



Understanding Gendered Tea Production Characteristics and Trends under Smallholder Farming Systems in South-Western Uganda

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Abstract

Tea production is one of the main sources of household income in south-western Uganda and contributes to foreign exchange earnings of the country. Tea production is dominated by small-scale farmers who supply fresh tea leaves to processing plants. The government of Uganda has been promoting tea production in traditional tea districts and expanding its production in new areas in effort to alleviate rural household poverty. The objective of this study was to assess tea production trends and the potential to benefit gendered households involved in its production in south-western Uganda. The study revealed that tea production increased in the last decade through the government's intervention in supplying free seedlings to farmers, strengthening extension system and supporting the establishment of private processing plants in tea-growing areas. However, it appeared that male-headed households opened up more land for tea production and were further getting support in form of improved tea clones and mineral fertilizers on credit from processing plants compared to their female-headed counterparts. Gender inequality, particularly in terms of access to and use of resources, particularly land, is the main obstacle that prevents female-headed households from increasing tea production and productivity as a means of reducing household poverty.

Subject Areas

Agricultural Engineering

Keywords

Gender, Household Income, Market, Tea, Production

1. Introduction

Tea is considered among the most popular and cheapest beverages in the world, which is consumed by a large number of people [1]. In Uganda, tea is the third export commodity by value and it is estimated that tea sector will grow at a compound annual growth rate of about 5.5% [2]. Its value is further projected to reach USD 73 billion in retail value by 2024 [3]. Tea, like other cash crops, has contributed to propelling Uganda's economy during the last decades [2] [4]. Evidence shows that on average, 93 percent of tea products are exported while 7 percent is consumed domestically [5]. More recent statistics from MoFPED [6] indicate that Uganda earned US\$ 72 Million from exporting 63,456 tonnes of tea, cultivated on 35,194 Ha, in 2012/13. This represented 2.8 percent of Uganda's total exports, 1.26 percent of global tea exports and 0.36 percent of Uganda's Gross Domestic Product (GDP). More than 67% of Uganda's tea is grown by small holder farmers under low-input systems [7]. The harvested tea from farmers' fields is processed by factories owned in different corporate setups [8]. Each of the processing plants has strengths and weaknesses with respect to business sustainability, relationships with farmers and impact on Uganda's economy [7].

Ugandan tea is commonly grown on the slopes of Mount Rwenzori and along the crescent of Lake Victoria areas of Bushenyi, Hoima, Kabarole, Kanungu, Kibaale, Kisoro, Mbarara, Mukono, Mityana, Rukungiri and Wakiso [6]. These areas are consistent with tea-growing requirements of a temperate climate with an average precipitation of between 1000 mm and 1500 mm for not less than 150 days per annum. In the above areas, temperatures average from 200°C - 250°C, an altitude of over 1500 m above sea level with rich well-drained fertile soils and soil alkalinity levels of not more than pH 6. Tea production in Uganda has fluctuated over time. In 1962, when Uganda gained independence, 6319 Metric Tonnes (MT) of tea were produced with slight improvements recorded over the next 8 years. But from 1972 to the late 1980s, Uganda recorded a severe decline in production—approximately 80 percent drop over that period. The poor performance in tea production was attributed to the political instability of the 1970's and 1980's, which led to the destruction of infrastructure and to disinvestment due to the abandoning of tea estates by Asians, who were the majority stakeholders. There is a notable steady recovery in production from 1987, with 2007 recording the highest level of production amounting to approximately 49,000 MT. The recovery in production is attributed to the change in regime, when President Museveni took over power in 1986, which led to the implementation of several recovery reforms [6].

Currently, through Government Strategic Interventions in response to Uganda National Development Plan III, tea production was prioritized as a commercial plantation crop as an avenue for rural household poverty alleviation [9]. With government support, farmers have been given free tea seedlings to expand tea production in the last decade. Further extension system has been revamped and strengthened through the recruitment of agricultural extension staff at the

sub-county level and the establishment of private processing plants in tea growing areas. Hence, this paper examines tea production trends and characteristics to assess the potential to improve both household incomes and rural livelihoods in the major tea-producing districts in the south-western agro-ecological zone of Uganda.

2. Study Area

The study was conducted in four major tea-growing districts (Mitooma, Rubirizi, Bushenyi and Buhweju) in the south-western agro-ecological zone of Uganda [10]. The study districts experience a bimodal rainfall pattern that presents two cropping seasons; short rains (from March to May) and long rains (from September to December). The predominant soil type in the study areas is ferralitic in nature, majorly composed of sandy loams. The soils are deep, well-drained, and of moderate to high fertility, but due to continuous cropping, most areas have lost fertility over time [11] [12]. The major economic activity is mainly small-scale agricultural production characterized by mixed farming systems with low productivity [13]. The dominant cash crops are tea (*Camellia sinensis*), banana (*Musa* spp) and coffee (*Coffea arabica* and *Coffea robusta*), while annual crops which are mainly under mixed cropping system are maize (*Zea mays*), beans (*Phaseolus vulgaris*), and sweet potato (*Ipomoea batatas*) among others. The altitude of the three districts ranges between 1600 to 1800 meters above sea level in Rubirizi and Buhweju, respectively.

2.1. Methods and Techniques of the Research

Several techniques were used to gather and analyse data required for the study, such as literature review, household survey among tea-growing household farms and thorough field observations. With regard to data management, two different, but complementary analytical approaches were taken. Firstly, statistical analysis was used to group farmers into household typologies based on gender of the household head. This was also used to assess the distribution of tea production characteristics, sources of planting materials, and tea-grown field locations, among others. Secondly, literature review helped in getting deeper insights into the clarification of some concepts related to research findings that were used to evaluate the data and make conclusions.

2.2. Questionnaire Design and Data Collection

The detailed household survey used a questionnaire based on a standard format to transcribe information from farmers' interviews. It was structured into four main parts including both closed-ended and open-end questions. The first part related to general household characteristics including gender and education level of the household head. The second part was related to farm characteristics including tea field typology, their locations, tea leafy yields as well as a source of planting materials. The survey carried out purposively targeted tea-growing farm

households in the major tea-growing sub-counties in each of the three districts. Secondary data about the tea production in the study sites were obtained from agricultural and statistical reports from the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) and Uganda National Bureau of Statistics (UBOS), respectively.

3. Results and Discussion

3.1. Distribution of Household Farms Engaged in Tea Production

The high proportion of households involved in tea production was located in the Buhweju district (Figure 1). The district has a number of private companies processing tea, which provide a market for harvested tea leaves. Processing plants being near farmers reduced transportation costs, enabling tea leaves processed when fresh. Further, private tea companies in the district offered planting materials, extension services and credit in form of mineral fertilizers to farmers. This made farmers in the district benefit from both government and private extension services on tea production.

Recently, the government has earmarked tea agro-enterprise as one of the avenues for alleviating poverty in rural areas [14], and has provided free tea seedlings in traditional tea-growing areas such as Buhweju, resulting in land expansion for tea production. Lack of tea processing plants in other districts contributed to low tea production in farmers' fields [7]. Transporting harvested tea leaves to neighbouring districts made no economic sense due to high transportation costs, which did not commensurate with the economic returns. This scenario was a disincentive to farmers located far from processing plants to expand tea-grown fields. Additionally, such farmers did not apply fertilizers since there was no reliable market for green leaves, which in turn led to low tea production and productivity.

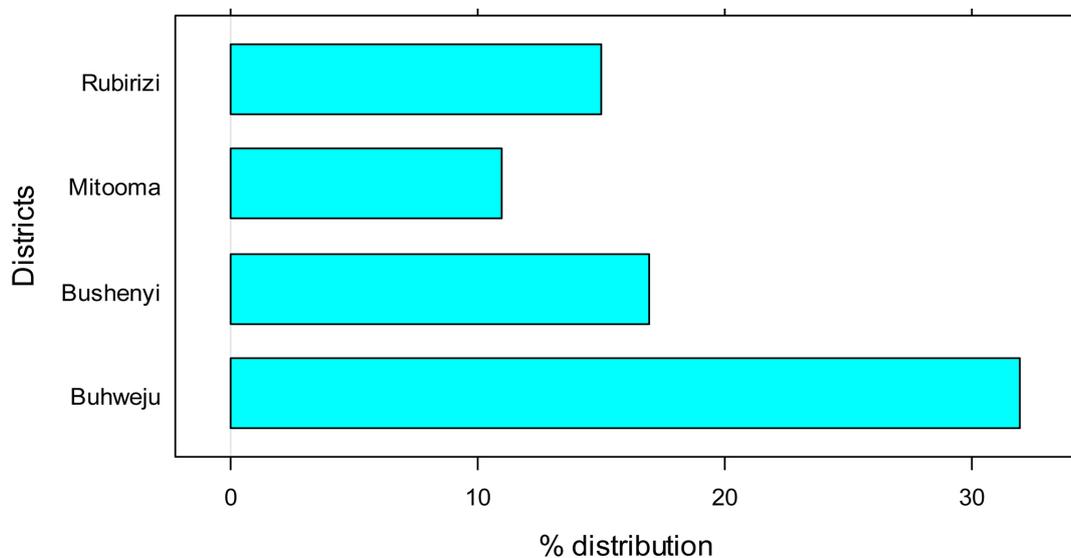


Figure 1. Relative distribution of households growing tea in sampled sites.

3.2. Household Tea Farm Typology Based on Education Level of Household Head

Majority of household heads involved in tea production were male-headed across all education levels (Figure 2). Nonetheless, majority of both female and male-headed households involved in tea production had primary education. Tea, being a cash crop, was the main source of household income in the tea-growing areas. From the social setting, men had a role in generating income for the households and therefore were seen to dominate in tea production. Further, gender inequality in accessing and utilizing land, made men dominate the tea cultivation and ownership levels. This was evidenced by the different tea field typologies owned by the two gender categories (Figure 3). However, it was the women who were the majority in providing workforce in tea plantations just like other regions in the developing countries engaged in tea production [15]. There was low workers' wage in tea sector and women hardly accessed and owned land for tea production. These challenges, coupled with low education, make female-headed households more vulnerable to poverty compared to their male-headed counterparts [16].

While more women were engaged in agricultural production compared to men, more poverty-stricken households were female-headed. This indicated that without addressing challenges related to gender access and ownership of land and other production resources in Uganda, women will always be left behind in poverty.

3.3. Source of Planting Materials Based on Gendered Households

There were four major sources of planting materials for tea production in the four sampled districts (Figure 4). Majority of male-headed households used volunteer plants as planting materials for tea-grown fields. This was attributed to limited supply of tea seedling distributed by the government and tea processing plants. Some farmers could not afford to buy seedlings from community-based nurseries due to rampant poverty in households [14]. Nonetheless, volunteer plants were often associated with low quality and productivity of tea leaves. This

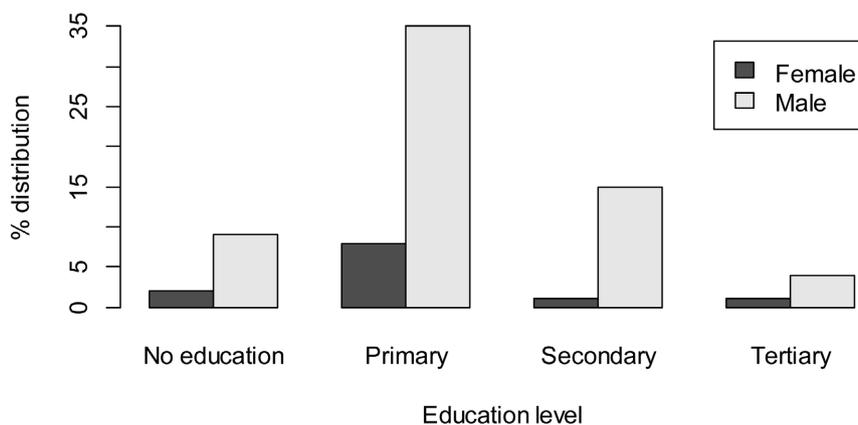


Figure 2. Gendered distribution of tea farmers by education levels.

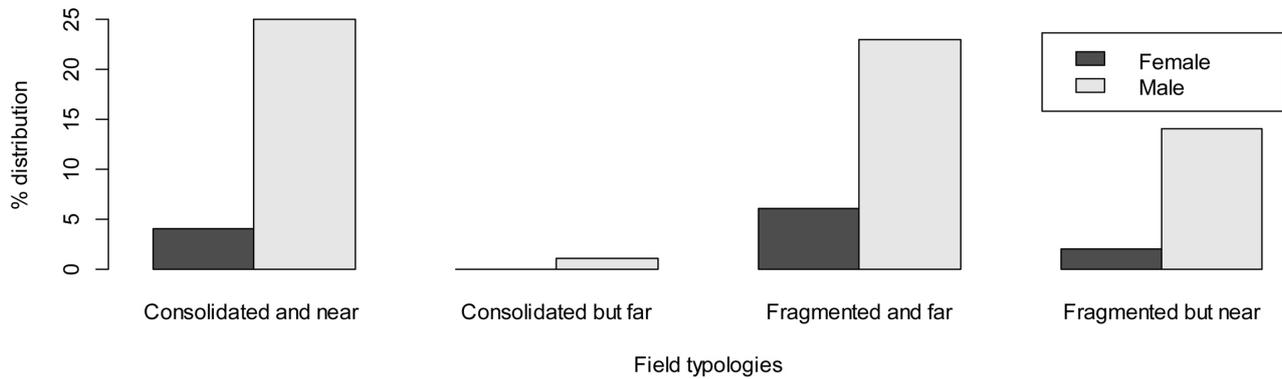


Figure 3. Distribution of tea fragmented and consolidated fields by gendered households.

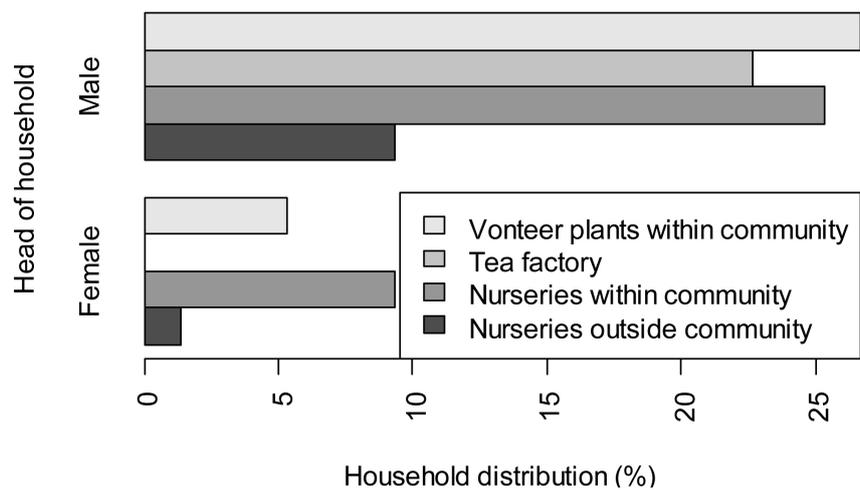


Figure 4. Proportions of households accessing tea planting materials from different sources.

implied that there was a need to strengthen community-based nurseries to produce quality tea seedlings at low costs in order to enhance tea production and productivity in the region.

Proportions of female-headed households accessing tea planting materials from different sources are quite low compared to their male-headed counterparts. This was attributed to a number of constraints such as limited access to resources and therefore capacity to purchase planting materials. Female-headed households often possessed smaller pieces of land that could only be used for producing food security crops such as beans and bananas. Further since female-headed households did not sell tea leaves directly to the processing plants, they hardly received planting materials from the tea factories. This implied that more male-headed households were getting empowered in alleviating household poverty compared to their female-headed counterparts. Tea is a cash crop in the four districts that are considered the main tea producers in south-western Uganda. The low proportion of female-headed households accessed tea seedlings, which indicated low tea production among female-headed households. This scenario became a challenge to alleviate household poverty among fe-

male-headed households through tea production alone.

3.4. Farmers' Perceptions on Leafy Yield and Labor Demand Trends

There was high farmers' perception of tea leafy yield increases in the last decade (Figure 5). This was a result of increases both in land acreage under production and productivity of tea fields. Farmers used improved tea clones supplied by the government and also increased the use of mineral fertilizers such as DAP in tea production. Mineral fertilizers were supplied to farmers on credit by the tea processors [14]. The credit was often deducted from the value of tea brought to the factory. This indicated that female-headed households hardly used mineral fertilizers in tea fields since they did not sell their tea leaves directly to the tea factories. Female-headed household often sold tea leaves to middlemen who supplied tea factories. This indicated that female-headed households were prone to exploitation by middlemen leaving them with little benefits from tea agro-enterprise.

Improved tea productivity was evidenced through increased frequencies of tea bushes harvested in a given month (Figure 6).

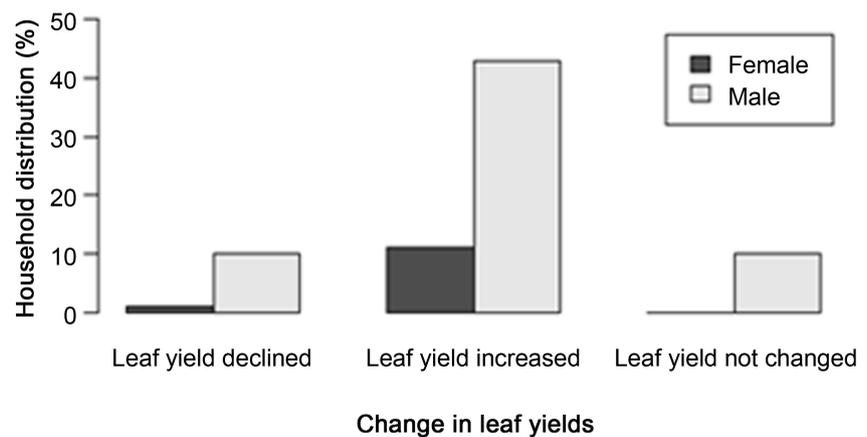


Figure 5. Farmers perception on tea leafy yield levels by gender in last ten years.

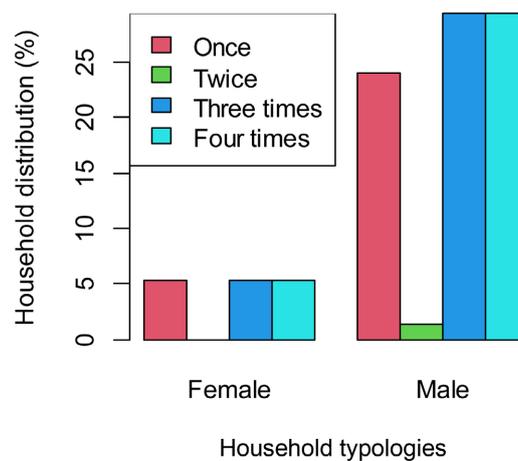


Figure 6. Frequency of harvesting tea leaves in a month.

Farmers perceived that tea production increased mainly due to land expansion under cultivation. This perception was similar to what was reported elsewhere that there has been increased tea production trends in Uganda with 65,900 MT in 2014; 67,000 MT in 2015 and 69,000 MT in 2016 showing consistent increment over the years [2] [9]. Farmers with extensive pieces of land were induced to tea agro-enterprise and expanded areas of tea production and bushes (Figure 7 and Figure 8). The government has been supplying free seedling to farmers since 2008 as an intervention to increase tea production for export [7]. Farmers with larger acreage used tea cultivation as means of alleviating poverty in households since household income from tea was substantial compared when tea was grown on small pieces of land. Analysts indicated that tea production required a minimum of three acres making commercial sense [7]. Hence, tea production mainly benefited resource rich male-headed households compared to female-headed households that were constrained with production resources.

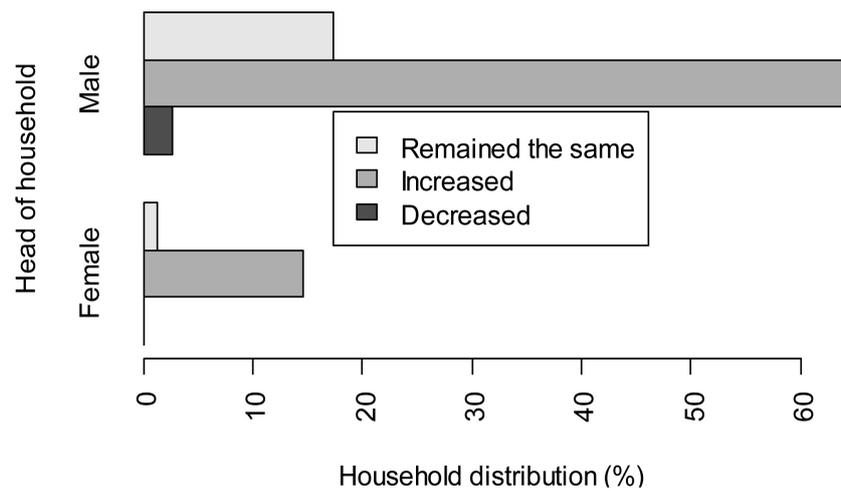


Figure 7. Farmer's gendered perception on land size cultivated for tea over the last ten years.

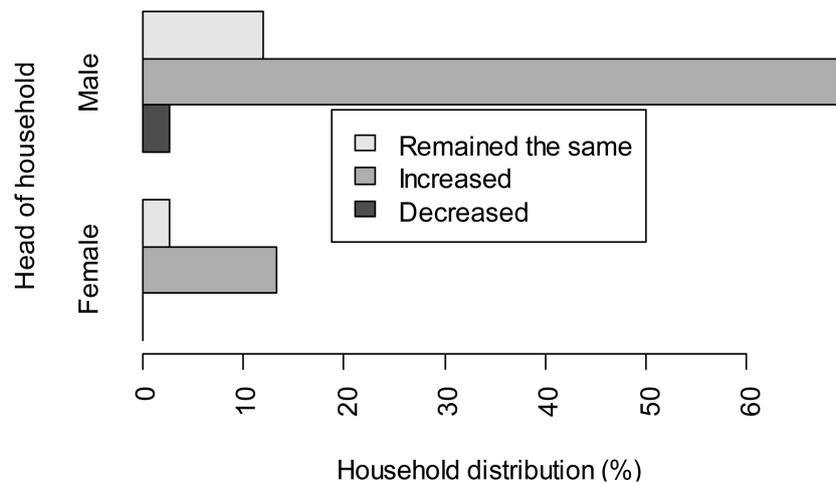


Figure 8. Gendered farmers' perceptions on changes of tea bushes in the last ten years.

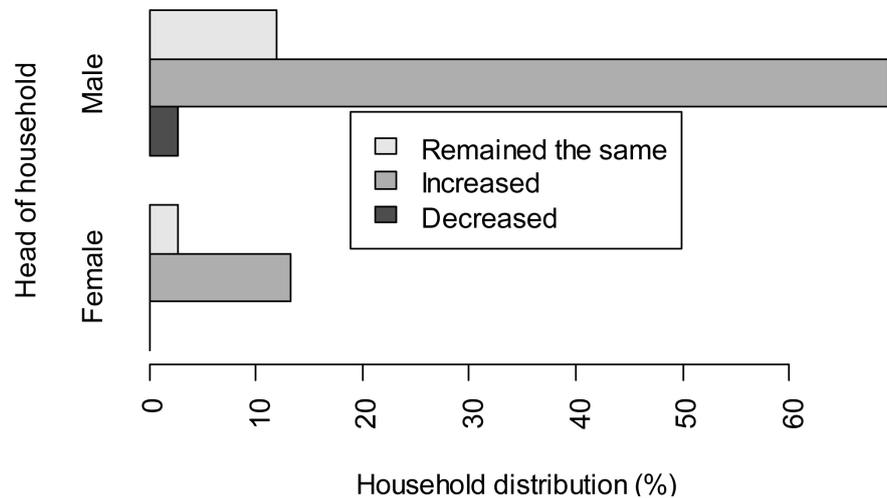


Figure 9. Gendered farmers' perception on trends for labor demand in tea production over the last ten years.

Tea processing plants provided ready markets for tea leaves [7], which was a catalyst for farmers to expand tea-grown fields [17]. Tea was often harvested more than once every month making it a reliable crop for farmers who needed periodic household income. Tea was considered a man's crop and this explains high involvement of male-headed households in its production.

Increased road networks in form of feeder roads, and collection centers also enhanced tea production in the region. Farmers' harvested tea leaves could no longer take many hours to reach processing plants. There were a number of privately owned trucks of tea companies that moved in communities carrying farmers' tea leaves to the processing plants in time, thereby reducing tea waste before processing. The increase in tea production and productivity called for increase in farm labor, and it was mainly the male-headed households that could afford to hire casual farm labor (Figure 9).

Labor was mainly required during land preparation, planting, weeding, and harvesting. During harvesting, it was normally women who were majorly involved.

4. Conclusions and Recommendations

During the last decade, there has been an increase in tea production through the expansion of cultivated land and the number of tea bushes. However, it is the Buhweju district that dominates in tea production and this calls for establishing more tea processing plants to catalyze increases in tea production in the region.

Tea production, as an avenue to alleviate household poverty, is inclined towards male-headed households because of gender inequalities associated with access and ownership of resources, especially land, the main production input. There is a need, therefore, to identify additional alternative sources of income, especially for female-headed households with limited resources.

Farmers are still planting volunteer tea seedlings which could have an effect

on tea quality and productivity. This calls for strengthening community-based nurseries to enhance tea seedling production so that farmers could get access to good quality seedlings within their communities.

Conflicts of Interest

The authors declare no conflicts of interest.

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