

Full Length Research Paper

Impacts on access to factors of production among smallholder farmers in central Uganda during COVID-19 lockdown

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The novel coronavirus 2019 which has brought about the covid 19 pandemics has hit the whole world starting from the super economies to underdeveloped economies. The impacts are being felt hard in developing countries whose economy relies on agriculture especially Sub-Saharan Africa. Uganda is amongst the countries in Africa which observed the longest period of total confinement during the Covid 19 outbreak. Hence this study aimed at the impact of Covid 19 total lockdown on labour availability, land accessibility and market access among smallholder farmers in Masaka district in Uganda. A structured questionnaire was used to collect data from ninety smallholder farmers in the Masaka district. The findings of the study indicated that 75.6 and 73.3% of the respondents were not able to access labour and their farms, respectively while all the respondents were not able to acquire farm inputs for their farming activities. Also, 74.4% of the respondents were able to sell some of their farm produce during the COVID-19 total lockdown at a low price.

Key words: Covid 19, farm input, labour, land accessibility.

INTRODUCTION

WHO declared coronavirus disease as a public health emergency of international concern on 20th January 2020. Covid 19 has resulted in major economic and labour market shocks worldwide in all sectors including food and agriculture systems. The covid 19 crisis in Africa has brought disastrous health impacts which are projected to bring social and economic emergency through supply shocks and thus reduce the wellbeing of the population (OECD, 2020). The preventive measures taken by

countries to limit the spread of the disease within their borders have led to several social-economic impacts on the vulnerable and different actors in the agriculture sector. Food demand was largely affected and thus food security in general due to mobility restrictions and reduced purchasing power which led to a greater impact on the most vulnerable population groups influencing the global food system (de Pablo et al., 2020). More than 30 million people are estimated to be food insecure and an

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Increase in acute food insecurity levels in Sub-Saharan Africa (UN, 2019). Vulnerable groups including landless laborers, wage earners, and small-scale farmers have been obstructed from their day-to-day work and faced the worst hit among all (Workie et al., 2020). The World Bank estimated that the covid 19 crisis will push more than 23 million people to extreme poverty in Africa (World Bank, 2020).

Uganda recorded its first case of covid 19 diseases on March 21st and it is one of the countries that had the most strict and prolonged lockdown. Some of the measures employed to control and prevent further spread of covid 19 included; home quarantine, institutional quarantine and geographical quarantine (National guidelines for quarantine in context of covid 19). On 21st March Uganda imposed a lockdown in the country with a government-mandated public transport closure with nonfood sales in the market. Most Ugandans especially smallholder farmers depend on public transport to transport their products in the market and to purchase their inputs from the bigger markets and towns. On 4th April the government mandated a closure on private vehicles and shopping malls putting the country in total lockdown which extended up to 30th May when the closure of private vehicles was lifted and until 13th June, the ban on public transport was lifted. The total confinement had some effect on major factors of production which are labor, land and capital. Effects on the market were also measured as this is how farmers can gain their income and being such an important aspect it cannot be ignored.

More than two-thirds of the world's poor depend on agriculture for income (Castañeda et al., 2016), thus agriculture is a crucial area to be studied on how it has been affected by total lockdown especially in a third world country. Smallholder farmers live in areas that are less than two hectares in size on average across the world and they produce between 65%-70 % of the total food produced (FAO, 2015). Small family farmers account for 89 % of all Ugandan farmers with 69 % of Ugandans being employed in the agriculture sector (FAO, 2018). Being that the country depends on agriculture as the main source of income and the major producers are smallholder farmers, there is a need to see how this major sector was affected by total confinement as the largest population depends on agriculture. Therefore, the objective of this study looks at the impacts of covid 19 lockdowns on labour, capital, land and market accessibility in central Uganda.

METHODOLOGY

Study area

The research was carried out in Masaka district Central Uganda. Masaka District is situated about 37 kms, away from the equator towards the south and lies between 00-25 south, and 340 East, having an average altitude of 1150 m above sea level. Bukomansimbi boards the district in the southeast, Kalungu in the

north, Rakai and Lwengo in the west and south, and Kalangala District in the east. The landscape and topography, in general, are rolling and undulating with vertical gully heads and valley bottom swamps including streams flowing to lakes and rivers. Soils are generally Ferrallitic, characterized by red-colored sandy clay loams within the Municipality and yellowish sandy loams in the surrounding areas (Masaka District Website, 2021). Along the shores of Lake Victoria, soils are hydromorphic. The rainfall pattern is bimodal having two seasons with dry spells between July and August, and January to March. The months of March, April and May receive very heavy and well-distributed rains of up to 1,200 mm. The second season occurs from September to December. The annual average rainfall received is between 1100-1200 mm with 100 – 110 rainy days. Masaka district was chosen because of its high population and its contribution to agriculture. Central Uganda was chosen for the case study because it has the highest population and the highest number of farmers.

Sampling procedure

To better understand trends in agricultural practices among a sample of farmers in Masaka District, a survey was conducted. Three sub-counties were randomly selected. To obtain a representative sample, a multi-step reasoned sampling method was used to identify farmers. First, 3 parishes were chosen randomly from each of the three sub-counties (9 parishes in total). Second, three villages were randomly selected from each of the nine parishes, for a total of 27 villages. Then in each village, a list of all potential farmers was created from the farmer training records maintained by St Jude family projects Masaka, an NGO majoring in farmers training. From the list was a total of 92 farmers were interviewed since the number of active farmers being trained was 120. On each farm, interviews were conducted on the head of household or the chosen respondent by the household head. Women were interviewed whenever possible to respect gender equity and also give out their views.

Data collection

The data for the survey was collected through quantitative methods at household levels through the administration of self-administered questionnaires. Some respondents who could not read were helped by the data collectors to understand the questionnaire. The data collectors were extension workers from St Jude Family projects Masaka, a local NGO majoring in farmers' extension training. Phone training together with zoom meetings were used to train them on data collection sampling procedure, interview techniques, interpretation and comprehension of questions due to the nature of the times with movement restriction. The contact organization supervised the enumerators. The filled questionnaires were scanned and sent for data analysis by the contact organization to the researchers.

Data analysis

The data collected to measure the COVID-19 effect were entered into SPSS software (version 20) then statistically analyzed.

RESULTS AND DISCUSSION

Here discuss the preliminary data and the latter is the findings of the main data. The study was conducted among 86 respondents. The initial sample was 92, but

Table 1. Demographic characteristics of the respondents.

Variable	F	%
Sex		
Male	27	31.4
Female	59	68.6
Education		
Primary	25	29.1
Secondary	7	8.1
University	5	5.8
Other tertiary	6	7.0
No formal education	43	50

Field data (2020), Hint: F=Frequency, %=Percentage.

Table 2. Impact of COVID-19 total lockdown.

Variable	Yes		No	
	F	%	F	%
COVID-19 effects on normal daily activities	85	98.8	1	1.2
If yes, how?				
	F	%		
I can't acquire farm inputs	20	23.3		
I have more time to work in my garden	1	1.2		
I can't access my garden	7	8.1		
I can't get money to buy inputs	31	36.0		
I can't access the market	26	30.2		
What is the main source of labour for your farm				
Family labour	32	37.2		
Casual laborers	39	45.3		
Permanent labour	10	11.6		
Prisoners	5	5.8		
	F	%	F	%
Would you say labour is easily accessible at this time	21	24.4	65	75.6

Source: Field data (2020); Hint: F=Frequency, %=Percentage.

the response rate happens to be 86.

Demographic characteristics of the respondents

From Table 1, 68.6% of the respondents were female which constitutes the majority of the respondents whilst males constituting 31.4% out of the total population (N=86). The table further exposed the educational background of the respondents which revealed that 50.0% majority of the respondents have no formal education, 29.1% have acquired primary education, 8.1% have achieved Secondary school education, 7.0% have other tertiary education, and the least among the

respondents also have university certificate. The results correspond with a study made by UBOS (2006) who stated that 75-80% of food producers in Uganda are women who majorly concentrate on subsistence farming. This is an indication that most of the respondents are females.

Impacts of COVID-19 total lockdown on labour availability

The impact of COVID-19 total lockdown on sources of labour and labour accessibility are presented in Table 2 while the constraints reason to labour inaccessibility are

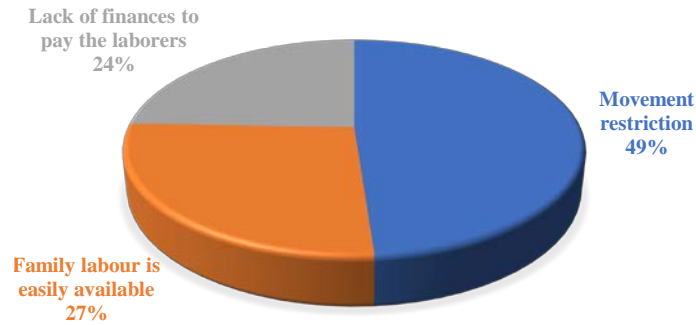


Figure 1. Showed reason to labor inaccessibility. Source: Field data.

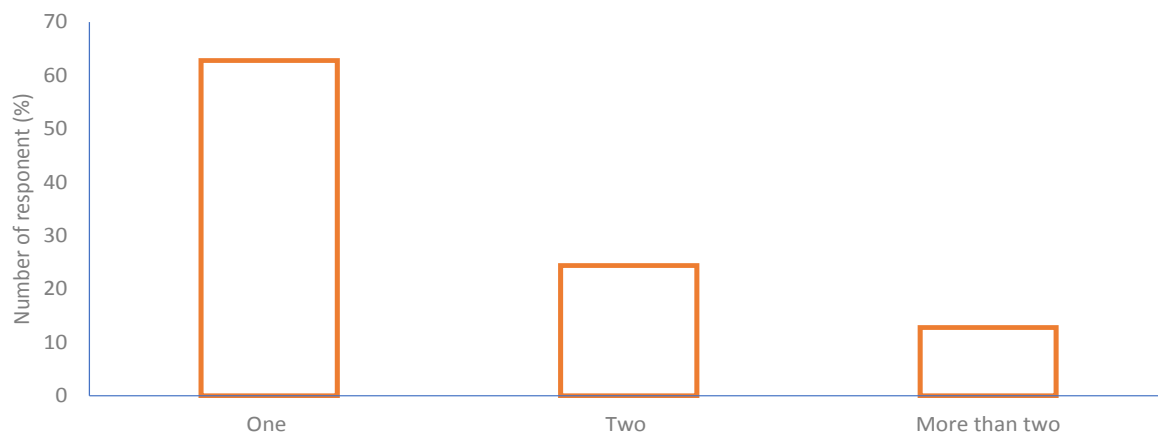


Figure 2. Number of farms at disposal to respondent; % = Percentage.

presented in Figures 1 and 2, respectively.

Table 2 revealed the responses made by respondents concerning how they have been impacted by COVID-19. A whopping amount 98.8% of the respondents claimed COVID-19 have had a huge impact on their normal daily activities with just a single 1.2% respondent claiming COVID-19 have not affected his or their daily activities. These respondents went ahead to expose how they have been affected by COVID-19 concerning their everyday activities. It was evident that 36.0% of the total $N=(86)$ population stated that “they cannot get money to buy inputs”, 30.2% exposed it’s difficult for them to access the market due to COVID-19 impact while 23.0% of the respondents also could not hold their breath not to expose how they have been impacted. They stated that acquiring farm inputs are the problem they are facing during this COVID-19 era, consequently, the least 8.1% number among the respondents say that they cannot access their garden and 1.2% claimed he or she can access their garden. In responding to the source of labor for their farm activities, majority 45.3% stated they hire casual workers to work on their farms, 37.2% revealed their family is their sources of labour in their farm, 11.6% stated that they have permanent workers to work on their

farms for them and the minority 5.8% stipulated they use prisoners for their farm activities. These results are with a study made by Yoko et al. (2006) where he elaborates that the high use of casual labor is a way adopted by rural Ugandan communities to supplement their income and also enable them to fight shocks and uncertainties in agriculture. Farming in Uganda is labour intensive and often farmers seek outside assistance for the farm especially during the harvesting periods (FAO 2015). Lwiza et al. (2017) supported the claim by stating women and children provide labour in the household as they are considered to have the sole responsibility for domestic work and energy availability within the household in Uganda. This explains the percentage of the respondents who solely depend on family labour as the main source of farm labour. Respondents with more than two farms were mostly sourcing their labour from prisoners and this can be explained by the high demand for intensive labour in different agricultural practices such as animal production, horticulture among others.

As shown in Table 2, 75.6% of the respondents support that there is *no* access to labour and the least 24.4% claimed they have access to labour during the COVID-19 period. As shown in Figure 1, the motives for their

Table 3. Impact of COVID-19 total lockdown on farm input.

Variable	F	%
Comparing to normal times would you say farm inputs are easily available		
Yes	0	0.0
No	86	100
What would you say is the reason for your answer above		
Local shops were closed	17	19.8
Local shops were open but did not have supplies	18	20.9
I could not reach to town shop where I buy my inputs	21	24.4
The shops were open but the prices of the inputs were too high	30	34.9

Source: Field data (2020); Hint: F= Frequency, % = Percentage.

responses included: most of the reasons that labour was hard to come by was because of movement restrictions which accounted for 48.8% of the total population, 23 26.7% revealed family labour is available to take up the farm activities, as they rely on family labour and the family members during lockdown at home, and 24.4% of the respondents stated that they could not afford to pay the laborers as shown in Figure 1.

Labour unavailability during the period could be explained by lockdown as a temporary measure to control COVID-19 which has prevented many people from going to work (Ranchhod and Daniels, 2020). Also, the closure of schools has left most women loose employment as they are left taking care of their children and families at home (Titan et al., 2020). Agriculture is a labour intensive area and movement restriction has caused bottlenecks in the sector. Subsistence farmers often have less resilience against large disruptions (Stephens et al., 2020). Accessibility of labor at the time of total lockdown, has been hard as portrayed above and lack of capital to pay workers, fear of contracting COVID-19 from others, movement restriction was the major reason.

Effect of COVID-19 total lock on accessibility to farm input

All the respondents admitted that farm inputs were not easily accessible during the total lockdown period. The reasons given for inputs inaccessibly include; increase in the price of the inputs from normal prices making them unaffordable which carried the highest percentage of 34.9% of the total respondents, 24.4% of the respondents could not access the towns where they usually buy their farm inputs, 20.9% could not access farm inputs because the local shops did not have the supplies whereas 19.8% of the respondents could not access farm inputs because the local shops where they usually get the inputs were closed. Input unavailability can be explained as an impact of keeping people from being able to meet, work, travel and socialize damaging their economic activities and thus

capital availability. Countries' lockdowns have resulted in a fall in domestic income, leading to falling in international market prices, reduced migrant remittances and a general lack of capital (Barichello, 2020). The findings were further supported by Baldwin and Di Mauro (2020) who claimed that COVID-19 pandemic will cause both negative demand and supply shocks inside the countries which will result to demand and supply contagion among countries affecting the world economy (Table 3).

Impacts of COVID-19 total lockdown on land accessibility

The results in Figure 2 represent the number of farms available for each farmer. 62.8% majority of the total respondents own only one parcel of land, 24.4% of the respondents own more than two parcels of land while the least 12.8% of the respondents claimed they own more than two parcels of land. They further responded on their ability to access their lands, and it was revealed that a whopping number of 73.3% of the respondents were able to access all their parcels of land while 26.7% of the respondents could not access all their farms.

All the farmers interviewed grow more than one crop in their farms and banana is the most grown crop at 95.3%. Beans and groundnuts are also among the most planted crops grown at 87.2 and 86% respectively. Cassava, sweet potatoes, coffee, vegetables, pumpkins, papaya and pineapples, are also commonly grown by smallholder farmers at 69.8, 67.4, 66.3, 62.8, 50 and 46.5% respectively as shown in Figure 3. During the COVID-19 total lockdown, the smallholder farmers who were harvesting bananas were 83.7% of the total respondents, 57.0% were harvesting coffee, 50.0% were harvesting maize, 50.0% were harvesting groundnuts 45.3% were harvesting cassava, 44.2% were harvesting beans, 33.7% were harvesting pineapples, 32.6% were harvesting sweet potatoes 31.4% were harvesting pumpkins and 29.1% were harvesting papaya fruits. Pineapples and coffee are considered as the major income-generating crops while the others are grouped as

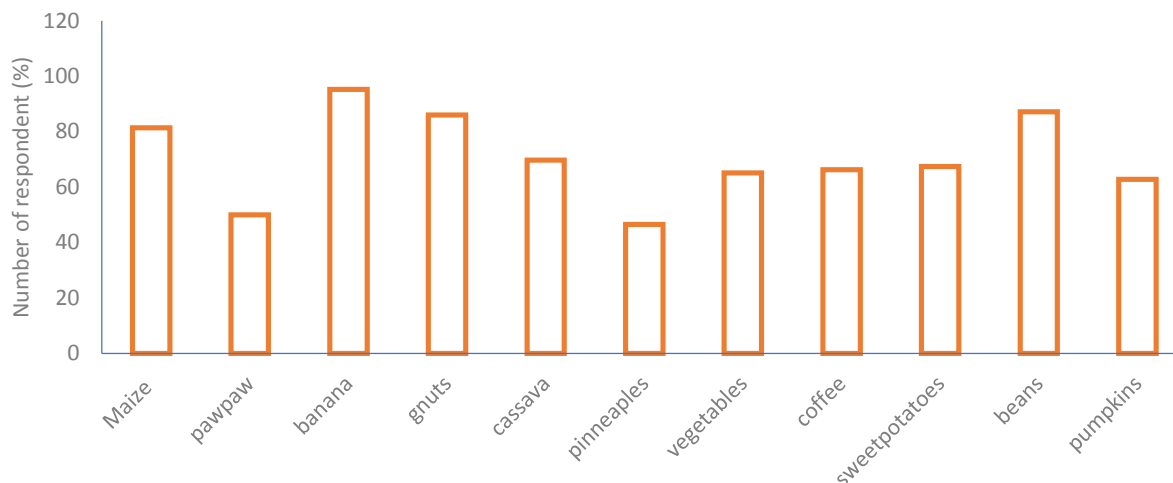


Figure 3. Crops grown on the farms on farmers' field.
Source: Field data.

Table 4. Impact of COVID-19 total lockdown on produce price

Were you able to sell any of your produce during this period?	F	%
Yes	64	74.4
No	22	25.6
If yes to whom did you sell the produce?		
neighbors	16.3	14
Traders in the local market	15.1	13
Buyers in the local market	8.1	7
Middlemen	34.9	30
livestock keepers	1.2	1
Is that your target market on normal days		
Yes	16.3	14
No	59.3	51
Would you say covid19 has affected your market?		
Yes	72.1	62
No	3.5	3
How would you compare the price now with normal times		
better	3.5	3
bad	20.9	18
very bad	51.2	44

Source: Field data, 2020; **Hint:** F= Frequency, % = Percentage.

food crops. 73.3% of the farmers also keep livestock in their farms apart from growing crops only while 26.7% of the respondents only grow crops with no livestock in their farms (Figure 3).

Impact of COVID-19 total lockdown on produces price

As shown in Table 4, most of the respondents (74.4%)

were able to sell some of their farm produce during the Covid-19 total lockdown period while 25.6% did not sell any of their farms produce. On the question of to whom did they sell to for those who sold; 34.9% sold to middlemen, 16.3% sold to their neighbors, 15.1% sold to traders in the local market, 8.1% sold to buyers in the local market while 1.2% of the respondents sold their farm produce to livestock keepers as a source of feed. 16.3% of those who sold to various people admitted that

that was their target market on normal days while 59.3% of those who sold responded that they did not sell to their target market as on normal days. 72.1% of the respondents who sold their produce admitted that COVID-19 total lockdown has affected their market while 3.5% of the respondents who sold were not affected by the Covid-19 total lockdown (Table 4). Farmers who sold to the middlemen stated that they had no other option for the market and it was better to sell than remain with their products since they needed the money. However, most of the farmers stated that the produce fetched a much lower market price as compared to the normal times. Some farmers were forced to sell to the livestock keepers produce like maize and maize Stover's who began formulating their food to feed mostly for pigs, cattle and poultry since they could not access readymade animal feeds as earlier due to the nature of the situation. Comparing the prices sold during the Covid-19 total lockdown period and prices sold at normal times 51.2% of the respondents who sold their produce rated the prices as very bad, 20.9% of the respondents rated the prices as bad while 3.5% of those who sold rated the prices as better than normal time's prices. Some of the reasons farmers gave for low prices included that being in the rural area where most of the people practice farming too, very few were willing since they already had the same products and those who wanted to trade preferred barter trade rather than using currency to buy. People in the locality didn't have money too since most depend on agriculture for income and with the market inaccessibility, selling farm produce was not easy. Most smallholder farmers in developing countries which includes Uganda depend on informal markets to sell their products and they include all transactions on the farm gate, roadside sales, sales in both retail and wholesale urban markets (Ferris et al., 2014). This corresponds with the Uganda Bureau of statistics annual agricultural survey findings that most farmers grow more than one crop with maize, banana, cassava and beans being the major food crops grown and coffee as the main cash crop (UBOS, 2020). Coffee in Uganda is mostly grown by smallholder farmers as it is the main cash crop and it is often intercropped with other staples like banana maize and cassava (Chiputwa et al., 2015). Also, small family farmers in Uganda account for up to 80% of all the annual output with coffee being the major export (FAO, 2015).

Conclusion

In this current study, it was a clear indication that the impact of COVID-19 lockdown affected farmer's access to the factor of production such that few of the respondents were able to access their farms for their activities, farm input and market to sell their produce. The study also indicated that most of the respondents were selling their produce at a lower price compared to the

normal price, therefore affecting the overall income and wellbeing of the smallholder farmers. Characterized by good agricultural lands, Uganda has been a step ahead in producing its food and even supplying to the neighbouring countries such as Kenya, South Sudan, Rwanda and Congo which was greatly affected by the long total COVID 19 lockdown. Reliance on public transportation for agricultural produce to reach the market, hired labor and ownership of many parcels of land located in different areas by farmers made the sector vulnerable to the total lockdown which affected a large population in the country.

Ethical approval and participants consent

This study was approved by the Uganda Martyrs University Research Ethics. Permission to conduct this study was later granted by the Uganda National Council of Science and Technology (UNCST) and the Chief administrative officers of the districts of study. Written informed consent and assent were obtained from the adult participants and persons under the age of 18, respectively.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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