the majority of the rural constituency and therefore are most affected by development programs and policy.

Gender discrimination is also not limited in a narrow area of male and female hierarchy but it may be extended in the area like economical, caste, cultural and ecological hierarchies and traditional difference. Intra and inter household gender relations also have important implications in technology design and policy choices. Therefore this study creates a framework and focuses its scope of study in mainly five specified themes on livestock management and livelihood opportunities of the communities (Fig 1). They are (i) gender participation in livestock production and management, (ii) decision making in intra and inter household levels, (iii) gender differences in knowledge, skills and capabilities, (iv) access to and control over resources and (v) technology identification and use. This framework shows linkages of gender dynamics to managing various livestock issues such as livestock technology, participation, knowledge skills and capabilities, decision-making processes, and access to and control over resources.

**Figure 1: A conceptual framework to study gender and social dynamics in livestock management (adapted from Gurung, 2005)**




## III. RESEARCH ACTIVITIES

The research was carried out by a research team of the project entitled Livestock Technology Change, Livelihood Impacts and Policy Lessons (LTIP), Nepal. However, this research was solely funded by by DFID-Livestock Production Programme (LPP). The field survey for mid hills (Lalitpur) and lowland (Chitwan) sites was carried out for over two and a half months from February to June 2005. The information and survey data for high hills site (Mustang) is drawn from earlier study of Gurung (2004).

**Data Collection Approach**

This study employed both qualitative and quantitative approach for data collection and analysis. During the training workshop, we develop an analytical study framework for livestock gender management (See Table.1.). The research team used this framework during the fieldwork for data and information collection at three levels--intra household, inter household and local institution. Sample household survey method was used for intrahousehold level, whilst key informant and focus group discussion, direct observation, group meetings and meetings of federation and cooperatives were employed for inter-household and institution levels. The detail of data collection matrix is presented in Table 2. Use of both quantitative and qualitative methods provided a richer base for analysis, where data from each method helped to interpret the other.

**Desk study**

Secondary data on gender dynamics in livestock, agriculture and related natural resource management was collected from published / unpublished books or journals, official reports or records and websites. Current government policies and strategies and related planning documents were reviewed in relation to gender, social dynamics and livestock in Nepal. This information was used to supplement survey data wherever possible.

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**Table 1: ANALYTICAL FRAMEWORK FOR THE GENDER AND LIVESTOCK MANAGEMENT**

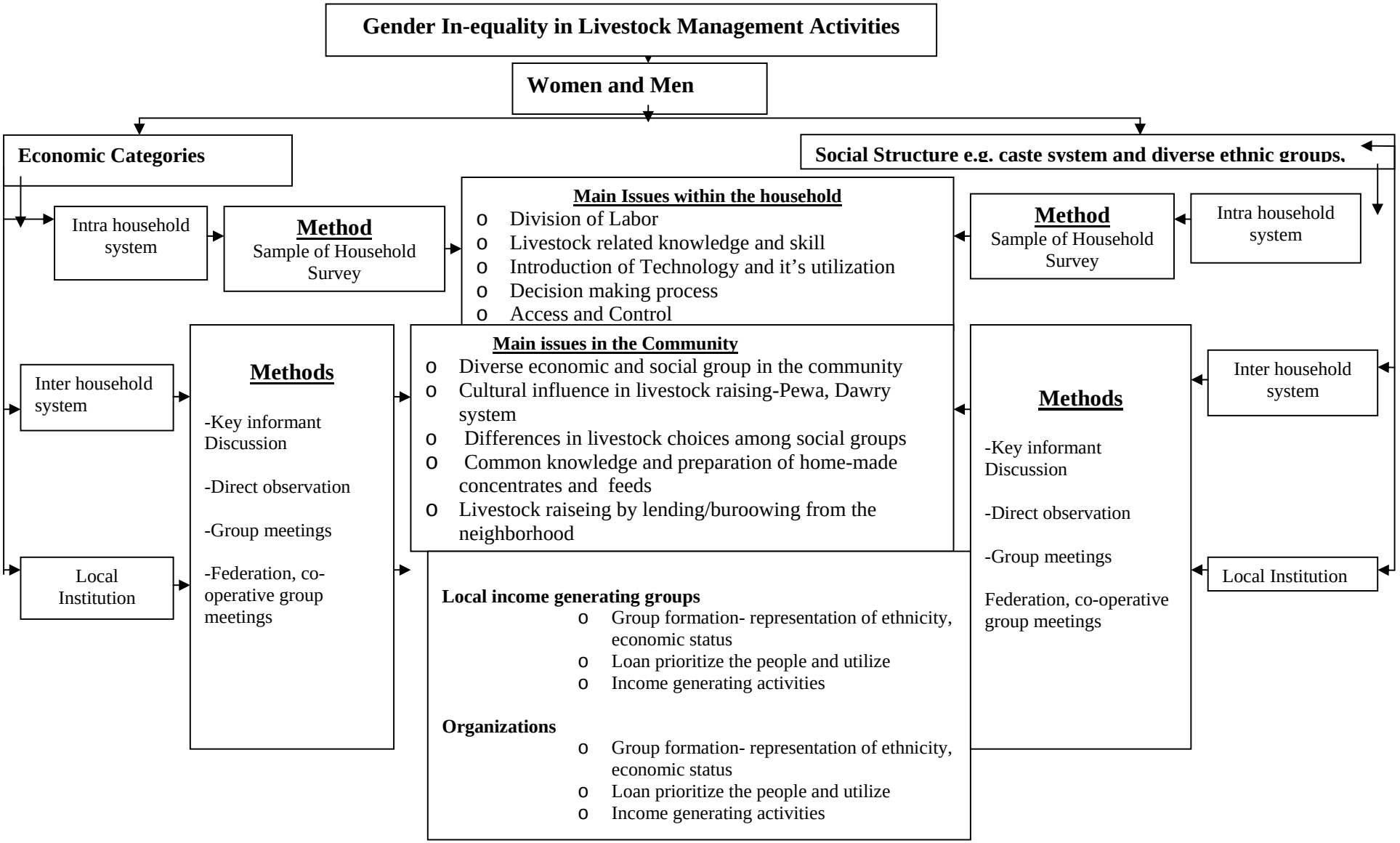


**Table 2: Data collection matrix for gender studies in livestock management**

| Topic of Key Question | Wealth Ranking | SSQ | Gender Calendar | Observation |
|---|---|---|---|---|
| What are the gender differences in workload and participation in different livestock activities by socio-economic group? | *Yes | *Yes | *Yes | *Yes |
| Are there differences in the knowledge, skills and capacity of men and women in livestock management? | | *Yes | *Yes | *Yes |
| To what extent do women's participation and decision-making in intra and inter household system relate to various livestock management activities? | | Yes | *Yes | *Yes |
| What are women's roles in access to and control over the household and community resources? | | *Yes | *Yes | *Yes |
| What are the gender differences in technology identification and use in lowland, mid hills and mountain communities? | | *Yes | *Yes | *Yes |

**Note:** *Yes illustrate where each method addressed a question and hence cumulatively

**Sampling Framework**

The study sites were selected representing major agroecological zones: high hills (mountain), mid hills and lowland (See Map). From each agroecology one district was selected from high hills, midhills and Terai/lowland on the basis of representation of technology types[1], farming systems and agroecology. Within each study district, villages were selected on the basis of their economy and physical accessibility. The economies were determined as being either relatively wealthy or poor and similarly access was either good or poor. In each study district four villages were selected as a combination of these factors in lowland and mid hills, whilst in high hills (mountains) only two villages could be selected for gender study (Table 3). Within each community a wealth ranking was carried out to identify the different socio-economic groups according the perceptions of the local people. About 21-30 households were selected from each community for detail household interviews.

[1] Technology types include: milk production and processing in Lalitpur; Leasehold forestry management in Chitwan; and pastureland and goat production in Mustang.

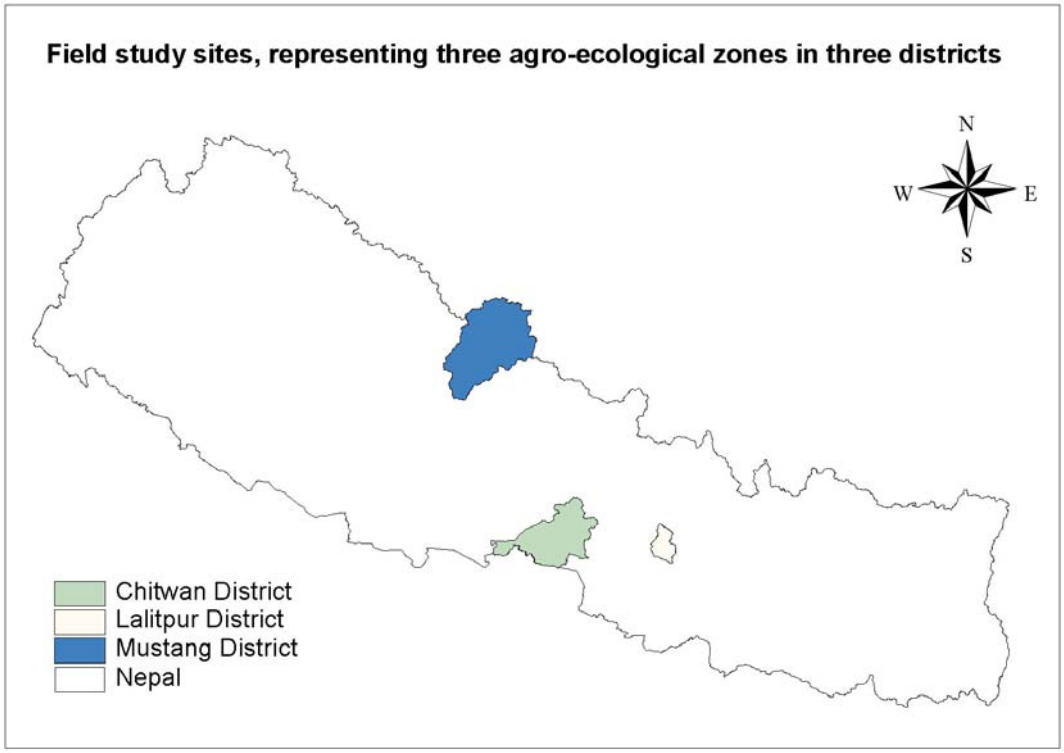



**Table 3: Sampling frame for the village sites in three districts and ecoregions, Nepal**

| **Regions** (District) | **Types of Study Village based on Economy and Accessibility, Nepal** | | | |
|---|---|---|---|---|
| | Poor Economy Poor Accessibility (PEPA) | Poor Economy Good Accessibility (PEGA) | Good Economy Poor Accessibility (GEPA) | Good Economy Good Accessibility (GEGA) |
| **Lowlands** (Chitwan) | Fhujintar | Barowa | Anand chowk | Parashnagar |
| **Mid hills** (Lalitpur) | Burunchuli | Jhyalungtar | Manechaur | Seraphat |
| **High Mountain** (Mustang) | Ghilling | - | - | Kagbeni |

Source: Rushton, J., PM Tulachan, K. Gurung, & S. Anderson, 2005

**Sample Interviews**

Based on the study framework (see Table 1) and research objectives, household (HH) survey questionnaire was developed. Semi-structured questionnaires (SSQ) were used employing personal interview techniques to collect quantitative data from the sample households and individuals across different socio-economic groups (rich, poor, caste groups, women, men etc). The questions structured were from open-ended to carefully prescribed (See Annex 1) and targeted to different socio-economic groups.

Research assistants and social mobilizes from each community were recruited and provided training to assist the research team in data / information collection. The research team carried out 21-30 sample interviews in each community to collect data / information for the intra household level. A total of 283 interviews (119 in Lalitpur, 120 in Chitwan and 44 in Mustang) were carried out from different socioeconomic class (rich, medium, poor). Out of this number, nearly half of the interviewees were female (see Table 4). Poor groups represented nearly 30% of the respondents. Semi-Structured interviews provided a means of obtaining responses to a series of open-ended research questions with the respondent, provoking purely binary data that may be more conducive to inductive questioning. The data collected from interview included information on division of labor between male and female, gender differences in livestock related knowledge and skill, introduction of technology and it's utilization, decision making process, and access and control to household, community and external economic resources.

**Table 4: No. of women respondents in different communities and wealth groups**

| **SN** | **Community** | **Number** | **Rich** | | **Medium** | | **Poor** | |
|---|---|---|---|---|---|---|---|---|
| *A.* | *Lalitpur* | *(Women)* | *Total* | *Women* | *Total* | *Women* | *Total* | *Women* |
| 1 | Jyalungtar | 30 (20) | 5 | 1 | 10 | 8 | 15 | 11 |
| 2 | Seraphat | 29(17) | 7 | 4 | 14 | 7 | 8 | 6 |
| 3 | Burunchulin | 30(21) | 6 | 6 | 12 | 7 | 12 | 8 |
| 4 | Manegaon | 30(0) | 8 | 0 | 12 | 0 | 10 | 0 |
| | Total | 119 (58) | 26 | 11 | 48 | 22 | 45 | 25 |
| *B.* | *Chitwan* | | | | | | | |
| 5 | Prashantnagar | 30(15) | 6 | 3 | 15 | 7 | 9 | 5 |
| 6 | Baruwa | 30(9) | 8 | 1 | 11 | 3 | 11 | 5 |
| 7 | Fujingtar | 30(18) | 10 | 4 | 9 | 5 | 11 | 9 |
| 8 | Anandachowk | 30 (18) | 10 | 6 | 13 | 9 | 7 | 3 |
| | Total | 120(60) | 34 | 14 | 48 | 24 | 38 | 22 |
| *C* | *Mustang* | | | | | | | |
| | Ghilling | 21 | 8 | - | 5 | - | 8 | - |
| | Kagbeni | 23 | 7 | - | 6 | - | 10 | - |
| | Total | 44 | 15 | - | 11 | - | 18 | - |
| | **Overall Total** | **283(118)** | **75** | **25** | **107** | **46** | **101** | **47** |

Note: Number in parenthesis indicate total women respondents in each community. In Mustang site number of women respondent are not available.

**Participatory Rural Appraisal (PRA)**

Qualitative data were collected through Participatory Rural Appraisal (PRA) such as wealth ranking, key informants, focus group discussion, and direct observation. The study also employed development of gender calendar, timelines and individual testimonials to get insights and collect detail information at both intra and inter-household levels including at community based line agencies and institutions. The checklists employed during the PRA exercises are presented in Annex 2. The specific PRA tools employed and their brief descriptions are outlined below:

*Wealth Ranking:* Wealth ranking was carried out to identify socio-economic groups existing within the community. Respondents were requested and facilitated to stratify households into different socio-economic groups along with the socio-economic parameters from each study site. Three socioeconomic groups rich, medium and poor were identified (Table 2). This information helped to select a number of household (n=119 in Lalitpur, N=120 Chitwan and N=44 in Mustang) representatives from three different socio-economic groups (poor, medium and rich) to conduct semi-structured interviews. Before classifying households into different groups, households from the study villages were listed. During focus group discussion, the key informants were asked to categories the households into three groups based on their own socioeconomic criteria. Accordingly a total of 22, 40, and 38 percent of households respectively were rich, medium and poor in Lalitpur. In Chitwan, rich, medium and poor accounted 28, 40, and 32 percent households respectively. Similarly about 34, 25 and 40 percent of households were rich, medium and poor respectively in Mustang

*Focus Group Discussion:* Focus groups were carried out among diverse economic and social group in the community. The main issues explored at the community level were, differences in existing economic and social groups in the communities, cultural influence in livestock raising-Pewa system, livestock choice among different social group, common knowledge and preparation of home-made concentrate feed, lend/borrow livestock raising from the neighborhood etc.

*Gender Calendar:* The gender calendar tool was used to explore gender roles, relation and responsibilities within and between households (See Annex 3). The tool was used with both men's and women's groups and individuals in livestock management. This information assisted to identify critical issues and gaps in managing the livestock.

*Observation:* Both field and households were observed during the field visits. The field observations included farming systems, livestock raising systems, types of livestock raised and crops grown in the field and their interaction in communities. Household

observation included direct observation of gendered differences in household activities and household management of livestock by gender and socioeconomic groups. Direct observation of everyday life, social interactions and relations and other household activities gave important insights and understanding to researchers. It helped to gather more explanations in relation to gender roles in the society. Additionally, this method also helped to verify the information collected from other methods.

*Time Line***:** Time line is an important tool to identify changes in gender roles and livestock technologies and policy choices in the study sites. This tool was applied with elders in order to gather a more comprehensive data for understanding key events and livestock technology and market changes that have occurred over the last 20 years.

**Harvard Analytical Framework**

Harvard Analytical Framework has been adapted in this study for collecting data at both intra and inter-household and community level. Semi-structured questionnaires particularly the Access and Control Profile were used here for organizing gender information. This tool was useful to list what resources people use to carry out the tasks identified in the Activity profile. It also indicated whether women or men have access to resources, who controls their use and who controls the benefits of a households and community's use of resources.

**Analysis and Synthesis of the Results**

The survey data from different study sites are compiled, triangulated and analyzed. Quantitative survey information were coded numerically and entered in spreadsheet (Excel). Mean and percentage are used for analysis of the data. Qualitative data are interpreted and triangulated with other sources and analyzed. The synthesized information was combined for overall writing and documentation. The survey information is supported by the available project information

# IV. OUTPUTS

## The study sites

The study was conducted in a total of ten communities, four each in mid-hill and lowland and two in high hills (mountain) districts. The list of study communities along with their major socioeconomic features are presented in Table 5. The mid-hill locations of Lalitpur district are situated at an altitude of 1350 to 1700 msl whilst the lowland locations of Chitwan district are situated around 400 msl. The high mountain study location of Mustang is situated around 2800-3500 msl. Brahmin was an important higher caste group studied in both mid hills and lowland sites. However, Chepang and Tharu in Chitwan (lowland), Taming in Lalitpur (mid-hills) and Goring (Bhatia's) in Mustang were dominant and specific disadvantaged indigenous ethnic communities in the study areas. The *Dalit* (untouchable), caste groups were common in Chitwan, Lalitpur and Mustang sites. In some communities of lowland (Chitwan), the other ethnic groups such as Goring, Magyar, and Newer were also prevalent.

Agriculture and livestock husbandry are the main source of livelihood and income of most people of the study communities. However, off-farm source of income particularly wage labour was the main source of cash income for poor, marginal farm households and disadvantaged communities in lowland (Chitwan) and hills (Lalitpur). In high hills of Mustang, men and women earn income from also off-farm migration to lower hills, lowland and India as well as running tourist inns in their places (e.g. Kagbeni). In all study sites, unlike higher caste groups such as Brahmin, Chhetri and Newar, family members of disadvantaged communities (Dalit, Magar, Gurung, Tamang, Tharu and Chepang) rarely had an access to government services. Some of these disadvantaged communities are so poor that they live on a day-to-day basis working on other's farms or off-farm activities with no assets and with no opportunity for future assets building.

**Table 5: General socioeconomic characteristics of the study communities, Nepal**

| SN | Study sites /Communities | Major Ethnic Groups | Livelihood options | Income source | Accessibility |
|---|---|---|---|---|---|
| **A.** | **Lalitpur** | | | | |
| 1 | Jyalungtar (Chapagaon) | Tamangs & Dalit | Crops, Animals Service | Food crops & livestock | Close to road head |
| 2 | Seraphat (Chapagaon) | Brahmins, Newar | Livestock, crop, vegetables, mushroom | Semi-commercial livestock | Close to rod head |
| 3 | Burunchuli (Devichaur) | Tamang | Agriculture & livestock | Agriculture & livestock | Partially accessible |
| 4 | Manechaur (Ghusel) | Tamang and Brahmin | Livestock-based, Rainfed agriculture | Livestock products, milk | Inaccessible by roads |
| **B.** | **Chitwan** | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 5 | Prashantnagar (Bharatpur) | Brahmin, Chhetri | Agriculture, Livestock, Off-farm | Agriculture, Livestock, Remittance, | Close to road head |
| 6 | Baruwa (Bharatpur) | Tharu | Wage labour, Crops, livestock | Wage labour | Accessible by dirt road |
| 7 | Fujingtar (Shaktikhor) | Chepang, Dalit, Newar | Agriculture, livestock and laboring | Farming, livestock and laboring | Accessible by dirt road |
| 8 | Anandachowk *(Shaktikhor)* | Chepang, Newar Tamand | Agriculture, livestock | Agriculture, livestock | Accessible by dirt road |
| **C** | **Mustang** | | | | |
| 9 | Ghilling | Gurung (Bhotiyas) | Agirculture, livestock, and off-farm | Livestock, off-farm migration | Inaccessible remote |
| 10 | Kagbeni | Gurung (Bhotiya),Bista | Agriculture, Livestock and Hotel business | Livestock, hotel business | Close to district head quarters |

The specific background information of each of the study site of mid-hills (Lalitpur), lowland (Chitwan) and Mustang (high hills) are briefly highlighted below.

**Lalitpur (Mid-hills)**

*Jhyaluntar, Chapagaon VDC:* Jhyalungtar village (Chapagaon VDC) is located north of Lalitpur district south of Kathmandu valley**.** It is 5 KM away from district headquarter, Patan and accessible by dirt road. The community is mostly inhabitant by Tamangs and Dalit caste groups besides other few households are from Brahmin and Newar groups. The people livelihood depends on agriculture and animal husbandry but some high-class social groups (Chhetri, Newar and Brahmin) are involved in services in government or some other local organization. Some Tamang groups are involved in service in army.

*Sheraphat, Chapagaon VDC:* Sera phat village (Chapagaon VDC) is located in north of Lalitpur district south of Kathmandu valley. It is 5 KM away from district headquarter, Patan and accessible by dirt road. The village is predominantly inhabited by Brahmins followed by Newars. The village has various agriculture related livelihood options such as semi-commercial livestock, mushroom and vegetable farming in addition to growing food crops (e.g. rice, maize and wheat). The main economic activity of Brahmin households is buffalo raising, for Newars it is trade–retail shops in the market supplemented by income from the sales of Chinese ducks and goats. The main source of income for Tamang is labour wage, however, the cash income for these households are supplemented by goats and pigs.

*Burunculi, Devichaur, VDC:* Burunculi village (Devichaur, VDC) is located in south-west of Lalitpur district south of Kathmandu valley bordering Makawanpur district. This village is about 10 KM away from the district headquarter, Patan. The community is

largely dominated by (99%) Tamang and only few numbers of households are from Chhetri ethnic group. Agriculture and livestock are the main income source of the people but few households also work in service.

*Manechowr, Ghusel VDC:* Manechour village in Ghusel VDC is located in south-west of Lalitpur district, south of Kathmandu valley bordering to Makawanpur district. It is relatively inaccessible which is five to six hours of walking from the nearest road head and about 12 KM away from district headquarter, Patan. Tamang and Brahmin are main ethnic communities in the village. Basically, the area has rain fed upland livestock based agricultural/farming systems. Despite the inaccessibility, the area has developed livestock based farming as a key source of livelihood. Milk production and sale is an important source of income for many households. The inaccessibility seems to have an environmental cost in terms of having to use fuel wood for boiling milk everyday before transporting to delivery points - collection and chilling centers.

**Chitwan (Lowland)**

*Janaki Tole –Parashnagar:* Janaki Tole-Parashnagar is located in south-east of Chitwan district in Bharatpur municipality at ward number 8. The majority of the inhabitants of this community are Brahmin and Chhetri. They were basically migrated about 20 years ago from the hilly regions of Nepal. Other ethnic groups such as Gurung, Tamang, and Newar also exist here. These communities are living temporarily in this area for working purposes as a caretaker of the landowner or by taking the land in lease. Besides, farming agriculture and livestock, they are also involved in small business and employment. There are other ethnic groups, such as Gurung, Tamang, and Newar. In addition, the other income sources of the households are from labour wage and remittances from working abroad.

*Barowa-Gaurigunj:* Barowa is located in Bharatpur Municipality about 5 KM south-east of Chitwan district. The majority population in the area is Tharu's who are marginalized and disadvantage ethnic people in terai area. There are other few household from Brahmin, Chhetri, Magar, and Dalit "socially excluded group". The main livelihood options of the people in this village are food crops, livestock production, foreign employment, wage labour, small business and others. Most of the poor household of Tharu's group are mostly dependent on wage labor as their main livelihood..

*Fajingtare Tole, Shaktikhor VD:* It is located in northeast of Chitwan district, Central region of Nepal. The major ethnic groups are Newar, Bika, Chetri, Magar and Chepang, Except Chepang, all are migrated from different parts of the country before 25-30 years. Now they become the permanent residential people of the place. The main occupation of the peoples of Fajintaar Tole is farming, livestock keeping and labouring.

*Ananda Chowk Shaktikhor VDC:* It is located in northeast of Chitwan district, Central region of Nepal. The communities are inhabitants from different ethnic groups such as

Chepang, Magar, Gurung, Tamang and Dalit including high caste Brahman, Chhetri and Newar. However, the majority are "Chepang" group who lives in this area and is considered as one of the poorest and marginalized peoples in the country. They are illiterate and economically poor and socially excluded. The main source of income of the farmer is from agriculture. Livestock raising provides supplementary income and livelihood needs of the households.

**Mustang (High hills)**

*Ghilling, Ghami VDC:* Grilling village (Ghami VDC) is a remote inaccessible site located in upper Mustang. It is three to four days walk from the headquarter of the Mustang district called Jomsom. The village is inhabited largely by homogenous ethnic group such as Bhotiayas (Gurung) of Mongoloid race from Tibetan orgin. There are also few Dalits in the village. The main income source of the Ghelling villagers' is from livestock especially a mountain goat locally called "Chyangra". Mountain goat from Gilling village is considered one of the best goats from the Mustang district. Farm household also raise cattle, draft animals such as mules, horse and dzhopas (male cross breed of yak and cattle).

*Kagbeni, Kagbeni VDC:* Kagbeni village is only four to five hours walking distance from the district headquarter, Jomsom. The village is inhabited largely by Bhotiayas (Gurung) of Mongoloid race from Tibetan orgin. There are also few Bista and Dalits in the village. Livestck and agriculture /horticulture is the main source income. People also earn income sources from tourism particularly by running tourist inns/lodges. Livestock rearing in the village includes goats, horses, mules and cattle.

## Economic Importance of Livestock

Livestock play important role in the income and livelihood of people in all the ten communities of high hills, mid hills and lowland. They supply meat, milk, and manure for household subsistence as well as for market sale to generate cash income. They are important for livestock dependent farmers, particularly those farmers who are directly involved in day-to-day management of livestock on their farms. For poor households, livestock keeping also acts as savings, buffering and insurance. In many vulnerable households livestock keeping is found to be as a convertible asset available and easily traded to make payments for health care, schooling, food and household requirements.

In semi-commercial dairy pockets of Lalitpur and Chitwan, improved buffalo keeping and the resulting income through sales of fresh milk is the primary source of household income amongst the economically better off farmers and to those of higher caste people. Income from sales of milk has enabled the local households to meet the expenditures of healthcare, ceremonies, festivals and children's education. Amongst other ethnic groups, goats, pigs, and poultry are providing supplementary income for their household livelihoods.

In Mustang mountain goats are the major source of livestock income. Because of harsh cold climatic conditions and infertile land, food production is hardly sufficient for a six months period or less in Mustang. Therefore people are more dependent on livestock husbandry than in other regions of Nepal such as terai and mid hill. In this region, livestock includes local cattles, dzhopas, horses, mules, goats and yaks all of which depend on pasturelands for their feed resources. Horses and mules are used for the transportation of human beings as well as goods services. Local cattle are raised mostly for household consumption of milk and milk products. Similarly, dzhopa are used for draft for farmland preparation as well as for fuelwood transportation. Among livestock, the mountain goat locally called "Chyangra" is the most popular in the region and the majority raised at altitude of 3000-4500 msl.

## Social and Cultural Value of Livestock

Though, livestock is the major sources to sustain the daily livelihoods of local people, it is also equally valued for the social prestige and family nutrition. The role of livestock therefore is important not only for household economic activities, but also its role in sustaining traditional values and culture among the disadvantaged communities. Small animals (micro livestock) particularly goats, poultry and pigs play important role in culture and the livelihood of poor and vulnerable groups. The cultural importance of keeping goats and chicken in disadvantaged community such as in Tamang family in mid hills is outlined in Box 1.

**Box 1: Socio-cultural value of keeping goats and chicken in Tamang family, Lalitpur**

Among the study sites, the Tamang community of Brunchuli, Lalitpur, mid-hiil is more conscious and still following the rites and rituals of their culture. Because of the religious matter, every Tamang household has been raising local goats and chickens since it is believed that they have to scarify one goat and chicken every year and few of them have raised cow and buffalo. Further, the Tamang household of this community has not yet done castration for their goat because of their ritual belief.

Similarly, according to Mr. Pratap Tamang from Serafat, Chapagaon (mid hills), goats are kept for socio-cultural and religious aspects. His family has kept goat for both home consumption and the religious purposes as the family sacrifices goat each year in Deepawali (A festival of light). In addition, they have also kept few cows to make use of dung for wiping the house. These animals are also kept for economic purposes such as for milk and manure.

Similarly, every Chepang household in Anandachowk Chitwan was found raising a pig for the upcoming big Hindus festival *DASHARA.* These Chepang people are socially

regarded as one of the poorest and excluded people of the society in Nepal due to their backwardness, illiteracy and poverty.

Livestock is also important for directly supporting the livelihood of rural women in the study areas. Livestock is used as a PEWA for supporting the livelihood of girl children in society by their parents. In this system a daughter is generally provided with animal assets so that she can raise, multiply and sell them for generating future income and livelihood. In rural Nepal, goats, pig and poultry are the common livestock which they prefer to give to their daughter as PEWA when they are young. Such PEWA finally becomes a dowry when she finally gets married. The example of using livestock as a PEWA system in Chitwan (lowland) of Nepal is presented in Box 2.

**Box 2: Women's livelihood through livestock: A "PEWA" system in Chitwan, Nepal**

There is a relationship between rural women's livelihood and livestock through a "PEWA' system. "*PEWA*" is the social system of family supporting with financial or material assets to their girl children in the society for their future livelihood. This is especially common among rural poor families and disadvantaged groups where other options to support their daughters are limited. Micro livestock (goats, pigs, poultry etc.) are most commonly used animals to be used as PEWA in rural disadvantaged communities as they are easy to raise and multiply faster to generate income.

Nanada Kumari Magar, a girl from a disadvantaged Magar family was borne in Chitwan, (Anadachowk, Shaktikhor VDC). When she was 13 years' old, she got goats and chickens as *PEWA* from her parents. When goats gave birth to their kids and hen hatched chicken they were cared by her family. When the young animals became adult, her parent sold it and kept her money. The income that comes from her PEWA is now invested by her father in productive activities that generates interests. She is using the interests now, and at last, she wishes to utilize her money in something beneficial such as investing in higher studies. If she could not take up higher studies, she believes that her parents will give her the final PEWA (total income generated from goats and hens and interest earned from investment) to her as dowry when she finally gets married.

## Ethnicity, Wealth and Livestock Keeping

In the present traditional subsistence livestock management system, some relationship was found between wealth, ethnicity and livestock keeping. Resourceful farmers from higher income group such as Brahmins tend to raise large ruminant mostly buffalo and cattle for local household consumption and market sale. Brahmins' main income source came from milk sale from these large animals such as in mid hills of Lalitpur (Serafat, Chapagaon).. Disadvantaged ethnic groups with poorer economic status such as Dalit, Chepang, Tharu and Tamang mainly raised micro-livestock such as pigs, goats and chicken. Some exception could be found in richer people of Tharu and Tamang who also

raise buffalo and cattle. The special ethnic preference and livestock raising in traditional subsistence systems is outlined in Box 3.

**Box 3 Ethnicity, wealth and livestock raising in study sites**

- Chepang raise mainly pigs in cages
- Dalit raise mainly pigs and goats
- Tharu raise mostly pigs, goats, sheeps
- Tamang raise goats and chickens
- Newar raise Chinese ducks, cattle and buffalo
- Brahmin raise mostly buffalo and cattle
- Rich farmers mainly raise buffalo and cattle

Chepang people, one of the most disadvantaged communities in lowland (Inner Terai), Nepal choose to raise pigs for their livelihood and rituals. Women from Dalit groups are involved in pigs and goat production (e.g. in Barowa, Chitwan every household raise goat among Dalit group). Goats and chickens are preferred livestock for Tamang (e.g. every Tamang households in Prashanagar Chitwan, raise goats and chickens). Poor disadvantaged households choose to raise small livestock species due to small investment required and the quick turnover of these enterprises with lower amounts of time required to return their investment. Richer households and higher caste group choose to raise large species particular dairy buffalo due to its regular income and their easy access of credits and other support services for investment in large animals. However, exception is found in high mountain site in Mustang, where richer farmers also raise a large number of mountain goats since they have free access to large tract of pasturelands and the local climatic conditions are most suitable to raise these animals profitably.

The time line analysis of a goat farmer from lowland (Chitwan) over the period of past 13 years revealed that the status of women farmer has changed from poor to medium economic status. This has been possible with the introduction of new technology, management practices and market development for goat in the locality (Table 6). During the year 1990, farmer had only two or three goats. With the development of local dirt road and banning of forest grazing, farmer started stall-feeding of goats. With the introduction of stall-feeding system, farmers are motivated to cultivate new improved fodder trees and forages for feeding the animals. Improved management practices including new treatment methods for goat diseases have helped improvement in the health of animals. This resulted in multiplication of goat numbers in a few years' period. Because of the marketable number and size of goat, goat traders also started buying goats from local village. Goat farming has now become profitable enterprise in the locality. Finally over the 13 years period (1990-2003) the same poor family could own.7-8 healthy goats and is being transferred to middle in come category in the year 2003. From the sales of live animals, the family members now are receiving fairly good cash income

from animal sales. The cash income earned from goat sales is used for various household expenses such as school fees for the children, buying household food items and spending in medical expenses.

**Table: 6 Time line Analysis:Transformation from Poor to Medium Status with Goat**

| **Key Events** | | **Time line Analysis of Goat Farmers in Chitwan (Lowland)** | | | | |
|---|---|---|---|---|---|---|
| | **Year** | **1990** | **1998** | **2000** | **2001** | **2003** |
| **Road head construction** | | Family have 2-3 goats | | | | |
| **Forest grazing banned** | | | Stall feeding initiated | | | |
| **Technologies improved** | | | | Fodder trees and forages introduced | | |
| **Market Access improved** | | | | | Traders buy goat in good price | |
| **Transformation from Poor to Medium Economic Status** | | | | | | Family has 7-8 goats, get good income & use it in family needs |
| **Status** | | **Poor** | | | | **Medium** |

Women and poor farmers from disadvantaged communities are mostly landless, poor and always traditionally dominated and discriminated by higher social caste and economic class. Traditionally they raise small animals such as goats, pigs and hens. They are not raising cow and buffalo because of the poverty and social barriers to sale milk and milk products in the past. However, in the recent years, this social belief is changing among the local people due to development of milk market and social awareness among local communities (Box 4).

**Box 4. Changing social beliefs in raising dairy animals among Dalit, Lalitpur**

Traditionally, Dalit (untouchable lower caste) groups depend in caste-occupation such as; tailoring, shoe making and black smith. They are mostly landless, poor and always traditionally dominated and discriminated by higher social caste and economic class. Traditionally they raise small animals such as goats, pigs and hens. They are not raising cow and buffalo because of the poverty and social barriers to sale milk and milk products in the past. However, in the recent years, this social belief is changing among the local people due to development of milk market and social awareness among local

communities. Recently in Chapagaon (Jhyalungar) in the mid-hills, Dalit groups are interested to raise buffalo because they can sale milk and milk products in Dairy Collection Centre of government which has been recently established in the community. Some of the Dalit groups have already started raising buffalo and cows for milk production and marketing. With this market development and social awareness gender roles are also changing. For example, males are now seen in the care of buffalo and cows whilst women are still taking responsibility of caring and managing their traditional animals such as pregnant goats.

## Livestock Management Systems

In high mountain site in Mustang, livestock particularly mountain goats are grazed in communal pastureland far away from villages for most of the period from March/April-October/November. Cattle, horses, mules are also freely grazed around the village in communal pasture, though these animals some times are stall fed with grains, grain by-products and other purchased feeds. This is mainly for two reasons: (i) unlike in other parts of Nepal, Upper Mustang has no community forest user groups established and are functioning well due to limited forest land available and (ii) a large amount of communal grazing land exist in these areas which do not restrict people from free grazing.

However, stall-feeding of livestock is a common practice in mid-hill and lowland study sites. Farmers, however graze their animals during daytime wherever, farmers' have easy access to local community grazing land and crop fields. Tree fodders and floor grasses are the major feeds for animals during wet seasons (Annex 4). The lean season for farming and livestock management are December 15-April 15 (Paush-Chaitra). The rest eight months are busy seasons for farmers, particularly for women. During lean /dry season (December-April) crop straws and grains are main feed items for animals. Tree fodders are important feeds during middle of March to June in areas where farmers have access to forest lands or have tree fodder cultivated in their farms. During July to November, floor grasses (green) are most important feeds for livestock in the study area. Improved feed rations and concentrates are fed to animals wherever, livestock are raised for market sale. In most of the cases local people prepare concentrate and routinely feed for their livestock using local materials such as cereal chaff with flour mixed with oil cake, salt and water. Women have rich indigenous knowledge in the preparation of local feeds for animals using locally available materials. The following text in Box 5 provides women's indigenous knowledge in preparing feeds and concentrates for animals.

**Box 5: Women's indigenous knowledge on livestock feed: Brunchuli, Lalitpur**

Feed scarcity is a major constraint to livestock keeping in all the study sites. For many poor livestock farmers in these areas, access to improved feed is beyond their reach due to both high cost and unavailability of the products in the local market. During feed scarce periods (winter months), farmers particularly women are involved in collecting Bamboo dried leaves from nearby forest and feed their animals. According to Buddha Laxmi Tamang-56, a women farmer from Devichowr V.D.C.-1, Brunchuli (mid hills) local people prepare concentrate for their livestock using local materials such as cereal chaff with flour mixed with oil cake, salt and water. The entire gradient are mixed and cooked for fifteen minutes. One *pathi* (about four litres) of water is poured again before feeding the animals. Sometimes they use to mix the wastes of wine in two *Mana* (one litre) concentrate and feed the animals, but this method is not regular. Salt is not given to female after mating due to fear of negative effect of salt on female animals.

## Gender Division in Workload by Socio-Economic Groups

Men and women have different roles, responsibilities and participation in livestock management and livelihood activities. Such roles, responsibilities and participation may differ among different socioeconomic groups and agroecologies. Women of all ethnic groups and economic status have more pressure of work in livestock keeping than in men. Women are involved from morning to evening day to day in every aspect of livestock caring and management. Women also work longer time with no leisure time:15-17 hours as compared to their male counterparts who work only 10-12 hours a day. In this way, the pressure of work in women is more than in men (See Annex 3). The findings of gender division in workload and labour use (average of four locations) each for hills (Lalitpur) and lowland (Chitwan) respectively including two communities of high mountain (Mustang) is presented below.

### Lalitpur (Mid Hills)

Table 7 presents the division of the workloads between the male, female and children of various socio-economical groups (average of four communities) of the mid hills of Lalitpur district, Nepal. In all the wealth groups, women are predominantly involved in livestock feeding, collecting and preparing feeds for animals, cleaning and bathing animals including milking of animals and heating raw milk. Male's roles are limited and children are also rarely involved in these activities. Higher percent of women from poorer groups are involved in various livestock management activities as compared to those of resource medium and rich groups. However, gender differences were distinct in selling milk among different economic status. As evident from the figure the participation of women in selling milk is higher in poorer and medium resource groups, whilst men's involvement in selling milk is higher in resource rich households. As more market production of livestock increases (e.g. milk sale), men's role becomes significant in

resource rich households. However, women's role donot change in resource poor households even with market production of livestock. .

**Table 7: Gender division of the workloads by socio-economical groups (average of four communities) of Lalitpur district, Nepal**

| | | POOR | | | MEDIUM | | | RICH | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **S.N** | **ACTIVITIES** | **M** | **F** | **C** | **M** | **F** | **C** | **M** | **F** | **C** |
| 1 | Collecting and feeding grass/fodder | 5.38 | 95 | 0 | 6.53 | 91.6 | 1.9 | 5.2 | 90 | 4.38 |
| 2 | Preparing and feeding concentrate | 9.5 | 91 | 0 | 18.1 | 82 | 0 | 20 | 80 | 0 |
| 3 | Cleaning animals' sheds and managing bedding | 6.83 | 93 | 0 | 15.1 | 84.9 | 0 | 22 | 77 | 1.13 |
| 4 | Bathing animals | 17.9 | 82 | 0 | 21.5 | 78.6 | 0 | 34 | 63 | 3.05 |
| 5 | Grazing | 18.9 | 77 | 4 | 21.5 | 67.2 | 11 | 14 | 53 | 8.33 |
| 6 | Milking and heating | 15.6 | 84 | 0 | 12.4 | 87.6 | 0 | 43 | 57 | 0 |
| 7 | Selling milk | 26.8 | 73 | 0 | 29.5 | 45.6 | 0 | 71 | 29 | 0 |
| | M = MALE | | F = FEMALE | | | | C = CHILDREN | | | |

**Chitwan (Low land)**

Table 8 presents the division of the workloads between the male, female and children of various socio-economical groups (average of four communities) of the lowland plains of Chitwan district, Nepal. As in mid hills in Lalitpur, women of all the communities in different socioeconomic groups are predominantly involved in livestock feeding, collecting and preparing feeds for animals, cleaning and bathing animals including milking of animals and heating raw milk. Male's roles are relatively low in many of these activities. Children of all economic status were rarely involved in livestock management activities. Higher percent of women from poorer groups are involved in these activities as compared to those of resource medium and rich groups. Milking and heating are only activities, where higher percent of women from resource rich groups are involved as compared to that of poor women group. As in mid hills (Lalitpur) gender interacts with economic status of the households. Women from resource poor groups have higher involvement in milk sale whilst in resource medium and rich groups, men's involvement is higher.

**Table 8: Gender division of the workloads by socio-economical groups (average of four communities) of Chitwan district, Nepal**

| | | POOR | | | MEDIUM | | | RICH | | |
|---|---|---|---|---|---|---|---|---|---|---|
| S.N | ACTIVITIES | M | F | C | M | F | C | M | F | C |
| 1 | Collecting and feeding grass/fodders | 17 | 83 | 0 | 25 | 74.3 | 0.6 | 26.1 | 74 | 0 |
| 2 | Preparing and feeding concentrate | 9.6 | 90 | 0 | 30 | 69.5 | 0 | 32.9 | 67 | 0 |
| 3 | Cleaning animals' sheds and managing bedding | 11 | 89 | 0 | 24 | 76.2 | 0 | 32.1 | 68 | 0 |
| 4 | Bathing animals | 0 | 0 | 0 | 46 | 4.18 | 0 | 35.4 | 65 | 0 |
| 5 | Grazing | 0 | 65 | 9.6 | 0 | 50 | 0 | 5.55 | 39 | 5.55 |
| 6 | Milking and heating | 5.8 | 19 | 0 | 23 | 52.4 | 0 | 37.9 | 62 | 0 |
| 7 | Selling milk | 7 | 18 | 0 | 29 | 21.4 | 0 | 31.6 | 18 | 0 |
| | M=MALE | F= FEMALE | | | C = CHILDREN | | | | | |

**Mustange (High Mountain)**

Women in high mountain site of Mustang are the primary caretakers of livestock for short term grazing, collecting feed resources for the livestock, and fuel for household consumption (Gurung, 2005). Men are traditionally engaged in livestock trade and investment in order to generate income. Women have strong involvement and responsibilities in managing the livestock, depending on species in the household. Women undertake different work related to livestock such as dzhopa, and cow management activities that include providing feed resources, cleaning animal sheds, and milking especially during the winter season. Women have less involvement in providing feed resources and grains to horses and mules than in cleaning sheds and preparing animal feeds, in which women are, strongly involved. Men therefore tend to have the stronger roles in providing feed resources to mules and horses. In the case of goats, women have a strong role in managing the short grazing for the young goats near by the village pastureland area. However, they are not involved in aspects such as veterinary care, animal sales and marketing nor the use of income from livestock.

## Gender Differences in Knowledge, Skills and Capabilities

In poverty stricken traditional rural societies, economic gains from livestock keeping directly depends on the knowledge, skills and capabilities of men, women including other family members. Women and men hold different level of knowledge in various livestock management activities. Some of the knowledge of livestock production and associated farm and household activities is held jointly by them. The findings of gender differences in knowledge, skills and capabilities in various livestock management (average of four locations) each for hills (Lalitpur) and lowland (Chitwan) respectively are outlined below. This information however, is not available for Mustang.

**Lalitpur (Mid Hills)**

The respondents reporting more knowledge, skills and capabilities among male, female and both, in livestock production and management, in Lalitpur (average of four communities) is shown in Table 9. Findings showed that both males and females jointly hold (as against individual male or female) more knowledge, skills and capabilities in various livestock management activities. These activities where men and women jointly hold knowledge include management of animals (both local and improved), introduced grasses and fodder production, cereal grains production, livestock disease management and local treatment methods for livestock diseases. However, women hold more knowledge, skills and capabilities in some of the specific activities such as managing sanitation, pregnancy and care for animals and cultivation of local grass and fodders. Men have more knowledge, skills and capabilities in the provision of veterinary services and castration. In livestock breeding either male individually or jointly with females hold more knowledge, skills and capabilities than females only.

**Table 9: Gender differences in knowledge, skills and capabilities in Lalitpur**

| S.N | KNOWLEDGE, SKILLS AND CAPABILITIES | MALE | FEMALE | BOTH |
|---|---|---|---|---|
| | | More (++) | More (++) | More (++) |
| 1 | Local animals | 51.15 | 42.85 | 86.73 |
| 2 | Improved animals | 68.7 | 29.475 | 93.43 |
| 3 | local grasses and fodders | 4 | 89 | 85.3 |
| 4 | Introduced grasses and fodders | 52.08 | 40.4 | 67.5 |
| 5 | Cereal Grains | 40.38 | 51.275 | 67.08 |
| 6 | Sanitation | 3.175 | 91.05 | 87.03 |
| 7 | Livestock diseases | 40.63 | 51.1 | 76.68 |
| 8 | Local treatment methods | 32.65 | 54.7 | 68.33 |
| 9 | Veterinary services | 65.55 | 28.275 | 44.53 |
| 10 | Pregnancy and birth care | 17.08 | 77.025 | 86.48 |
| 11 | Castration | 63.48 | 21.15 | 60 |
| 12 | Livestock breeding | 64.08 | 32.15 | 65.28 |

**Chitwan (Lowland)**

The respondents reporting more knowledge, skills and capabilities among male, female and both, in livestock production and management, in Chitwan (average of four communities) is shown in Table10. The findings indicated that females in Chitwan have more knowledge, skills and capabilities in the management of local animals, grasses and fodder production (both local and introduced), cereal grains production, sanitation, pregnancy and birth care, livestock disease management including local treatment methods for livestock diseases. Men have more knowledge, skills and capabilities in the provision of veterinary services and castration. However, for livestock breeding, both males and females jointly hold knowledge, skills and capabilities. In the management of

improved animals, respondent reported that there were not much differences in knowledge, skills and capabilities between male and females.

**Table 10: Gender differences in Knowledge, Skills and Capabilities in Chitwan**

| S. N | KNOWLEDGE, SKILLS AND CAPABILITIES | MALE | FEMALE | BOTH |
|---|---|---|---|---|
| | | More (++) | More (++) | More ( ++) |
| 1 | Local animals | 40.6 | 60 | 49 |
| 2 | Improved animals | 52.7 | 53 | 26 |
| 3 | local grasses and fodders | 23.7 | 78 | 48 |
| 4 | Introduced grasses and fodders | 34.6 | 63 | 13 |
| 5 | Cereal Grains | 35.1 | 67 | 37 |
| 6 | Sanitation | 25.2 | 75 | 25 |
| 7 | Livestock diseases | 16.7 | 58 | 25 |
| 8 | Local treatment methods | 38.9 | 60 | 25 |
| 9 | Veterinary services | 61.6 | 36 | 19 |
| 10 | Pregnancy and birth care | 26.7 | 76 | 35 |
| 11 | Castration | 79.5 | 23 | 63 |
| 12 | Livestock breeding | 46.4 | 55 | 72 |

## Access and Control over Intra and Interhousehold Resources

Access here includes freedom to use resources in livestock management where as control is the power to decide where and how resource is to be used in livestock management and livelihood activities of the people. In reality control, is related to decision making of the resources. Women and men differ in the level of access and control of resources. Women may have access but may not have power to decide or control over resources for livestock management and improvement of their livelihood. The findings of gender differences in access to and control over resources in various livestock management (average of four locations) each for hills (Lalitpur) and lowland (Chitwan) including Mustang respectively are presented below.

### Lalitpur (Mid Hills)

Table 11 presents respondents reporting more access to and control over resources for livestock management activities in Chapagaon, Lalitpur district (mid hill region). Higher percent of respondents reported that females' have more access to and control over livestock consumption activities and use of agricultural products in livestock. However, access to livestock farming as a main occupation and decision on access to livestock selling are mainly male jobs. Similarly access to and control over livestock business and other economic activities for livestock management (e.g. burrowing and lending money and investment), spending of household income for various activities (household expenditure, education/health, livestock development, starting new occupation etc.), sell /collateral for livestock are more of male jobs.

**Table 11.Gender differences in access and control over the resources in Lalitpur (Burunchuli, Ghusel, Jhyalungtar, Serafat), Nepal**

| | | | Access | | Control | |
|---|---|---|---|---|---|---|
| | | | Male | Female | Male | Female |
| S.N | ACTIVITIES | | More | More | More | More |
| 1 | Livestock consumption & sale | Consumption | 48.925 | 81.22 | 58.2 | 68.08 |
| | | Selling | 66.95 | 49.5 | 73.12 | 44.4 |
| 2 | Livestock occupation | | 84.275 | 51.67 | 81.67 | 45.7 |
| 3 | Economic activities | Borrowing money | 38.375 | 33.47 | 41.95 | 26.78 |
| | | Lending money | 62.5 | 37.5 | 62.5 | 37.5 |
| | | Livestock investment | 79.225 | 48.47 | 83.45 | 43.23 |
| 4 | Livestock business | | 72.2 | 43.97 | 75.15 | 42.5 |
| 5 | Spending of income | Household expenditure | 70.95 | 58.27 | 70.32 | 53.85 |
| | | Education/ Health | 73.3 | 53.4 | 70.3 | 49.3 |
| | | Livestock development | 83.45 | 58.1 | 78.8 | 53.33 |
| | | Starting new occupation | 75.4 | 45.85 | 75.4 | 45.85 |
| 6 | Use of agricultural product in livestock | | 45.95 | 79.82 | 45.6 | 75.33 |
| 7 | Sell/ Collateral for livestock | | 67.525 | 43.6 | 71.75 | 39.03 |

**Chitwan (Lowland)**

Table 12 presents respondents reporting more access to and control over resources for livestock management activities in Chitwan (Lowland). Higher percent of respondents reported that females' have more access to livestock consumption, selling and livestock as a main occupation as compared to their counterpart male members. They also have more access to and control over use of agricultural products in livestock. However, males have more control over resources in livestock consumption, selling and livestock as a main occupation. Similarly males have more access to and control over livestock business and other economic activities for livestock management (e.g. burrowing and lending money and investment) and spending of household income for various activities (household expenditure, education/health, livestock development, starting new occupation etc.) and sell/collateral for livestock are more of male jobs.

**Table 12: Gender differences in access to and control over the resources in Chitwan (Parashnagar, Baruwa, Fujingtar, Anandchowk), Nepal**

| | | | Access | | Control | |
|---|---|---|---|---|---|---|
| **SN** | **ACTIVITIES** | | **Male** | **Female** | **Male** | **Female** |
| 1 | Livestock consumption &Sale | Consumption | 43.5 | 74 | 75 | 36.8 |
| | | Selling | 53.7 | 61.5 | 80 | 29.9 |
| 2 | Livestock occupation | | 37.7 | 79.3 | 60 | 44 |
| 3 | Economic activities | Borrowing money | 60.1 | 49 | 76 | 26.8 |
| | | Lending money | 60.2 | 49.1 | 78 | 24.1 |
| | | Livestock investment | 60 | 50.6 | 76 | 25 |
| 4 | Livestock business | | 66.2 | 36.2 | 75 | 29.1 |
| 5 | Spending of income | Household expenditure | 47.4 | 69.7 | 65 | 44.6 |
| | | Education/ Health | 47.3 | 68.9 | 64 | 47.6 |
| | | Livestock development | 33.4 | 51.1 | 32 | 46.7 |
| | | Starting new occupation | 48.7 | 30 | 53 | 25.2 |
| 6 | Use of agricultural product in livestock | | 42.1 | 78.1 | 53 | 67.6 |
| 7 | Sell/ Collateral for livestock | | 61.2 | 47.4 | 81 | 22.5 |

**Mustang (High Mountain)**

Women in high mountain site in Mustang (Ghelling and Kagbeni) have access to household resources but they do not have actual control over the resources. Women have strong access to working in the farmland, managing livestock, and providing wage labor. But this access to property resources—farmland, houses, livestock and others is through men since there is no equal property right distribution in Nepal.Women also have strong control on utilizing agricultural grain within the household. However, women have limited access to investment, marketing of live animals and livestock products, which men exclusively have access and control over it. Women also do not have significant access to and control over the use of income from livestock and livestock products in both study sites. This situation underscores the dominant economic positions of men and how they retain them..

## Gender Differences in Decision Making by Socioeconomic Groups

Decision-making is a complex process, which is related to power to decide the use of resources. Decision making power in livestock management and livelihood of communities may rest with male, female separately or jointly. This decision making power may differ with socioeconomic status of the farmers and women depending on agroecology and local circumstances. The greater the expertise and control a man or

woman has over a resource or production process, the greater his or her comparative advantage to make decisions regarding the use of the resource of product (Fernandez, 1997). The findings of gender differences in decision making on various livestock management activities each for average of four locations of hills (Lalitpur) and four locations lowland (Chitwan) and two location of high hills (Mustang) respectively are outlined below.

**Lalitpur (Mid Hills)**

Percent of respondents reporting gender differences in decision making among different wealth category in various livestock production and marketing activities in Lalitpur is tabulated in Table 13. In poor households, higher percent of male and female jointly make decision for livestock keeping as an occupational activity; whilst in medium and rich households this decision is mainly made by males.

**Table 13 Gender differences in decision-making by socioeconomic groups, Lalitpur**

| | | | | POOR | | | MEDIUM | | | RICH | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.N** | **DECISION MAKING** | | | **M** | **F** | **J** | **M** | **F** | **J** | **M** | **F** | **J** |
| 1 | Objectives of keeping livestock | Occupational | | 20.2 | 28.8 | 50.9 | 47.5 | 9.2 | 43.2 | 54.1 | 26 | 20.2 |
| | | Home consumption | | 15.8 | 49.1 | 35 | 17.6 | 20.5 | 61.9 | 15 | 25 | 60.2 |
| 2 | Livestock selection | Species | | 45.2 | 28.8 | 25.9 | 51.1 | 12 | 36.9 | 74.7 | 14 | 11.5 |
| | | Quality | | 39.4 | 30.5 | 30 | 49.4 | 10.3 | 40.3 | 66.9 | 14 | 19.4 |
| 3 | Economic activities | Borrowing money | | 15 | 35 | 25 | 39.5 | 0 | 35.4 | 10 | 15 | 50 |
| | | Lending money | | 43.7 | 6.2 | 0 | 50 | 0 | 25 | 8.33 | 17 | 0 |
| | | Livestock investment | | 39.0 | 21.3 | 39.6 | 44.8 | 6.25 | 48.9 | 53.6 | 14 | 32.2 |
| | | Give and take | | 35.7 | 39.2 | 0 | 50 | 0 | 0 | 31.3 | 19 | 25 |
| 4 | Selling | Milk product | | 45 | 12.5 | 42.5 | 46.8 | 15.6 | 37.5 | 57.5 | 13 | 29.1 |
| | | Animal/ Meat | | 36.1 | 26.4 | 37.5 | 44.0 | 6.6 | 49.3 | 55 | 13 | 31.6 |
| | | Manure | | 6.2 | 37.5 | 31.3 | 10 | 5 | 35 | 8.3 | 38 | 4.1 |
| | | Chicken/eggs | | 16.7 | 27.0 | 31.3 | 33.3 | 0 | 41.7 | 50 | 0 | 25 |
| 5 | Spending income | Household expenditure | | 30.0 | 26.8 | 43.1 | 28.8 | 10.3 | 60.9 | 35 | 17 | 48.1 |
| | | Education/ Health | | 25.3 | 26.2 | 48.5 | 34.2 | 10.3 | 55.4 | 38.1 | 17 | 45 |
| | | Livestock development | | 20.82 | 25 | 29.2 | 30.6 | 0 | 69.3 | 48.8 | 15 | 35.7 |
| | | Starting new Occupation | | 41.6 | 25 | 33.3 | 0 | 0 | 25 | 51.7 | 13 | 10 |
| 6 | Livestock breeding | Natural service | Same species | 34.4 | 32.3 | 33.2 | 46.7 | 10.7 | 42.6 | 63.8 | 8.8 | 27.5 |
| | | | Cross breed | 47.8 | 28.0 | 24.1 | 49.2 | 11.5 | 39.3 | 52.4 | 25 | 22.6 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Artificial insemination | 25 | 0 | 0 | 25 | 0 | 0 | 25 | 25 | 0 |
| 7 | Developing knowledge & skills | Training | 0 | 25 | 0 | 0 | 50 | 0 | 25 | 25 | 0 |
| | | Tours | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Seminar/ Meeting | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 25 | 0 |
| | M = MALE | | | | F = FEMALE | | | | | J = JOINT | |

However, in home consumptions of livestock, women have major decision in poor households but this is jointly made in rich and medium households. In the selection of livestock species and quality, males play important roles in all types of wealth groups. This indicates that wealth has no effect on gendered selection of livestock species. In many economic activities such as borrowing and lending money, livestock investment and give and take, decisions are mainly made by males or jointly. Similarly for selling livestock products, the decisions are mainly made either male or jointly. Female roles are limited except in selling of manure products in all the wealth groups and selling chickens/eggs only in poorer group.

Both males and females play important role in decisions relating to spending income on education, health and livestock development. However, decision on spending income on starting new occupation is mainly made by the males. Similarly decision on livestock breeding particularly using natural services for local species and cross breeds including artificial insemination are mainly made by males. Livestock breeding through artificial insemination is only male activity. Reponses on gender differences in decision making in relation to knowledge, skills (training, tours, workshops) was not collected fully except in females where they have more decision making in trainings on livestock.

**Chitwan (Low land)**

Percent of respondents reporting gender differences in decision making among different wealth category in various livestock production and marketing activities in Chitwan is tabulated in Table 14. Higher percent of male and female jointly make decision for livestock keeping as an occupational activity in medium and rich households whilst this decision is not very distinct by gender among poor households. However, in home consumptions of livestock, there were not distinct gender differences in Chitwan unlike in Lalitpur. In the selection of livestock species and quality, males play relatively higher roles, though it is not distinct in medium wealth group of household. In many economic activities such as borrowing and lending money, livestock investment and give and take, decisions are mainly made by males. Similarly for selling livestock products, the decisions are mainly made by male except in selling of milk products in poorer group, where decisions are made by women. In selling of manure, higher percent of responded reported that females' have more role in decision making. Women predominantly make decisions in selling of chickens/ eggs in all socioeconomic groups.

There is some gender variations among wealth group in decision making related to spending household income is in Chitwan. In poorer households, women have major decision making role in household expenditure, education and health, livestock development and starting a new occupation. However, in resource rich and medium households, there are no clear differences between male and female in decision making on the household expenditure and education/ health activities. Only in livestock development and starting a new occupation, males have major decision making roles in rich and medium resource households. Decision on livestock breeding using natural services for local species and cross breeds including artificial insemination are mainly made by the females in resource poor households. However, in resource rich and medium households, decision on livestock breeding are mainly made by males. In poorer households, women are mainly participating in training, tours and seminar / meetings. Females of resource medium households also participate more in training. However, there were no differences between males and females in resource rich households. But participation in seminar/workshop was a male activity in rich households.

**Table 14: Gender differences in decision-making by socioeconomic groups, Chitwan**

| | | | | POOR | | | MEDIUM | | | RICH | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.N** | **DECISION MAKING** | | | **M** | **F** | **J** | **M** | **F** | **J** | **M** | **F** | **J** |
| 1 | Objectives of keeping livestock | Occupational | | 26.4 | 26.7 | 21.9 | 27.2 | 6.53 | 41.3 | 23.7 | 5.75 | 45.6 |
| | | Home consumption | | 34.5 | 45.5 | 20 | 34.5 | 29.6 | 35.9 | 34 | 36.8 | 29.1 |
| 2 | Livestock selection | Species | | 43.2 | 40.1 | 16.6 | 37.7 | 21.4 | 40.9 | 40.2 | 27.4 | 32.4 |
| | | Quality | | 43.2 | 40.1 | 16.6 | 37.7 | 22.4 | 40 | 40.2 | 27.4 | 32.4 |
| 3 | Economic activities | Borrowing money | | 49.8 | 29.6 | 20.6 | 52.3 | 21.5 | 26.2 | 56.3 | 19.2 | 24.5 |
| | | Lending money | | 45.5 | 30.9 | 23.6 | 46.9 | 21.2 | 31.9 | 65.9 | 8.7 | 25.4 |
| | | Livestock investment | | 43.3 | 33.1 | 23.6 | 45.5 | 21.2 | 33.3 | 64.8 | 7.6 | 27.6 |
| | | Give and take | | 47.2 | 33.3 | 19.4 | 48.5 | 24 | 27.5 | 57.5 | 20.3 | 22.2 |
| 4 | Selling | Milk product | | 40.5 | 31 | 3.6 | 32.7 | 50.7 | 16.7 | 44.1 | 36.9 | 19.1 |
| | | Animal/ Meat | | 47.6 | 40.5 | 11.9 | 42.7 | 28.8 | 28.6 | 56.9 | 16.3 | 26.9 |
| | | Manure | | 27.5 | 64.4 | 8.13 | 51.3 | 31.3 | 17.5 | 48.3 | 38.3 | 13.3 |
| | | Chicken/eggs | | 0 | 47.5 | 27.5 | 2.8 | 72.2 | 25 | 25 | 43.8 | 6.25 |
| 5 | Spending of income | Household expenditure | | 34.6 | 51.5 | 14 | 38.1 | 32.4 | 29.5 | 35.1 | 37.9 | 27.1 |
| | | Education/ Health | | 29.5 | 57.9 | 12.6 | 40.8 | 35.7 | 23.5 | 33 | 42 | 25 |
| | | Livestock development | | 27.9 | 63.6 | 8.6 | 61.7 | 30.6 | 7.78 | 56.3 | 25 | 18.8 |
| | | Starting new Occupation | | 28.2 | 43.2 | 3.5 | 71.4 | 0 | 3.58 | 70.8 | 16.7 | 12.5 |
| 6 | Livestock breeding | Natural service | Same species | 35.8 | 53.6 | 10.6 | 61.3 | 13.2 | 25.6 | 54.5 | 35.5 | 9.9 |
| | | | Cross breed | 17.6 | 49.7 | 7.7 | 54 | 16.1 | 29.9 | 48.1 | 43.8 | 8.1 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Artificial insemination | | 20 | 30 | 0 | 37.5 | 6.25 | 6.25 | 29.2 | 16.7 | 4.2 |
| 7 | Developing knowledge and skills | Training | | 0 | 75 | 0 | 28.6 | 46.4 | 0 | 37.5 | 37.5 | 0 |
| | | Tours | | 0 | 25 | 0 | 25 | 25 | 0 | 37.5 | 37.5 | 0 |
| | | Seminar Meeting | | 0 | 25 | 0 | 25 | 25 | 0 | 62.5 | 37.5 | 0 |
| | M= MALE | | F= FEMALE | | | | | | J= JOINT | | | |

**Mustang (High Mountain)**

Women in high mountain communities as in other parts of Nepal are strongly involved in livestock care, feeding and management. However, their decision making role is low in many of the economic activities such as livestock trade, investment including health care and vaccines (Table 15). Although husband and wife consult each other in making decisions regarding breed selections, health care and vaccines, credit and investment, purchasing of livestock or selling live animals and livestock products, men take the final decisions. The limited role of women in such economic activities is due the fact that women think men are more strong and confident to deal with these things.

**Tables 15: Gender Differences in Decision-Making (percent) in various Livestock Production and Marketing Activities in Mustang**

| **Livestock Production and Marketing Activities** | **Ghelling (%)** | | | **Kagbeni (%)** | | |
|---|---|---|---|---|---|---|
| | **Men** | **Women** | **Joint** | **Men** | **Women** | **Joint** |
| Breeding Selection | 71 | 11 | 18 | 61 | 6 | 33 |
| Vaccines & Healthcare | 82 | 10 | 8 | 69 | 5 | 26 |
| Sales of Live Animals | 74 | 9 | 17 | 81 | 4 | 15 |
| Credit & Investment | 68 | 14 | 18 | 59 | 13 | 28 |
| Marketing of livestock Products | 74 | 7 | 19 | 69 | 7 | 24 |
| Selection of Livestock Types | 63 | 14 | 23 | 63 | 11 | 26 |
| Use of Income from Livestock Products | 54 | 14 | 32 | 63 | 4 | 33 |
| **Average percentage** | **69** | **11** | **19** | **66** | **7** | **26** |

*Source: Gurung, 2005*

## Gender Differences in Technology Identification and Utilization

Technology is a powerful tool to empower the marginalized and disempowered women and men through a systematic transfer of knowledge and skill in their practical livelihood management issues. Most of the farmers in all the study sites still follow traditional methods of livestock keeping system. Only in market accessible mid hills and lowland areas where dairy market is well developed, few households from high social and economic status tend to keep improved cows and buffaloes. Those farmers have even

adopted improved methods of livestock management techniques particularly livestock care and feeding strategies. Since males and females have different roles, knowledge and skills in livestock management, gender roles and relations have important role in identification, accessing and utilization of livestock technologies. The findings of gender differences in technology identification and utilization on various livestock management activities each for average of four locations of hills (Lalitpur) and four locations lowland (Chitwan) including two locations of high mountain (Mustang) respectively are presented below.

**Lalitpur (Mid Hills)**

Gender differences in technology identification and utilizing households for Lalitpur (mid hills) are presented in Table 16. The data show that the range of improved technology adopting households is 48% for improved animals, 36% for introduced grasses and fodder, 75% for vet services and only 5% for artificial insemination. Among improved animal adopting households, males are main technology identifier whilst females are main utilizer. However, females are main identifier as well as utlizers of introduced grasses and fodders. In case of Vet services and Artificial insemination males are main identifier and utilizers. Females also are equal utilizer of artificial insemination.

**Table 16: Gender differences in technological identification and utilization, Lalitpur**

| S.N | TECHNOLOGY | TAH% | IDENTIFIER | | | UTILIZER | | |
|---|---|---|---|---|---|---|---|---|
| | | | M | F | B | M | F | B |
| 1 | Improved animals | 48.65 | 60.125 | 17 | 22.9 | 0 | 52.98 | 47.03 |
| 2 | Introduced grasses and fodders | 36.48 | 41.9 | 57.2 | 0.9 | 1.925 | 64.63 | 33.45 |
| 3 | Vet services | 75.48 | 67.625 | 25.8 | 6.55 | 53.28 | 26.78 | 19.95 |
| 4 | Artificial insemination | 5.675 | 54.175 | 20.8 | 0 | 37.5 | 37.5 | 0 |
| | AVERAGE % | 41.59 | 60.475 | 30.6 | 8.95 | 24.25 | 47 | 28.75 |
| | M = MALE F = FEMALE B = BOTH | | | | | | | |

Note: TAH %= Percent technology adopting households

**Chitwan (Low land)**

Gender differences in technology identification and utilizing households in Chitwan are presented in Table 17. The data show that the range of improved technology adopting households is 23% for improved animals, 71% for introduced grasses and fodder, 88% for vet services, 21% for artificial insemination and 91% for cereal grains cultivation. Among improved animal and introduced grass/fodder adopting households, females are both technology identifier and utilizers. However, males are both main identifier as well as utlizers of vet services and artificial insemination. In case of cereal grains, males are technology adopters but females are the main utilizers of these technologies.

**Table 17: Gender differences in Technological Identification and Utilization, Chitwan**

| S.N | TECHNOLOGY | TAH% | IDENTIFIER | | | UTILIZER | | |
|---|---|---|---|---|---|---|---|---|
| | | | M | F | B | M | F | B |
| 1 | Improved animals | 23 | 39 | 52 | 9.05 | 33 | 56 | 11.3 |
| 2 | Introduced grasses and fodders | 71 | 29 | 62 | 8.8 | 22 | 49 | 29.4 |
| 4 | Vet services | 88 | 50 | 38 | 12.5 | 50 | 13 | 37.5 |
| 5 | Artificial insemination | 21 | 31 | 15 | 4.63 | 31 | 15 | 4.63 |
| 3 | Cereal grains | 91 | 48 | 45 | 6.35 | 28 | 61 | 10.7 |
| | | 59 | 43 | 49 | 8.5 | 36 | 45 | 19.5 |
| | **M = MALE F = FEMALE B = BOTH** | | | | | | | |

Note: TAH %= Percent technology adopting households

**Mustang (High Mountain)**

Local technology is dominant for livestock management in high hills in Mustang. Livestock breeds were purely of local types. Over the last 10 to 15 years, there have been only a few livestock-related technologies introduced such as improved grass seed distribution, maize farming for feed resources, goat breeding system and animal diseases (Table 18). Although, women have been directly or indirectly involved and benefited from the existing livestock technology most of the new technologies were not adopted by the community households in both areas. However, among these technological innovations, women are directly involved in cultivating and harvesting maize from the field. This innovation has directly impacted women's lives diminishing the workload of collecting forage from the pastureland or forest in Kagbeni village. On the other hand, introduction of improved forage grass species (technological intervention) has failed because of the water scarcity in the region. Farmers continue to make hay from these grasses for the winter season. In terms of women's involvement in technology adoption, in the case study villages their role has been with implementation of activities.

**Table 18: Women's Involvement in Livestock technology use in Mustang (high hills)**

| Technology | Source | Women's Role | Benefit to Women | Outcome |
|---|---|---|---|---|
| Improved grass species seed distribution-Medicago falcate | Exogenous | Sowing in the field bunds | Direct | Failed |
| Maize farming for feed resources | Endogenous | Labor contribution for cultivation and harvesting | Direct | Adopted |
| Changed in goat breeding timing | Endogenous | No involvement because of the | Indirect | Adopted |

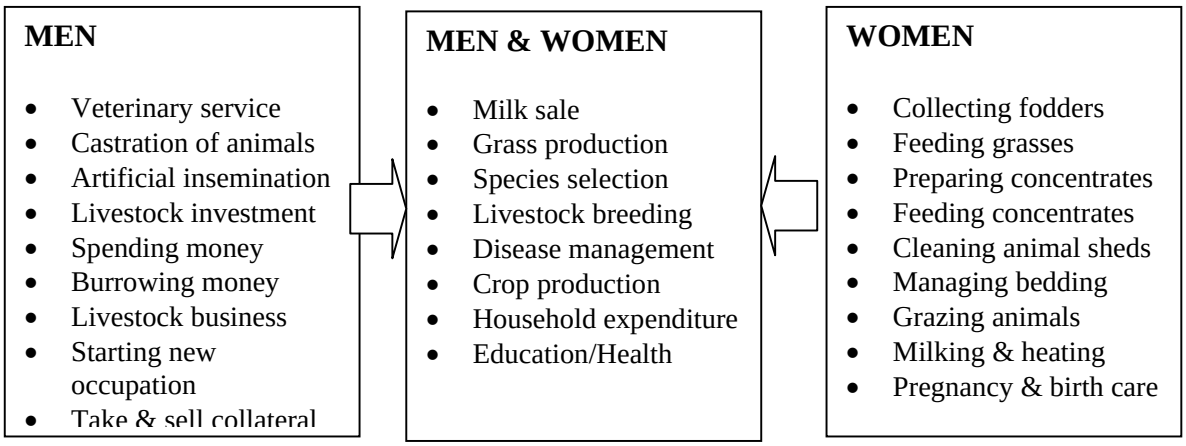
| | | | | |
|---|---|---|---|---|
| | | cultural or religious barriers | | |
| Introduced dipping tank to treat ecto-parasites for goat | Exogenous | Some women-headed household involved | Indirect | Adopted Kagbeni village & Failed Ghelling village |

Source: Gurung (2005)

## Summary of intra household Gender Roles, Relation and Decision Making

The roles, responsibilities, knowledge and decision making of men and women differ in livestock management as well as other intra and interhousehold activities (Fig 2). Men have specific roles of provision of veterinary services, castration and artificial insemination of animals, livestock investment and spending money in various household economic and community activities. Women's major responsibility lies in collecting grasses and fodders, feeding and cleaning animals, milking, heating and taking pregnancy and care.

**Figure 2.Gender division of labour and decision making in livestock Management**




However, crop, grass /fodder production, traditional livestock breeding, species selection, disease management including household expenditure on education and health are joint activities of both men and women. Despite differences in roles and responsibilities between men and women, the participation of women in many of the livestock management activities is predominant irrespective of economic status and agroecologies.

Women of all ethnic groups and economic status in all agroecological regions have more pressure of work in livestock keeping than in men because they have to be involved in both farm work and household chores (Box 6)**.** Women are involved from morning to evening day to day in every aspect of livestock caring and management. Women also work longer time with no leisure time as compared to their male counterparts (Annex 3)..

**Box 6. Pressure of work to women in study communities**

Women have more pressure of work in livestock keeping than in men because they have to be involved in both farm work and household chores. In many households, women are the ones who get up early in the morning and sleep later in the night. Mrs Jina Mahato from lowland Barowa, Chitwan, even gets up at 4 AM for her household chores and field work. Female works harder than the Male in all ten study communities of lowland, mid hills, and high mountain, because

- They look after livestock raising daily.
- They cut fodder and feed the animals.
- They cleanse animals' sheds.
- They prepare for the home made concentrate.
- They collect manure everyday
- They take animals for short grazing in communal grazing land
- As usual they prepare food for their family
- They take care of children and old family members

The evidence form lowland, mid hills and high mountain in all ethnic groups and economic status indicate that despite women's high participation in intra household economic activities including livestock management and their easy access to economic resources, they have limited control and decision making power in livestock trade, investment and use of livestock income at both intra and inter household levels. Their access to property resources—farmland, houses, livestock and others is through men since there is no equal property right distribution in Nepal. This situation underscores the dominant economic positions of men and how they retain them.

## Women's Role in the Community Activities at Inter Household Level

### Women's Participation in Community Decisions and Development

### Lalitpur (Mid hills)

Women in midhills in Lalitpur are tradionally not directly involved in community development activities and decision making. Women's participation in community and village councils is limited. However, recently their involvement in some of the groups and cooperatives sponsored by various development and government line agencies has enhanced their involvement in community development and management of natural resources such as forest and agricultural land. For example, a Women Community Forest User Group (Mahila Ghumti kosh Samudaya Ban Upovokta Samuha), Brunchuli, Devichowr V.D.C.in Lalitpur is involved in community forest management. About 80% of the members in this group are women mainly of Tamang ethnic group. Similarly farmers in Jhyalungtar, Lalitpur have formed "Women's Farmers Group" to have access of technologies and support services for agricultural production. By means of this association, the members of the group are participating in improved agricultural development activities as they are frequently distributed with the seeds of paddy, wheat, vegetables including the chemical fertilizers. The members of the group are also now participating in water collection, use and management in both at household and community level since they provided with goods such as pump set, water preserving tank, etc. in a subsidized price from district agricultural development office. This association in group has also helped women farmers' involvement in community management of fodder and pasturelands. Few women are also participating in enhancing their local skills and capacity in articulating their views and participatin in community development and political decision-making. Despites such recent improvement of women's roles and participation, their overall participation in community development and management is very much limited. Men from higher economic background are still main decision makers of the local village councils and community development activities. Women from poor economic background and disadvantaged communities (e.g. Dalit) have very limited participation and voice in community decisions.

### Chitwan (Lowland)

Women in lowland in Chitwan are also traditionally not directly involved in community decisions and local development activities. Men particularly from higher economic status and social groups are the main decision makers in village councils and community decision-makings. Recently with the involvement in groups and cooperatives, few women are also participating in some local development activities such as improvement of sanitation, drinking water facilities, school improvement and local agricultural and forest management activities. For example, Women's Area Improvement Committee' (Mahila Tol Sudhar Samiti), Janaki Tole, Prashannanagar is involved in local development activities. Similarly few women are also involved in management of

leasehold forestry by forming groups. For instance, Saajgairya Leashold forestry Group ("Saajgaira Kabuliyati Ban Samuha") in Chitwan has been managing 3 hectare of land by growing fodder and forest trees. Women are also participating in few of the women groups that are also involved in rural energy promotion, livestock (goat) raising programs and rural development activities. The example of such group is Mahila Samuha Samanwaya Samiti (Women's Group Cooperation Committee). Few women are also participating in developing their skills and capability to raise and strengthen their positing in community development and poltical decision-making. Creative women Group (*Janajagaran Mahila Samuha*') in Prashnanagar in Chitwan are one of them. Despites such recent improvement of women's roles and participation through the support of various development agencies and government line agencies, women's overall participation in community decisions and local development is very much limited. Men from higher economic background are still main decision makers of the local village councils and community development activities. Women from poor economic background and disadvantaged communities (e.g. Chepang, Tharu, Dalit) have very limited participation and voice in community decisions and development activities.

The more powerful and wealthy elites tend to dominate the group activities. Furthermore, many of these poor peoples find attending group meetings and working on group activities difficult due to the opportunity cost involved.

**Mustang (High Mountain)**

In high mountain site of upper Mustang, the Mukhiya (Village Chief) system existed from generation to generation to rule the local communities and undertake various community development activities. Mukhiya make decisions regarding local people participation in community activities. Such activities include agriculture planting schedules, irrigation in the field, livestock grazing area, and conflict resolution within the community or household level.Since upper Mustang is located in a remote area, with little political influence from central government in Nepal, this customery practices evolved over the years. However, this system is male dominated; women are not represented in any position of the Mukhiya system. In Kagbeni, (good economy accessible site of Mustang), women also can attend meetings by representing "Women Development Group". However, mostly women from rich and medium socioeconomic groups are participating in this group. This women group allows women to raise their voices during the community meetings although they do not have a representative in the village council position. Therefore, they may have informal influence in community decisions. In deed, they do not have much direct role in community management of resources suh as management of livestock grazing area or building community bridges, schools and irrigation canals etc.

In the case of the Ghelling (poor economy inaccessible) site, traditional mother groups existed but were unable to continue due to social factors such as domestic responsibilities and poverty. There are no women representatives to participate in community meetings

of the local village councils. Therefore, the system only allows men-headed households to participate in the community meetings. Recently “Udaya Shree Yuba Club” has been established in Ghelling village by a younger generation of men. There are women representatives, but they are mostly from rich households. However, these women are rarely involved in community development and decision-making.

Women have more or less equal roles in various religious ceremonies and festivals. Women from all socio-economic groups are active in helping to prepare meals during the occasions and treat each other equally, including the Dalit women. Therefore, women have stronger participation in religious and other festival ceremonies in the community, though their decision making power is restricted in such activities.

## Women's Involvement in Formal and Informal Instituion

Women's are involved in different community groups such as saving and credit, agriculture and livestock group, mothers group, youth groups and those groups with special women and ethnic issues. Such groups are more prevalent in lowland and midhills as compared to high hills in Mustang. There was only one functional women group in high mountain site- that too mainly in more accessible good economy site (Kagbeni village). The list of various groups, their focus and specific nature is listed in Table 19. Some of these groups specifically focused on livestock keeping such as "Creative Goat Raising Group" in Prashanagar (Chitwan) and "Goat Project" in Baruwa (Chitwan). Many women groups were formed for making them self-reliance and raising their economic conditions and living standards through saving and credit systems. In addition, these groups were also formed to create awareness among women and socially excluded communities about their rights and responsibilities in the society. One of the important objectives of these groups were also to make them organized into groups to have easy access of credits from formal lending sources (e.g. Banks and financial institutions) including accessing technical services from government extension and developmental programs and projects.

Active participation and roles of women were observed in many of the groups, which are either mixed or handled by higher social, economic and caste groups. Women are more enthusiastic and active in group formation in various livestock and livelihood activities. Organization of women into various groups and cooperatives have increasingly helped their knowledge, skills, capacity as well as access to interhousehold resources such as accessing credit, technology and support services. For example, women's involvement in "Women's Area Improvement Committee"in Prashantanagar, Bharatpur Municipality has helped their access to formal credits from financial institutions. This group was also active in implementation of goat and other projects, which have enhanced women's economic conditions and livelihood opportunities. The women's development group in Kagbeni mountain site in Mustang has also attended various training programs that are being organized by the various organizations especially from ACAP (Anapurna Conservation Area Project).

**Table: 19 Women involvement in local community groups in livestock management**

| SN | Study sites | Groups/Cooperatives | Focus | Specific nature |
|---|---|---|---|---|
| **A.** | **Lalitpur** | | | |
| 1 | Jyalungtar (Chapagaon) | "Jhyalungtar Mahila Krisak Samuha "Jhyalungtar Women Farmer Group" was established 4, 2060 B.S | Focus on agriculture and raise the status of Dalit by raising group funds and mobilizing skills | All ethnic groups including Dalit. Equal involvement of Tamang and Brahmin in group |
| 2 | Seraphat (Chapagaon) | Chapagaun "*Chyau Utpadan Shewa Sahakari Sanstha* Limited" was | Focus on mushroom but members also have agriculture and | Two-third are women and women pay less to be a |

| | | | | |
|---|---|---|---|---|
| | | established in 2043. | livestock | member. |
| 3 | Burunchuli (Devichaur) | *Mahila Ghumti kosh Samudaya Ban Upovokta Samuha,* Est.: 2053, Devichowr, Brunchuli | Women managed group saving & credit. The loan burrowed for goat | 80% of the members are women and 99% Tamang ethnicity |
| **B.** | **Chitwan** | | | |
| 4 | Prashantnagar (Bharatpur) | *Srijana Bakhra Paalan Samuha* - 2 no."Creative Goat Raising Group" Parashnagar – 8 | Saving for the purpose of goat raising | Only Brahmins are involved as they are only the caste group |
| 5 | Baruwa (Bharatpur) | Women's Group Coordinatin Committee, registered in Chitwan District in 2048 BS. | The purpose was to enhance social & economic conditions of women | Goat project & social, educational & environmental activities initiated |
| **C.** | **Mustang** | | | |
| 6 | Kagbeni | The women's development group, Kagbeni established in 1994 with the initiation of Care-Nepal (Denmark). | The focus was on community development activities including adult education | Restricted male gambling, constructed bridge & community building |

Some group-based organizations are sectoral, and some are multisectoral. Some are indigenous, some traditional and others are sponsored by donor projects or by NGOs, or direct by government line agencies. Most of these groups were mixed types which have representation of all ethnic types but mostly attended by the women from the rich and middle socio-economic groups. Traditionally though more privileged, elite male and higher social groups dominate group-based organizations, however, the situation is changing in some cases. There are few groups in the study areas, which are specifically established to raise the social and economic status of disadvantaged (e.g. Dalit) women groups. For example focus on empowerment of Dalit women group was found in mid hills Chapagaon, Lalitpur (Box 6).

With the membership of women and landless in credit and saving groups and other development groups, their access to formal credit has enhanced though the access is more of indirect type through groups rather than individual access. Groups have now been recognized as the basis for service delivery, empowerment and local decision-making (Biggs etal, 2004). With the establishment of these groups gender roles are also changing in the management of the type of livestock. However, many of these poor peoples find attending group meetings and working on group activities difficult due to the opportunity cost involved. The community groups and institutions and federation from Ghusel, Lalitpur and Fuzingtar, Chitwan and Anandachowk, Chitwan and Ghilling, Mustang were however not studied here due to non-existence of functional women groups.

**Box: 7 Empowerment of Dalit Women with Micro-livestock Jhyalungtar, Lalitpur**

***"Sungava* Women Finance Group**" in Jhyalungtar is a Dalit Women's Group which was formed with the technical support of *Dalit Mahila Sangha (*Dalit Women Union) of Kathmandu. This union provided different training in livestock management, particularly on poultry farming. The reason of forming this group was to create awareness of Dalit women for their rights' and improve their livelihood through various means including livestock keeping. The focus of livestock was specifically on poultry and pig. The group had specific training on awareness rights of Dalit, group mobilization, gender issues and pig, poultry and cattle keeping. They raised the group fund with poultry with twenty five percent investments and deposited same money for the group in the local bank account. Members are required to pay for only medicine in treatment of the sick animals. With such training and support in group mobilization, their capacity and confidence in conversation and articulation of their views with men members and higher caste people have increased. In addition, women's cash income and livelihood has improved with adoption and better management of micro-livestock (pigs, and poultry). Distinct gender differences are also observed between men and women. Among Dalit, males are more informed with the improved management, identification and selection of cows and buffalo. Females are seen in the care of the pregnant goats where as males are seen in the care of cows and buffaloes.

There were very few groups found in Dalit, Tharu, Chepang, Tamang and Bhotiya (Gurung) ethnic groups in study sites, who are actively involved in community activities. Dalit and other disadvantaged communities are poorest of the poor and powerless as they are grossly underrepresented in development group activities in Nepal (Biggs etal, 2004). In addition, as compared to resource rich groups, women of poorer economic conditions from different caste and ethnic groups are also rarely involved in community development and natural resource management activities. These limited numbers of groups in these communities also were mostly non-functioning due to illiteracy, poor economical background and lack of time as they have to be involved in various household chores and field-work. Therefore, women from these socially and economically disadvantaged groups have no time to be active in women's groups unlike women from higher caste groups. Similarly, women from Tamang group in Lalitpur were also not functioning very well due to ignorance, lack of time as a result of hard household chores, poor social mobilization and poverty. The difficulty of adhering disadvantaged communities in local community groups are highlighted in Box 7.

**Box 8. Difficulty of adhering disadvantaged women in local community groups**

Illiteracy, ignorance, poverty and social exclusion have directly influenced formation and functioning of local community groups. The field study revealed that separate local community group of disadvantaged women from Chepang, Tharu and Tamang have not been either formed or if formed are not actively functioning well because of their poverty, illiteracy and availability of time to work in the groups unlike women from higher caste/ethnic groups. Although there is an active women's savings and credit group in the Chapagaun VDC working for their common benefit over the past ten years, the disadvantaged groups –the Tamangs and the Dalits have not been able to take benefits of cooperatives. In the case of Tamang women, they formed a group on their own about six months ago but the group has been inactive so far. In addition many members do not seem to understand the purpose of the group. Similarly in lowland Chitwan, women from Chepang and Tharu have no time to be active in women's groups unlike women from other caste/ethnic groups as they have to work harder from morning to evening in their farm. Inadequate concerns from government and other development agencies in understanding constraints and concerns of women groups have hindered social and economic upliftment of rural disadvantaged women.

**Role of Institutions in Livestock Choices and Social Inclusion**

Formal institutions (policies/laws and market) and informal institutions (culture and kinship) have played important role in livestock choices. Presently government has a policy of forming groups for both community development and natural resource management activities (e.g. forests, water, land). There are also instances of formation of separate gender based groups e.g. women groups (e.g. mothers' group) and to that of disadvantaged group (e.g. Dalit Group) by the development agencies. Some of the groups are customery (traditional and indigenous), which are functional and found effective in some study sites. For landless people and women who do not own or have natural capital (e.g. lands) and financial capital (e.g. gold) or collaterals for banks, involvement in groups is only an option to access formal credits. In addition, involvement in formal sponsored groups (e.g.Cummunity Forest User or Livestock Group) also provide an option to have access of natural resources (e.g. fodder, firewood, grazing land) and other rural support services such as agricultural and veterinary extension and subsidies in agriculture, irrigation, livestock and community development activities. For poor women farmers and disadvantaged communities, involvement in groups also has made easy acces of livestock technologies and support services (e.g. goat through goat exchange programs) from the government line agencies and development organizations. Therefore, government policy of forming groups have played critical role in farmers' access and choices of livestock species and technologies.

In many cases choices of livestock types, specieis and management practices is also determined by informal institutions such as indigenous rules of access to community grazing and forestland. In high mountain areas in Mustang informal rules and regulations

provide local farmers to have access of large tract of grazing land. Thus farmers go for raising large flocks of mountain goats in free grazing system. In mid hills of Lalitpur and lowland in Chitwan where community forest management is prevalent, farmers tend to go for stall feeding as free grazing is restricted. Richer resource ful farmers and men from higher social hierarchy tend to grow large ruminants such as Buffalo in stall feeding sytems since they have easy access to formal credits and milk market and they can afford to buy external feed resources for managing dairy animals. Establishment of market for milk (Dairy Collection Center) and Government's policy (e.g. Agricultural Perspective Plan) of supporting dairy milk production in commercial accessible pockets have also facilities farmers' choices of large dairy animals and their improved management practices in market accessible pockets of Lalitpur and Chitwan.

There are some recent policies / laws that may have positive impact on gender inclusion and better choice of livestock technology and management for improving the livelihood of women and the poor. The decentralization policy of government such as local self-governance Act 9 (1999) has devolved authority over natural resources management and control to the local authorities (DDC and VDC). This policy though yet to be implemented fully will have positive impact on local people including women and disadvantaged communities. The recent policy of government to include atleast 33% female members in agriculture, livestock development and community forestry user groups (CFUGs) is a good indication of inclusion of women in community development and decision-makings. However, there are no comparable stipulations and policies regarding membership quotas for Dalits and disadvantaged ethnic groups (Biggs etal, 2004).

## Discussion on Overall Gender Issues in Livestock Management

Livestock are part and parcel of the rural farm household, contributing both to household consumption and the market sale. Contribution of livestock is important to sustain the daily livelihoods of local people in ten communities of lowland, mid hills and high hills... Livestock contributes the agriculture crop production, but it is also equally valued for the social prestige and family nutrition. Livestock raising is fully dependent on the family members; however, among them women have strong roles and responsibilities. Livestock choices and access to intra and intrahousehold resources are determined by gender, ethnicity and local institutions. The gender disparity exists in relation to division of labor, decision making, access to and control over resources, agriculture related knowledge and skill, and introduction of technology and its utilization. Some of recent major issues on gender dynamics, roles, relation and their interaction with various factors such as wealth, agroecology, ethnicity etc. in relation to livestock management and livelihood enhancement of women and rural poor are briefly discussed below.

**Wealth and Gender**

Wealth has some effect on gender roles and relations in some livestock production, management, marketing and community activities. The role and participation of women from poorer economic and social background is very much limited in community decisions and development activities in all the study sites (high hills, mid hills and lowland). In mid hills and lowland, the participation of women in selling milk is higher in poorer groups; whilst men's involvement in selling milk is higher in resource rich households. Though higher percent of women from resource poor groups are involved in various livestock activities in study sites, in lowland (Chitwan) milking and heating are only activities, where higher percent of women from resource rich groups are involved as compared to poor women. In Chitwan decision on livestock breeding using natural services for local species and cross breeds including artificial insemination are mainly made by the females in resource poor households. In resource rich and medium households, decision on livestock breeding are mainly made by males. In Lalitpur however, there was no wealth effect on gender that is decision on livestock breeding particularly artificial insemination is purely male activity in all types of socioeconomic groups of women. In lowland Chitwan, women from resource poor groups also have higher decision making power in household expenditure, education and health.

**Agro-ecological zones and Gender**

Environmental /ecological factors such as altitude, topography, climate, rainfall and location may affect gender roles and relations. Women in lowland plains (Chitwan) hold more knowledge, skills and capabilities in the management of local animals introduced grasses and fodder production, cereal grains production, livestock disease management and local treatment methods for livestock diseases. However, in mid hills (Lalitpur), both males and females jointly hold (as against individual male or female) in these above livestock management activities. In high mountain (Mustang) women roles, participation and knowledge is higher in off-farm migration and local management of tourist inns Similarly, the control over consumption of livestock products differs by agroecology. Women have more control over consumption of livestock in hills whilst in lowlands male have more control over consumption of livestock products.. Gender differences were also found in in livestock technology adoption and utilization in mid hills and lowland plains. In mid hills (Lalitpur) males are main technology identifier whilst females are main utilizer. However in lowland plains women are both technology identifier and utilizers.This indicates that the roles, participation, technology use and control of resources varies across agroecologies. Various factors might have contributed in variation of gender roles in different agroecology. Some of these effects may be of literacy, higher social awareness, ethnicity or market effects which need further investigation.

**Ethnicity and Gender**

Gender roles and relations differ among ethnic communities and culture. Previous evidence indicates that the contribution and roles of Brahmin and Chhetri women in agriculture and livestock management is lower as compared to women from ethnic hill Matwali communities such as Tamang, Gurung and Magar (Acharya and Bennet, 1981; Bajracharya, 1993).In these Matwali communities, women are accorded more decision-making powers, have more access to resources, property and are more likely to be a part of the business of their families. However, the available qualititative information and field observation indicates that there are no such explicit gender differences found in this study in livestock management among ethnic communities.

**Market Development and Gender Relations**

The participation of women in selling milk is higher in poorer groups, whilst men's involvement in selling milk is higher in resource rich households in mid hills and lowland. In high mountain, however, this analysis could not be made since market development of milk and other livestock product was not apparent. As more market production of livestock products (e.g. milk sale) occurs in mid hills and lowland, men's role becomes significant in resource rich households. However, women's role remains important in resource poor households even with market production of milk products. This finding indicates that market development may not have significant negative impact on gender relations if properly targeted for women. However, further investigation need to be carried to understand better the role of market on gender roles and relation in livestock marketing

.

**Pro-Poor/ Women Priorities and Policy Sensitivity**

The poor farmers particularly women from disadvantaged ethnic groups such as Dalit, Chepang, Tamang and Tharu are mainly involved in subsistence micro-livestock production such as pigs, poultry and goats in mid hills and lowland. In addition, the study revealed that women from this poor group of households also have higher access and control over sales of micro livestock such as poultry products. These micro livestock however are not major policy priorities of Agricultural Perspective Plan (APP) and other development policies in Nepal. In lowland Chitwan, poor groups and women also have higher decision making power in household expenditure, education and health. Present policy insensitivities according to priorities of women and poorer groups are a major hindrance to reduce poverty and improve social inclusion of women and disadvantaged groups.

**Changing Gender Roles and Relations**

Gender roles and relations are not fixed. They are dynamic. Traditionally women have major roles and responsibility in livestock and related natural resource management. Though they have access to household and community resources but mainly the males have major decision making power and control over these resources. However, with increased formation of women groups and social mobilization efforts, women's role is increasing in household and community decision activities. The recent example is a case of Dalit community in Chapagaon (Jhyalungar) in the mid-hills. Traditionally Dalits were not raising cow and buffalo because of the poverty and social barriers to sale milk and milk products in the past. Recently with social awareness of their rights and development of milk market (establishment of Dairy Collection Center) in the community, Dalit groups have also started raising buffalo and cows for milk production and marketing. With this Dalit women's roles are also changing towards milk production and sales in local cooperatives.

# V. CONCLUSIONS

Livestock play important roles in household income and the livelihood of the study communities of mid hills and lowland plains. They are important not only for household economic activities, but also their role in gender mainstreaming and addressing the concerns of disadvantaged groups. Women from different agroecologies and socioeconomic groups have higher participation in livestock management, higher decision making in the sale of micro livestock (e.g. poultry products), more knowledge, skills and capabilities for managing livestock production. They are also main identifier, adopter and utilizers of livestock feeds (grasses and fodders). However women's decision making power in major livestock product sale, spending income, investment and veterinary services are limited. Women have access to home consumption and many activities related to management of livestock but they have less control over major livestock business, trade activities and resources. Women lack adequate capital assets and information to use their decision making power in their livelihood improvement through adequate livestock technologies and management techniques. In addition, they have a very limited role in community based decisions and development activities.

Higher percent of women from poorer groups are involved in various livestock management activities. Women are overburdened and time-restrained with agricultural works and household chores and hence they need ways and technologies to relieve part of this burden in order to free them to participate in community decisions and management activities. Women are not homogenous groups as assumed by the current government policies and programs. Specific targeted women groups in disadvantaged communities have not been yet formed or if formed remain non-functional due to lack of awareness, poverty, and inadequate technical and managerial support in addressing specific priorities of these groups. Women from disadvantaged groups are still marginalized and vulnerable in playing their active roles in making decisions at both intra and inter household levels.

Finally, the study findings conclude that livestock choices and access to intra and intrahousehold resources are determined by gender, ethnicity and institutions. Despite the fact that over a decade of focus on pro-poor and pro-women issues in national and international arenas, not much progress has been achieved so far. Women's decision-making power in intra and inter household level regarding livestock trade, investment and spending of household income obtained from livestock marketing are limited. Women have access but they have limited control over these resources. The poor particularly women from low caste and disadvantaged groups remain poor and highly vulnerable in terms of improving their livelihoods. The study has given insight that when the different roles and needs of women and men from different socioeconomic strata are not taken into account in project design and implementation, development interventions are less effective. But above all, the study has increasingly come to recognize that social inclusion and economic advancement of rural women from disadvantaged group is critical to achieve social equity, reduction of poverty and food security. Therefore, gender equality and women's empowerment will need increasing emphasize in government

policies, plans and programmes both as objectives and as instruments for poverty reduction.

# VI. CONTRIBUTION OF OUTPUTS: PRO-POOR GENDER SENSITIVE POLICY

Given the high role of livestock sector (30 % of AGDP) and higher participation of women in livestock management, efforts are needed to improve economic conditions and empower rural women in livestock management and livelihood improvement. However, the past and present blanket approach of policy prescriptions and development approaches have widened not only gap between rich and poor but also between men and women. The long-term Agricultural Perspective Plan (APP)-a key agricultural development policy of Nepal, presently focuses on commercial dairy milk production focusing on large ruminant animals (e.g. buffalo and cows), which in fact is benefiting mainly richer economic class and higher caste groups including men who are mainly involved in raising buffalo and cattle. However, the poor women and disadvantaged communities mainly raise micro-livestock such as goats, pigs and poultry which are not the policy priorities of national policy. Hence there is a need of pro-poor and pro-women policies, programs and support services that address adequate gender considerations and differences in the needs and priorities of different socioeconomic group of farmers. Development programmes should be targeted to the women of most economically vulnerable and socially marginalized communities. Dalit (low caste people) and ethnic communities such as Chepang, Tharu, and Tamang are the most disadvantaged groups in the study sites and most of them are marginal farmers and landless peasants who are directly dependent on livestock for their livelihood. In these communities, there is a need to expand women's access to and control over fundamental assets – capital, land, knowledge and technologies.

The present study findings evidently imply that there is a need to develop and implement pro-poor and pro-women policies to promote the pathways towards equity and justice. Participatory and inclusive gender sensitive pro-poor policies and programs are essential to promote the societal benefits as a whole leading to a "win-win" situation. The following implications and recommendations are drawn in relation to this study for pro-poor gender sensitive policy and programs.

1. Societal gender differences relating to production, labour, daily responsibilities, technology use, decision making and access to and control over resources mean that women and men have different needs and criteria which must be used to evaluate the efficiency, effectiveness, equity and quality of livestock development interventions. Therefore, there is a need of targeted policy prescriptions for women. This will require policy on empowering women farmers in planning, management and decision making of livestock and other intra and inter household resources.

2. Women are not homogenous groups. Inadequate concerns from government and other development agencies in understanding constraints of disadvantaged women groups have hindered their social and economic upliftment. One size fits well policy is not suitable for gender mainstreaming. Despite women being closer with livestock and

active in community groups and cooperatives, women from disadvantaged groups are not taking advantages and opportunities of community groups due to poverty, illiteracy, social barriers (untouchability), and lack of free time to participate in community group activities. Therefore separate targeting of disadvantaged and poor women groups is necessarily to empower them and enhance their social and economic upliftment. This may require separate social mobilization and addressing the specific concerns of disadvantaged women groups (such as illiteracy, social awareness, and drudgery reducing technology etc.).

3. Socio-cultural norms, values and local institutions also influence choices of livestock species, types and management practices. Poorer and disadvantaged ethnic groups tend to raise more of micro-livestock such as goats, pigs and poultry. Women from disadvantages groups also have more access to, control over and decision making in the management of these micro livestock. Hence pro-poor and pro-women policy will include promotion of these micro livestock in rural areas through inclusion in government policies, research and development strategies.

4. Presently women are deprived from access to the institutional sources of credit and agricultural (and veterinary) extension services as women do not have control over land or any property due to socio cultural patterns of property inheritance rights to the men only. Provision of accessible and affordable micro-credit and information support services accessible to poorer group of women and disadvantaged groups is essential in livestock production and marketing.

5. Since women particularly of the disadvantaged groups are overburdened and time-restrained with agricultural works and household chores, there is a need of research to understand women's time allocations and input of labor saving devices for household and livestock activities. Appropriate gender friendly technology need to be designed and improved to relieve women farmers from their time burden in order to free them to participate in community decisions and management activities.

6. Since women were more involved and knowledgeable in local technologies and techniques of forage, fodder production and local treatments of animal diseases and species selection, it is essential to make women central to those efforts in exploration, revival, and improvements on indigenous techniques that have been locally adapted.

7. Presently women have limited participation and role in community decisions and development activities. This requires programs and activities for social, economic and political empowerment of rural women.

8. Develop programs and projects to train women particularly from poorer disadvantaged groups in livestock entrepreneurial activities and operational skills, and identify the specific training needs of different categories of women (depending on ecological region, ethnic community and economic status). Training in animal

breeding, livestock selection, processing and marketing including birth care, pregnancy and veterinary services are essential.

9. There is a need to develop a sound bottom-up planning system to enable women farmers to participate in all stages of the planning cycle for livestock production, processing and marketing and extension education activities. This will be essential for empowering women from disadvantaged groups in planning, management and decision making of livestock and other intra and inter household resources.

10. Many farmers in remote inaccessible area have no access to livestock technologies and veterinary services. In many cases these technologies are not suitable, affordable and sustainable to rural poor, disadvantaged and women farmers. The poor groups and women need locally proven packages of low cost technologies that can enhance the productivity and production of livestock whereby they can earn more cash income from livestock farming. This will require decentralization and improve local service delivery of local technologies and veterinary services by empowering local communities in local service delivery mechanisms.

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# ANNEXURES

## ANNEX 1

## SEMI-STRUCTURED INTERVIEW

Date:
Place:
Ward no.:
Name of interviewer:

(a) Details of family members

Name of the respondent:
Caste/Ethnicity:
Sex: Number of family members: Male: Female:
Major occupation: Family Structure: Nuclear/Joint/Extended

(b) Is your family originally from here or migrated from other place?

(c) Is any member of your family staying outside the village?

Number: Place name:
Migrated temporarily: Migrated permanently:
Purpose:

(d) What type and what number of livestock is your family raising?

| Type of Species | Number of Species | | Remarks |
|---|---|---|---|
| | Local | Improved | |
| (1) Cows | | | |
| (2) Buffaloes | | | |
| (3) Bullocks | | | |
| (4) Goats | | | |

| | | | |
|---|---|---|---|
| (5) Chickens | | | |
| (6) Ducks | | | |
| (7) Pigs | | | |
| (8) Others | | | |

**A. Workloads**

(Q) Who among your family members spend how much time in the following livestock related activities?
(Note: Workloads: - fill up on time basis/ Male: M, Female: F, Children: C)

| Activities | Buffaloes | | | Cow/Bullocks | | | Goats | | | Pigs | | | Chickens | | | Others | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | C | M | F | C | M | F | C | M | F | C | M | F | C | M | F | C | |
| 1) Cutting & collecting fodder/forage | | | | | | | | | | | | | | | | | | | |
| 2) Feeding fodder/forage | | | | | | | | | | | | | | | | | | | |
| 3) Making concentrate | | | | | | | | | | | | | | | | | | | |
| 4) Feeding concentrate | | | | | | | | | | | | | | | | | | | |
| 5) Cleaning animal's sheds, Bedding management | | | | | | | | | | | | | | | | | | | |
| 6) Milking | | | | | | | | | | | | | | | | | | | |
| 7) Heating milk | | | | | | | | | | | | | | | | | | | |
| 8) Selling milk | | | | | | | | | | | | | | | | | | | |
| 9) Bathing animals | | | | | | | | | | | | | | | | | | | |
| 10) Grazing | | | | | | | | | | | | | | | | | | | |

**B. Working skills, knowledge and capabilities**

(a) Who among your family have more knowledge on the following livestock related matters?

(Note: More = ++, Less = +, None = -/ Male: M, Female: F, Both: B)

| Skills, knowledge and capabilities | Buffaloes | | | Cow/Bullocks | | | Goats | | | Pigs | | | Chickens | | | Others | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | B | M | F | B | M | F | B | M | F | B | M | F | B | M | F | B | |
| 1) Local animals | | | | | | | | | | | | | | | | | | | |
| 2) Improved animals | | | | | | | | | | | | | | | | | | | |
| 3) Local fodder/forage | | | | | | | | | | | | | | | | | | | |
| 4) Introduced fodder/forage | | | | | | | | | | | | | | | | | | | |
| 5) Grains | | | | | | | | | | | | | | | | | | | |
| 6) Sanitation | | | | | | | | | | | | | | | | | | | |
| 7) Diseases | | | | | | | | | | | | | | | | | | | |
| 8) Local treatment methods | | | | | | | | | | | | | | | | | | | |
| 9) Veterinary services | | | | | | | | | | | | | | | | | | | |
| 10) Pregnancy and birth care | | | | | | | | | | | | | | | | | | | |
| 11) Castration | | | | | | | | | | | | | | | | | | | |
| 12) Livestock breeding | | | | | | | | | | | | | | | | | | | |

(b) What type of forages have you been feeding to your livestock and what are your purposes for feeding those forages?

| | Forage species | Type of forage | | Purpose | | | Who have more knowledge? | |
|---|---|---|---|---|---|---|---|---|
| | | Local | Introduced | Milk | Meat | Manure | Male | Female |
| 1) | | | | | | | | |
| 2) | | | | | | | | |
| 3) | | | | | | | | |
| 4) | | | | | | | | |
| 5) | | | | | | | | |
| 6) | | | | | | | | |
| 7) | | | | | | | | |
| 8) | | | | | | | | |
| 9) | | | | | | | | |
| 10) | | | | | | | | |

(c) What type of tree fodders have you been feeding to your livestock and what are your purposes for feeding those fodders?

(d) Who have more knowledge about the local treatment methods in regarding the livestock diseases in your family?

| Diseases | Symptoms | Identifier | | Local treatment methods | Who does the treatment? | |
|---|---|---|---|---|---|---|
| | | Male | Female | | Male | Female |
| 1) | | | | | | |
| 2) | | | | | | |
| 3) | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4) | | | | | | |
| 5) | | | | | | |

(e) Who is involved in getting the medicines or calling veterinary doctors if the local treatment methods do not work?
(f) Did anyone from your family receive any livestock related training?

| | Type of training | Who received (Male/Female) | When received | Purpose | Has the training been utilized now? |
|---|---|---|---|---|---|
| 1) | | | | | |
| 2) | | | | | |
| 3) | | | | | |
| 4) | | | | | |
| 5) | | | | | |

**C. Technological identification and utilization**
(Q) Have you adopted any new technology related to livestock?

| Type of technology | Started period | Who introduced? (Male/Female | Who is utilizing now? (Male/Female) | Purpose |
|---|---|---|---|---|
| 1) | | | | |
| 2) | | | | |
| 3) | | | | |
| 4) | | | | |

D. **Decision making**

(Q) Who makes decisions in the following livestock related matters?

(Note: Male/Female/Joint)

| | Activities | | | Buffalo | Cows | Chickens | Goats | Chickens | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1) | Livestock purposes | Occupational purposes | | | | | | | |
| | | Home consumption | | | | | | | |
| 2) | Livestock selection | Types | | | | | | | |
| | | Quality | | | | | | | |
| 3) | Economic activities | Borrowing money | | | | | | | |
| | | Lending money | | | | | | | |
| | | Livestock Investment | | | | | | | |
| | | Give and take | | | | | | | |
| 4) | Marketing | Milk products | | | | | | | |
| | | Animals/Meat | | | | | | | |
| | | Manure | | | | | | | |
| | | Chickens/Eggs | | | | | | | |
| 5) | Use of profit | Household expenditure | | | | | | | |
| | | Education/Health | | | | | | | |
| | | Livestock development | | | | | | | |
| | | For starting new occupation | | | | | | | |
| 6) | Livestock breeding | Natural service | Same species | | | | | | |
| | | | Cross breed | | | | | | |
| | | Artificial insemination | | | | | | | |
| 7) | Development of knowledge and skills | Training | | | | | | | |
| | | Tours | | | | | | | |
| | | Seminars/meeting | | | | | | | |

E. Access and control over the resources

(Q) Who has more access to and control over the following livestock related matters in your family?

(Note: More=++, Less=+, None=-/ Male: M, Female: F)

| | Activities | Access | | Control | | Remarks |
|---|---|---|---|---|---|---|
| | | M | F | M | F | |
| 1) | Livestock production<br><br>Consumption | | | | | |
| | Selling | | | | | |
| 2) | Economic activities<br><br>Borrowing money | | | | | |
| | Lending money | | | | | |
| | Investment | | | | | |
| 3) | Livestock related business | | | | | |
| 4) | Livestock related occupation | | | | | |
| 5) | Use of profit<br><br>Household expenditure | | | | | |
| | Education/Health | | | | | |
| | Livestock development | | | | | |
| | For starting new occupation | | | | | |
| 6) | Use of agricultural product in the livestock | | | | | |
| 7) | Sell/Mortgage of property for livestock raising | | | | | |

# ANNEX: 2

## PRA CHECK-LIST

**1. Household survey**

a. Fill up the questionnaire

b. Fill up the gender calendar

- On the basis of class (High/ Middle/ Low)
- In the family/household (Husband/Wife)
- To distinguish the months on the basis of (More/Less workloads)

**2. Meeting with the:**

- Community
- Local group (Mother's group/ saving group)
- Institution/Organization

**Meeting within the community**

**To find out:**

a) Major caste/ethnic group existing in the village.
b) Livestock selection in terms of caste/ethnicity.
c) Effect of social norms and values in the livestock.
d) To get the information about the Pewa and Dowry system.
e) Process of making home made concentrate.
f) To fill up the annual activities those are performed every month for the livestock feeding management. (Tables are at the next page)

**Meeting with the local group**

**To find out:**

a) Source of inspiration for the formation of group.
b) Purpose of forming the group.
c) Which class, caste, and ethnic group are involved by the group?
d) How are the works regulated and coordinated in group?
e) In what kind of works are the group's fund invested?
f) Are the investments made also for the livestock sector?
g) To find out different groups those are working for the livestock sector.

**Meeting with the institution/organization**

a) To find out if the institution/organization is regulating any programme related to livestock.
b) Which class/caste/ethnic group has been targeted by the institution/organization?

c) To find out if the institution or the organization has regulated any kind of training skills programme or meeting.
d) To find out if the institution or the organization has regulated any programme in regarding the gender equity and empowerment.
e) To find out the different institution/organization those are working for the livestock sector.

# ANNEX: 3

## GENDER CALENDAR .

## A: Gender Calendar for Middle Class Family (Lalitpur, Mid Hills)

. **Husband: Mr. Krishna Bahadur Moktaan**
**Wife: Mrs. Kanchhi Moktaan**
**Jhyalungtar-7, Chapagaon VDC**
**Lalitpur district**

| Time | Male's activities | Time | Female's activities |
|---|---|---|---|
| 5:00 | Wake up, Clean oneself, Go to toilet | 4:00 | Wake up, Go to toilet |
| 5.35 | Feeding straw | 5:00 | Cleaning house, Cleaning oneself |
| 6:00 | Preparing concentrate, Feeding concentrate | 5:30 | Preparing concentrate |
| 6:35 | Milking | 6:00 | Feeding concentrate |
| 7:05 | Taking bath, Cleaning sheds, Managing | 6:30 | Milking |
| 9:00 | Feeding *bhhussa* (chaff) | 7:00 | Cleaning sheds, Managing bedding for animals |
| 9:30 | Having lunch | 7:20 | Heating milk, Making tea |
| 10:05 | Going to office | 7:30 | Preparing lunch |
| 5:00 | Returning back home and resting | 8:30 | Managing feed for animals |
| 6:00 | Working in the vegetable garden | 9:00 | Having lunch, Washing dishes, Cleaning kitchen |
| 7:00 | Having dinner | 10:00 | Go to forest |
| 7:30 | Watching television | 1:00 | Returning back home and resting |
| 9:00 | Go for sleep | 2:30 | Making Tiffin, Taking Tiffin |
| | | 3:30 | Go for collecting grasses |
| | | 5:00 | Returning back and giving *bhhussa* (chaff) to animals |
| | | 5:15 | Milking |
| | | 5:30 | Preparing dinner |
| | | 8:00 | Having dinner, Washing dishes |
| | | 9:00 | Go for sleep |

## B: Gender Calendar (Low Class Family: Lowland Chitwan)

**Name of the respondents: Husband: Mr. Man Bahadur Gurung**
**Wife: Mrs. Dhan Maya Gurung**
**Address Janakitol, Parashnagar – 8, Bharatpur municipality/Chitwan**

| Time | Male's activities | Time | Female's activities |
|---|---|---|---|
| 6:00 | Wake up, taking tea, Farm work (putting manure, clearing unwanted grasses from the field), Livestock related work | 5:00 | Wake up, Cleaning house, Feeding grasses and watering the animals |
| 10:00 | Having lunch | 6:30 | Making tea, taking tea and serving to other members of the family |
| 10:30 | Resting | 7:30 | Farm work 'Usually in *parma*' |
| 2:00 | Taking tiffin, take care of animals | 1:30 | Return from farm work, preparing tiffin, having and serving to other members of the family |
| 2:30 | Go for farm work | 2:00 | Providing grass and water for animals |
| 6:00 | Returning from the farm work, cleaning oneself, Take rest | 2:30 | Go for farm work again |
| 7:00 | Fedding grasses to the animals | 6:00 | Returning from farm work, Take rest |
| 7:15 | Free time | 7:00 | Prepare dinner, Having dinner and serving to other members of the family, Washing dishes, Cleaning kitchen |
| 10:00 | Having dinner | 11:00 | Sleep |
| 11:00 | Sleep | | |

# ANNEX: 4
# LIVESTOCK FEEDS AND FEEDING STRATEGY

**Livestock feeding strategy for the whole year , Serafat, Chapagaon, Lalitpur (Mid Hills)**

| S.N | Month | Tree fodder | Floor grasses | Hey | Grains | Grazing |
|---|---|---|---|---|---|---|
| 1. | *Baisakh* | No | *Siru, Kaash, Gandhhey, Armale, Bhhede,* | Yes | Yes | No |
| 2. | *Jestha* | No | *Siru, Kaash, Gandhhey, Armale, Bhhede,* | Yes | Yes | No |
| 3. | *Ashaar* | No | *Siru, Kaash* | Yes | Yes | No |
| 4. | *Shraawan* | No | *Siru, Kaash, Bhhadaure* | Yes | Yes | No |
| 5. | *Bhadra* | No | *Bhhadaure, Makai ko dhhor, Naulo jhhar, Saama jhhar* | Yes | Yes | No |
| 6. | *Ashoj* | No | *Saama jhhar, Siru, kaash* | Yes | Yes | No |
| 7. | *Kartik* | No | *Jai* | Yes | Yes | No |
| 8. | *Mangsir* | No | *Jai* | Yes | Yes | No |
| 9. | *Paush* | No | *Jai* | Yes | Yes | No |
| 10. | *Magh* | No | *Masino gahu ghhas, Leu jhhar* | Yes | Yes | No |
| 11. | *Falgun* | No | *Masino gahu ghhas, Leu jhhar* | Yes | Yes | No |
| 12. | *Chaitra* | No | *Bhhede, Siru* | Yes | Yes | No |

Note: In the months *of Kartik, Mangsir,* and *Paush* she even feeds *bhhussa* (chaff) and *dhhuto* (paddy bran) to her animals.