

# Socio-Economic Impact of Large Scale Commercial Farming on Rural People's Livelihoods: The Case of Flower Farming in Central Uganda

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## Abstract

The development of greenhouse technology has enabled floriculture industry to move to places where it was impossible to practice horticulture. The present day floral industry is a dynamic, global, fast-growing industry, which has achieved significant growth rates during the past few decades. Experts believe that the production focus has moved from traditional growers to countries where the climates are better and production and labour costs are lower. However, little is known about the industry's social, economic and environmental impacts, especially in the global south. This study examines socio-economic impact of flower farming on the livelihood of rural people in Central Uganda. An exploratory sequential mixed method design and methodology was employed to investigate the industry's influence on the livelihood of flower farm workers and that of the community members residing within the neighbouring communities. The selection of participants entailed both non-probability (purposive), and probability (stratified and simple random) sampling techniques. The study, due to the above design, employed multiple data collection methods which included in-depth interviews, focus group discussions, and surveys. Qualitative data from interviews and focus group discussions were analysed using thematic analysis, while quantitative data from the survey was analysed using statistical techniques. The study found that farms were positively changing people's livelihoods through employment, generation of micro-enterprises, and improvement of infrastructures. Despite these benefits, the study also found some negative experiences with flower growing; loss of food production land, and interfering with other known livelihood practices like fishing from Lake Victoria.

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## Keywords

Flower Farms, Rural Communities, Impact of Flower Farms, Large Scale Commercial Farming, Rural Livelihoods, Central Uganda

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## 1. Introduction

The development of greenhouse technology has enabled floriculture industry to move to places where it was impossible to practice horticulture. The present day floral industry is a dynamic, global, fast-growing industry, which has achieved significant growth rates during the past few decades. Experts believe that the production focus has moved from traditional growers to countries where the climates are better and production and labour costs are lower. Uganda, like many other developing countries, is attempting to diversify its export base with a view of gaining new sources of income for its ever-increasing rural population.

This improvement in green house technology is argued to have presented Uganda with a wider base to diversify its export base. The sources of export earnings, by 1989, was exclusively coming from coffee (95%) (World Bank, 1995). The danger of this narrow export base was demonstrated when the International Coffee Organisation (ICO) quota collapsed, and the international price of coffee declined from US \$3.3 per kilogram in 1986 to US \$0.98 per kilogram in 1990, (Ssemogerere & Kasekende, 1994). This witnessed Uganda's foreign exchange earnings dropping from the all-time high of US \$394 million in 1986 to US \$179 million in 1990, a decline of 45.4% in four years (Ssemogerere & Kasekende, 1994). The National Resistance Movement (NRM) government, aware of the gravity of the problem, opted to pursue some very liberal policies in order to promote export diversification. These new economic reforms ushered in non-traditional exports, which were expected to restore the equilibrium in the balance of payments, and reduce poverty levels by providing income to rural households (World Bank, 1995).

The initial effort by the NRM government to diversify into the nontraditional agricultural exports was guided by a 1987 newly created programme: Economic Recovery Programme (ERP) (Tjalling, 2001). However, this effort was frustrated with high inflation, drought, low coffee prices, stranded reforms, ongoing war in the north of the country, and border clashes with Kenya (Bigsten & Kayizzi-Mugerwa, 1999). By 1990, the NRM government made a second effort with the help of successive arrangements under the enhancing structural adjustment facility (ESAF) programme to once again stabilize the economy. According to Dijkstra (2001), 1990s saw the increment of investment in non-traditional exports that resulted to an export worth \$20 million.

Among the non-traditional exports targeted by the government by then was flower growing. Literature suggest that the growing of flowers for export, first

started in Kenya as early as 1960 and was later introduced in Uganda in the 1970s but solely for the local market (Agona & Muyinza, 2008; Whitaker & Kolavalli, 2006). However, by 1992 the industry had started attracting export-oriented business men and women, the first being the Hudda family of Asian origin. In five years later, the number of flower farms in Uganda increased from two to nineteen farms (Kirigia et al., 2016; Munyuli, 2014). Similarly, the land under flower farming increased from few hectares in 1992 to 192.1 hectares in 2009 (Floriculture Sector Brief, 2009).

Despite this enormous inclination of the NRM government toward agricultural commercialisation, livelihood scholars note that historically, such moves had not been of great benefit to the rural people (Michiel, 2017; Smalley, 2013; Cotula et al., 2009). Literature on large-scale commercial farming in Africa, presents a number of evidences where such farming failed to create any meaningful change in people's wellbeing. The earlier attempts by the colonial government to tune African countries into cash crop growing community clearly depicts these failures. The first cash crops (normally referred to as traditional cash crops), were first introduced by the colonial governments, these included coffee, tea, cotton and tobacco. According to Michiel (2017), these crops were labour-intensive and required meticulous timing. They competed with food crops for seasonally scarce labour. The attempt by the colonial governments to direct rural Africans into growing of such cash crops only compromised the production of food crops. In Chad, for example, Michiel (2017) reports how the colonial authorities forced local farmers to cultivate compulsory communal cotton fields at the optimal time of the short agricultural cycle compromising the work on food crops. In Mozambique, facing an equally short rainy season, the concessional companies and colonial authorities exhibited a similar disregard for food security. Consequences were severe, food shortages occurred regularly.

In Uganda, Nabuzale (2019), in her study on the impact of sugarcane growing on the livelihood of the people of Lugazi municipality, concluded that the large-scale sugar cane plantations in Busoga region had caused the loss of cropland. She argued that the prevalence of food insecurity in Busoga was as a result of the Indian owned sugar cane plantations in the region. Martiniello (2017), studying the same sugar cane plantations in Busoga region termed it "Bitter Sugarification". In his study Martiniello reports that one central feature of sugarification was the super-exploitation of labourers. He then painted a picture of how this exploitation was articulated by explaining how one particular activity, cane cutting, was done.

Sugarcane cutting, the hardest among the labour tasks in the sugarcane complex, is performed by young migrant workers from the country's north-western regions. Their work is remunerated on a piecework basis, for instance, once the cutting of five lines of 25 meters of cane is completed, not through daily wage. The cane is then bundled and remunerated at shillings

800 for every bundle. Generally, workers take from seven to eight hours of strenuous and dangerous work to complete eight bundles, for a total of shillings 6400 (less than \$2).

Martiniello (2017) further reports that the working and living conditions of sugar cane plantation workers, most especially for those who reside on the company estates, were miserable. In his conclusion he argues that because of the meagre pay, workers were caught in the spiralling “from hand to mouth” cycle which had kept them in poverty. The above discussion recounts to some of the challenges witnessed in the previous cash crop production in Africa. Considering the experiences with the so called traditional cash crops, this study examined one of the newly introduced non-traditional cash crops (flower growing) to reflect on its impacts on people’s livelihoods in Central Uganda.

The socio-economic impact studies of flower growing in some countries in Africa have presented a mix feeling on the industry’s sustainability. Although the literature reviewed suggest that the industry has generated jobs (Dolan & Sorby, 2003; Mbelwa, Semboja, & Bonaventura, 2000), boosted foreign exchange (Munyuli, 2014), and enhanced agricultural production technology (Dolan & Sorby, 2003), the industry has increasingly come under criticism for multiple sets of challenges. These include its failure to improve poverty levels of its employees (Mlynska et al., 2015), increased cases of poor occupational health and safety (Straka, 2008), poor working conditions and overexertion that has led to increased accidents in farms (Tekele & Mengesha, 2006). Other scholars have also condemned the industry on grounds of its pollution to the environment through chemical drifts. Reports of such chemical drifts include the pollution of Lake Naivasha in the Kenya’s Rift Valley, the presence of agrochemicals in Weruweru River in Tanzania and pollution of grazing land in Debre Zeit area in Ethiopia (Muhammed, 2015; Petter, 2014; Gezmu, 2013). All these suggest that, left on its own, the industry might not be sustainable.

There are increased reports in Uganda pointing at the deteriorating health of workers, poor working conditions and environmental pollution in some of the flower farms (Wandera, 2016). This has raised fears that Uganda might soon be faced with some of the above-mentioned challenges. Even though there are a number of studies on floriculture industry in Uganda, these studies have not indulged much on the industry’s socio-economic impact. This study attempts to address this gap by examining the socioeconomic impact of the industry on people’s livelihood.

## 2. Methodology and Study Area

### 2.1. Methodology

The study employed a mixed methods approach to examine the industry’s impact on people’s livelihoods. A sequential mixed methods design that entailed an initial qualitative phase of data collection and analysis, followed by quantitative

data collection phase and analysis, and finally a data integration phase was used. The decision to first employ qualitative approach was because of the need to allow the workers and the neighbouring community members to narrate, in their own understandings, their experiences with these farms. The researcher believed that this approach was the most appropriate in capturing the events in flower farms. Agreeing that the results from a few individuals collected through qualitative tools is hard to be generalised without first confirming them in a larger sample, a follow-up quantitative survey was conducted.

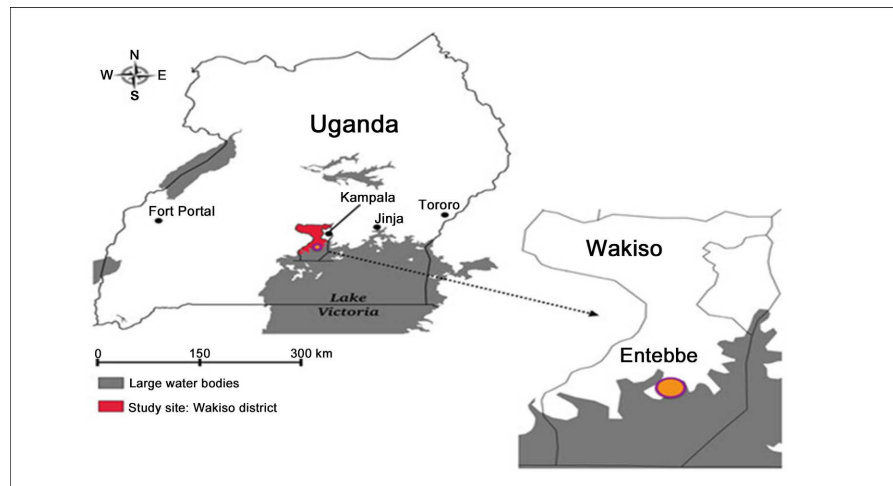
In qualitative phase, focus group discussions (FGD) and in-depth interviews (IDI) were used to obtain data from individual farm workers, local community members and key informants (farm managers, supervisors, union officials and community leaders). While in quantitative phase, a close-ended questionnaire was mainly employed to solicit data from the general work force. A total of 402 respondents participated in this study.

Data analysis process entailed the use of thematic and content analysis in the qualitative phase, while for quantitative data; the study used a number of tools. These included descriptive statistics [Mean, Standard Error of Mean (SED), and Standard Deviation (Std. Dev)]; inferential [multiple regression (Mincer's earning function) and t-statistics]; and impact estimation techniques [Propensity Score Matching (PSM)] and the Difference-in-Difference (DiD) methods.

## 2.2. Study Area

The study was confined in Wakiso District in Central Region of Uganda where the majority of flower farms were located. The presence of Entebbe international airport that facilitated the airlifting of flowers out of the country to their preferred destinations and the availability of constant supply of fresh water from Lake Victoria might have contributed to the convergence of the farms in this region. The two case study farms Aurum Roses and Wagagai Flowers were chosen to represent differing impact of flower farms.

In the rural communities of Wakiso Districts, farming is the main livelihood activity that people engage in. Plantain is the main food crop, sometimes intercropped with some other crops like potatoes, cassava, and beans, mostly for household consumption. Although some community members did engage in retail and microenterprises like arts craft, weaving, pottery and other primary industries, only a few tend to take these as sole occupations. Most of the community members are full-time farmers. Apart from farming the presence of a large water body (Lake Victoria) availed the communities with alternative livelihood strategy. Fishing and trading in fish formed part of the livelihood activities of the community members. The arrival of flower farms within these communities slightly altered this trend by introducing wage employment. The three communities that were visited included Bugiri Community hosting Aurum Roses, Nkumba and Bendegere communities hosting Wagagai Flowers. The communities shared common features and did not differ in terms of vegetation and climatic conditions (**Figure 1**).



**Figure 1.** Map of Wakiso District, (Showing the Location of Study Area Katabi Sub-Location). Source: Adapted from [Christine and Qiong \(2016\)](#).

### 3. Results

The primary aim of this study was to explore socio-economic impact of large-scale commercial farming on rural people's livelihoods. The research sought to examine the benefits derived from flower growing and their impacts on people's livelihoods. In this section, data are systematically organized into two overarching themes (benefits and challenges), each comprising sub-themes that provide a nuanced understanding of the participants' perspectives. The research questions guiding this investigation was; how has the floriculture industry economically improved livelihoods of flower farm workers and that of the local communities' members? The answers to this question are integral to understanding the socio-economic contributions of flower growing in Central Uganda.

#### 3.1. Benefits

The main reason for establishing flower farms in the rural areas was the desire to improve cash flow in such communities. The industry, being a labour intensive, was expected to avail a large number of the rural people with jobs that would eventually enhance their economic status. With this improvement of finances, other livelihood activities like the rural people engaging in small and midsize enterprises were envisaged to occur. In line with the above argument, this study attempted to identify some of the benefits the hosting communities had derived from flower farms. These benefits included the direct rewards like financial rewards inform of salaries and bonuses given to community members who were working in the farms while other benefits were indirect (increased entrepreneurial activities and improved infrastructure). The study also brings to light some of its findings on challenges faced by the communities which included chemical exposure, environmental degradation due to chemical drift, and the denial of access to some of the natural resources to community members. This section, therefore, presents and explains the findings in relation to the above-

mentioned themes.

### 3.1.1. Financial Rewards and Livelihoods

The study sought to establish whether the financial rewards handed over to workers in form of salaries and bonus had improved their economic status and whether the impact had also been felt in the neighbouring communities. The variable was measured by asking the workers to give their opinions concerning their economic conditions. The lead question was, “Do you feel that your economic condition has improved or worsened since you started working in this farm?” A summary of the responses are reflected in **Table 1** below.

**Table 1.** Measuring economic conditions of flower farm workers.

	Frequency	Percent
Not improved	75	23.7
Improved	247	76.3
Total	322	100.0

Source: Field Data (2022).

Majority of the workers (76.3%) reported a positive change in their economic conditions. This response suggested that the presence of flower farms in rural communities was constantly changing the economy of the people. Themes emerging from qualitative analysis lend support that flower farm workers, especially the women, were happy working in the flower farms because they believed that their economic status was improving. In one of the communities, an interview with the LC1 Chairmen revealed that people were happy with having a flower farm within their communities.

“The presence of the farm in this community is a good thing. It has brought employment opportunities to our youths who were otherwise idling around. Women who have just been waiting at home are now actively working and earning salaries,” Musa (not his real name) an LC1 Chairperson.

By the time of this study, the two farms had been in operation for more than 20 years. Another factor that explains this perception is the flower farm’s promotion system. The long-serving employees had gained enormous knowledge about flower growing. This experience gave them the skills that enabled them to be promoted to well-paying positions as supervisors and managers as alluded to by Joyce (not her real name);

“We started working here as casual workers earning very little money by then. However, with time you can see what I have become, I am a manager. My salary has enabled me to acquire land and built my own house and I am completing my bachelor’s degree next year.”

### 3.1.2. Meeting Basic Needs with Ease

Following the above findings, the researcher attempted to find out whether the

workers were able, therefore, to meet their basic needs with ease. **Table 2** below presents the binary logistic regression for the factors associated with the perception that basic needs were met with ease.

**Table 2.** Results of the binary regression for the factors associated with the feeling that basic needs are met with ease (Not met with ease is the RC).

	Coef.	Odds Ratio	Std. Err.	z	P > z
<b>Gender (RC = Male)</b>					
Female	-0.15	0.86	0.34	-0.45	0.653
Age	0.01	1.01	0.03	0.20	0.839
<b>Level of education (RC = Primary)</b>					
Secondary	-0.40	0.67	0.37	-1.08	0.278
Tertiary	0.66	1.93	0.50	1.31	0.192
<b>Employment status (RC = Permanent)</b>					
Casual	0.15	1.16	0.51	0.30	0.768
<b>Household size</b>	-0.27	0.76	0.10	-2.60	<b>0.009</b>
<b>Monthly salary</b>	0.42	1.53	0.31	1.34	0.179
<b>Times salary has been increased (RC = Once)</b>					
Twice	1.04	2.83	0.44	2.36	<b>0.018</b>
Severally	0.30	1.35	0.41	0.73	0.466
<b>Union membership (RC = Yes)</b>					
No	0.60	1.82	0.34	1.75	0.081
<b>Economic conditions (RC = Improved)</b>					
Worsened	-2.20	0.11	0.72	-3.07	<b>0.002</b>
Remained the same	-2.47	0.08	0.56	-4.39	<b>0.000</b>
Constant	-4.43	0.01	3.77	-0.18	0.239

LR  $\chi^2(12) = 66.72$   
 Prob >  $\chi^2 = 0.0000$

The coefficient of the women's perception on whether they were able to meet their basic needs with ease is negative. This implies that the women were less likely to report an improvement in their ability to acquire their basic needs as compared to men. Being a female reduced the likelihood of the acquisition of basic needs with ease by 0.8 times.

On the contrary, the result showed that the men were relatively better off and could easily meet their basic needs with ease. Several reasons supported this

finding; men as opposed to women were also engaged in other financially rewarding activities after work. One of these activities was the boda-boda transport business. During individual interviews, a male employee explained how he acquired a loan from the farm's SACCO and bought a motorcycle. This earned him some side income, which replenished his monthly pay. Another factor could also be that women are homemakers. In their duty of homemaking, women tend to use their earnings to buy food, clothe the children, and at times even pay school fees for their children. These, at times, drain them of their income.

The struggle to meet their basic needs, has forced some of the women to engage in petty trade after work. "Awino" (35 years' old who had worked in one of the flower farms from the age of 20 years) had the following to say when asked how she had been managing with her two children;

"I have a vegetable and fruits grocery. During the day my younger sister help me to take care of my customers but in the evening I run it myself up to about 10 pm."

Apart from engaging in some petty trades, some workers also reported opting, with slightly given opportunity, to work more hours so that they could get an additional pay accrued from over time worked. Some workers were even requesting their supervisors to be allowed to report to work on holy days (days when they are supposed to rest) to supplement their monthly pay by earning double on such days.

### **3.1.3. Increased Entrepreneurial Activities**

Apart from providing employment opportunities to the community members, this study found that the presence of flower farms in these communities had also enhanced entrepreneurial activities, which were hardly there before the arrival of the farms. These included the business in rental houses, retail shops and groceries. All these mainly targeted the migrants who flocked these communities in search of employment. Katanyoleka (not his real name) described the benefit derived from rental houses in the following words:

"The farm is changing this community into a housing estate. As the farm expands, more people come here. This has brought us a new business; in my small plot, I have built rental houses that have replenished my monthly income. Those rooms you see over there are my rentals. The tenants are working in the farm down there."

As more people flocked the communities in search of employment, more houses to accommodate the migrants were erected. Rental housing slowly became a luxurious business within these communities. The value of land also shot up as more business-oriented people scrambled for pieces of land to construct rental houses. When asked whether the tenants pay the rent promptly, Katanyoleka's response was:

"Sometimes the farm administration assists us to receive our rental money

from some scrupulous workers who could have, otherwise, run away with our money.”

Another area where the farms had participated in transforming the communities was on the supply of food. The study found that even though some of the migrants could send for food from their home districts, quite often they were buying their food within the hosting communities. This encouraged the indigenous members of these communities to expand their food production to trade the surplus to the farm employees. Numerous groceries and canteens dotted the areas neighbouring the farms. An interview with Nambiru (not her real name), 58 years of age, reported that she was selling some of the food products to flower farm workers:

“When we have surplus cassava, bananas, maize and many other crops we sell to the farm workers who live with us here in the community. We plan our food production with them. They have become part of us.”

These small and medium-sized enterprises (SMEs) had become the driving force that most farm workers were looking forward to starting. Beryl (not her real name), former employee of one of the farms, reported that a number of flower farm workers were aiming at starting their own businesses.

“After working in the farm for about six years, I started my own business. As you can see this is my grocery where I sell vegetables and fruits mostly to those who still work in the farm down there. Some of my colleagues whom we were working with have also left the farm and are now running their businesses; salon, and canteens while others are now boda-boda riders.”

#### **3.1.4. Improved Infrastructure**

Another area where the presence of flower farms has been felt is in the construction of new roads where there were hardly any. The arrival of flower farms in rural communities and their efforts in constructing new roads or maintaining the old ones can be argued to have eased transport constraints in rural communities.

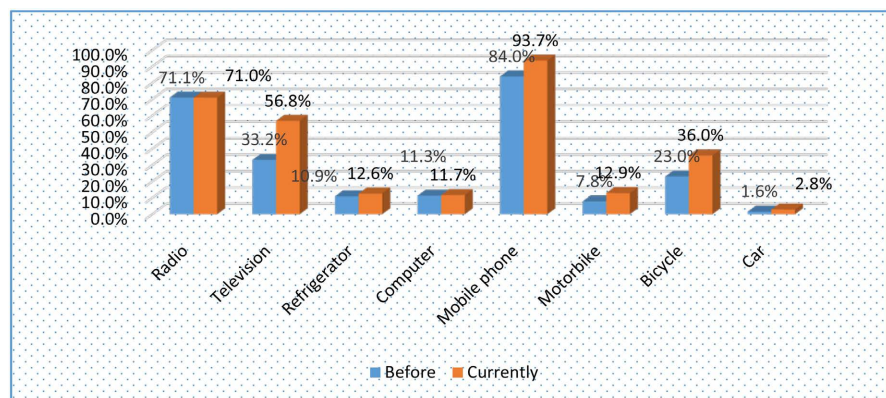
“The farm has improved our roads. It was very difficult to access this area. We have gone through a lot of difficulties in accessing medical services when we are sick. Can you imagine carrying a sick person for almost three kilometres up to the marram road near the shopping centre up there?” Musa, (not his real name) an LC1 Chairperson.

The study further found that not only did the farm improved or constructed new roads, they also gave back to the communities in other ways. These included the extension of tapped water outside their gates to community members. “Mawa” (a migrant worker who eventually settled in one of the communities) explained that for more than 20 years, the farm had supplied water to the community free of charge.

This extension of water to the community was found to be a common practise

in flower farms in Uganda. During one of the interviews, a woman who happened not to have worked in any of the flower farms echoed the farms' effort to supply water to their respective communities. She recounted a number of times she had fetched water from a tap next to a football pitch outside the farm. She also agreed that the water was treated and was good for cooking and drinking.

In the same vein, farms had contributed to the rural electrification by either allowing the community to tap the power from their transformers or helped in the purchase of a community transformer. During an interview with one of the leaders from the community he reported that they sometimes approach the farms for financial support for some community projects. In one such request, the farm contributed UGX 10 million for the purchase of a UGX 70 million transformer in one of the communities. The study further found that the availability of power within some of these rural areas saw the increment in the ownership of some of the gadgets that need power (see **Figure 2** below).



**Figure 2.** Assets owned by households before and after joining the flower farm. Source: Field Data (2022).

In one of the focus group discussions, a manager explained how their farm had also opened up the farm's medical clinic to the communities. Jenina (not her real name) had the following to say:

“We give the first priority to our employees whom we cater for up to their immediate family members but allow non-employees to enjoy these services at subsidized costs.”

Monica (not her real name), a resident of that community, echoed this:

“The farm brought for us a clinic. We used to travel up to Kisubi or Entebbe. It was difficult when you or your child happened to fall sick in the middle of the night. We are happy that this is now history; we now have a health centre in our community.”

The two farms visited had put in place farm clinics to cater for health of the workers. In **Table 3**, 99.1% of the respondents agreed that the farm provided medical treatment to the workers. One of the farms had put in place a health

centre three; fully-fledged maternity ward and full-time doctors offering medical services to workers as well as to the hosting communities, and occasionally receiving patients from the nearby islands.

**Table 3.** Provision of medical treatment.

		Count	Column N %
Whether the farm provides medical treatment for occupationally related injuries or sicknesses	Yes	313	99.1%
	No	3	0.9%

Source: Field Data (2022).

Despite the positive reports from the workers and community members on their economic improvement as a result of salaries, increased entrepreneurial activities and improved infrastructures, there were grey areas where farms were reported to have infringed on the activities of the community or practically denied the members the enjoyment of their natural resources. These included the loss of production land to the flower farms, poor occupational health and safety, and environmental degradation.

### 3.2. Challenges

Although the responses tended to agree that the industry had generated a number of socioeconomic benefits in form of wages, generation of entrepreneurial activities, improved infrastructure, there were glaring areas where the farms might have contributed to the vulnerability of both the workers and the community members. These included low wages, insufficient occupational health and safety through exposure of workers to hazardous chemicals, environmental degradation as a result of chemical drifts, and restricting access to some of the natural resources which were part of livelihood strategies before the arrival of flower farms.

#### 3.2.1. Low Wages

Despite the improved salaries for long serving employees, as reported in section 3.1.2 above, most of the general workers were of the view that their remunerations were low. Some community members also reported this problem during focus group discussions. “Joshua” (54 years) and have lived in that community for a long time was of the view that flower farms were unfair to their employees.

“The majority of workers in the farm down there are desperate. They cannot even afford a decent meal. They work for long hours and yet are paid very little.”

Shamim (not her real name) neighbour to some of the flower farm workers in their residential area also hinted that the flower farm workers were having some difficulties in acquiring basic needs. She observed that the farm workers were sharing a single room in order to be able to share the burden of the rent.

“I have never worked in any flower farm but I have some of my neighbours working in that farm down there. They go to work almost every day, on Sundays and even holy days. Three of them share a room ... I really pity them. In the evening they only take porridge with some greens”

In an attempt to find out why the general workers reported low salaries, one of the managers responded that apart from salaries, farms were giving other in-kind benefits to their employees. James (not his real name) said:

“It is not right to talk as if the farms only offer salaries to the workers; no, we offer much more than that. Farms go an extra mile to give workers two meals a day. This is something over and above what the government expect from us. The workers’ health care and some of their immediate family members is catered for by the respective farms they are working in. Some farms even transport the workers to and from work every day.”

Apart from the above benefits reported by the manager, the study found that there were other in-kind benefits that were hardly mentioned by the workers during interviews but were captured during farm visits. In the two farms visited, there were baby care units where babysitters did take care of the workers’ babies. The workers arrive with their babies in the morning, hand them over to the babysitters, and occasionally came to breastfeed them. The care was prolonged up to year three when the baby was about to start nursery courses.

“All these if computed, is a lot of money given to the workers,” James added.

With these in-kind benefits the workers were able to relatively save some large sums of their monthly salaries with the farms’ SACCOs. “Margret” (42 years old, harvesting manager) reported that the highest savers in the farm’s SACCO were the general workers.

“We have workers who save on a yearly basis up to the tune of two to three million shillings. These workers are able to feed their children, pay their house rent, pay school fees for their children, clothe themselves and still be able to save.”

One of the human resource managers during an interview confirmed this by reporting that the SACCO, by the time of this study, was worth UGX. 500 million (\$140,000). It was from these SACCOs that the workers were able to acquire large sums of money to increase their asset base. Mwebe (not his real name), an assistant human resource manager, reported that workers, especially the male ones, had acquired loans and motorcycles that they were using to offer transport business to workers and the community at large.

Boda-boda riding was one of the side income activities carried out by male flower farm employees. With this income, they were able to run their homes while saving more than 50% of their farm salaries. With these high savings, the study found that these particular groups of workers had access to big amount of

SACCO loans that some had used to buy plots and build their own houses.

### 3.2.2. Hazardous Chemical Exposure

Even though the responses from the qualitative phase suggested that there was a likelihood that workers did come into contact with agrochemicals, the quantitative survey results regarding chemical exposure revealed a different result.

This discrepancy in the results of the two phases can be explained in a number of ways. Firstly, in the qualitative phase, both active and former employees participated in the study. During community visits, the two groups were interviewed at different times. Community sessions provided the respondents with optimum privacy, making many to air out their views without intimidation. These testimonies were ambiguously missing during farm visits and the subsequent FGDs composit with only active workers.

An interview with one of the workers who was working as a scout for pests and diseases revealed that farms were reducing the rampant use of chemicals and instead were going biological;

“We used to have several complaints about sulphur, but the farm uses very few chemicals these days. Most of the time we apply some insects which eat some of the pests that have been disturbing us. For this reason, we hardly come into contact with chemicals,” (Dan (not his real name) one of the scouts).

In line with the above incidences, the researcher attempted to know whether the flower farm workers were satisfied working in the farms. To understand the workers’ satisfaction, the variable was measured by asking the workers to describe the working conditions in the farm. The lead question was, “Do you feel that working condition in this farm has improved or worsened since you joined?” Out of 319 respondents, 284 (89%) of the workers agreed that their working conditions had improved. A summary of the descriptive statistics is given in **Table 4** below.

**Table 4.** Measuring working condition.

	Frequency	Percentage
Improved	284	89.0%
Worsened	35	11.0%

Source: Field Data (2022).

### 3.2.3. Flower Farms and Environment

An interview with a woman who, for over twenty years, had lived next to one of the farms revealed that chemical fumes emanating from the green houses during chemical applications did reach her house. To respond to the awful smell, “Mariam” and others whose houses were neighbouring the farm resorted to staying away or shutting their doors and windows and remain indoors in the evening hours.

“To tell you the truth I have suffered here. As you can see, my house is just some few metres away from the fence, some times in the evening it can be very bad. We close ourselves indoors during such times to avert the smell. There are times when we are forced to just abandon our houses and move away for some hours. These chemicals are different. While some may make you feel that you are being choked others even make you shed tears.”

In another farm, a woman who was also staying some meters away from the fence of the farm recounted a night when she could not sleep in her house because of a terrible choking smell emanating from the farm. That awful night the couple decided to lodge in a nearby hotel and confronted the management of the farm the next day. From her understanding, which was limited, there was a treatment with a very strong chemical to kill some soil-borne pests and diseases.

### 3.2.4. Denial Access to Natural Resources

#### 1) Loss of Production land

The arrival and eventual expansion of flower farms in Central Uganda witnessed a change in the local people’s livelihoods. With flower farms taking over large pieces of land, several households were subsequently displaced. Pieces of land where food crops were grown were eventually taken over for flower growing. During community visits, a number of the interviewees hinted that they lost a valuable commodity to the flower farms. Namsoke (not her real name) 75 years old in one of the interviews responded;

“Together with my late husband, we had a well-kept banana garden. He made sure that we had enough food for our consumption and the surplus to trade-off for things like sugar, salt and fish. Anglers used to come from the Islands to buy bananas, sweet potatoes and even cassava from us. The *Muzungu* took my land away and left me desperate as you can see.”

As others were lamenting about their lost kibanja<sup>1</sup>, Mwanguzi (not his real name) who relocated from Nkole land (Western part of Uganda) and by the time of this study was residing in the central region, was seemingly happy with the flower farm. In his response, he said that they were not forced out of their land but sold it willingly.

“The farm gave us options upon which we had to decide. Either to be given money and on our own buy our pieces of land, or we identify a piece of land then farm buys it for us. Some refused the second option reasoning that the *Muzungu* could not be trusted and opted for cash money. You know the problem with money; some of us who opted for the second offer are the only ones who are now happy.”

Apart from paying for these pieces of land, some farms allowed the displaced locals to make bricks with the soil from their former pieces of land and use some of the trees they had in their compounds to burn the bricks for building their

<sup>1</sup>A kind of personal landholding system in Central Uganda.

new homes.

Even though Mwanguzi was happy with the transaction that made him own a title deed, it was clear that the arrival of flower farms and the subsequent loss of production land denied the community one of their sources of livelihood. As such, they had to adjust and find other ways of surviving. While others went to the lake to fish, some had no options but to join the farm as employees.

## 2) Restricted Fishing

The presence of Lake Victoria in the region has for a long time presented the neighbouring communities with a way of survival. Fishing has been a major activity upon which several community members have derived their livelihood. Some community members, who neighbour Lake Victoria and River Nile, have acquired enormous skills in fishing. The arrival of the farms and their presence along the lakeshores might have interfered with these activities. An interview with some of the community members yielded mixed reactions concerning the location of the farms along the lakeshores.

“When the *Muzungu* came here, he bought almost the entire area neighbouring the lake and fenced it off. We have not been allowed to come any closer or land on the areas bordering the farm. He has put his guards who have, on many occasions wrestled with us and took our fishing gadgets. They see us as potential thieves who should not be allowed to step on the farmland,” Mubiru (not his real name).

It is common practice that farms do secure their pieces of land by either erecting perimeter walls or chain links. Such demarcations are meant to bar the locals from trespassing into the farm’s premises.

“I am afraid,” Mubiru further explains, “that the farm is creating a rift amongst us by turning our colleagues, our kinsmen, whom we have harmoniously been staying and fishing together with against us. They ambush and take our fishing nets and sometimes even our boats.”

Some of these conducts do not only deny the local people one of the ways to earn a living, but also put a wedge between them. This has made the indigenous members of such communities to shy away from joining the flower farms, leaving it to migrant workers from other parts of the country.

## 4. Discussion

Previous scholars have attempted to examine the impact of large-scale commercial farming on rural people’s livelihoods. Even though the question of large scale commercial farming has been fairly addressed in the literature, much of it has been on the known traditional cash crops with very little if any given to non-traditional cash crops (i.e. flower farming). This study used an exploratory sequential mixed method design to examine floriculture industry’s impact on the livelihoods of rural people. The study found both positive and negative results as discussed below.

## 4.1. Benefits Accrued

The debate on whether agricultural commercialisation is beneficial to the local people has been around for some time. A number of scholars have argued that benefits arising from agricultural commercialization have been witnessed both at household and at community levels (Govere & Jayne, 1999). At household level, commercialized production could create employment to a number of household members thereby improving their economic conditions. It could also spur private and public investment in infrastructure and human capital development that eventually improve livelihood. However, some scholars have critical on this move. They argue that the emphasis on agricultural commercialisation by some of the developing nations might have been the cause of rampant food shortages in some countries in Africa (Martiniello, 2017; Michiel, 2017; Nabuzale, 2019). Some of these issues in line with the study findings are discussed in more detail below.

### 4.1.1. Financial Rewards

The findings suggest that flower farms availed employment opportunities to the otherwise disadvantaged rural community members in central Uganda. Majority of the workers (76.3%) agreed that, as a result of the availed jobs, their economic conditions had improved (see **Table 1**). According to ILO (2019), “paid work is a key driver of material well-being, economic security, equality of opportunity and human development.” To lift the economic conditions of the rural people, governments in developing countries have formulated policies that have enhanced the establishment of large-scale farms in the rural areas. Apart from tea, coffee, cotton, and sugarcane (traditional cash crops), modern and high value non-traditional crops like vegetables, fruits, and flowers have emerged.

Looking at the number of people engaged in the floriculture industry, there is no doubt that the flower sector makes a positive contribution in people’s welfare (Gezmu, 2013). The gender distribution of employment shows women are the overwhelming majority and constitute 77% of the total work force of flower farms. Mbelwa, Semboja, and Bonaventura (2000), in their study of cut flower production in Tanzania concluded that with the challenge of a labour force largely unemployed due to inappropriate skills and the slow labour absorptive capacity of the economy, flower farms avail employment opportunities to the otherwise disadvantaged rural community members. The harvesting, sorting and packing of the flowers are too delicate to be mechanised. While other industries may call for greater academic credentials, most of the activities in flower farms require hands on experiences, which are acquired on the job.

Due to the employment opportunities, that farms offer and their significant contribution to GDP growth, the World Bank encourages the expansion of this industry to a number of developing countries (World Bank, 1996; Dolan & Sorby, 2003). For instance, Colombia flower farms have provided employment to over 100,000 direct jobs (of which 60 percent are female) and 94,000 indirect jobs. In Kenya, the floriculture industry directly employs 90,000 workers of

which 75 percent are female. Such huge employment opportunities, provides the needed path for developing countries that are experiencing economic crisis to move out of poverty (Dolan & Sorby, 2003). In Uganda, agriculture remains the dominant sector by employing up to 65.6 percent of Uganda's working population (UBOS, 2013) and contributing 23.2 percent of GDP (Maweje & Munyam-bonera, 2016).

However, there was a general claim that farms were offering low salaries. This was largely reported by the general workers who were the majority. The negative coefficient (-0.15) of the women's perception on the ability to meet their basic needs with ease suggested that the farm's remuneration was not congruent with the living wage. This finding was in line with the finding of Mlynska et al. (2015) in Ethiopian flower farms. In their findings, they argued that the poor pay in farms made it difficult for the workers to meet their basic needs with ease. In order to replenish their earnings, the Ethiopian flower farm workers resorted to either working for long hours or carrying out some petty trade that ran late in the night. Like in the finding of Mlynska et al. (2015) in Ethiopian, this study found that flower farm workers in Uganda were working long hours in order to attain over time allowances. This long working hours is argued to be pervasive to the lives of the workers. It reduces the opportunities for socially productive leisure time by restricting available time for being, for example, an effective marriage partner, parent or citizen (Golden & Figart, 2000; Warhurst et al., 2008).

Unlike flower farms in Ethiopia, this study found that flower farms in Uganda offer other in-kind benefits (i.e. breakfast and lunch). This finding agrees with Azfar and Buyinza (2019)'s who argued that the rewards of flower farm workers in Uganda was not to be solely pegged on the monthly salaries. In their conclusion they argued that since the provision of meals or allowances for meals were common across all the flower farms, there was justification for including them as partial payments to the workers. Despite the effort made by Ugandan farms to avail the workers with lunch and breakfast, the findings still suggest that workers in flower farms were still struggling to meet their basic needs with ease. This study thus, argues that the provision of in-kind benefits, during the time of this study, had not generated any positive impact and as such did not cushion the workers' financial needs. It therefore reiterate the argument that it is not enough for firms to simply provide employment without emphasising the importance of the quality and decency of the job (ILO, 1999). While paid work, as argued by ILO (2019), is a key driver of material well-being, economic security, equality of opportunity and human development, Jade (2019), warns that a number of employees have remained poor. Many people have remained poor in developing countries, not only because of the absence of employment but also because they earn insufficient income from the organisations they work for.

#### 4.1.2. Infrastructure

The debate on why infrastructure development may have a positive impact on the income and welfare of the poor has been discussed by a number of scholars.

According to Gaël et al. (2009), most of rural community members are farmers whose incomes depend largely upon their agricultural production. In order to increase their agricultural productivity and hence, their income, they need modern inputs like seeds, fertilizer, and pesticides. This requires access to markets from where they can buy the inputs and sell the surplus produce (to raise the money for inputs and other necessities), and to do this they need adequately maintained roads that run through the villages. Flower farms transport their produce outside the host communities to their respective customers who are mostly based in urban centres or abroad. With their financial weight, these farms have constructed new roads and maintained old ones leading to and from their respective farms.

This study's findings report that flower farms have improved the status of infrastructure within rural communities that host them. Responses from the three communities visited were positive on the improvement of the infrastructures in these communities courtesy of flower farms. They reported that farms had built new roads where there were hardly any, supplied electricity and brought health services closure to people. Apart from the challenge of transporting the sick as was reported during interview, another constraint was the lack of means of accessing markets for the communities' agricultural produce. This had resulted in head loading, sometimes right from the field to home and from there to the market (Kleih et al., 2004).

Apart from roads, farms have also facilitated the extension of electricity to the rural communities where there was practically none. By allowing members of the community to tap power from their transformers, farms had made other aspects of development—education, healthcare, income generating activities, etc.—possible. Improved lighting, for example, promotes extended hours of study and in return contributes to better educational achievements of community members (Shahidur et. al., 2008). This in the end would increase the number of academically qualified people in such communities and thus, give them room to successfully compete for other jobs that calls for higher academic qualifications. This access of electricity also exposes the rural people to the benefits of using devices such as telephones, radios and television. In **Figure 2**, the study, report an increase of some of these gadgets in the community. Those who own television increased from 33.2% to 56.8% after the arrival of the farms. The ownership of mobile phones also went up after the arrival of the farms from 84.0% to 93.7%. These devices have availed the rural households with needed information for the betterment of their lives.

The inappropriate infrastructure in some of the African countries is argued to have increased the cost of production and hindered such regions from taping from the global wealth. Therefore, to reduce the production and transaction cost Gannon and Liu (1997) suggest that effort should be made in developing infrastructure. In this vein, Estache and Fay (1995), while studying the regional growth in Argentina and Brazil, concluded that enhanced access to roads and sanitation is a key determinant of income generation for the poorest regions in

Argentina and Brazil. In his study of rural roads in Kaduna State in Nigeria, Hettige (2006) observes that the building of either new roads or rehabilitation of the old ones caused a surge in the number of small businesses in the community. Like in rural Kaduna, the improvement of rural roads in Uganda, courtesy of the flower farms, might have increased agricultural production and revitalize economic activities in such communities. By renovating and building new roads as reported in the findings, flower farms in Uganda have contributed in connecting the local people to other core economic activities, and as such allows them access to additional livelihood strategies.

## 4.2. Challenges

The arrival and expansion of flower farms in Central Uganda did not only bring about positive changes but came along with some negative ones as well. The need for large chunks of land necessitated the relocation of people to create room for the establishment of these farms. During community visits, the respondents reported having lost their *bibanja*<sup>2</sup> to the flower farm projects. One of the reasons that facilitated the loss of such pieces of land to flower farm projects was the prevailing land tenure system. The 1900 Buganda Agreement transformed land ownership in Uganda<sup>3</sup>, introducing far-reaching changes in regard to land tenure in Uganda, the ramifications of which are still being experienced to date (Mafeje, 1973; Jorgensen, 1981; Hansen, 1986, Mair, 1933). This agreement saw the demarcation of the land under the influence of the Buganda kingdom into Mailo<sup>4</sup> and Crown land (Mamdani, 1976; Mafeje, 1973). Mailo land was divided into two categories: Private Mailo and Official Mailo (Mafeje, 1973; MISR and University of Wisconsin, 1989). Private Mailo was allotted to individual persons, effectively becoming privatised.

This arrangement alienated the local people making them lose their rights to owning land and became landless (Nabudere, 1980). These peasants automatically became squatters on the pieces of land they had owned for decades and were subjected to paying tithe and rent, locally known as “Envujjo”<sup>5</sup> and “Busuulu”<sup>6</sup> respectively, for the use of the land under their position. This is what Eria (2014) calls “the extraction of surplus from peasants”. This arrangement is argued to have facilitated the acquisition of large chunks of land by the incoming flower farm proprietors. The farmers must have found it simpler to negotiate the sale of the land with the said property owners, who in any case, were not using

<sup>2</sup>A kind of personal landholding system in Central Uganda.

<sup>3</sup>Buganda Kingdom was, and still is the most powerful monarchy in Uganda. The administrative capital of Buganda was located in present day Uganda’s capital city Kampala. Therefore, all developments in Buganda consequently impacted on the broader Uganda.

<sup>4</sup>The unit of measuring land was “square miles” hence the word “Mailo”. It is used to refer to freehold land that was given to the Kabaka of Buganda, chiefs and other officials as per the 1900 Buganda land agreement signed between the King of Buganda and British colonial administrators.

<sup>5</sup>Envujjo, loosely translated as tithe or tribute, was a percentage of the total produce that each tenant paid to the landlord (Eria, 2014).

<sup>6</sup>This is the ground rent payable by a tenant for the use of Kabaka’s land as provided by the law of Busuulu and Envujju Law of 1928.

the land. Sometimes such arrangement left the squatters at the mercy of the incoming proprietors, who, in this case, were interested in using the land for flower growing.

Land plays an important role in the lives of the rural people. It reduces their vulnerability to hunger and poverty (IFAD, 2007), and as such, the denial of access, either by the dictates of culture or policies of a state, pushes people into the oblivion of social and economic instability (World Bank, 2001). Julian et al., (2024) argues that in Africa, land-based activities are fundamental to livelihoods, and is the most important capital. Losing it to investors, as was reported by Bugiri, Nkumba and Bendegere communities, point at a lose of livelihood.

Another finding was the denial of community members to access Lake Victoria where they have, for years, earned a living through fishing. Fishing has been a major activity among the communities bordering L. Victoria. In 2022, FAO (2022) reported that the fisheries subsector had contributed three percent to gross domestic product (GDP) and 12 percent to agricultural GDP, and was providing incomes inform of employment, and export revenue.

The arrival of flower farms and the demarcation of pieces of land neighbouring the lake to bar the locals from trespassing into the farm's premises, denied the locals access to their known fishing grounds. Some of these conducts did not only deny the local people a means of earning a living, but also put a wedge between members of the community. The farm guards and anglers, who were hailing from the same community, turned against each other. Fighting and confiscating their brothers' fishing gadgets. This made the indigenous members of such communities to shun the flower farms, leaving it to migrant workers from other parts of the country.

## 5. Conclusion

Based on the above findings this study concludes that the establishment of flower farms in Central Uganda has positively impacted on the rural people's livelihoods. The farms have availed jobs, increased entrepreneurial activities within the communities and improved infrastructures. The creation of employment directly provided the community members with finances that they used to turn their lives around. The monthly salaries and bonuses received by the employees brought about the desired disposable funds that, with time, revitalized trade within the communities. The generation of micro-enterprises (salons, groceries, boda-boda transport, and rental housing), and accrued benefits realized from improved infrastructures (roads, electricity, water and clinics) courtesy of flower farms, were some of the amenities that the community members used to replenish their asset base.

Despite the above benefits, the study also found some negative experiences that could be argued to have denied the communities to fully realize their potentiality as far as livelihood outcomes are concerned. The loss of land to the farms, restriction on fishing grounds, hazardous chemical exposures to some members of the community and environmental degradation through chemicals drifting

from the farms, are some of the areas where farms might have negatively impacted on the peoples' livelihoods. This is one of the recommendations suggested by this study below.

## 6. Recommendation and Directions for Future Research

The study recognizes the economical contribution of flower farming, most especially within some of the remotest areas in the world. The green house technology has promoted the practice of agriculture in places where there were hardly any and thus, availed jobs to some of the otherwise disadvantaged members of such communities. However, there is need to understand the industry's impact on the environment in the new places it has moved to. The environmental impact is wide and was beyond the scope of this study. Some of the areas of concern should target the industries exploitation of resources like water, soil and energy. A close study on the contamination of groundwater by chemical drift, soil degradation and plastic pollution from greenhouses are important areas to be considered. This study highly recommends more research in such areas in future with an intention of tuning the industry to adhere to the call for sustainable development goals.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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