

# **GENDER, IRRIGATION AND LIVESTOCK: EXPLORING THE NEXUS**

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# 1. Introduction

One of the guiding principles of ILRI is to:

- Incorporate gender analysis in research activities, identify the needs of women and address their marginalized status.

The Government's livestock water supply policy, among other things, attempts to: make livestock an integral part of the overall water sector.

## Three related issues emerge from the above policies:

- i. To what extent has ILRI incorporated gender analysis in research activities and identified the needs of rural women?
- ii. To what extent are rural women empowered and involved in the management of community –based initiatives (such as irrigation schemes and benefited from such undertakings?
- iii. To what extent is the livestock subsector integrated into the design and implementation of water works in general and irrigation schemes in particular?

In a nutshell, one wonders how increased supplies of water could impact gender roles and household livelihoods.

However, these questions are little researched. Put differently, there is conspicuous dearth of information on the nexus between irrigation, livestock, and gender.

Using case studies of three sites in East Oromia zone, this paper attempts to address issues raised above and identifies relevant policy options.

## 2. Methodology

- Three case study areas were purposefully selected on the basis of the following criteria:
  - i. Availability of irrigation schemes or other types of water works;
  - ii. ILRI's research interest in the area; and
  - iii. Variations in farming systems and proximity to market centers.

- The three study sites are:
  - i. Doni irrigation Scheme in Upper Awash Valley
  - ii. Godino irrigation scheme near Debrezeit
  - iii. Ground water reservoirs in Teddie-Dildima near Mojo town.

- Information required for this study can be classified into the following broad categories:
  - i. Background information
  - ii. Irrigation schemes and their impacts
  - iii. Gender relations
  - iv. Livestock production
  - v. Health and environmental issues

- Information and data were gathered primarily, through focus group discussions and interviews with key informants. In addition I used the personal observation technique, the life history approach, and market survey. A total of persons participated in the group discussions. Four representation groups were identified: a) elders and religions leaders, b) female-headed households, c) housewives, and d) young and middle-aged farmers. Each focus group consisted of three to seven persons. A sort of stratified purposive sampling was used to set up focus groups.

- The study team was composed of the principle investigator, an assistant from ILRI, and three enumerator (at least one of which was a women) for each of the sites. Women were interviewed by trained female enumerators only
- The principal investigator was actively involved in the fieldwork.
- A checklist of questions was written in Amharic and pretested during the pilot study.
- The fieldwork was under taken between December 16 2004 and February 6 2005.

### 3. Theoretical perspectives

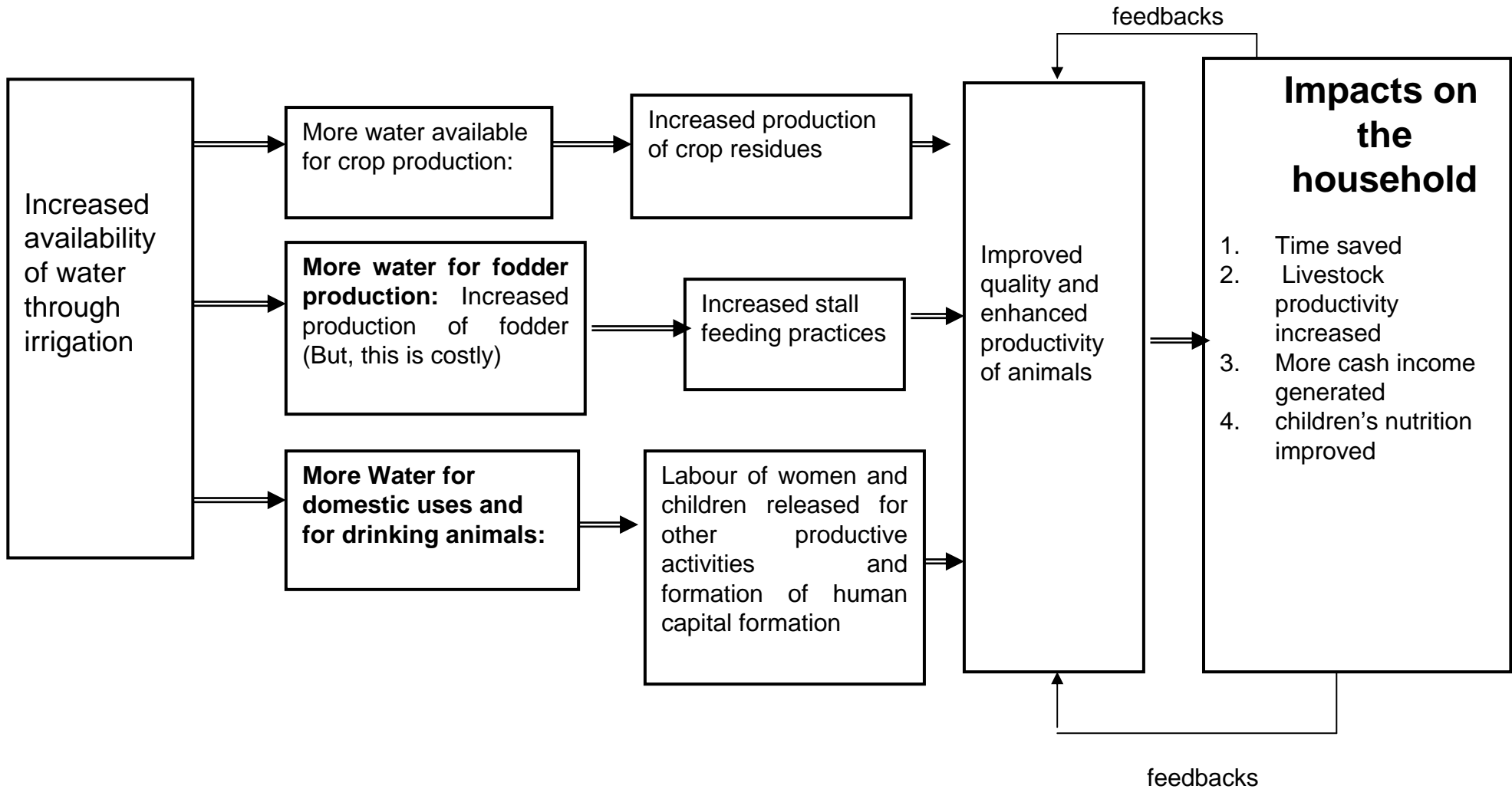
- Feminist theory dominates the literature
- Mainstream economic theory has been content to treat the household as a single unit facing the same utility function (i.e. harmony exists within the household). But, there are counterarguments, e.g. Sen's theory of "co-operative conflict".
- The New Home Economics (NHE) treated the time dimension of gender issues. According to the NHE the household is a production unit. The NHE made women visible to economic analysis. But, the NHE is not capable of fully analysing gender issues. This is partly because NHE makes unrealistic assumptions.

- The debate in economic theory boils down into **the unitary model of household behaviour (UMHB)** versus the **collective model of household behaviours**:
- The UMHB also known as “the common preference model” or “the altruism model”, assumes that household members **act as one economic agent**. Accordingly, all household resources (including assets and labour) are pooled for the benefit of all household members. By implication, all members of the household have the same utility function.

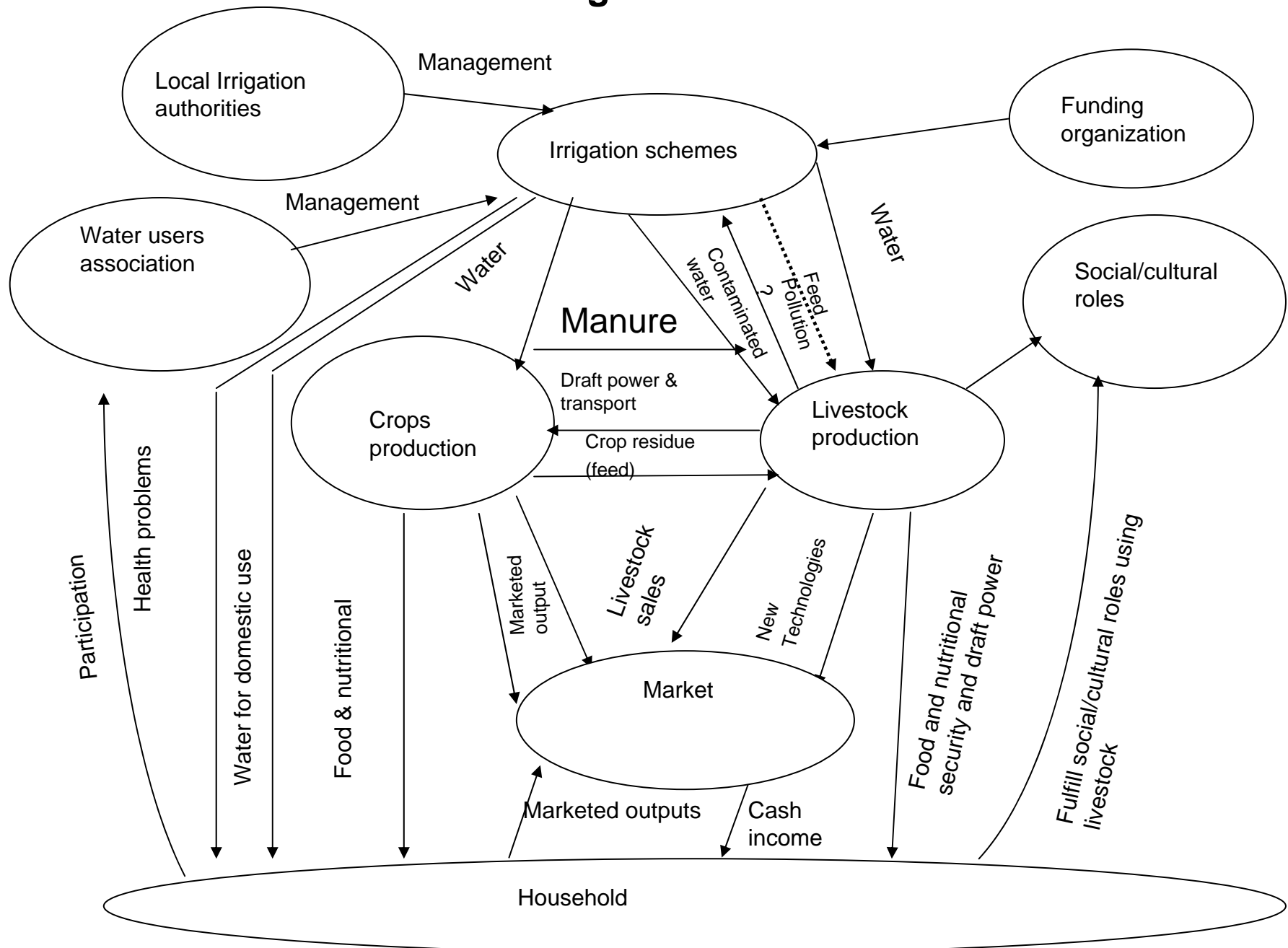
- On the other hand, “the collective models of household behaviour”, also known as the “bargaining models”, focuses on the individuality of household members. According to this model, household members entertain diverse (or even conflicting) objectives. However, household members attempt to resolve their differences through cooperation or non-cooperation.
- This study hypothesises that, in the context of rural Ethiopia, **the unitary model is more relevant than the collective model.**

# 4. A Conceptual Framework of the Study

Figure 1. The Impacts of Irrigation on Crop/livestock Integration Livestock, Women, and Children



# Annex 1. The Links Between Irrigation Livestock and Gender



# A Summary of Major Findings and Policy Implications

## **General**

- Farmers are found to be willing to adopt irrigation technologies or other types of water works. The two irrigation schemes are potentially profitable
- The two irrigation schemes were constructed in areas where river water (the rivers Awash and Wudecha)

- Other places, like Teddie-Dilma, do not have community-based irrigation schemes. This is partly due to high cost of construction of water reserviors. The two water tankers in Teddie-Dildima were built at high costs (i.e. costs of digging and of pumping ground water). The few water harvesting structures, though promising, could be beyord the capacity of individual farmers.
- Thus, a major policy issue is how to put in place cost-effective ways of mobilizing water resources.

- Considerable wastages of water are observed in Doni and Godino. It is high time to explore technological options for devising efficient ways of using available water. So far, drip irrigation, an efficient technique, is used only in connection with a water harvesting technology (see the case of Ato Bahiru).
- Irrigation schemes alone are not enough to improve the livelihoods of poor farmers. Complementary inputs, like chemicals and extension works, are required. But, there are inadequate supplies of complementary inputs. In particular, female farmers are highly disadvantaged. Perhaps, they may need targeted subsidies and other support schemes to improve access to new technologies.

- With the exception of water troughs installed in Teddie-Dildima, so far, no attempt has been made to integrate the needs of the livestock sub-sub sector into the design of irrigation schemes. By integrating livestock into the design of irrigation schemes, it is possible to increase the supply of drinking water in a very cost-effective way. This should be food for thought for policy-makers.

# Gender Roles and Access to Resources

- This study suggests that there was no strong evidence of systematic discrimination against women. Most of the biases against women are determined by cultural factors and lack of education and training facilities. Thus policy –makers should focus on education and training facilities for female farmers.

- In discussing gender issues, it is important to make a distinction between two categories of women, i.e. those operating as housewives and those heading households. In other words, there are important differences between conjugal households and female-headed households. In the latter case women: a) are farmers on their own rights; b) are more empowered than housewives; c) are excessively overburdened with work because they shoulder primary responsibilities for farm activities and housework as well; and d) are usually poorer than women in conjugally – based households. Therefore, it is important to make a distinction between the two categories of women in designing irrigation schemes.

- The findings of this study reinforce the hypotheses of the unitary model of the household, although the collective model cannot be ruled out altogether. Accordingly, the following hypotheses emerge from the study:
  - i. In many cases resources are jointly accessed and decisions are jointly made by husbands and wives. A group of housewives summed up their argument by saying “**yesu yenenew; yeneyesu newu**” (“his is mine; mine is his”).
  - ii. It appears that women market low value products, while men market high value products. Most animal products are marketed by women. But, most often the proceeds are used for common purposes, although there are possibilities of exclusive control of income by irresponsible husbands.

- Women are involved all types of farm activities except plowing, broadcasting of seeds (of cereals), and mowing of **tef**.
- As usual housework falls within the domain of women.
- Most tasks related to animal husbandry are shared by both sexes. Exceptions are: a) milking and the processing of dairy products, tasks which are left to women and b) plowing of fields (a task which falls with the domain of adult males).

- Women's participation in community-based organizations is limited. In the study areas, the executive committees of water users associations were dominated by men.
- But, there were women participating in the administration of kebellies.
- It is likely that, whenever water is rationed female-headed households are likely to be the least beneficiaries.
- Evidently, conflict often arises during the dry season when irrigation water is in short supply. Some women complain about unfair distribution of water among users. Some leaders of water users associations are accused of favoritism and unfair treatment of disadvantaged members.

# Gender and access to markets

- Price instability and lack of market are almost invariability identified as major constraints to irrigated agriculture covered by the study areas.
- In Doni, farmers are no more allowed to take their produce to market centers in Addis Ababa. Therefore, they are at the mercy of traders exercising localized monopsony.

- Marketing cooperative were conspicuously missing or proved to be too ineffectual to reduce risks arising from price instability and marketing problems. Similarly, credit facilities were found to be inadequate.
- Perishable as they are, vegetables and milk cannot be stored at the farm level awaiting price increases. In the absence of the necessary marketing facilities and infrastructure, farmers have no choice but sell their produce at prices that may not cover costs of production.
- Femaleheaded households, who often rent out their land (due to shortage of adult male labour), are hardest hit whenever marketing problems become serious. But some women, like Gete Kumbe, could successfully tackle marketing problems.

- women's participation in markets differed depending on: a) the value of the commodity to be marketed; b) the purpose for which a good is purchased; c) division of labour in the production of marketed product; and d) the categories of women engaged in marketing.
- In general, high value products, such as cattle, are marketed largely by men, while low value products such as chicken, eggs, and butter are marketed by women. However, women in female-headed households, with assistance from an adult male, can sell or buy high value livestock such as draft oxen or even, small ruminants (see picture).

- It appears that goods destined for crop production, such as farm inputs (e.g. fertilizer), are purchased by males, while goods meant for household consumption (e.g. food) are often purchased by women.
- The prevailing gender division of labour can influence the extent to which women can participate in markets. Women tend to market goods in the production of which they play a primary role (e.g. butter, vegetables from backyard farms).

## Table The Gender Division of Labour in the Study Sites

Activities	Primary responsibility of women	Joint responsibility of men & women	Primary responsibility of men
Tilling/ plowing			*
Weeding		*	
Harvesting crops (except mowing)		*	
Mowing of tef			*
Guarding crops & keeping away animals from field crops		*	
Looking after animals		*	
Attending to sick animals		*	
Milking cows & churning milk	*		
Drinking cows		*	
Drinking oxen		*	
Drinking sheep & goats		*	
Cutting grass for oxen		*	
Cutting grass of cows		*	
Working on irrigated fields		*	
Repairing irrigation canals		*	
Fetching water	*		
Childcare	*		
Cooking food	*		

**Table Women's participation in Marketing Activities**

<b>Activities (buying &amp; selling)</b>	<b>Participate most of the time</b>	<b>Participate sometimes</b>	<b>Never or rarely participate</b>
Cattle	* Women heading households		* Mostly housewives
Small ruminant	* Women heading household	* Godino only	* Mostly housewives
Chickens eggs & butter	*		
Hides & skins	* Women heading households		* Almost all housewives interviewed
Crops grown on irrigated fields	* Mostly women heading households		* Almost are housewives
Buying cloth and notebooks for children	*	*	
Buying food for the household	*		

**Source:** Results of focus group discussion and market visits.

- **By way of conclusion: we note that:**
  - The study has suggested that community-based irrigation schemes have some positive impacts on women.
  - But women need more empowerment to improve their economic and social status.
  - There is along way to go to integrate livestock into the design of community based irrigation schemes.
  - Further research is required to investigate the hypotheses raised here on a wider data base. In particular, it is important to investigate how to integrate gender and livestock into the design and implementation of irrigation schemes.



Doni: Harvesting Onions Increased participation of landless women in labour market



Doni: A woman “cutting” onions (Note the way she handles the sickle)



Doni: Animals Feed on crop residues (onion leaves and stalk)



Teddie-Dildima: Animals drink water from a trough (The water comes from the tanker)



Teddie-Dildima: A water tanker (**birka**)



Godino: Integrating vegetables with crop production and livestock raising.



Doni: A women Sells vegetables



**Doni:** With the support of an adult male, a women sells goats (note: there is a separate market for livestock).



Doni: Gete Kumbe in the homestead of her original house.



Doni: Gete Kumbe and daughter displaying their new house and a radio set.



Teddie-Dildima: Ato Bahiru and W/ro Bizunesh feeding their animals



Teddie-Dildima: Bezunesh and Bahiru watering vegetables