Introduction
In the past decades, livestock research and development interventions have been planned and implemented without sufficient knowledge about the gender dynamics that positively or negatively affect research and development outcomes. Mainstream analysis of poverty, and the policies and strategies that are designed to address it, have often failed to consider gender relations and dynamics that affects their implementation. Nevertheless, over the past few years, gender analysis has highlighted the significance of gender relations in livestock production. Understanding gender differences and social dynamics in livestock systems is essential to the design of gender sensitive interventions that equitably address the priorities of male and female smallholder farmers and other disadvantaged groups.

Materials and Methods
The data for this analysis were derived from literature review and a multi-stakeholder consultation workshop. We applied both manual and electronic searches for studies done on gender and livestock in Ethiopia. A data extraction matrix template was prepared. Using the template, information including type of manuscript, author name, year of publication, online link, target livestock species, regional states, study population, production systems, sample size, study approach and gender issues discussed were extracted from eligible studies. Drawing on the findings, we propose a framework for analysing gender issues at household, community and environmental level.

Results

Gender Division of Labour
While there is great variability across livestock species, systems, and socioeconomic contexts, women generally play a major role in livestock husbandry and management practices, even when they are not the owners but their roles are culturally less valued or invisible. Participation in livestock management is influenced by the enterprise, the farming system, the technology used, the wealth status of the household, culture, religion, stage of economic development, species of predominant animals, and population pressure. All household members participate in animal husbandry and management practices at varying degrees but in most cases women are responsible for almost all labour intensive re/productive activities related to cattle and small ruminants.

Intra Household Decision Making
The studies on decision making in livestock production, marketing and management of income in Ethiopia show consistent results: men are largely the final decision makers for livestock production, husbandry activities associated with better financial income, sale of livestock, collection of money, and about spending the income earned from livestock. On the other hand, women are decision makers on animal products and small animals they own such as chicken. Empirical evidence suggests that what determines power relations over livestock within a household is the amount of livestock brought in either through inheritance or marriage and how the marriage was arranged in addition to age and level of education. Bringing more livestock gives women more say over livestock sales but arranged marriages give less power to married women. Similarly, older and better-educated women participate more in decisions and have more say on livestock sales.
Results (continued)

Access, Ownership and Control of Livestock Resources
Women are more constrained in accessing, owning, and controlling livestock resources than men in both male and female-headed households. They generally lack access to institutional credit and extension services and to informal and formal market information systems; have poor technical skills; and are more constrained by lower levels of capitals. When the rearing of animals and their products that are traditionally controlled by women become a more important source of family income, ownership and control are often taken over by men.

Livestock Marketing
Livestock market engagement is influenced by gender and wealth status of the household and thus differs significantly between female and male livestock keepers. Men from rich and middle wealth households travel to more distant markets to secure higher prices as they can access and afford transportation. However, one major downside of increased mobility and access to cash income for men is the risk of HIV infection through unprotected sexual intercourse with infected individuals which will negatively affect the family and the livestock value chains in general. In contrast, poorer farmers and women tend to accept lower prices at local markets they can reach on foot and their clients are mostly local consumers.

Time Poverty, Perception and Agency
Ethiopian rural women are not only resource poor as compared to men but are also stricken with time-poverty. They work for longer hours than men in a day, and this becomes worse during peak seasons and when they lose help from their children when schools open. An important constraint to women’s livestock ownership is wrong beliefs and perceptions (gender stereotype image) embedded in socio-culture. An example is the belief/fear of men that if a women owns animals and takes control over the related benefits, men are likely to lose their position as household heads. This discourages women from owning and controlling key livestock assets particularly in the Southern region. Ethnography shows that men are more educated and hence are considered to be more apt to lead local associations. As women are often prevented from participating in higher education, their educational level is then used to legitimize women’s limited participation in the ‘outside’ community activities. Women’s low level of human capital generally impedes their leadership in organizations and voice in the community to exercise their agency.

Livestock-based Institutions and Structures
Gender norms that restrict women from claiming ownership of livestock tend to also exclude them from participating in livestock based institutions. Examples include management of the communal pasture, and membership in breeding and milk cooperatives. Commercialization of livestock products tends to systematically marginalize women from their traditional rights of controlling income generated from milk. The reason is that men are registered as members of milk cooperatives representing the household and thus receive the payments from the cooperatives although the women are responsible for milking and delivery to the cooperatives. This has created stresses on gender relations and family harmony resulting from the scramble to control income earned from selling of milk.

Gender Capacity
One of the main bottlenecks to addressing gender inequalities in livestock is the low level of gender capacities of livestock service providers in Ethiopia. Although, there is high commitment to gender mainstreaming, gender analysis and strategic planning is often not institutionalized. Individual gender capacities tend to be higher than organizational gender capacities. However, due to the relatively low organizational gender capacities, it is unlikely that individuals can translate their capacities into action. It is generally understood that human development is the driver and technology provides the tools. However, what is often observed in research and development is a continued focus on technical solutions.

Changes in Gender Relations
Custom-based gender relations and the associated roles in livestock are slowly beginning to change in the context of changing practices in rural markets in terms of access and modes of operation, increased political interventions and rights awareness, and general changes in sociocultural settings. Women are also slowly engaging in decision making, and participating in markets, as in the case of becoming members of cooperatives, and the collection of income based on their contributions to the cooperatives. These shifts may come with challenges to the existing social structure, normative settings, and livelihoods. Very limited information is available on the positive changes in gender relations that affect livestock development.
Researchable Gaps

Gender Roles:
Gender division of labour in livestock is fairly well documented. Nevertheless, contemporary findings suggest that further disaggregation of animal management and husbandry practices reveals a different story and challenges the traditional understanding of the gender roles in livestock production. Hence, a closer look into animal management and husbandry practices may be needed to provide detailed context specific evidence.

Local meaning of Gender Issues
Understanding how the identified gender concepts/issues (such as access, ownership, control, etc.) are articulated by men, women and youth across the diverse socio-cultural and agro-ecologies in Ethiopia is essential. The limited evidence available shows that men and women conceive differently and attach diverse meanings to these concepts which is an important factor to be considered in livestock technology/ innovation development, adaptation and dissemination.

Systems of Control/Resource Governance
It is apparent that what matters most in ensuring gender equitable benefit within the household is not ownership but the capacity to have control over household resources because ownership does not necessarily translate into control. Further research should focus on a better understanding of systems of control over resources, and to ascertain whether control over assets have an effect on the intra-household distribution of welfare.

Resources or combinations of resources to help poor household moving out of poverty
Research has provided insights into the importance of specific resources at the start of asset accumulation. Because resources are interrelated and their accumulation seems sequential, access to one resource enables access to the other and vice versa. More research is needed to determine which resource or combinations of resources are important to help poor households to move out of poverty in a shorter period of time.

Gender Dynamics in Livestock-based Institutions
Milk market participation involves various intra-household dynamics that put men and women into dialogue, conflict and bargaining, which affect women’s bargaining position. Research should identify socio-culturally acceptable and economically viable benefit sharing/income from milk sharing models that could help to overcome the existing gender-based constraints to women milk producers, dairy HHs and the milk value chain in milk based cooperatives in Ethiopia.

Change in Gender Relations
In the face of changing gender relation as a result of various factors, research needs to be done to investigate drivers of change and their positive and negative impacts on men and women livestock keepers as these shifts may come with challenges to the existing social structure, normative settings, and livelihoods. Hence, its understanding through a more focussed research seems vital.
Implications for Gender Research and Development Interventions

This review presents a summary of existing knowledge on gender issues in livestock in Ethiopia. While the review highlights a number of key gender issues for attention in livestock related research and development, it also indicates some gaps in the existing data and areas for future research. The lack of data and detailed information related to some of the factors identified in Figure 1 obstructs gender analysis and strategic gender responsive interventions. Based on the evidence extracted from the literature and our understandings of the context, a framework for analysing gender issues in livestock is proposed for Ethiopia (Figure 1) which may assist to conduct gender analysis and develop gender responsive development interventions. The framework includes the interrelated factors that constrain women's participation in and returns from livestock that have been highlighted by our literature review. The figure represents how lack of agency and gender norms affect women’s outcomes for participation and benefits from livestock at household level. At community level, similarly, it presents how structures (either formal or informal) shape or are shaped by gender relations. Finally, the framework suggests how lack of gender capacity by livestock related service providers affect gender responsiveness of research and development interventions by reinforcing the existing patriarchal gender relations through supporting, creating or working within these constraining structures. Apparently, gender analysis in livestock needs to examine the elements presented in the diagram at all the three levels. They reflect the three common dimensions of women’s empowerment, but adds gender capacity element to the framework.

Investable Options for Women Livestock keepers

The literature review on gender and livestock in Ethiopia suggested some possible investable options to improve the existing gender inequalities in livestock with a potential of far reaching consequences of improving the livestock systems in general.

- Gender capacity building integrated into livestock research and development interventions to strengthen service providers’ and women’s agency.
- Building on traditional mechanisms for enhancing poor women’s access to livestock assets.
- Introduce livestock based gender transformative approaches to overcome gender-based constraints in livestock based systems.
- Rethinking the commercialization model of the milk value chain in Ethiopia in order to address its unintended consequences on women's ownership and control of income from the milk business. Documentation of approaches that have worked to mitigate women's loss of control over their business when they become successful could be a stepping stone.
- Strengthening institutional linkages among livestock service providers for better gender responsive service delivery.