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Gender aspects in the dairy value chain in Tanzania: A review of literature

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Abstract

Gender inequalities in the dairy value chain in Tanzania cannot be over emphasized. A desk review of (29) published and (32) gray literature was done to analyze gender inequalities in the Tanzanian dairy value chain from independence to date. Lack of sex disaggregated data used for monitoring, evaluation and impact assessment of the interventions soon after independence was among the outcome of the study. Further, women, unlike men, lack skills for enhancing dairy income generation owing to their limited access to training and other technologies. The study concludes that the Tanzania's dairy value chain is predominantly gender aware, but stuck at a place where gender issues identified are not dealt with. The projects also appear to have a low commitment to address the gender issues identified which could be due to a low political will or a low capacity to collect sex disaggregated data, conduct gender analysis of the recommended interventions that will narrow the gender gaps and implement these recommendations.

The authors recommend projects to recruit gender experts and train project staff on the economic benefits of integrating gender and how to mainstream gender in projects including collecting sex disaggregated data, analyzing it by gender and how to develop indicators to measure progress. The projects should be informed by comprehensive gender mainstreaming strategies that indicate how gender will be mainstreamed at every step of the project cycle. Ways of creating space for and maintaining women in male dominating nodes of the dairy value chain should be sought, tested and applied by research and development actors.

Key words: *gender inequalities, nodes of the dairy value chain, participation*

Introduction

Men and women actors in the livestock value chain have different needs, interests and

constraints as far as livestock management is concerned. To understand these varying interests and address the associated constraints among actors, adoption of the value chain approach to development of the dairy sector is considered to be imperative (Jeckonih et al 2013). The value chain approach to development has been used by various development actors including government institutions, local and international non-governmental organizations, and research institutions. The main focus of the value chain approach is to increase producers' incomes by improving productivity and linking producers to the market. Little attention has been paid on the gender relations among actors in the chains. Without considering gender relations, the chain is more likely to have a negative impact on women and other gender groups including the youth and children. For instance, women perform more of work, but receive fewer benefits than their male counterparts.

In order to address the gender inequalities in the dairy value chain, a systematic analysis at each node of the value chain is required so that they are clearly understood. Mutua *et al* (2014) recommend a critical analysis of what all players in the different nodes do and accrue from these nodes. Doing this could inform various interventions that could then lead to equitable sharing of benefits and a reduction in the gender income and poverty gap between men and women. This is because gender relations essentially shape processes within and between the nodes of the dairy value chain while molding the behaviours of men and women that influence efficiency and competitiveness of value chains in the market (Mutua et al 2014). In order to systematically analyze the dairy value chain in Tanzania, information gathering was an inevitable process. Information for this paper was obtained through a desk review of gray and published literature and key informant interviews with dairy value chain stakeholders in Tanzania. Underlying causes of issues identified from literature on gender and ways of addressing the causes of inequalities derived from lessons from past interventions associated with narrowing the gender benefit gaps between men and women value chain actors. Among the benefits considered include access to and control over milk and income obtained from the sale of milk.

Historical background of Tanzania's dairy Sector's Development

Historically, the dairy industry in Tanzania has gone through various changes. For example, during the colonial era, there were very few large scale farms owned by the colonial government and settlers located in the Northern and Southern parts of Tanzania (Kurwijila 2003). Dairy cattle were kept in the intensive system and the main market for milk was in urban areas mainly in Dar es salaam. In 1960, the colonial government withdrew completely from dealing with milk production, processing and marketing and left to private operators (Njombe et al 2011). From 1961-1965 private commercial farms and processing plants developed and dominated the industry. During this period, smallholders' share in the processing plants only ranged between 25 and 40% and the milk processing plants were run by Zonal Dairy Boards (Kurwijila 2003).

In 1965 a dairy industry Law was enacted and implemented by the National Dairy Board (NDB). The law stated that Zonal Dairy Boards (ZDBs) should be established in areas with sufficient production of milk to allow establishment of dairy plants. In 1973 the NDB phased out as the Minister did not appoint new board members; hence the function of ZDBs also became moribund (Njombe et al 2011). In 1974 a Livestock Development Authority

(LIDA) was established to oversee the functioning of the two subsidiary companies, the Dairy Farming Company (DAFCO) and the Tanzania Dairy Limited (TDL) that were established under LIDA. In its initiatives towards improving the dairy industry, in 1975 the government put more efforts towards increasing milk production through establishment of parastatal medium and large scale dairy farms, livestock multiplication units, milk processing plants and milk marketing infrastructures. These initiatives resulted in the establishment of 8 dairy farms under the Dairy Farming Company (DAFCO) and 7 milk processing plants under the Tanzania Dairies Limited (TDL) producing reconstituted milk using powered skimmed milk and butter oil which were supplied by the World Food Programme (Njombe et al 2011). Profits from sale of the reconstituted milk were used for development of the Dairy Industry. DAFCO underperformed and the management for TDL was not strong enough to handle some of the managerial issues. Furthermore, lack of foreign currency and high yielder dairy cattle were among the stumbling blocks towards advancement of the sector (Kurwijila 2003).

From mid 1980's the approach for development of the dairy industry shifted from establishment of medium and large scale farms towards small holder dairy development. These changes also coincided with economic reforms in which the government withdrew from performing production, marketing and milk processing (Kurwijila 2003; Mutagwaba 2013). Owing to these reforms, individuals and agencies joined the dairy industry as milk producers, processors and marketing agents (Kurwijila 2003; Njombe et al 2011). Performing all these functions, required an organ for regulation, hence the government enacted a Dairy Industry Act No. 8 of 2004 to facilitate the establishment of the Tanzania Dairy Board (Njombe et al 2011). The Tanzania Dairy Board was inaugurated in 2006 with an objective of developing and regulating the dairy industry. The Board members are from the Government, milk producers, processors, milk traders, input suppliers and consumers.

Currently, dairy cattle are concentrated in the cool highland regions of Kilimanjaro and Arusha, Southern Highlands (Mbeya and Iringa), as well as Tanga and Kagera. Dairy cattle raised in these areas are mainly owned by women such as the KIJIMO women group of Arusha, and Kalali and Nronga women groups of Kilimanjaro region. They keep dairy cattle and process milk into various products such as cultured milk, yoghurt and cheese. These products are sold to various consumers such as school children, individuals and tourists.

There are two major processing plants in the southern highlands (Iringa and Mbeya). These are ASAS and CEFA in Njombe region. ASAS processing plant has an installed capacity of processing 50,000 litters but currently it is processing only 12000litters per day (Omulo Undated), processing mainly pasteurized milk (75%), cultured milk (15%) and flavored yoghurt (10%) (Msuya 2012). CEFA Njombe Factory has an installed capacity of 10,000 litres per day, but currently processing only 2700 liters per day. The factory mainly processes milk into pasteurized (15%), yoghurt (25%) and cheese (60%) (Msuya 2012). Little information is available on gender aspects of the dairy value chain, this study was carried out to bridge the knowledge gap.

Methodology

This paper draws information from a review of published and gray literatures. The articles reviewed included 29 published reports and journal papers, 7 un-published research reports/dissertations, 3 baseline reports, 4 annual reports; 14 conference papers, 2 policy briefs and 2 project documents. A summary table on articles reviewed is given in Table 1 below and Information collected was analyzed using the content analysis method.

Table 1. A summary of articles reviewed

Main subject of focus	Published literature reviewed	Grey literature reviewed	Total
Gender and dairy value chain	7	10	17
Contribution of small scale dairy farming to community welfare	4	4	8
Role and participation of women in the dairy value chain	4	1	5
Monitoring & evaluation of the dairy projects	2	5	7
Up-scaling and out-scaling of the dairy sector	3	4	7
Heifer in trust scheme and its contribution to poverty reduction	3	2	5
Food security and nutrition	4	3	7
Production and marketing	2	3	5
Total	**29**	**32**	**61**

Results and Discussion

A Gendered Analysis of Tanzania's Dairy Value Chain

Based on reviewed documents, this paper revealed the trends in which the Tanzania's dairy value chain has gone through. Prior to independence, the capital based infrastructure on which the dairy industry was built was put in place. During that period – predating 1961there was no gender consideration in the development process, therefore, majority of the actors in the commercial dairy enterprises, which required a certain level of literacy and numeracy, were men as there were few educated women (Maeda-Machangu 1995).

The review has clearly shown that the government identified areas with conducive environment for establishment of the milk processing plants in the Northern part of Tanzania (Kilimanjaro, Arusha, Mara) and in the Southern highlands (Iringa and Mbeya) where the temperature and availability of fodder were more conducive for the survival of exotic breeds of cattle and their crosses being introduced for commercial dairy production. Milk from other parts of the country, therefore, continued to be sold in the local markets and few private dairy processing plants, which could not absorb all milk produced especially in the rainy season when cows produced large quantities. In the 1970s all the processing plants were possessed by the government after the enactment of the Arusha declaration. The government, like the rest of the world, did not pay attention to the gender as it continued to develop the dairy value chain. Consideration for gender issues in the dairy value chain started mainly from the 1980s – like for other development projects globally – and was introduced in Tanzania by the international programmes such as Heifer International and FAO (Maeda-Machangu 1995; SHDDP 1996). Gender considerations have continued in unsystematic ways.

Figure 1. represents a schematic construct for the Tanzania dairy value chain. The milk

prices indicated in various nodes were adopted from the study conducted by Moremilk project in 2012 (Sikira et al 2013)

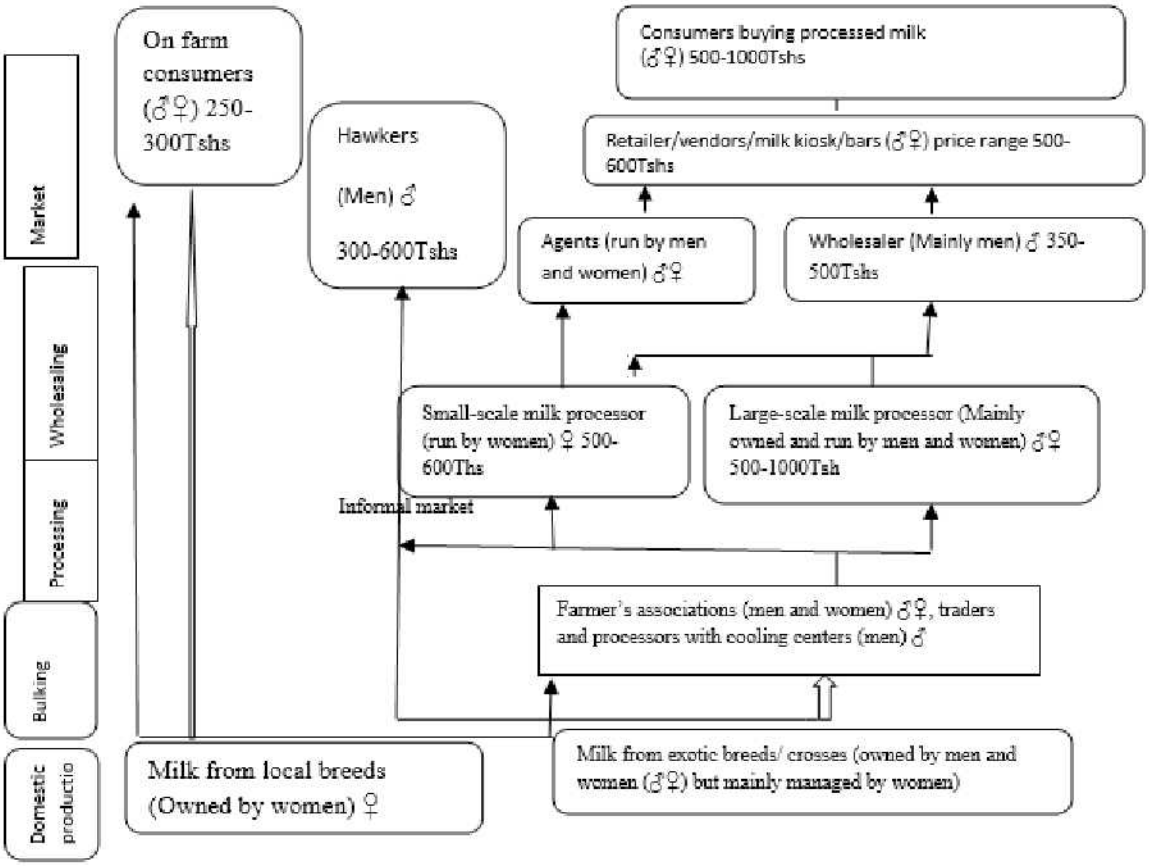

Figure 1. Dairy value chain in Tanzania indicating areas of concentration of men and women (Adapted from RLDC 2010). Key ? -a symbol for men ? a symbols for women

Note the prices indicated vary according to the production system and size of the packaging material. For instance prices at farm level in the extensive system was 250-300Tshs per liter while in the intensive system the price ranged from 500-800Tshs per liter. For the processed milk, the packaging material depends on the targeted consumers.

Producer's node

Gender issues in the production node include the well demarcated gender roles emanating from cultural norms. Men and women are active participants in the production node of the dairy value chain in intensive and extensive systems. Division of gender roles differ from one context to another, for instance in Nepal, men perform various activities including milking (Paudel et al 2009), whereas among most communities in Tanzania and Kenya, women do the milking. Unlike for women, roles performed by men at this node involve high mobility, which enables men to have access to new technology and information (FAO 2013).

Traditionally among the Maasai of Tanzania, women are assigned the role of taking care of the calves and sick animals that are herded near the home, while men herd animals outside

the home. In other parts of Tanzania, such as the Mara region, women herd animals in the field (Sikira 2010). Women perform multiple roles relative to men and hired labourers (Sikira et al 2013). For example, Saghir et al (2012) in a study conducted in selected villages of Morogoro and Kongwa districts in Tanzania revealed that women perform most of the activities in agriculture as well as in livestock management. Another study done by Sikira et al (2013) revealed that men performed fewer activities than women in both dry and rainy seasons. In the northern and southern parts of Tanzania roles such as herding and watering of calves, milking of cows, cleaning the animal shed and preparing food for the herdsmen are done by women. In the extensive livestock production system, women spend much time milking as there are more lactating cows and milking is done twice during the rainy season than in the dry season.

Hawkers' node

The majority of the actors in this node are young men capable of collecting milk from the producers to the collection centre or taking milk directly to the consumers. According to Nombo and Sikira (2012), collecting milk from the extensive system is difficult as producers stay far from urban and peri-urban areas where there are milk collection centers, milk kiosks and individual buyers. The study also observed that fewer women than men participate at this node. The few who, participate buy milk from intensive zero-grazing producers in urban centers. Majority of young men involved in hawking transported milk from farms to collection centers with bicycles and motorcycles. Women are less likely to use bicycles and motorcycles for transport because they lack capital to buy them, which results in their exclusion from this node. Furthermore, based on the risks of the job particularly the need to wake up very early in the morning (4.00 am) and peddling or riding of the bicycle or motorbikes on rough roads, the node is culturally considered not conducive for women.

Processing node

Women constitute a large proportion of actors at the small scale processing node because most of the processing activities done fall under the traditional roles assigned to women. Processing involves heating of fresh milk and most heating at home is carried out in the kitchen which is regarded as women's space (Nombo and Sikira, 2012). Women processors use various technologies to reduce workload and they are acquired through training offered by NGOs, government institutions and private sector (Majurin 2010). Equipment used at processing plants are considered to be women friendly, e.g. cheese churning machines and cheese pressers, whereas a few other equipment are not, e.g. lifting pulleys. On the other hand, large processing plants are managed by men, e.g. Tanga Fresh, Tan Dairies, Azam dairies, CEFA and ASAS. All activities including heating of milk are done by men provided that there is a commercial value. Gender norms that define gender roles are, therefore, dynamic because they are socially constructed to establish, maintain and sustain power of hierarchies among genders.

Gender roles in Marketing

While men are responsible for selling animals and overall decision making on livestock, women traditionally sell milk. Women are dominant in milk sale when there is no formal market; however, when a formal market is established women are pushed out of the market. This trend was reported by researchers in the Southern part of Tanzania (Iringa and Mbeya regions) as well as in the northern part of Tanga region (Mkenda-Mugittu 2003). Milk produced in Tanzania is mainly sold at the informal market by smallholder farmers (mainly women). Improving the informal market will definitely improve women's status. This could be prevented by ensuring that women get a fair share of benefits whether men take over marketing of milk or not by for example empowering them in ways that can enable them to negotiate for a fair share of benefits.

Women experience limited mobility which denies them access to distant markets and prevents them from exploring multiple options for benefits from other economic ventures (EADD 2008). Women lack access to transport (for example, access to money for transport, safety while traveling due to gendered asymmetries in intra-household decision-making powers. Other reasons include the reproductive roles that often tie them to home or close to home. Moreover, most women in Tanzania are illiterate and cannot make business transactions. In addition, the bargaining power of illiterate women is poor (Mkenda-Mugittu 2003). Sen (1999:3) argues that development is "a process of expanding the real freedoms that people enjoy". In this regard, cultural gender norms have taken these freedoms and development away from women.

Collection centers

Milk collection centers are mainly installed in areas with high milk production such as in the Southern highlands, the Northern and Eastern parts of Tanzania. The major actors are both men and women. These are mainly controlled by the big processors such as Tanga Fresh, Tandairies, ASAS and CEFA and the main actors are the producer groups (men and women).

Milk kiosks/milk bars

While majority of men own the milk kiosks/bars, majority of women/girls dominate the milk kiosks/milk bars as employees selling milk and other dairy products in milk as they are known to attract buyers (Nombo and Sikira 2012).There are many Milk kiosks and bars in areas with processing plants such as the Northern, Southern and Eastern part of the country (Arusha, Kilimanjaro, Njombe, Mbeya, Iringa, Tanga and Dar es Salaam) (Msuya 2012).

Input supply

Presence of inputs increases working efficiency of the dairy value chain. For instance readily available extension services to the producers would enhance the productivity and quality of the milk. Generally, men are responsible for buying these drugs and treating animals. Most men unlike women can easily travel long distances to purchase drugs from primary markets or retailer shops located in urban areas. Very few input supply outlets are

managed and owned by women.

Consumers

Almost half (49%) of Tanzanian consume milk (RLDC 2010). On average Tanzanians consume 45.0 liters per head per year (Kurwijila 2011; Mutagwaba 2013). Similarly, in Bangladesh, the National Health Strategy recommends a daily milk ration of 250 (ml) /person while the actual average daily consumption is 42 ml/person (FAO 2011). Most consumers in rural, urban and peri-urban areas in Tanzania prefer fresh milk (RLDC 2010) followed by fermented milk. The reason could be because fermented milk is easy to process locally making it readily available at the household and from milk kiosks/milk bars. Packed milk is mainly consumed in regions with processing plants such as Njombe, Mbeya, Arusha, Tanga, Morogoro, Kilimanjaro and Dar es Salaam, which have the highest number of consumers (Msuya 2012).

Gender gaps and recommended interventions

Following the gendered analysis the following gaps were identified and summarized in Table 2. Women are the custodians of both production and management as they conduct multiple roles in the management of livestock at household level. Based on the importance of livestock to the livelihoods of communities in Tanzania, women are framed as helpers to male household heads.

Table 2. Research gaps and sources of information

s/n	Research gap	Recommended interventions to fill the gap
I	Lack of a framework for measuring gender changes in response to planned interventions (Mkenda-Mgittu 2003)	Setting gender sensitive indicators during baseline survey(Mkenda-Mgittu 2003) Ensure capacity to integrate gender by recruiting experts and training project staff on gender (DAC 2010)
II	Women not fully involved in decision making when it comes to control of proceeds accrued from livestock even when they own them (Lyimo-Macha et al 2012); ILRI, 2014)	Empowerment of communities both men and women through training, lobbying by tradition leaders on some of the binding cultural issues.
III	Effect of seasonality lead to intra-household inequalities especially in marketing and consumption of milk and its products, women and children lose more than men (SHDDP 1996)	capacity building on proper feeding and feed storage to ensure feed availability throughout the year (ILRI 2013)
IV	Lack of sex disaggregated data for monitoring, evaluation and impact assessment data (Mkenda Mugittu, 2003).	Ensure capacity to integrate gender by recruiting experts and training project staff on gender (DAC 2010)
V	The negative impact of marginalization of women by men associated with commercialization of dairy enterprise, low capacity among women to benefit from livestock property rights and particularly when they own large stock (cattle) Kristjanson et al	Capacity building among women groups on dairy processing technologies and ensure capital availability through formulation of SACCOs and VICOBA (BMZ 2013)

	2010	
VI	Lack of power among women to own land in spite of the enactment of the 1999 village and land acts which clearly recognize their right to land (Lyimo-Macha et al 2012).	Proper implementation strategies of the formal law should be in place (HAKIARDHI 2012) Proper consultation of stakeholders during policy formulation that could indicate possible obstacles in implementation (Kurwijila 2011)
VII	Limited gender-specific research on the dairy value chain (Kristjanson, et al 2010)	Ensure capacity to integrate gender by recruiting experts and training project staff on gender (DAC 2010)
VIII	Lack/Poor participation of women in the dairy/livestock market Njuki et al 2014; Waithanji et al 2013	Empowering women in issues related to market and establish marketing hub where women can sell milk direct without going through middlemen

Conclusions

- The study concludes that the Tanzania's dairy value chain development has moved from predominantly gender-blind to gender aware based on effort done from 1970s to date. Development organization actors leading interventions must have the political will to integrate gender beyond comparing male and female headed households. For this to happen, gender expertise, that will develop systematic gender mainstreaming strategies in the entire project cycle – context analysis, implementation, monitoring and evaluation with a gender lens and impact assessment need to be done. The gender experts should be able to collect sex disaggregated data that will yield useful gender analysis that will give recommendations that can be implemented. Once implemented, progress and processes of interventions can be measured using appropriate indicators. Similarly, indicators for impact assessments should be well defined. In addition to expertise, managers of such projects should be held accountable to gender mainstreaming and be encouraged to do so by being provided with scientific evidence on the economic benefits of integrating gender.

- Women working in a group of women can perform better than working in male dominated groups and networks. This review realized some few women groups working in all nodes of the value chain that is from producer to consumers (for example Kijimo in Arusha, Kalali and Nronga in Kilimanjaro regions). Women's groups and network have proven to be useful pathways for sharing and passing information onto women. According to BMZ (2013), women can easily learn new knowledge if development actors can provide a targeted training to support their economic and cultural role in livestock production.

- The perception of the extension staff was also noted to bias their extension packages to men without considering women. This was due to the fact that large animals such as cattle are traditionally controlled by men and therefore training on its management should be imparted to men. However, women shoulders most of the management activities.

Recommendations

- Based on the review and above conclusions the paper recommends the following: Development of clear gender strategies that outline systematically, the gender mainstreaming processes at all levels of the project cycle in the dairy value chain for all ongoing and future dairy value chain interventions in the Tanzania.

- It is also recommended that, training on the various aspects of the milk value chain be done to those involved in the particular nodes such as women. Proper training will generally impart the necessary knowledge and skills required for increased milk productivity of the chain.

- Empowerment of women and developing their entrepreneurial and leadership skills would enhance women's capacity to deal with milk sale as a business.

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