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30

ILRI's experience with the Crop and Goat Project in Tanzania from a gender perspective



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ILRI's experience with the Crop and Goat Project in Tanzania from a gender perspective

Raymond Brandes,¹ Petra Saghir,² Alessandra Galie³ and Violet Barasa³

1. Consultant—Sustainable Development, Gender, Capacity Development and Result Based Management

2. Federal University of Agriculture, Abeokuta, Nigeria

3. International Livestock Research Institute (ILRI)

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Box 30709, Nairobi 00100, Kenya
Phone: + 254 20 422 3000
Fax: +254 20 422 3001
Email: ILRI-Kenya@cgiar.org

Box 5689, Addis Ababa, Ethiopia
Phone: +251 11 617 2000
Fax: +251 11 617 2001
Email: ILRI-Ethiopia@cgiar.org

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Acronyms

AFS	Agriculture and Food Security
CAD	Canadian dollar
CGP	Crop and Goat Project
CIDA	Canadian International Development Agency
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organization of the United Nations
FCS	Food Consumption Score
FGD	Focus Group Discussion
FHH	Female-headed Household
GDP	Gross Domestic Product
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
ILRI	International Livestock Research Institute
KAP	Knowledge, Attitudes and Practice
M&E	Monitoring and Evaluation
NBS	National Bureau of Statistics
SUA	Sokoine University of Agriculture
UNDP	United Nations Development Programme
UoA	University of Alberta
USAID	United States Agency for International Development
USD	United States dollar

Executive summary

This paper focuses on synthesising ILRI's experience with the Crop and Goat Project (CGP) in Tanzania from a gender perspective. ILRI's part concerning gender activities in the CGP is a cross cutting issue. Therefore, it cut across other components and activities carried out by partners. As such, ILRI's experience cannot be described without referring to other components of the CGP.

Some findings were identified which are worthwhile pursuing in future similar projects. For example, access to and control over assets and the products and proceeds gained from them increased the independence of male and female household members as they can now make decisions with little dependence on resources of others.

The project has also been able to positively improve some of the key domains of gender empowerment, i.e. asset ownership, decisions-making ability and authority, independence, improved sense of worth, willingness and ability to question one's status and capacity to negotiate relationships and change labour patterns.

Furthermore, the use of gender analysis in design, implementation and evaluation stages helped in providing an understanding of the complexity of gender relations and labour organization and how they shape household strategies and power dynamics, and subsequently the differential impact of the project on different members of a household.

Finally, the various project activities have helped to clarify the need for new participatory approaches, i.e. empowerment framework and pathway, to define a multi-level empowerment conceptual framework including a carefully determined targeting strategy (like working with women's and special interest groups and youth, but also ensuring the engagement with men and boys), set empowerment goals, translate the framework and goals into a pathway, identify indicators of change, and assess success of projects in enhancing change, all in a participatory fashion.

Keywords: gender, decision-making, asset ownership, labour patterns, food security, access to service

Acknowledgements and disclaimer

This discussion paper is based on the project (progress) reports of the Crop and Goat project (CGP) in Tanzania funded by International Development Research Centre (IDRC), and Canadian International Development Agency (CIDA) implemented by Sokoine University of Agriculture (SUA), Tanzania in partnership with University of Alberta (UoA) and International Livestock Research Institute (ILRI). We would like to acknowledge the support of ILRI's Livelihoods, Gender and Impact (LGI) team of the CGIAR Research Program on Livestock and Fish, especially Sheila Onzere for her support and providing thoughtful feedback during the development of this paper.

The documentation as listed under Annex I has been reviewed as the basis to synthesise findings from the CGP which show gendered perspectives on the project's context and progress assessed. We gratefully acknowledge the authors of these reports: Cathy Farnworth, Alessandra Galiè, Paula Kantor, Petra Saghir, Jemimah Njuki, Elizabeth Waithanji, Juliet Kariuki, Anna Sikira and ILRI, University of Alberta and Sokoine University of Agriculture. However, we may not make reference to their work each time findings from their reports have been used.

Unfortunately, the results of the endline household survey have not been analysed, so they could not be used to compare with the results from the baseline household survey. However, the baseline data analysis, the qualitative studies and the progress reports did provide sufficient information to present interesting findings concerning the status, and where observed or perceived progress, in gendered aspects of the project such as ownership, labour and decision-making in cassava and sweet potato cultivation and dairy goat rearing.

We hope that the gendered findings, although they display existing inequalities which undermines progress for the individual farmers, their households and communities, also show that such situation is not fixed and that there are ample promising opportunities to transform towards a more equitable state of affairs and that the recommendations on how to facilitate such change processes will be considered in future research studies and intervention projects.

Introduction

This discussion paper looks at ILRI's experiences in the project called 'Integrating dairy goats and root crop production for increasing food, nutrition and income security of smallholder farmers in Tanzania', referred to as Crop and Goat Project (CGP), from a gender perspective.

The goal of the CGP was to see 120 farmers in the Dodoma and Morogoro regions of Tanzania raise dairy goats and grow crops (cassava and sweet potato) that provide both fodder and food to improve nutrition, ensure food security and incomes from integrated farming for rural households with a view to improve their standard of living. Especially, resource poor households and female-headed households were expected to benefit from this project through careful design of project components, research instruments and development strategies.

The objectives were to improve the milk production potential of indigenous goats through crossbreeding, improved management and control of major diseases at the community level. The project also tested and evaluated improved sweet potato and cassava varieties that have the dual purpose of improving food security and nutrition at household level and providing leaves and vines for the development of locally available and cost effective rations for dairy goats. The CGP investigates the livelihood strategies, production potential and marketing possibilities of local goats and crops in the study areas, and analyses the impacts (productivity, environmental, gender and empowerment, food security and nutrition) of integrating improved goat breeds with sweet potatoes and cassava into an agropastoral farming system.

The focus of this paper is on the gender-based component and analysis that informed other components, structures, activities and results within the CGP project.

ILRI and partners supported the gender component by providing the ex ante gender analysis of the project, backstopping other project partners and conducting other gender activities over the course of the project. These activities include the development of a gender strategy, the completion of the baseline household survey with gender disaggregated data, the application of Knowledge, Attitudes and Practice (KAP) surveys to collect gender-based perceptions in regard to different aspects of the project. These activities also spanned to the implementation of field studies to inform project interventions, and the development of partners and beneficiaries' capacities through gender training and awareness raising sessions.

The project documentation of these activities to date have been reviewed to synthesise this discussion paper and explore the likely transformative impacts of the introduction of dairy goats and improved cassava and sweet potato varieties. The interventions, and their results where possible, were analysed on the status of or observable change related to the gender dimensions of the project such as men's and women's (labour) roles, responsibilities, perceptions and aspirations, and gendered differences in participation and decision-making and access to and control and ownership of assets and the proceeds derived from them. These dimensions determine the level of women's empowerment and achievement of sustainable transformation towards gender equitable behaviours in the farming households and their environment.

Context

Tanzania ranked 159th (out of 187) in the Human Development Report (UNDP 2014) with a Human Development Index of 0.488 and a gross national income per capita of USD 1702. Tanzania ranked 124th with a Gender Inequality Index of 0.553, a composite measure reflecting inequality in achievement between women and men in three dimensions: reproductive health, empowerment and the labour market.

The poverty status of Tanzania is improving slowly over the last 3 Household Budget Surveys conducted by the Tanzanian Government. The percentage of the population living below the poverty line in terms of food went down from 18.7% in 2000/2001 to 16.6% in 2007 and in terms of basic needs from 35.7% in 2000/2001 to 33.6% in 2007; however, in rural areas the poverty was higher than in urban areas. Though the overall percentage of female-headed households in Tanzania living below the poverty line went up from 22.9% in 2000/2001 to 24.5% in 2007, in rural areas the poverty of female-headed households was lower than in urban areas in 2007 (NBS 2013).

Agriculture is a very important sector of the Tanzanian economy. It contributes about 95% of the country's food demand, 26.8% of Gross Domestic Product (GDP), and 30.9% of foreign currency and provides employment to over 75% of Tanzanians (United Republic of Tanzania 2013a). Tanzania is well endowed with a variety of farming systems with climatic variations and agro-ecological conditions suitable for crop production (United Republic of Tanzania 2013b). According to data on UNFAO (FAOSTAT),¹ Tanzania produced in 2013 an estimated amount of 5.4 million tonnes of cassava and 3.1 million tonnes sweet potatoes. With 4.6%, livestock ranks second within the agricultural sector in terms of its contribution to GDP (United Republic of Tanzania 2014). The estimated 2010 official statistical data reveals that, there are 19.2 million cattle; 13.7 million goats and 3.6 million sheep (United Republic of Tanzania 2014).

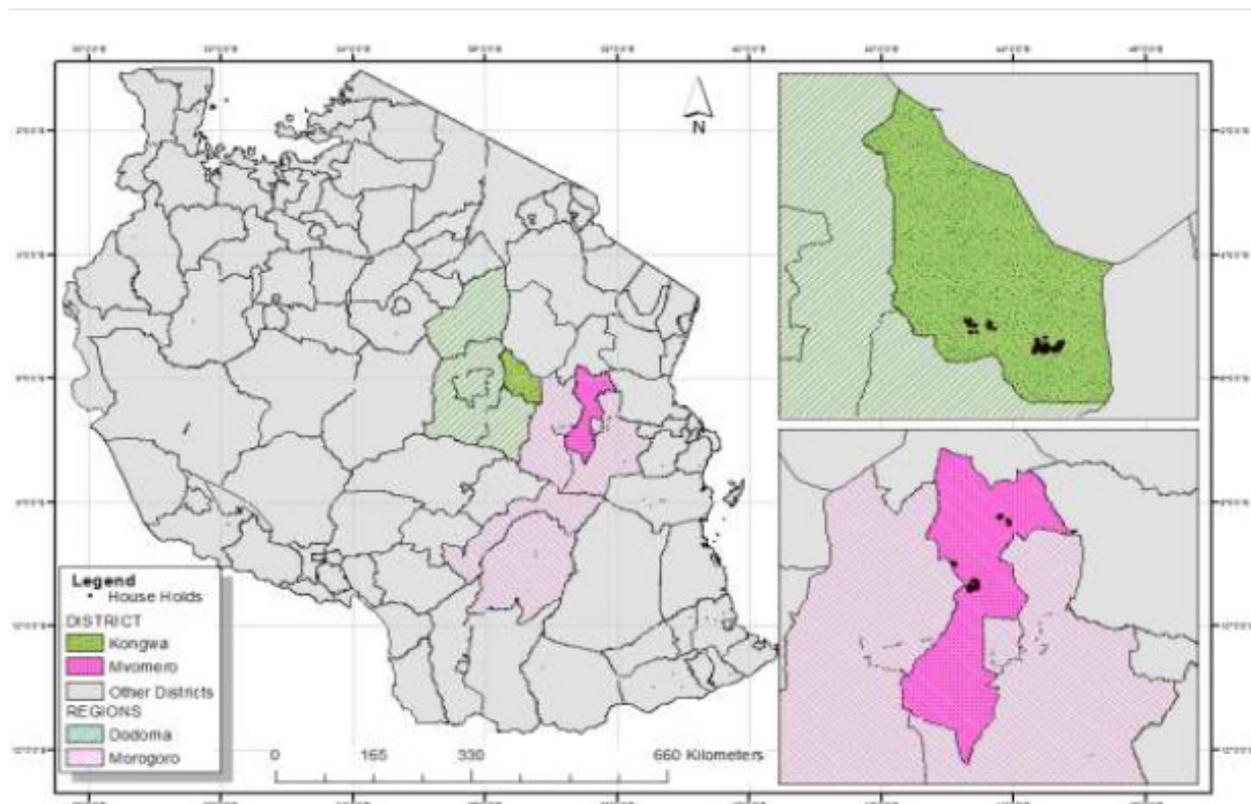
Project location context

The Crop and Goat Project targeted farmers in the regions of Morogoro in the North East of Tanzania and Dodoma in Central Tanzania (see Figure 1). Two districts of Mvomero and Kongwa were selected from these regions. In the two districts, four villages were selected; Wamiluhindo and Kunke in Mvomero District; Masinyeti and Ihanda in Kongwa District to implement project activities. The four villages in the project were selected based on their levels of food insecurity, potential for increased production, low dairy goat population and the absence of other development projects in the area. The latter arguably contributes to a stronger attribution to the project of the changes reported.

In 2002 the Tanzania population census reported 260,525 inhabitants in Mvomero. There are about 142,155 farmers (of which 49.8% women) in the district and 2534 pastoralists. The district's average individual annual income per capita in 2007/08 was approximately 337,000 Tanzania shilling (approximately USD 213). Eighty percent of the adult population relies on agriculture and livestock keeping for their livelihoods. According to the 2002 population census Kongwa included 295,476 residents. Eighty-five percent of households rely on farming and 4.7% on livestock keeping. Kongwa is reported to have significantly lower per capita incomes than Mvomero.

1. Available via <http://faostat.fao.org/site/291/default.aspx> and accessed on 20 August 2014.

Figure 1. Map of the study sites in Kongwa and Mvomero districts.



Sources: ILRI (2013); Galiè and Kantor (2014).

Domestic livestock are an important component of the agricultural sector in Tanzania, with goats ranking second to cattle. Yet low growth rates of livestock and low milk production among small-scale farmers (Chenyambuga et al. 2004) limit food and nutritional benefits. Therefore, dairy goats are an attractive investment and provide higher quantities of milk compared to indigenous goats. Also, small-scale dairy production is an important source of cash income for subsistence farmers, especially in the East African Highlands (Omore et al. 2004).

In the past, some efforts were made to introduce dairy goats in Tanzania like the 'The Improvement of Newala Goat Research Project' under the Small Ruminant Collaborative Research Support Group, which resulted in improved milk yields and improved knowledge and use of high quality feeds (Mtambuki and Salum 2009) and the Kenya Dual-purpose (meat and milk) goat, with support from the USAID-Small Ruminant Collaborative Research Support Program (Peacock 2008). Unfortunately, the projects could not be sustained locally because the approaches were too complex, faced logistic obstacles, lack of funds and poor performance leading to the end of the initiatives.

Several studies have highlighted advantages of growing root crops. Sweet potato and cassava have the ability to provide a food security buffer during hunger periods, are sometimes considered as a famine reserve foods (Kapinga et al. 1995), and can be successfully grown in semi-arid areas (Dahniya 1994; Kapinga et al. 1995). Cultivating such root crops has the added value of being both food for humans and feed for animals (dual-purpose) making these crops desirable to produce in areas where land availability is declining (Leon-Velarde 2000; Nyaata et al. 2000).

Therefore, bringing the cultivation of root crops and livestock production together may lead to positive outcomes, which could benefit poor smallholder livestock keepers when carefully targeted. The capacity for mixed crop–livestock systems to provide protein-rich food for billions of smallholder rural food producers and urban consumers, generate income and employment, reduce vulnerabilities in pastoral systems, intensify small-scale mixed crop–livestock systems and sustain livelihood opportunities to millions of livestock keepers including vulnerable groups such as women (Saghir et al. 2012) makes them an appealing vehicle for poverty eradication and pro-poor development.

In Tanzania, women are major contributors in the agricultural economy providing 54% of the labour force in agriculture (FAO, IFAD, ILO 2010) while agriculture also comprises a greater part of women's economic activity than men's (81% vs. 73%). In rural areas, that number rises to 98% for women (FAO, IFAD, ILO 2010). However, their potential at alleviating poverty is limited by the constraints they face in livestock production and agricultural development as they pursue their livelihood activities.

Studies have shown that women do not exercise control over large animals in any system (FAO 2006; Valdivia 2001). The income from small-scale production involving small animals (like goats) has long been reported to be negligible compared to earnings from larger livestock such as cattle (Kryger et al. 2008; Staal et al. 2008). The concern whether or not women take decisions over livestock assets is based on an understanding that the social impacts of derived remunerations from these assets vary depending on which gender has control. Women are reputed to use profits from assets over which they have control for meeting household food security needs, including education and health of household members (FAO 2011).

Various sources document similar findings from cassava and sweet potato studies in Tanzania. A study on cassava farming found that women in female-headed households were more likely to own crop fields due to the fewer number of adult males living in these households (Nweke and Enete 1999). Studies on sweet potato farming show that in some regions of Tanzania, women are 100% responsible for planting, weeding, processing and storing sweet potato, whereas men are responsible for 70% of rural area marketing (Kapinga et al. 1995), which implies a certain level of women's control over incomes generated from farming activities. Male farmers in Tanzania have been found to control most of the profits from commercialized cassava sales, while women control incomes from small cassava sales often using the money to buy household goods and support their children's education (Curran and Cook 2009).

Livestock, compared to land and other physical assets are among the only productive assets that women can easily acquire and own (Rubin et al. 2010). The view that women are more likely to own small stock such as chicken, goats and sheep rather than larger animals such as cattle and camels tends to be unsubstantiated and is often supported by little statistical evidence (Bravo-Baumann 2000). There is however an emergence of studies that investigate gendered differences in livestock species ownership. For example, data from a recent study in Tanzania shows that women were more likely to own goats than cattle (Njuki et al. 2011). These data also showed that men owned a significantly higher number of goats than women because for every 1 goat owned by women, men owned 14 goats. While women may own more goats than cattle, the benefits they can gain from small stock needs to be more clearly understood if interventions with crops in mixed systems are to contribute to welfare benefits.

Studies have shown that integrated farming is more beneficial to women and the disadvantaged because cassava and sweet potato crop cultivation and dairy goat rearing are considered by most traditional patriarchal communities as appropriate for women (Sanni et al. 2007; Njuki et al. 2011). Additionally, establishing and managing small stock is cheaper than cattle and the labour needed to handle dairy goats and crops is often readily available and provided by women.

Women have different knowledge, access to, and control over resources, and different opportunities to participate in decisions regarding resource use and management than men (Sass 2001). Past studies have noted that most programs and projects at development and implementation stages seldom seek the opinion of women, despite their greater contributions and roles in agriculture (FAO 2007; CARE Ethiopia 2009). The exclusion of women has made many past interventions most ineffective (World Bank 2008).

Interventions, like the CGP, that seek to increase women's livestock holdings must determine the extent of gendered differences in access to and ownership of different livestock species (Njuki et al. 2011) in order to improve outcomes. Also, roles that men and women play in agriculture, and the different opportunities they have to participate in household and community decision-making process are the interest areas of this discussion paper.

Project overview

Origin and structure of the Crop and Goat Project in Tanzania

The Crop and Goat Project (CGP) was developed and implemented with collaborative efforts of multidisciplinary researchers from Sokoine University of Agriculture (SUA), Tanzania in partnership with University of Alberta (UoA) and the International Livestock Research Institute (ILRI).

The CGP is a three and half year community-based project from March 2011 to August 2014. The total budget of Canadian dollars (CAD) 1,663,588 was financed by the International Development Research Centre (IDRC) and the Canadian International Development Agency (CIDA) and disbursed to the implementing institutions based on activities to be carried out.

The project implementers also collaborated with households, farmer groups, district extension officers, local non-government organizations and several national research agencies. To support the local adoption and maintenance of integrated farming systems, a comprehensive program of research and analysis was conducted. A repeated livelihoods and environmental assessment focused on current opportunities and constraints to the introduction of new goat and crop activities along with insights into the actual experience of technological adoption at the household level.

Gender issues were an integral part of this project. Gender analysis is focused on ways to enhance women's participation and benefits from project activities. Targeted research also focused on environmental impacts, market access and disease control with attention to sustaining household and nutritional benefits over the long term. Insights from this research contributed to the implementation of this project, laid the ground work for wider-scale adoption, and transferred research capacity to the development community in East Africa and beyond.

Originally, 120 project farmers (30 per intervention village) were randomly selected to receive dairy goats but only 107 farmers (69 male and 38 female) received goats due to lack of interest by core pastoralists in keeping a dairy goat alongside local breeds which required different but contrasting management practices, while others could not afford the pre-existing requirements to build a house for the dairy goat (University of Alberta and Sokoine University of Agriculture 2012b).

To further achieve the set goals of the CGP for integrated farming systems, the project bulked and distributed new improved varieties of cassava and sweet potato varieties to project farmers (aimed at 50% women involvement) in the villages selected for on-farm participatory trials.

The CGP benefited from periodic baseline monitoring and evaluation and other analytical studies. Joint efforts of the multidisciplinary researchers and project students from SUA and UoA provided a vast pool of wide-ranging expertise and peer reviewed articles from the project that informed the success recorded by the project.

The CGP supported eight basic complementary channels of intervention to address developmental challenges posed by inability to maintain goat breeding stock and household food insecurity that debar communities in the project villages to move beyond survival and subsistence towards sustainable development and poverty reduction. The area of intervention of most interest from a gender perspective for the presentation and discussion of findings in this paper was 'Gender impacts and empowering women and the disadvantaged, so that they can successfully benefit from project intervention'.

The CGP is constructed around a series of crosscutting components that result into the increase in the quantity and quality of food consumed by households and increase in improved goat production. This ensures community ownership and participation and the use of local resources to deliver the project milestones, activities and outcomes sustainably. The research/project framework is displayed in Figure 2. The project components were:

1. Food security systems:

- Dairy goats (breeding and milk production)
- Root crops (cassava and sweet potatoes)
- Goat feeding systems

2. System-wide analytical tools

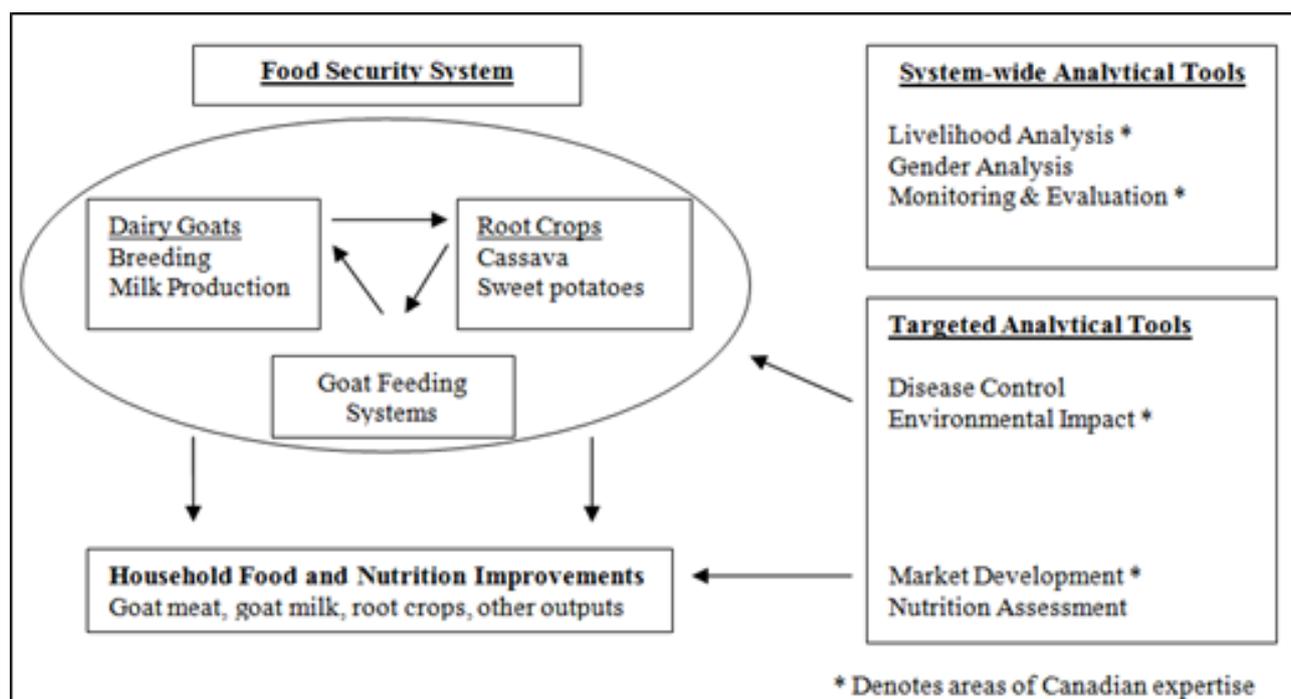
- Livelihood analysis
- Gender analysis
- Monitoring and evaluation

3. Targeted analytical tools

- Development of sustainable disease control strategies
- Environmental impacts assessments
- Market development studies
- Nutrition assessment

All three components were implemented in the selected communities by project partners together with local institutions and beneficiaries.

Figure 2. Project framework.



Source: University of Alberta and Sokoine University of Agriculture (2010).

Application of the various analytical tools has resulted in a comprehensive baseline survey, a gender analysis and gender strategy and environmental impact assessment, and a number of documents on on-going efforts with respect to dairy goat and root crop introduction and management (Chenyambuga 2012; ILRI News 2012; Kusiluka 2012; Mtunda and Msemu 2012). Market development studies have been performed by masters' students at the Sokoine University of Agriculture, as have household nutrition assessments and other field studies. A literature review of past experiences in improved goat breeding and mixed crop farming in East Africa (Amati and Parkins 2011) has been completed, and an analysis of gift-giving using cassava as a proxy for general gifting behaviour is being undertaken (Zigab et al. 2012). The project implements a dual monitoring and evaluation system with a project M&E and a community M&E system for community participation and feedback.

Role of ILRI in project

The International Livestock Research Institute (ILRI) is one of the major collaborating partners who ensure that CGP realizes its stated objectives to increase food security among smallholder farmers in Tanzania with an emphasis on resource-poor households, ensuring gender equity and women's empowerment through an integrated farming system. The broad mission of ILRI² is to improve food and nutritional security and to reduce poverty in developing countries through research for efficient, safe and sustainable use of livestock ensuring better lives through livestock. ILRI strives to achieve a gender equitable enjoyment of benefits of development through interventions that reflect women and men's distinct needs, preferences and aspirations. The CGP project aligns with and informed by the gender strategy of the CGIAR Research Program 'Livestock and Fish'—led by ILRI—the goal of which is 'Poor women, men and marginalized groups have improved and more equitable access to affordable animal source foods through gender equitable interventions'.

As such, part of ILRI's role was to ensure gender issues were integrated in the project. This is an approach for making women's, as well as men's concerns and experiences an integral dimension in the design, implementation, monitoring and evaluation in all political, economic and social spheres so that women and men benefit equally from the project interventions and inequality is not perpetuated.

2. Source: <http://www.ilri.org/mission> (accessed 30 September 2014).

The M&E specialists of ILRI developed the gender-responsive M&E web-based system for strategy level goals, outcomes, outputs and activities as well as the thematic research areas of the CGP to develop project pathways and monitor results. They also trained partners and communities to enter their information on dairy goats and crops for easy access by stakeholders for proper monitoring and evaluation processes supported by ILRI. The M&E database system enhanced the production of various reports in the project including monitoring and evaluation reports of the implemented activities.

ILRI provided platforms and a learning environment for the research teams in the project to share the research experiences and findings within the components of the project through periodic research workshops. These workshops provided an avenue for CGP sponsored faculty and graduate students to share preliminary research results and enable them to continue developing project-based insights across all aspects of the project.

Collaboration and complementarities with other project partners and issues

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I Food Security System

- a. Introduction of dairy goats and establishment of crossbreeding breeding program with smallholder farmers

SUA and UoA collaborated to introduce dairy goats in the project communities. SUA collaborated with Agricultural Research Institute and Agricultural Extension Officers to establish crossbreeding and breeding programs with smallholder farmers.

- b. Farmer participatory trials of improved cassava and sweet potato varieties

SUA conducted and introduced farmer participatory trials of improved cassava and sweet potato varieties. Men and women farmers' acceptability and the agronomic potential of improved cassava and sweet potato varieties and associated technologies were evaluated and documented through farmer participatory trials. ILRI supported data analysis of the participatory trials.

- c. Development of feeding packages for dairy goats

This component was undertaken by SUA. The main purpose was to incorporate cassava and sweet potato into goat rations (to ensure availability of animal feeds all the year round) and deploy the on-farm evaluation of feed resources and feeding management research strategies.

2. System-wide Analytical Tools

a. Livelihood Analysis

Livelihood Analysis was carried out with by SUA and UoA and they benefited from the baseline data analysis conducted by ILRI. This involved the review of changes in perceptions and the use of technologies and other changes in livelihood strategies, social organization and status of the environment, and documented any changes to project implementation recommended. The gender and intra-household dynamics of improved technologies and market linkages were analysed and recommendations made for further activities on gender in the project to ensure benefits to men, women and their households.

b. Gender analysis and integration

Gender experts from ILRI and SUA developed capacities of all project partners to ensure the integration of gender in their interventions and that the partners know how to examine the likely impacts of the introduction of dairy goats and improved cassava and sweet potato varieties on gender dimensions of the project such as the division of labour and decision making, independence and access to and ownership of assets, including the proceeds of these assets.

c. Monitoring and evaluation research

The M&E component was spearheaded by ILRI experts in collaboration with SUA and UoA experts.

3. Targeted Analytical Tools

a. Development of sustainable disease control strategies

SUA handled this component and collaborated with the project communities and local veterinary officers. ILRI created the platform for community based monitoring and evaluation of disease control and management.

b. Environmental Impact Assessment (EIA)

SUA and UoA collaborated to achieve the set goals for the EIA component. ILRI provided the baseline data that laid the foundation for actualizing this component and also helped to design evaluation tools.

c. Understanding and improving market access and improving goat and goat products value chains

SUA collaborated with UoA to improve the functioning of the market and the value chains of goats and goat products.

d. Food security and nutrition assessments

Gender experts from ILRI collaborated with their peers from SUA and a SUA graduate student to determine the prevalence of malnutrition and causes associated with it. This was realized by assessing nutritional status of under-five year of age children and evaluating household dietary patterns of the beneficiaries in Mvomero and Kongwa Districts. Data collected were disaggregated by gender.

Gender strategy

The CGP gender strategy was developed by ILRI for project partners to live up to one of the project's approaches of integrating gender concerns into CGP project. This action can make visible the gaps between project commitments and their actual implementation and impact, and can thus be used to hold commitment makers accountable for their actions, or their lack of action.

This is an essential element for the success of the project and as a means to ensure gender equity and empowerment by identifying gender-based constraints and opportunities related to decision-making, roles within households and in the community, and ownership of and control over resources in relation to crop and goat production and marketing.

The objectives of the gender strategy (Njuki and Saghir 2012) are to:

- Ensure that project interventions meet the practical and strategic needs of both men and women because often overlooking women's needs undermines the success of agricultural development interventions.
- Identify gendered constraints, opportunities and orthodoxies to dairy goat production and marketing, the current livestock ownership patterns, decision making, division of labour and management as this is likely to increase benefits for both men and women from the interventions.
- Promote project sustainability, gender-sensitive strategies (that aim to improve the economic status of and opportunities for women) designed, implemented and systematically monitored and evaluated.
- Contribute to the specification and identification of target gender-related variables within the key project milestones which is intended to serve as starting point for the broader research question on how integrated farming can bring benefits to women and men.
- Hold implementers/stakeholders accountable to engender projects objectives, deliveries, outcomes and impacts. This action pinpoints who is responsible for certain actions within the project.
- Assess challenges to success, and adjust programs and activities to better achieve gender equality goals and reduce adverse impacts on women and men.
- Assist project implementers to identify how interventions can be adjusted to achieve their maximum impact, and where resources can be reallocated to improve overall development and gender equality.

The strategy also aims to ensure proportional representation of women in key project activities and stressed the need to carry out periodic review of the project activities. This is necessary to assess challenges to success, and adjust programs and activities to better achieve gender equality goals and reduce adverse impacts on women and men.

The strategy specified areas of gender integration in the project, i.e. gendered aspects of food security improvements, household level impacts, market access, amongst others. The strategy emphasized the need for periodic capacity development of project partners and beneficiaries in gender integration, so that men and women would benefit equally from project interventions. To achieve gender equity for the resource-poor women (especially female-headed households), the strategy was specific on the need to form women groups so they can benefit maximally from the project using group dynamics and collective actions.

The strategy encourages achieving transformative and empowerment outcomes, and moving to community and individual efforts to transform the rigid patriarchal culture they are part of and preserves gender inequality.

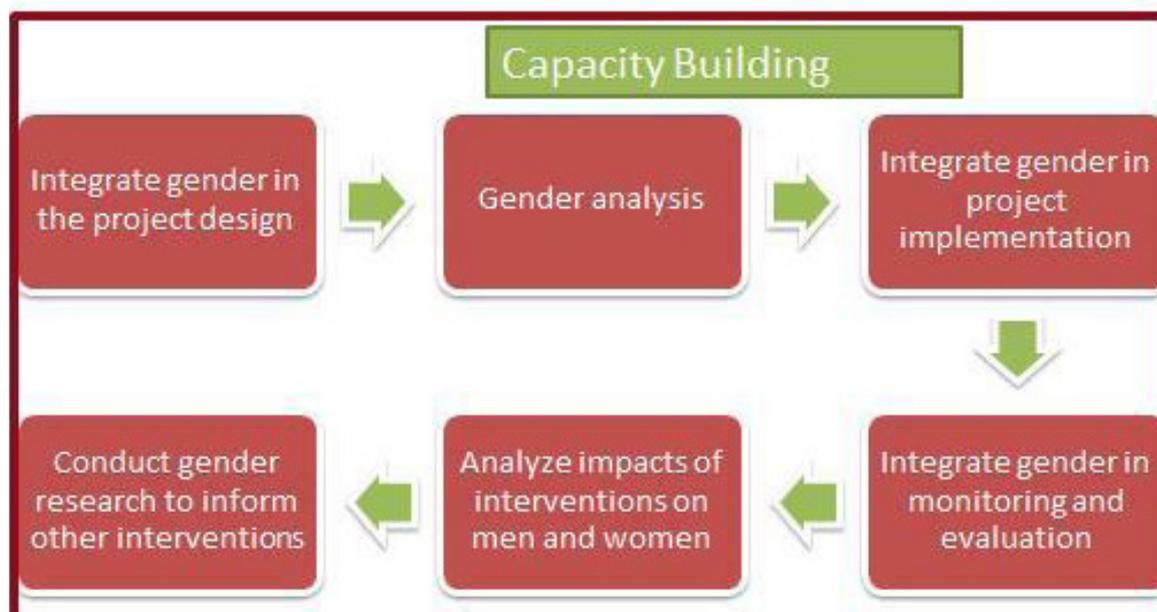
The strategy suggested the use of gender analysis—a method to assist in strengthening development planning, implementation, monitoring and evaluation, and to make programs and projects more efficient and relevant. This recommendation was to make data gathering more meaningful and ensure generating relevant sex and gender disaggregated data.

The aim of such analysis is to formulate interventions that are better targeted to meet both women's and men's needs and constraints, reduce gender inequalities and take advantage of existing opportunities to achieve gender equality.

Activities: Integration of gender in other themes and strategic research

The CGP objective for integrating gender into its components and activities is summarily represented in Figure 3.

Figure 3. Approach for integrating gender in the CGP-Tanzania.



Source: Njuki and Saghir (2012).

Gender specific activities carried out by ILRI and other partners that ILRI backstopped can be divided into four parts:

1 Gender transformative approaches through:

- Training and capacity development for project partners and communities
- Gender awareness sessions
- Group formation and dynamics

2 Resource allocation and co-ownership:

- Provision and distribution of dairy goats and improved varieties of cassava and sweet potatoes
- Marketing and improved value chains for goat and goat milk products
- Goat houses
- Disease control and management

3 Field studies, data collection activities and research workshop:

- Gender analysis and gender disaggregated data in:
 - Livelihoods studies
 - Food security and nutrition studies
 - Qualitative and quantitative analysis for M&E
 - Research workshop
 - Publications from the project

4 Monitoring and evaluation through:

- Gendered monitoring and evaluation tools for project activities
- Community-based web-based M&E

1. Gender transformative approaches through:

Capacity development and awareness creation

Capacity development sessions on gender integration were carried out for project staff, project partners and community members. Trainings were held at two levels: general gender awareness and analysis which covered issues such as introduction to gender, gender transformative approaches, gender sensitive facilitation skills and gender analysis. Gender specific trainings tailored more to the specific functions and roles of different team members and partners. For example, in January/February 2012, project team members and extension staff from Kongwa and Mvomero districts were trained on gender analysis and how to integrate gender into project activities. A total of 16 (seven females and nine male) staff participated and mainstreamed gender in their specific project activities. ILRI provided the training on gender and gender analysis. In addition, ILRI developed a gender strategy to provide further guidance to project stakeholders.

Project partners were also taught on how to mainstream and integrate gender concerns into their activities.

Community training on gender awareness and sensitization were held, for example, during focus group discussions when gender related issues come up. The objective was to create awareness and help change some stereotype mind-sets based on cultural practices, and one way to engage men and boys in discussing gender related practices, especially those that create inequities.

A village level gender training workshop was held for project farmers in all four villages (18 to 22 November 2012). A total of 122 project farmers (62 women and 58 men) and six government extension workers (4 men and 2 women) participated. During the training, farmers were helped to understand different gender related aspects particularly key gender concepts, gender analysis and the contribution of community in gender relations.

A total of 126 project farmers (68 women and 58 men) and six government extension workers (5 men and 1 woman) received one day training on gender, nutrition and marketing.

Other stakeholder targeted training sessions were held after a needs assessment. For example, female project farmers were trained on leadership, negotiation and conflict management skills.

Group formation and dynamics

A gender study/inventory to identify existing and potential women groups was conducted in all four project villages in June/July 2012 (University of Alberta and Sokoine University of Agriculture 2012b).

In relation to participation in social groups; three women groups were identified: crop production, VICOBA/SACCOs³ and self-help social groups. As a response to findings from the baseline study and field studies, project farmers were trained on dairy goat production, management, market aspects, and steps taken to integrate gender, dairy goat and its products and extension services.

2. Resource allocation and co-ownership

Farmer participatory trials for the evaluation of men and women farmers' acceptability and the agronomic potential of improved cassava and sweet potato varieties and associated technologies were set up with 115 project farmers and a target of 50% women involvement. The CGP witnessed men and women in the households having joint ownership of goats and other resources and at the same time sharing goat management roles and responsibilities.

3. Field studies, data collection and research workshop

Baseline household survey

The report on the baseline household survey, analysing different parameters from a total of 552 households from the four project villages and four non-project villages in Kongwa and Mvomero districts which were surveyed in 2011 was completed in March 2013. There were 472 project farmers and 80 non-project farmers and 19% (103 of 552) of the households were female-headed households. Male household heads were on average younger (42 years) than the female household heads (56 years). The results of the surveyed households gives a broad picture on the following different household parameters: Household characteristics; Goat raising and root crop production; Livelihood analysis; Root and goat production and productivity; Market access for root crops and goat; Access to services and Access to community resources and environmental conservation. Part of the data was sex/gender disaggregated and the study showed some gendered analysis of these parameters.

Gender study and inventory

A gender study and inventory was carried out in all four project villages in June/July 2012, (Mosha-Kilave and Lyimo-Macha 2013). The objectives of the study were to identify female headed households (FHHs) in the project villages who had received dairy goats in the first round, explore their roles and capacity in keeping the dairy goats, and root crops cultivation, identify gender training needs for project participants, and identify existing challenges in dairy goat enterprises and training needs.

Knowledge, attitude and practice survey I

In July 2012 (though published in August 2013) a study was conducted to assess the project farmers aspirations for their dairy goat project relative to the project objectives, to understand the preliminary outcomes of the dairy goat project from the project farmers perspective and to assess the knowledge, attitude and practice of the project farmers regarding root crop and dairy goat production.

3.VICOBA:Village Community Bank; SACCO: Savings and Credit Cooperative Organization.

Knowledge, attitude and practice survey 2

In August 2013, focus group discussions were held in the project's four villages with 50 participating farmers (29 women and 21 men) and seven government extension workers (5 men and 2 women) to find out what they perceived as changes in their knowledge, attitudes and practices (KAP) as a result of the project interventions. This was meant as a follow up study from the KAP survey 1 conducted in July 2012.

In January 2014 (44 women and 40 men) additional semi-structured interviews were held in preparation for the book chapter mentioned below.

A number of the participants of the KAP survey 2 were randomly selected to participate in the most significant change story exercise. This methodology is used to capture change from the farmers' perspective at any level as a result of the project. Stories from 19 men and 19 women were collected.

Child nutritional status and gender relations

To determine the prevalence of malnutrition in under-fives and gendered causes associated with it, a study was carried out (Meena et al. 2013) to assess child nutritional status and gender relations among dairy goat and improved root crops project beneficiaries in Mvomero and Kongwa Districts.

Research workshop

A research workshop was held at ILRI at Nairobi campus, Kenya, from 18–20 June 2013. This workshop provided an avenue for faculty and graduate students to share preliminary research results and enabled them to assess the progress for all aspects of the project, including on gender. During the workshop 20 presentations were made which helped to enrich the discussions and shape the future project interventions.

Publications

All CGP partners have published articles of project findings to foster more knowledge sharing among partners and other scientists taking a gender perspective in discussion papers, books and newsletters. Some of the publications are:

ILRI Discussion Paper

After the project inception meeting in 2011 a qualitative gender study was conducted on 12–17 September 2011 by ILRI with support from SUA in rural Tanzania. The study involved gender disaggregated Focus Group Discussions (FGDs) involving 224 men and women who participated in the FGDs from the four study villages of Wami Luhindo and Kunke in Mvomero, and Masinyeti and Ihanda in Kongwa respectively. A total of 12 FGDs were conducted to achieve the study objectives.

Book chapter

Galiè and Kantor (2014) authored a book chapter 'From gender analysis to transforming gender norms: using empowerment pathways to enhance gender equity and food security in Tanzania'. Drawing on findings from field studies on knowledge, attitude and practices implemented in August (2013) and January (2014), they discuss the concepts of gender analysis, empowerment, and present a participatory empowerment pathway as a possible approach for operationalizing Gender Transformative Approaches in the field.

Newsletters

Four issues of the Crop and Goat Newsletter were published and distributed. These were also placed on project website at UoA.⁴ Issue four took a gender focus.

4 Monitoring and evaluation:

A project M&E framework was developed and presented at the inception workshop in May 2011. This framework included tools for data collection and tracking key results/progress of the project.

From 23–26 July 2012, SUA conducted a day long training on community-based M&E in each project village with backstopping from ILRI where 81 farmer group members (51 male and 30 female members) were trained. They had all participated in the baseline survey and most of them own goats.

From 11–15 February 2013, the monitoring team from ILRI in collaboration with SUA team, conducted training on M&E to 2 newly recruited research assistants, 8 village extension workers, 2 technicians from SUA who are attached to the project and 1 researcher from the root crop component. Main emphasis was on the different types of data to be collected, how this data is to be collected, how to input the data into the system, analyse them and give feed back to the farmers.

4. <https://sites.google.com/a/uAlberta.ca/diary-goats-and-root-crops-tanzania/home/newsletters>

Findings

At the time of the development of this paper the analysis of the endline household survey was not available yet, so the baseline data could not be compared with the endline data. However, the gendered findings of the baseline household survey are by themselves very important to be noted as findings at the early stages of the project, so they have been incorporated in the sections as well.

At the end of this chapter some findings are provided that relate to how the project document was assessed halfway the duration of the project as being the guiding document for the planned activities. Whether a project accomplishes gender equitable results and impacts depends largely on the approaches used to implement interventions. Therefore, it is useful to share the perspective on the transformation or implementation processes used that was documented.

Role of livestock and crops in income generation and food security and aspirations of farmers

The findings from the gender analysis of data collected from the two districts of the project in September 2011 (Saghir et al. 2012) showed that livestock such as cattle, goats, chicken and pigs play important roles in income generation and food security of both men and women in Tanzania. There was however a divergent report on the importance of livestock across gender as women considered small stock such as goats and chicken as convertible assets that are easily traded to meet household's immediate and future needs, whereas men considered livestock such as cattle and goats as immediate source of large income.

Perceptions of women and men on the potential benefits of integrating root crops and goat varied. Men perceived value addition resulting from owning dairy goats and the attendant increase in income for them, whereas women perceived change as an increased workload resulting from stall goat management activities which may not lead to an increase in income for them.

Another concern voiced by women was that any foreseeable increase in income from integrated farming might result in the withdrawal of men from household responsibilities. Some participants explained that the anticipated increase in men's real income could also come about either through men accessing women's income, or more commonly, women using their earnings to substitute men's expenditure on household needs and children's education.

A dairy farmer's aspirations assessment conducted in July 2012 revealed that there are differences in what men and female farmer aspire to achieve in the project (ILRI 2013a). Aspirations over one year seemed to be quite similar between men and women wanting to increase incomes from the dairy goats and root crops or increase food directly. In Mvomero district, the focus differed; the top priority for men was to build houses for the dairy goats and for the women it was to expand the land under sweet potato and cassava. Over the three year period into the CGP project, clear differences between women and men's aspirations emerged. The focus of women was to improving the quality of life of the households. In Kongwa, the focus of the female members was to expand land under production first and then to improve their living conditions in their homes including taking children to secondary schools prioritized as

the fourth most important. For the female members of Mvomero district, the priority focus was on education, food security and transportation. Education did not feature for the male members of the Kongwa group; rather the focus was on expansion of land, increased incomes and increased number of dairy goats.

Fieldwork (discussions with project participants) carried out February 2013 also brought out the farmers' expectations and concerns (Farnworth 2013). Women and men expressed similar visions, though women corroborated early finding that they prioritize educating their children. However, some women articulated very large visions, such as building a new house.

Farnworth (2013) found out that project beneficiaries 'spoke gender language' without really having the in-depth knowledge of what gender integration and actualization is all about. Lessons learned here is that there is need for more capacity development on gender issues in the project communities and possibly advocacy at the community level if ILRI is given more opportunity. This could be achieved if the CGP continues with a second phase. The implementation period for the first phase of the CGP was too short to monitor and evaluate transformative impact of CGP project. It was observed that despite of the gender integration centrality of this project, gender is almost invisible in the objectives. It appears only in terms of an expected impact analysis on the project objectives and in terms of female participation in value chains under objectives. Importantly, though, the outcomes per objective show strong gender disaggregation of expected outcomes and outputs. Subsequently, even if all project components will integrate gender, there must be a clear pathways for achieving such.

Tracking of CGP gains and impacts were difficult. There is the need for clear indicators in future projects to include and measure empowerment, start with a clear definition of empowerment, develop indicators to measure change along the pathway (across scales and actors), so as to better track progress towards gender transformative and empowerment goals (Galie and Kantor 2014).

Ownership of assets

The gender analysis (Saghir et al. 2012) found that men owned all the goats (though local breeds which are hardly used for milk production) and made all the goat related decisions unilaterally and women owned goats only through bride wealth, inheritance and by direct purchase, which was uncommon. Even when a woman purchases a goat, she does not own it due to the persisting cultural affiliation. In some cases, men even indicated that women could never own goats, explaining that goat ownership by men is a traditional right. However, for some groups, there was some willingness to consider goat ownership by women. A minority of groups from Mvomero district reported the existence of joint livestock ownership compared to the rigid gender stereotype that existed on goat ownership in Kongwa district.

Ownership of crops between men and women is quite distinct, and depends on the market prices of crops and yield of the crop they grow for cash. Men own cash crops or crops for cash, whereas women own subsistence or food crops for home consumption. Even crops traditionally owned by women become men's once they become commercialized.

The baseline household survey conducted at the end of 2011 (ILRI 2013b) showed that men owned more livestock than women (TLU⁵ of 0.51 and 0.43 respectively), but mostly livestock was owned jointly (TLU of 4.86). This was also the case for ownership of household assets. Households that owned assets jointly (38.84) reported ownership of more assets than households where assets were owned either owned by men (23.49) or women (8.80).

5. TLU is Tropical Livestock Unit.

There were also differences in the contribution of livestock to the household asset index. The livestock contribution was significantly higher for women (16.19%) compared to men (8.95%) and highest for joint-headed households (30.44%). The land owned jointly (8.69) was significantly higher compared to that owned by men and women, whereby men owned more land than women (4.44 and 3.78 respectively). This shows that livestock assets as a measure of the store of wealth is more important to assets owned by women compared to assets owned by males. However, the livestock contribution was twice as important in households where assets were jointly owned.

There were also differences in asset ownership for goat rearing households; joint ownership is significantly the highest (asset index of 124.91), whereby male-headed households asset ownership was higher (75.75) than in female-headed households (23.10). For cassava producing households, there was a significant difference between men and women with men owning more (26.84 and 7.89 respectively). Joint ownership of assets (31.96) was also more than men and women ownership of assets. Significantly, more assets were owned by men than women among sweet potato producing households (36.38 and 7.81 respectively) while joint asset ownership (34.71) was slightly lower than assets owned by men.

In addition, the contribution of livestock to the household asset index was significantly higher for women (29%) and joint ownership (55%) than for men (19%) in goat rearing. This was also the case in sweet potato producing households (women: 23%, joint: 28% and men: 12%) and in cassava producing households (women: 20%, joint: 68% and men: 8%).

The gender asset disparity ratio is computed as the ratio of women's asset index to men's asset index. In terms of gender equality a ratio close to 1 would be desired. This ratio was found to be much higher (and closer to 1) for households that produced cassava (0.7187) and sweet potatoes (0.6573) than those that kept goats (0.5078) in the project villages. This implies there is a lower gender asset disparity for cassava and sweet potato producing households compared to goat rearing households.

CGP witnessed role reversal on the ownership of assets. This shows the desired change and impact expected with gender considerations in project communities known for cultural rigidity on goat and crop ownership. Now, women have joint ownership of both goats and crops, project communities are witnessing narrowing of assets disparity gaps between men and women. The resultant effect of this is improved food and nutrition for the family because of income managed by women. This improvement is due to the gender sensitization and awareness created by ILRI and partners on women empowerment and gender equity. Therefore, there is need to intensify sensitizing communities on gains inherent in gender equalities of access to opportunities and women empowerment.

Though the CGP enjoys the rich data collected from the baseline M&E data, subsequent M&E data collected could not achieve same. There was no continuity in data collected from the project inception to project completion. The effect of blending M&E concepts together means that it is quite hard to (i) discern the actual entry point and strategy for achieving specified outcomes and to (ii) discuss the hypotheses underlying each intervention. This created dearth in information that could possibly highlight lessons learned. Comparison was difficult and conclusion on the impact of the project were anecdotal, not backed by endline M&E data. In the future, more information should be collected throughout the project to ensure consistency.

Decision-making over assets and the proceeds derived from them

On the decision-making how to spend the proceeds from the sales of goats or root crops the household head from male-headed households was predominantly responsible for making the decision followed by the joint decision in the male-headed households (ILRI 2013b). These findings corroborated with the findings from the gender qualitative study earlier conducted for the CGP by Saghir et al. (2012). Also, it was common that decision-making about proceeds from the sale of goats among the female-headed households was only done by the head (female) of the households. Noticeably, in some male-headed households the spouse (female/wife) was the decision maker whereas in other male-headed households the decision was made jointly (ILRI 2013b).

Women also decided on food crop allocation such as the amount to produce. Some women indicated that their husbands contributed to household upkeep with the money from crop sales. Not all men, according to women, supported their families sufficiently (Saghir et al. 2012).

Already in August 2013 attitudinal changes were noticed in regard to gender relations with women getting more opportunity to make joint decisions with their partners compared to what occurred before the advent of the CGP where male farmers made every decisions in the house pertaining to resources use, access to resources as well as disposal resources (ILRI 2014). However, some women reported that men still have final say in decision making pertaining to some household needs.

The training on gender that women and men farmers received led to changes in the way farmers made decisions over resources and nutrition at the household level. More consultations on important issues relating to goats are experienced between men and women. This is a major achievement compared to the rigidity in decision-making on goat related issues before the CGP. However, on a practical matter for training on goat and crop management women from Kongwa asked to focus the training on practicing the new knowledge in the field as they are not able to read and write and find it difficult to follow teachings in class.

Decision-making about goat and crop management changed insofar as new activities were introduced: i.e. the women and men who manage the dairy goats and crops make decisions about their management (ILRI 2014). Most households in Mvomero said decision-making about milk and crop sale revenues were shared between men and women. Most women in Kongwa mentioned that they had not sold the milk or crops yet—due to the limited availability, even for household consumption—but thought that at the moment of sale their menfolk⁶ would take over the management of the revenues accruing from such venture.

Decision-making positions and responsibilities in communities

The CGP ensured that gender concerns was a crosscutting issue and therefore influenced interventions. This also had a bearing on the strategies used for participants to benefit from the project. These strategies led to addressing gender disparities in group formation to include women in leadership positions like in Kunke where the chairperson for the group is a female and also to give women major responsibilities. An example was letting the women be the ones taking care of the buck to serve the does in the villages.

Galiè and Kantor (2014) also found that decision-making about revenues mostly rests with the men. It appeared that men (only) started to share information with their womenfolk⁷ so that the latter could take care of the goats when the men were away. This was not needed with local breeds that are grazed by men and boys only.

The findings regarding decision-making over assets and the proceeds derived from them indicate that the trainings were perceived as helping to increase sharing of decision-making, but were probably insufficient to achieve gender equitable patterns. Moreover, when asked to detail the reasons why the work and decision-making relative to the dairy goats were shared more equally than in the past, it turned out that the main reason was the co-ownership of the goats. Men say they have no issue with women's ownership of livestock, but they are uncomfortable when decisions on goats are made by women rather than men. Co-ownership of the goats was the only way to ensure that men and women felt equally responsible in the goat management. Ownership by one family member only would entail the disengagement of the other member from any work associated with the goats and their produce.

Gender equity in decision-making was also associated with age. Young people in project villages aspire to more 'modern' lifestyles that include more equal gender relations with comparative advantage in decision-making than older generation that believe men make the decisions on assets and resources.

6. The word menfolk is used to demonstrate that the practice is not limited to the spouse only; it may also refer to other men in the household or extended family.

7. The word womenfolk refers to the wife first, but also refers to other women in the household.

The project has been able to positively improve some of the key domains of empowerment, i.e. resource ownership, power to make decisions, independence, improved sense of worth, willingness and ability to question one's status and capacity to negotiate relationships (Galiè and Kantor 2014). Again, a clear pathways and better indicators should be designed to track beneficiaries' livelihoods over time to ensure that CGP actually delivered and impacted on livelihoods of beneficiaries.

The numbers of training and capacity building communities were exposed to may not be sufficient to achieve gender equity because the focus is primarily upon transforming people's normative frameworks rather than offering an array of activities focusing on achieving change in various domains. Project partners are just witnessing gender utilizations of capacities developed at both community and household levels. As such, more time is needed to show observable differences across gender, descent and age grade.

Labour patterns

Saghir et al. (2012) found that women are responsible for caring for animals kept at the homestead. In contrast, the first KAP survey conducted in July 2012 found that the majority in Kongwa (71%) and Mvomero (88%) districts strongly disagreed or disagreed with the statement that 'looking after dairy goats is a woman's job because dairy goats require special attention and are usually kept at home' (ILRI 2013a).

Labour patterns, however, vary for both men and women in the two districts (Saghir et al. 2012). In general, men herded and women cleaned the goat house. In addition, women fetched water for the animals and took care of the sick kids while men were responsible for activities like gathering information on water availability, range conditions and market situation. Sometimes in the dry season, women stall-fed goats with purchased grain by-products they bought from the market. Children helped both men and women in these chores, but only when they were not in school. Demands of women's and children's labour increased during the dry season as they have to collect dried leaves and fodder for goats from nearby forests.

The allocation of agricultural tasks tends to be gendered, and are influenced by the scale and purpose of production—subsistence or cash (Saghir et al. 2012). Cassava and sweet potatoes were tagged as 'women' crops even though few women cultivated these crops; maize and paddy were cultivated by men. Women prepare land, harvest and participate in post-harvest activities. They also assist in their husband's crop farms, but the husbands never assisted the women with their crops. However, two years into the project some women mentioned that their husbands were contributing to the work more than in the past (ILRI 2014). This change may be due to gender relations awareness and sensitization on gender issues created by CGP implementers in the project communities.

The baseline household survey (ILRI 2013b) indicated that only male-headed households were involved in sales and purchases of goats. This was also the case for crop sales and purchases. There seems to be a relation with the distance to the location of sales and means of transportation used to go there which favour the men to be preferred to handle the sales and purchases. This has implications on decision-making on household income, because who sells and where sold has a strong bearing on management of income and what such income is used for (Saghir et al. 2012).

Farnworth (2013) found that women and men did not have the same view on how goat management tasks are divided/shared among household members. The men indicated that they are responsible for the construction of the goat house and other tasks are fairly equally shared by women and men with the only 'pure' female task being the boiling of water. Female respondents did not agree and mentioned that cleaning the goat house and the care of sick animals was their sole task. Women may naturally assume the mentioned role of animal caregiving because they are usually at home and are also the cultural health givers in their reproductive roles.

However, after more than two years in the project it was found that duties are more shared and there are more role reversal incidences in goat management such as feeding, milking and cleaning the goat houses and preparing the farms to plant root crops among other duties (ILRI 2014). The gender training was also instrumental in helping families learn

how to share chores at home and ensure everyone is participating in family activities. Further, both male and female farmers received training in root crops activities, marketing, product management and even household management in general. Dairy goat rearing is very attractive and lucrative for women because the goats are housed at the backyard and does not really involve women herding goats. It nullifies time wastage and women can use extra time to do other things they love doing.

Contrary to the perception some women had before the project started reported in Saghir et al. (2012), female farmers whose goats had kidded and were producing milk, and particularly the female heads of household, anticipate the new work on goats as a positive new task, because the benefits of accessing milk were more important than the extra work (Galiè and Kantor 2014). While the increased burden on women's workload is often considered a potential negative and unforeseen outcome of the introduction of new technologies, particularly when dissemination processes are gender-blind, this case shows that the women welcomed the increased workload as it was paralleled by their increased control of milk, its distribution in the household and prestige of owning dairy goats in the community.

Although according to the project farmers, there were no particular changes at the family organization attributable to knowledge gained in regard to labour allocation, some women in Wami-Luhindo and Kunke reported that there was increased workload at the household level (ILRI 2014); when explicitly asked about it, men acknowledged the extra burden on women and partly children, according to Galiè and Kantor (2014). This increase in workload prompted household unit to be more organized in the way they share the labour at the household level. Men and women have to agree at the household level who does what in the morning. However, there are men and women from Kunke and Wami-Luhindo who felt that there was not much change in labour allocation since they are traditionally livestock keepers and the activities around goat keeping are the same. What actually changed is the manner in which labour was allocated and more consultation in labour allocation was established.

The introduction of the dairy goats affected gender-based division of labour. In most households in Kongwa the women and children were mostly in charge of the new goats—kept at home—while men herd the other local stock for grazing. In Mvomero the goat management is shared among women, men and children.

Importance of gender analysis

Gender analysis was important to reveal how a newly introduced technology impacted the workload of men, women and children differently. It also helped to reveal more complex intra-household arrangements than declared in initial answers. When asked about the impact of the project on farm management most women and men stated that they undertook all goat-related tasks and decision-making together with their family members. Some qualified their statements by adding that the project made them aware of the importance of working together. Only through more in-depth discussions—with a focus on daily tasks of women and men—was a clear gender-based division of labour, in some cases characterized by flexible arrangements, revealed.

Source: Galiè and Kantor (2014).

Changing livelihood opportunities like rural–urban migration were identified as a factor that influenced gender and goat management and this increases workload for women (Saghir et al. 2012).

Food security

The baseline household survey data (ILRI 2013b) showed that the food adequacy situation in the two districts was noticeably different. In Kongwa, less than half of the respondents reported that they had adequate food in the last 12 months while the proportion of food adequate households among the female-headed households was slightly lower (39%) than the male-headed households (41%). In contrast, more than half of the households in the project villages of Mvomero district mentioned that they had enough food to eat during all the months in the last 12 months; however, again, the proportion of food adequate households among the female-headed households (52%) was slightly lower than the male-headed households (57%).

The comparison between different households headed by men and women regarding the Food Consumption Score (FCS), which is based on dietary diversity, food frequency and relative nutritional importance, shows that male-headed households have higher FCS than female-headed households in the project villages, but almost all households reported acceptable FCS of more than 35 except non goat and crop producing female-headed households which reported an FCS of 31.

It was also indicated that in all villages, female-headed households were on average poorer than the male-headed houses and secondly, incomes in different villages varied greatly. This may be a reason why female-headed households have less food (quantity) and less diverse/nutritional food (quality) to consume.

Additionally, Farnworth (2013) reported additional studies at the project sites that provided findings in Kongwa where men eat first followed by wives and children and in Mvomero where families usually eat together which explained that the food diversity is higher there. Men usually take consumption decisions in the household except in female-headed households. However, sensitization based on these findings already led to some changes:

- Some men—but not all—are starting to realize they have to take care of the family too, that it is also their responsibility to ensure that children—as well as women—are getting enough food. They are beginning to see that they can take care of the children, ensure access to health services and to share the work.
- Women are getting more confidence to speak and discuss with men. They are establishing more communication with their husbands.
- Change is most rapid and visible in female-headed households due to their relative autonomy and also because they are offered specific help by the project.

Galiè and Kantor (2014) also found that both men and women believed that men were in charge of ensuring food security at home. However, further discussions revealed that in practice, women were heavily involved in food production and provision and shared decision-making roles in ways that often seemed to contradict the normative roles reported before.

Both female and male respondents whose goats produced milk believed that their household food security had increased because they had reliable access to milk which they could either consume in the household or sell to buy other food. Many farmers, both women and men, used goat manure in their field to produce better vegetable crops that they ate or sold to buy other food, sold the manure or exchanged the milk to buy food. They also appreciated the money they saved by not having to buy milk, so they have more left to spend on other (food) items. However, the contribution of milk to household food security seemed more important in poorer households and particularly in female-headed households (both the poorer and less poor ones) and for women in male-headed households. In general female-headed households have less income-generating options (and remember female-headed households were on average poorer), so ownership of a goat provided options through sales of milk and manure or exchange it for vegetables with neighbours. Women considered the availability of milk in their courtyard important for them to control it and feed the children whenever needed.

A study on child nutrition and gender relations in the household indicated that chronic malnutrition was more pronounced in male children with the age of 12–24 months than female children (University of Alberta and Sokoine University of Agriculture 2013). Factors associated with malnutrition were location where the child lives, age of the child, educational level of mothers, timing for introducing complementary foods, type of complementary food and feeding frequency. Most decision-making and ownership of resources were undertaken by men, thus hindering women to make decisions that may influence the nutritional status of the family, including the children.

Access to services

The only service for which a higher proportion of female-headed households reported that they had access to was information related to the crop and livestock market. However, they did not use that service as much as male-headed households did (ILRI 2013b).

Project approach review findings

Whether a project accomplishes gender equitable results and impacts depends largely on the approaches used to implement interventions. Therefore, some findings are shared in this section that relate to how the project document was assessed as being the foundation document directing the interventions.

Farnworth (2013) noticed that despite the centrality of gender to the project, gender was almost invisible in the objectives. It appeared only in terms of an expected impact analysis on the project objective side, and in terms of female participation in value chains under objectives. Importantly, though, the outcomes per objective show strong gender disaggregation of expected outcomes and outputs. In terms of addressing gender, staff have received training in gender, half-day gender training workshops have been held in each project village, some follow up discussions have been held and women are directly included in all activities. Halfway the duration of the project this was not considered sufficient to achieve gender equity because the focus is primarily upon transforming people's normative frameworks rather than offering an array of activities focusing on achieving change in various domains.

A particular area of concern is ensuring effective research into development pathways. The research led project mentioned insufficient modalities for translating research into use. Work on gender could have been strengthened by developing an 'empowerment' framework. From an interview with a gender focal point who presented the project's vision for gender in her own words it was clear that the project was focusing on nudging women and men towards gender-equitable behaviour rather than attempting whole-scale transformation of gender relations. Indeed, the development of an empowerment framework based on the earlier mentioned gendered analysis and gender strategy could (have) help(ed) to achieve such transformation.

A lack of a comprehensive risk analysis was also mentioned as a difficulty. Two areas of concern regarding gender were mentioned.

- **Value Chains.** It was well documented that value chain projects are often captured by men and elites. This project relied primarily on gender sensitization as a strategy to prevent male takeover. Was this realistic? Could other methods to strengthen female participation in value chains have been introduced?
- **Gender.** Gender relations in both areas, and again particularly in Kongwa, were characterized by strong male decision-making power, and high levels of formalized and non-formalized polygamy.

Together with risks described in other areas of concern (i.e. environment, goat markets, goat milk markets, and cassava and sweetpotato) these issues posed serious challenges to the CGP. Therefore, it was suggested to develop a mitigation strategy for these risks.

Furthermore, the targeting strategy was discussed. The random selection requirement demonstrates the tension between research goals and development goals. A lead justification for the project was a focus on the most marginalized households (including female-headed households) but random selection does not guarantee this. Whilst random selection of respondents is good research practice, it was not suitable in this project. It would have been preferable to engage in purposive selection using pro-poor and gender-responsive criteria developed largely by the communities themselves. Promoting self-targeting, by creating a project of interest to poor women and men—but conversely of little interest to wealthier farmers—is important.

It was also stated that some key recommendations of the gender strategy developed early in the project were not addressed (yet).

- Provision of assets to women. This could have commenced with ensuring joint ownership of assets. However, the project registered goats in the name of the household head only.
- Specific strategies to involve very poor households, for example by organizing them into groups to obtain communal land for individually or communally worked plots.
- Working with existing women's and special interest groups as an entry point.
- Specific strategies to involve youth.

With respect to other recommendations, the degree to which community members were actually working on the development of equitable criteria for the ownership, management, and decision-making over project benefits was not clear. Similarly, the degree to which gendered indicators have actually been developed with community members to help track improvements in women's involvement in project activities and benefits was also unclear.

Although these findings were from the mid-term review, they are useful learnings and important to consider for the development of similar projects in the future.

Word of caution

Project participants had given the impression of almost complete gender equity around goat management, and that women expect to play a strong role in determining how profits were to be used. Suspicion was raised that the project participants had learned 'development speak' very effectively and were saying what they thought the study team wanted to hear. This shows the importance of triangulation in order to verify whether change had actually occurred.

Source: Farnworth (2013).

Summary of findings on achieving progress in gender equality

Summarized shortly, some findings on the Crop and Goat Project are provided below which are worthwhile pursuing:

- Access to and control over assets and the products and proceeds gained from them increased the independence of male and female household members as they can now make decisions with little dependence on resources of others.
- The project has been able to positively improve some of the key domains of gender empowerment, i.e. asset ownership, decision-making ability and authority, independence, improved sense of worth, willingness and ability to question one's status and capacity to negotiate relationships and change labour patterns.
- The use of gender analysis in design, implementation and evaluation stages helped in providing an understanding of the complexity of gender relations and labour organization and how they shape household strategies and power dynamics, and subsequently the differential impact of the project on different members of a household.
- The various project activities have helped to clarify the need for new participatory approaches, i.e. empowerment framework and pathway, to define an empowerment conceptual framework, set empowerment goals, translate the framework and goals into a pathway, identify indicators of change, and assess success of projects in enhancing change, all in a participatory fashion.

Discussion, conclusions and recommendations

Gender equity was intended to be integrated into the project activities, as well as being a key objective. The project was effective at increasing the independence, decision-making and food security of the involved livestock keepers and agriculturalists. However, these changes were of limited scope and were shown to be paralleled by the persistence of contradicting gender normative roles.

Though the findings from the reviewed project documents in chapter 3 show that the gender dimensions of the project⁸ are in need of improvements, they also indicate potential for enhancements. The baseline household survey and the qualitative studies revealed that much of the labour is still divided between men and women differently, and men own most of the livestock and other assets and make most of the decisions in the household, including on how to spend the proceeds gained from these assets owned by themselves, their spouses and jointly. However, these studies also showed promising opportunities for change. ILRI should be encouraged by these positive learnings to keep advocating for gender analysis of planned interventions and ensuring gender sensitive approaches are integrated in the implementation of these activities. A clear empowerment framework would support such *modus operandi*.

The culture of patriarchy and gender stereotype practices were mentioned as the main reason for women's poor ownership of goats in Tanzania. However, according to some groups that were formed around the project, there was willingness to consider ownership by women. Findings from the baseline household survey showed that most assets (livestock, household assets and land) are owned jointly and that joint ownership is significantly higher than men's and women's individual ownership (with still a substantial difference between men's and women's ownership); joint ownership—which can be seen as an expression of equal possession—already exists mostly. Co-ownership of the dairy goats, prerequisite of the project, was considered the main reason, by male and female project farmers, why the work and decision-making around the goat management were shared more equally than in the past. This could be a precursor for more gender-equitable attitude and behaviour reinforced by gender training and other transformative approaches. The participants of the project indicated that the training on gender that they received led to changes in the way they made decisions over resources and nutrition at the household level. ILRI should take consider this positive feedback to continue promoting joint ownership and developing capacities.

Ownership of crops between men and women is quite distinct; men own cash crops and women mainly grow food crops for home consumption (interestingly, cassava and sweet potatoes are considered 'women' crops). Even in the case where women are allowed to sell products, decisions on how the proceeds are spent are made by men. A concern was raised that men would spend increased income outside the household (with friends or marry additional wives). However, some women indicated that their husbands contributed to household upkeep with the money from the crop sales.

8. Gendered dimensions such as men's and women's (labour) roles, responsibilities, perceptions and aspirations, and gendered differences in participation and decision-making and in access to and control and ownership of assets and the proceeds derived from them.

Women prepare the land, harvest and participate in post-harvest activities. They also assist their spouses with their crop farms. While it was mentioned in the beginning of the project that husbands don't assist the women, later in the project some women pointed out that their husbands were contributing to the work more than in the past. Furthermore, the majority of group discussion participants indicated that, although men were mainly in charge of crop and investment related decision-making, they also discussed with their spouses.

Labour patterns, especially in dairy goat management, differed for both men and women in different districts of the project indicating there is no one single approach to goat rearing. With local goats, men herded and women cleaned the goat house, but dairy goats are kept at the farm courtyard with the zero-grazing system. Because men still take the other livestock out for grazing, women mostly manage the dairy goats. Nevertheless, a vast majority of the female and male members of the focus group discussions strongly disagreed/disagreed with the statement that 'looking after goats is a women's job because dairy goats require special attention and are usually kept at home'.

While a concern on the division of labour was raised by some women that the perceived change instigated by the project added to their workload, others welcomed the extra work as they were compensated by the increased control of milk (access and ownership) and its distribution in the household (decision-making). The milk or manure provides them options for income or for exchange for vegetables with neighbours.

Besides that women generally are in charge of milking the goats, selling the milk and using the milk for household nutrition, other tasks are nowadays shared between women, men, boys and girls.

The introduction of dairy goats has increased the household labour and while men acknowledged the extra burden on women, they also asserted that the additional workload made the household consult among themselves to organize the tasks. Therefore, it is debateable whether the sharing of goat-related tasks and decision-making has changed because of more gender-equitable behaviour within the household or out of necessity to become more and better organized as a household. Only more discussion and collaboration to enhance work arrangements may not directly lead to sustained gender-equitable behaviour. However, it is a good practice and offers an opportunity to show that consultation and cooperation is beneficial for all involved, and therefore may ultimately lead to more participation and sharing of tasks in the household. A number of female respondents indicated that the project helped them to understand their position and improved it with regard to ownership, labour and decision-making, while some male respondents now realized the importance of joint planning and working together.

Some respondents associated gender equity in decision-making to age and that the younger generations aspire to more 'modern' lifestyles that include more equal gender relations. This intergenerational difference offers an opportunity to break the culture of patriarchy and gender stereotype practices that was referred to before. Therefore, ILRI should take advantage of that feedback and empower the youth to promote gender equitable lifestyles among their peers (and their elders whenever possible).

Changing livelihood opportunities like rural–urban migration when men move away to work elsewhere were identified as a factor that influenced gender and goat management by increasing the workload for women. It was also mentioned that it does not increase the women's decision-making in the household as that remained reserved for other men in the household or male family members which need to be consulted before a decision can be made and carried out by the woman left at home.

Besides the potential opportunities that the findings revealed, the integration of gender into the research studies and the development activities has not been without challenges and raised pertinent questions as detailed below gathered from reviewing the project documentation:

- How best to define gender and related concepts, achieve a common understanding and apply the concept of gender in development activities?
- Which concepts benefit the gender activities within the project community, i.e. gender equality or equity? Will a call for gender equality be received with opposition from both men and women due to their cultural upbringing which put stress on differentiated roles for boys and girls, for men and women? Will a call for gender equality burden women with more tasks on top of the heavy burden they already shoulder at the level of household? Is empowerment and gender equity the way to go?
- How best to achieve gender equity through a change in gender norms and behaviour patterns without undermining the cultural symbols of masculinity and men's power, e.g. over decision-making on assets?
- Is the increased independence of women good for their economic empowerment or does independence add another burden and responsibility to women as providers of food and other necessities for household members?
- It takes time to change mind-sets, e.g. gender roles from cultural practices to equitable sharing of roles.
- The low levels of education, especially among women makes it hard for them to participate in project activities, access information by interacting with extension workers, read instructions on packages such as medicine for the dairy goat, among others.
- The existence of a notion that the project achieved an understanding of gender equality (among community members) more as working towards 'sameness' defined as sharing tasks. This is contrary to the anticipated empowerment, gender equity and changes in gender norms which involve a pathway enabling more expanded choice and opportunities for women and men based on their diverse needs, opportunities and preferences.
- The critical role of gender analysis in 'assessing how gender relations shape household livelihood activities and strategies in order for projects to respond adequately'.
- Need for indicators in future projects, i.e. to measure empowerment, start with a clear definition of empowerment, develop indicators to measure change along the pathway (across scales and actors), so as to better track progress towards gender transformative and empowerment goal.
- There is need for the development of a participatory understanding of local conceptualizations of empowerment—that way the project will be able to assess whether the identified changes, e.g. in women's independence in the provision of food and access to cash income as progress towards empowerment and gender equity or overburdening of women with new roles and putting them at loggerheads with their husbands and other members of the household/community.

Recommendations

As much as the findings showed some promising results towards gender-equitable outcomes which offer opportunities for change in gender relations and achieving more balanced benefits for women from development interventions, it won't be sustainable without clear pathways to achieve transformation from research findings into development outcomes. As indicated by Farnworth (2013) and taken further by Galiè and Kantor (2014) a clear empowerment framework (see summary description of their proposed empowerment pathway approach in box below) would provide such guidance.

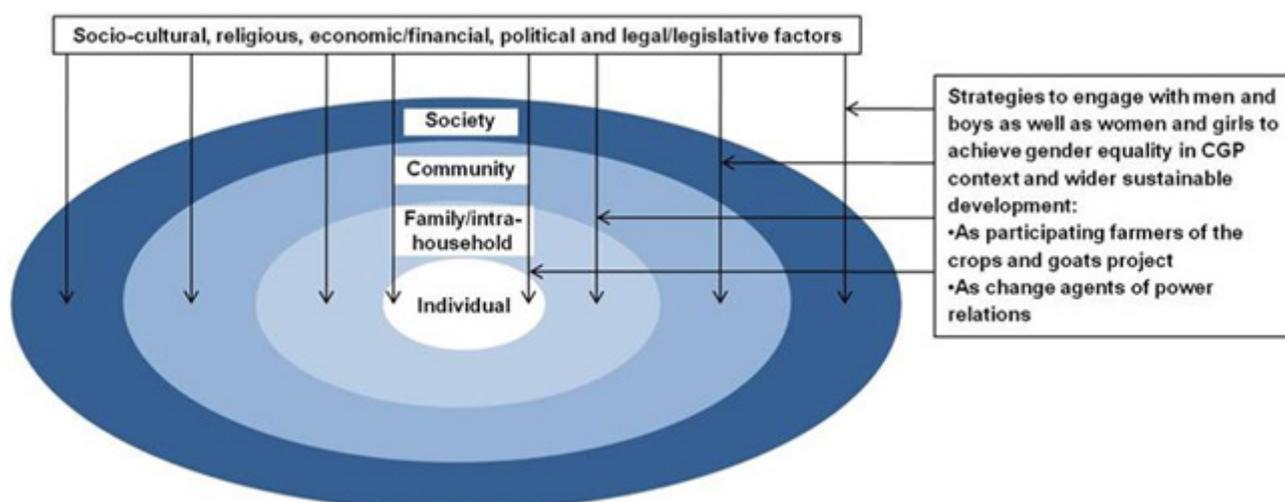
The empowerment pathway approach

The empowerment pathway approach proposes to achieve ownership across this range of stakeholders through applying critical participatory action research to engage the actors in: defining empowerment; identifying the opportunities and threats associated with progressing towards individual empowerment goals; diagnosing how both technical and social constraints affect value chain functioning and outcomes; identifying ways to overcome both sources of constraints; defining key indicators to monitor progress towards set goals; learning from the outcomes of the actions; and applying this learning to future actions. This process aims to foster questioning of the assumptions and practices underlying gender inequality as part of a process of challenging gender-based power imbalances and developing people's aspirations for self-determination beyond existing gender roles. Participatory monitoring of progress in the selected indicators towards the identified goals will help adjust project activities and provide insights on the unfolding of empowerment processes from the perspectives of different actors involved in them. The process of articulating empowerment pathways is expected to enhance individuals' capabilities to define their needs, voice them and act to satisfy them; it is part of the empowerment process itself. However, enhanced individual capabilities can be undermined when interactions take place in social contexts with rigid gender norms. Therefore, gender transformative approaches that seek to foster a more enabling social environment are needed to provide the context in which individual empowerment processes can be realized and sustained.

Source: Galiè and Kantor (2014).

While the proposed empowerment framework seems to suggest to work complementarily at two levels (individual and societal) to develop personal capacity and an enabling environment for change the authors of this paper recommend to expand this model to include family or intra-household and community levels specifically which have a close influence on the individual's empowerment. The ecological model originally applied by Heise (1998) to explain the occurrence of violence against women and help identify potential prevention strategies has been adapted to show how stakeholders could be engaged in achieving gender equality in the CGP context and wider sustainable development.

Figure 4. Ecological model for engaging stakeholders in achieving gender equality in the CGP context and wider sustainable development.



Sources: Adapted from Heise (1998).

Specific targeting of interventions was another recommendation raised by Farnworth which would not only help determine beneficiaries of the project, but would also apply to selecting other stakeholders of the projects to be engaged to ensure all levels where gendered (power) relations occur are going to be addressed. Participation and representation are important to consider when designing, implementing and monitoring/evaluating a project and the (expanded) empowerment framework could assist in increasing this in the approach to gender analysis. Entry points such as women's and special interest groups and youth should especially be explored as it was shown that the younger generations aspire to more 'modern' lifestyles that include more equal gender relations and interventions will benefit from the familiarity of a (women's and special interest) group with the community rules as well as the power of collective action inherent in groups. Working with groups will also facilitate more efficient resource management and strengthen community institutions and relationships between these institutions. Local institutions are key actors in promoting change and recognition of good practice by these institutions. In that regard, the authors of this paper also believe extra efforts need to be made to engage with men and boys as well, because they are often the ones that may uphold gender inequitable power relations which need to be transformed.

Applied research could document lessons on how to apply the gender empowerment pathway approach in different contexts and how the process of gender transformation occurs. It was clear from the review of the project documents that gender analysis and in-depth semi-structured interviews and group discussions focused on gender-based dimensions of the project helped reveal more complex intra-household (flexible) arrangements than declared in initial answers or through administered questionnaires like the baseline household survey.

Farnworth also indicated in her report that the project farmers who participated in the qualitative field study through semi-structured interviews and-or focus group discussions sometimes gave the impression of almost complete gender equity around goat management, and that women expect to play a strong role in determining how profits were to be used. Farnworth suspected that the respondents had learned 'development speak' very effectively and were saying what they thought the study team wanted to hear. This shows the importance of triangulation in order to verify whether change had actually occurred and future work should take this into account when monitoring their progress and ensure multiple ways of retrieving information to validate findings.

Annexes

Annex I. ILRI's CGP Tanzania outputs: Bibliographic list

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