

Coping with Water and Food Insecurity during COVID-19 Lockdown: Implications for Gender Relations in Urban Uganda

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Abstract

Despite considerable literature on the worldwide socio-economic impact of the COVID-19 pandemic, our knowledge of household coping mechanisms for water and food insecurity during the COVID-19 lockdown in developing countries is still limited. As a contribution towards this knowledge gap, this paper provides context-specific information on household water and food insecurity coping mechanisms in an urban setting in Uganda. The results indicate that over 90% of the respondents experienced water and food shortages and varying mechanisms were employed to cope with water and food insecurity at the household level. The results further indicate that water and food insecurity during COVID-19 had a devastating impact on women and girls as they bear a disproportionate brunt of water collection, hygiene, and family care. These burdens manifested in confrontations with security personnel, defying lockdown restrictions, increased domestic violence, early marriages, and high school drop-out rates. Accordingly, due to a lack of systematic efforts to ensure sustainable access to water and food among the urban poor, COVID-19 restrictions aimed at curbing the spread of the pandemic disadvantaged the most vulnerable sections of the population even more and reinforced existing socio-economic inequalities.

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Introduction and Background

Ensuring water and food security in terms of quality and quantity in developing countries has always been a worldwide challenge. Food insecurity as a global challenge is attested by the fact that around 820 million people face hunger daily and more than two billion people lack vital micronutrients, affecting their health and life expectancy (FAO et al. 2019: 3). The food insecurity situation was exacerbated by the COVID-19 crisis, which presented an unexpected shock and simultaneously affected nearly the whole world (Mahmud/ Riley 2021: 2). The water and food insecurity in Sub-Saharan Africa are mostly linked to interrelated factors, such as preexisting conditions of inadequate water supply, water infrastructure operation, and maintenance challenges, lack of reliable food supply chain, lack of social protection, persistent poverty, inadequate public policies and general insufficient social services provision such as health and water (Bukuluki et al. 2020: 1-2; Serwajja et al. 2024: 1-2; Naiga 2018: 114f).

In the case of Uganda, water and food insecurity was made worse by the desert locust invasion in December 2019; climate change events such as landslides, and the continued refugee influx (Serwajja et al. 2024: 1; FSIN 2020: 4; UNHCR 2021: 2). Uganda has become the third-largest refugee host country worldwide and is the largest refugee host country in Africa with over 1.5 million refugees (UNHCR 2021: 2; Mwenyango/ Palattiyil 2019: 535). Most of the refugee population, i.e., 82%, are women and children (UNHCR 2023: 6). These pre-existing contextual factors were compounded by the unfolding effects of the Coronavirus Disease that reinforced the need for access to food and nutrition security. Hence, COVID-19 increased competition and contestation for food and water among the refugee population and between refugees and host communities in Uganda (Grosrenaud et al. 2021: 1; Bjørkhaug 2020: 266)

The intertwined nexus between water and food supply became more critical during the COVID-19 pandemic in developing countries that were already vulnerable to water and food insecurity, but also ineffective health systems (Naiga 2021: 9; Naiga 2022: 1; FAO 2020: 1f; Moseley/ Battersby 2020: 2; Mabhudhi 2016: 2). Reliable access to water and adequate nutritious foods gained more importance globally as essential to containing the spread of the virus through total lockdown measures and boosting the human immune system to fight the pandemic in case of infection. Indeed, when the World Health Organization (WHO) declared COVID-19 a global pandemic, awareness campaigns by health practitioners were raised with specific emphasis on the importance of reliable access to water for preventive measures through hygiene and nutritious foods to boost immunity against the deadly virus (FAO et al 2020: ix; Moseley/ Battersby 2020: 1f). Social distancing aimed at avoiding crowded places and

staying and working from home had been enforced as a preventive measure to control the spread of the virus. However, lockdown measures were enforced on the assumption that the population had reliable access to water and food supply. This assumption was far from reality for most African countries where access to safe water is still below 65%, over 84% of the population are employed in the informal sector such as small-scale business, and the majority of the population lives below the poverty line, faced with pre-existing poor service delivery and high refugee influx (Bukuluki et al. 2021: 1; Kansiime et al. 2021: 1f; Naiga 2021: 2). Moreover, 16.4 million Ugandans are faced with insufficient food consumption and 29% of children under the age of five years are faced with chronic malnutrition (Mpuuga et al. 2023: 1; FAO 2020: ix). Therefore, the COVID-19 preventive measures increased the demand for nutritious and well-balanced diets yet reduced access to the same foods during the pandemic which exposed already vulnerable populations such as refugees, women, and children to COVID-19-related health expenses and a very high death rate (Miguel/ Mobarak 2022: 254; Bukuluki et al. 2021: 1).

In East Africa, Uganda had the most prolonged, restrictive, and strict complete lockdown that lasted close to two years – from the end of March 2020 to January 2022 due to the COVID-19 pandemic. The lockdown was imposed after only one case of COVID-19 was confirmed in the country. On 18 March, all public gatherings including places of worship, pubs, weddings, music shows, rallies, and cultural meetings were suspended; all schools and universities closed on 22 March, and the borders were closed except for food trucks; all public and private transport, non-essential businesses and non-food markets were stopped on 25 March 2020. On 30 March, a curfew every day from 7 pm until 6:30 am was enacted until February 2022 (Naiga 2022: 2). The unexpected shock and survival instinct forced many people to shift their efforts and focus from the fatal effects of the pandemic to the immediate threats it posed to their daily food and water supply. This effect was greatly felt among the urban population, the majority of whom worked in the informal sector and depended on daily casual income, meaning that they live every day on their ability to afford a daily meal (Mukiibi 2020: 1; Naiga 2021: 2; Mahmud/ Riley 2021: 2).

In the case of Uganda, COVID-19 presented a range of contextual challenges due to already constrained food supply chains and over-dependency on rain-fed agriculture as the mainstay of the economy, limited resources, and the already strained socio-economic conditions such as health and gender inequalities (Kerry et al. 2022: 805; Naiga 2021: 2; Naiga 2022: 1f). With food systems being highly labour-intensive, restrictions on people's mobility greatly compromise food security among the poor population which constitutes over 70% in develop-

ing countries like Uganda (Naiga 2022: 2). This resulted in food shortages and increased food prices, especially in urban areas. Even more problematic was the unequal and gendered burden of food and water insecurity in Uganda where food and water provision are considered the responsibility of women largely because of the socially ascribed roles within the household and patriarchal society (Naiga et al. 2023: 2; Naiga et al. 2017: 506; Mpalanyi et al. 2015: 31). Therefore, increased demand for food and water as a containment measure and reduced access to food and safe water during the pandemic not only exposed the already vulnerable sections of the population to COVID-19-related infection and death but also reinforced gender inequalities (Naiga 2021: 3).

As the country continued to enforce strict directives to combat the spread of the virus, little attention was put on the effects of the lockdown directives on the people's ability to feed themselves and the resultant public outcry on the gender inequalities among the urban poor. It is, therefore, crucial to provide an understanding of how the pandemic affected the lives of the urban poor to inform the designing of policies and programmes aimed at safeguarding the vulnerable population during future pandemics but also the post-pandemic period. Despite substantial literature on the effects of COVID-19 on water and food insecurity (Naiga 2021: 1; Naiga 2022: 1f), our knowledge of the coping mechanisms employed at the household level and the implications on gender relations among the urban poor is still limited. As a contribution towards this knowledge, this paper aims to provide context-specific evidence with a specific focus on the coping mechanisms at the household level in Uganda. The key question guiding this paper, therefore is: What are the coping mechanisms employed at the household level to deal with water and food insecurity during the pandemic? By answering this question, the paper adds knowledge to the growing body of literature on the impact of the evolving COVID-19 pandemic and the resulting socioeconomic impact in developing countries.

Study Area and Rationale

The study was carried out in Kampala district, the capital city of Uganda. The study location was purposely selected because the urban setting presented context-specific socio-economic challenges as a result of COVID-19-related restriction measures. Over two million people live in Kampala and the informal sector provides over 80% of employment opportunities for urban dwellers (UBOS 2014: 9ff). Therefore, COVID-19 restrictions such as lockdowns and social distancing resulted in the loss of work for the majority of the population in urban areas. This situation increased their vulnerability to food and water shortages

since they did not have the financial reserves required to stockpile (Naiga 2021: 4). Access to fresh foods and safe water in urban areas was also affected by government directives on social distancing and the ban on public transport but also a choice between lives and livelihoods. Urban livelihoods are fundamentally different from their rural counterparts due to over-reliance on cash for basic needs of daily life such as water, food, housing, and social services such as health care (Naiga 2022: 1). As a result, there were contestations among different sections of the population as evidenced by daily confrontations between urban dwellers and security operatives as the former tried to defy the lockdown policy and secure livelihood in a capital city and other urban areas. For the urban poor, issues related to the continuous need for cash to cater for food, water, and housing became more critical due to two years of school closures. Given the fact that unskilled workers who constitute the majority of the population in urban areas depend on daily income (hand to mouth), sexual exploitation and harassment during lockdown became widespread. The situation of sexual exploitation and harassment was worse for the urban refugees due to lockdown measures such as the banning of public transport which affected their mobility and access to services provided in settlements. Urban refugees travel to their designated camps to access food and other benefits, lockdown restrictions including a ban on public transport made access to camps impossible. Urban refugees therefore lost their sources of survival, accumulated debts, and experienced feelings of isolation, and hopelessness. Moreover, urban refugees had not benefited from social assistance provided by the state or non-government organizations to host communities (Bukuluki et al. 2021: 69)

In addition to contextual socio-economic situations, Kampala was also selected due to the prevailing lockdown and social distancing practices where phone interviews and other forms of social media and online data collection were most suitable in urban areas where rates of mobile phone ownership and internet access are high. For example, in the 2010 mobile phone baseline survey in Uganda, mobile phone ownership was found to be over 87% (Hoogeveen et al. 2014: 188). With such high rates of mobile ownership, a representative household survey using phones becomes a viable and rational option during COVID-19. Phone ownership beyond 80% is far beyond the threshold at which reliable survey research can be conducted (Hoogeveen et al. 2014: 188; Dillon 2012: 520). Hoogeveen et al. (2014: 188) provide evidence that high-frequency panel data have been collected in Tanzania and South Sudan on a wide range of topics in a manner that is cost-effective, flexible, and rapid.

Research design and data collection methods

A mixed-method approach comprising both quantitative and qualitative methods of data collection was used. The data was collected in four phases. The first phase comprised the literature review at national and international levels. The literature review was done systematically to assess the availability of evidence on the socio-economic effects of COVID-19. The literature search followed the guidelines of Waddington et al. (2012: 359ff) on systematic reviews, which are designed to establish a comprehensive, documented, and replicable protocol to search defined databases, screen and select evidence against pre-specified eligibility criteria, and synthesize the selected evidence. The second data collection phase consisted of key informant interviews. Purposive sampling was used to select key informants based on their roles, experiences, and knowledge of the effects of COVID-19 on water, food security, and gender relations. The key informants included water user committee members, officials from the Uganda Police, community leaders, and Kampala City Authority Officials. The results from documents and key informant interviews were used to design the questionnaire that was used in the third phase of quantitative data collection at the household level. Using a list of households as a sampling frame, a simple random sampling technique was used to select 80 households. A total of 105 respondents were interviewed comprising 25 key informant interviews and 80 household interviews. The summary of sampling techniques, data collection methods, and the number of respondents in each category is presented in Table 1.

SN	Respondent Category	Sampling Technique	Data Collection Method	Number of Respondents
1	Household Informants (HHI)	Simple Random Sampling	Household Interviews	80
2	Officials from the Uganda Police (UP)	Purposive Sampling	Key informant semi structured Interviews	5
3	Water and Sanitation Committee members (WSC)	Purposive Sampling	Key informant Interviews	5
4	Community-level key informants	Purposive Sampling	Key informant Interviews	7
5	Health Workers (HW)	Purposive Sampling	Key informant Interviews	4
6	Kampala City Council Authority Officials (KCCA)	Purposive Sampling	Key informant Interviews	4

Table 1: Overview of sampling techniques, data collection methods, respondent's category and number

Lastly, virtual stakeholder meetings were conducted with key stakeholders to disseminate, discuss, and validate the results. The contribution of stakeholder meetings was to facilitate information sharing and co-learning to develop solutions and recommendations for transformative paths toward efforts to mitigate the socio-economic effects of COVID-19.

Due to lockdown and physical distancing measures, data was collected through phone interviews and other forms of communication such as WhatsApp, Skype, SMS messaging, virtual meetings, and email. The process was eased by the high rate of mobile phone ownership widespread in urban areas of Uganda. Hence, phones and other online forms of data collection were used successfully to collect reliable data within a stipulated time frame. The qualitative data was analysed through content analysis and was guided by Miles and Huberman (1994: 10) approach of the concurrent flow of activity of data reduction, display, generation of meaning, and drawing conclusions, right from the start and throughout the process of conducting the research. A coding technique was used to analyse the qualitative data. This coding strategy allowed for the quick

identification of the segments relating to the research questions and any potential themes (Miles/ Huberman 1994: 57). The quantitative analysis was done using frequencies. The general research design is summarized and presented in Figure 1 below.

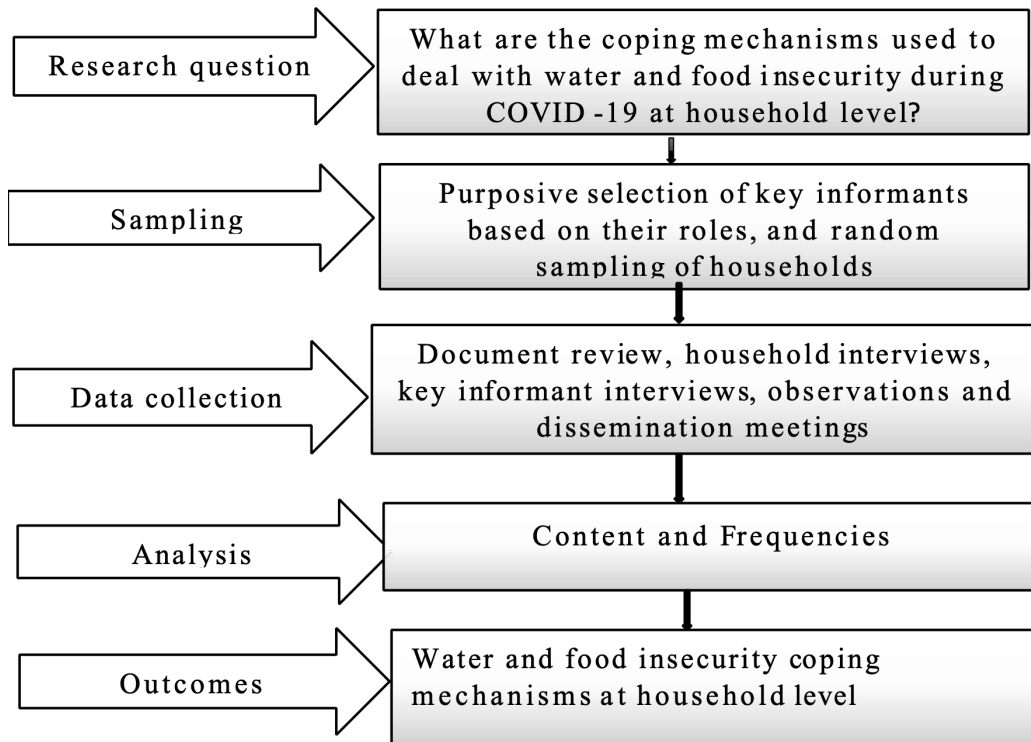


Figure 1: General Research design (Source: Originated by the author)

Results

Figure 2 below presents the food and water insecurity coping strategies employed at the household level during the COVID-19 lockdown and mobility-related restrictions.

Household Water and Food Security coping Mechanisms

S. No	Coping mechanism	Number	Percentage
1.	One to two meals a day	96	91
2.	Cheap starchy foods	92	88
3.	Water reuse	90	86
4.	Flouting lockdown restrictions	86	82
5.	Staying at the workplace	55	52
6.	Prostitution	37	35
7.	Early marriages	23	22
8.	Alcoholism	22	20

Table 2: Ranking of the coping mechanisms (Source: Author’s fieldwork 2021)

According to Table 2, respondents used multiple coping mechanisms. The results indicate that the majority of the respondents experienced disruption in lifestyles and faced remarkable food shortages that resulted in changes in food consumption, eating patterns, and diet. As a result, the most common coping mechanism reported by 91% of the respondents was changing from four meals to one or two meals a day – either lunch only or breakfast and supper. The change in food consumption was attributed to the loss of employment and income as a result of the shutdown of both formal and informal sectors. Food insecurity at the household level was largely due to limited food supply and the resultant high food prices. Limited food supply and high prices were highly related to lockdown measures including restrictions on movement of people and goods. In support of the food shortage and reduced meals as a coping mechanism, the community leader key informant explained:

“Urban farming is limited, and most food items come from rural areas to urban areas, restrictions on the movement of people and public transport have limited availability of the food in urban areas which has resulted in very high food prices. The food shortage and high prices have resulted in families having one meal a day.” (CLI on 11.01.2021)

The high prices for food items made households more vulnerable to food insecurity. Although some respondents employed in the formal sector, especially the private sector also reported loss of employment and income due to scaling down of the employees to minimize costs, the informal sector was affected most in Uganda.

To cope with high food prices, 88% of the respondents reported having resorted to cheap foods. The foods considered relatively cheaper – hence most consumed during the lockdown – were starchy foods such as cassava, sweet potatoes, posho, and beans. Female and male household respondents explained:

“We no longer work, we don’t have any other source of income to purchase sufficient food in terms of quality and quantity hence eat what we can afford such as cassava but also in small quantities.” (HHI on 10.02.2021)

Similarly, a female respondent expounded:

“Due to food shortage, we have resorted to foods that can fill the stomach very fast and for a long time such as cassava and posho.” (HHI on 10.02.2021)

Concerning food insecurity and health implications, a health worker noted,

“People have resorted to cheap foods more especially starchy food stuff without consideration for nutrition and health risks such as diabetes among adults and malnutrition among children.” (HW on 19.02.2021)

Relatedly, a male respondent elaborated,

“Covid-19 will kill the poor mostly due to starvation and malnutrition since the poor do not have sufficient savings to purchase and stockpile food during lockdown but also purchase the most nutritious foods to boost the immunity against the pandemic.” (HHI on 10.02.2021)

In support, another female responded and expounded,

“Health workers are emphasizing the need to consume plenty of fruits rich in vitamin C such as oranges to boost our immunity against COVID-19 but despite the nutrition value and importance of fruits in boosting the immunity against the pandemic, we now consider fruits as a luxury due to inability to satisfy family food needs as a result of loss of income and food high prices.” (HHI on 06.02.2021)

Importantly, 86% of the respondents reported water reuse due to water insecurity during the lockdown. The water insecurity situation was made worse by the fact that 63% of the urban poor depend on communally used and managed water sources such as protected springs, shallow wells and boreholes. Communally used and managed water sources are located distant from most households

and tend to be crowded with long queues. For example, 64% of the respondents reported walking at least a kilometre to the nearest water source and 62% reported spending 3 to 5 hours at the water source due to long queues. The restriction on movements and social distancing increased water insecurity for most households that were already lacking adequate water in terms of quality and quantity.

A female respondent lamented,

“COVID-19 is a hygiene disease because we need water to wash hands to prevent the pandemic but also need water to drink, cook food, and maintain general hygiene but the lockdown has made it very difficult to access the water due to restriction on movements such as curfew and social distancing at the water sources.” (HHI on 11.02.2021).

In support, a community leader informant expounded,

“given the centrality of water during the pandemic, community members are requesting me to ask the government to either provide water to their households or waive the restrictions on movement so that they can get adequate water in terms of quantity and quality.” (KII on 10.02.2021)

Furthermore, a female respondent stated,

“the little available water is for cooking and drinking, we have decided to either give up on hand washing or resort to dirty water for other family needs such as washing and cleaning.” (HHI on 06.02.2021)

To cope with water insecurity at the household level, varying mechanisms were used. While 86% of the respondents reported water reuse such as using water that had been used for washing clothes, bathing, and cleaning the house, others reported resorting to measures such as illegal water connections, bathing once a day, or resorting to social capital especially borrowing from networks and extended family members. While social capital featured among the coping mechanisms, it was found to flout social distancing restrictions but also challenging for the refugees and displaced persons due to weak social networks, being distant from their immediate and extended family ties. Therefore, water insecurity during the COVID-19 pandemic posed great risks for urban refugees.

The pandemic therefore intensified water-related conflicts, discrimination, stigma, poverty, unemployment and gender-based violence among refugees. Many urban refugees live in urban slums of Uganda’s capital city mostly in crowded living conditions without access to water and sanitation facilities that are recommended to reduce transmission and exposure to COVID-19. The situation was exacerbated by congested and inadequate water and sanitation facilities that are communally used by both refugees and host communities. With restrictions imposed on movement during the lockdown, refugees resorted to

contaminated water sources such as wetland springs. This situation became detrimental to the efforts to reduce the spread of COVID-19 given the centrality of clean water and adequate sanitation for disease prevention. The COVID-19 and lockdown-related restrictions, therefore, presented a range of contextual challenges in Uganda since Uganda hosts the third-largest refugee population in the world and the largest in Africa, but also due to highly constrained access to safe water and over-dependence on limited and unreliable communal water sources located far from homes (Naiga 2022: 1).

Water scarcity also increased the risk of spreading the pandemic due to overcrowding on water sources and failure to observe social distancing due to the scramble for water at communal water sources. Those who feared the crowds and long queues were forced to use unsafe water sources such as open ponds and rivers, increasing the risk of waterborne diseases. More so, due to disparities in water access in Uganda, urban people living in poverty had to pay as much as 22% of their income on water from water vendors. Spending such a high percentage of their meagre earnings on water further reduced overall household income and increased poverty and food insecurity.

Given the desperate circumstances, women engaged in food vending were forced to spend the night at the workplace, especially in food markets and shops. Due to movement restrictions, the government authorized those working in the food sector to spend the night at the workplace to comply with curfew times and the closure of public transport. This coping mechanism was reported by 52% of the household respondents. The majority were women, and they reported several challenges such as insecurity, marital instability, sexual harassment, developing cold-related diseases, and malaria due to mosquito bites.

Worse still, sexual exploitation and early marriages as coping mechanisms accounted for 35% and 22% respectively. Through 2020 and 2021, the COVID-19 pandemic led to school closures for almost two-years in Uganda. The prolonged homestay of children increased demand for basic needs such as food and water, which exacerbated gender-based violence against women and girls since water and food provision are socially prescribed roles of women and girls. Moreover, financial burdens also increased the pressure on girls to work in close proximity to the perpetrators within their homes or neighbourhoods. Walking long distances to distant water sources and adhering to cultural and social norms exacerbated the situation through child marriage. Both male and female respondents reported having married off their girls in exchange for money due to a lack of food and shelter in the urban area. Apart from the short and long-term effects of physical and sexual violence such as health risks, early marriages accounted for over 50% of girls' inability to return to school and complete their education

leading to a vicious cycle of poverty. The increase in gender-based violence and early marriages exposed the weaknesses of social protection and protective laws and institutions in Uganda. The pandemic contributed to the erosion of trust in the state due to either too slow responses to the ever-increasing gender-based violence, linked to discrimination, or being perceived as being insensitive to the basic needs of the population.

Implications of Water and Food Insecurity on Gender Relations

Women are the primary food providers and caregivers in the family and are key healthcare frontline responders placing them at increased risk and exposure to infection, increased food insecurity, and gender-based violence. COVID-19 increased women's workloads, for example, women are largely self-employed in the informal sector such as food vending. Given that the food sector was not affected by the lockdown in Uganda, women continued to work hard to provide for their families. In addition, women were caring for children as schools were closed as well as the sick. Additionally, there was increased domestic violence related to inadequate provision of family needs, especially food. In Uganda, over 6500 cases of domestic violence were reported within a period of six months (March to August 2020) and many more cases were unreported. Although domestic violence affected both males and females, 97% of the cases included violent acts against women such as women battering and biting. Women reported the common cause of fights as food scarcity that resulted in counteraccusations. When female respondents were asked about the implications of food and water insecurity, they reported adverse effects on their relationship with their children and husbands. The children considered their mothers less caring while their husbands suspected them of extra-marital affairs. Women also reported forfeiting their share of food for the children and husbands in case food was not enough. Concerning water insecurity, a male respondent reported,

“In the process of walking long distances for water, I lost both my daughter and the water container. For a week now I don't know the whereabouts of my 15-year-old daughter who left home to fetch water for household use. I am sure a certain man took both – my daughter and the Jerrycan.” (HHI on 10.02.2021).

Another male respondent explained,

“Previously men were involved in fetching water using bicycles, but due to the closure of schools, parents mostly send their children to fetch water and boys have taken advantage of the situation.” (KII on 06.02.2021).

Providing more context, another male respondent observed that

“men who own means of transport such as bicycles would help a lot in improving the household water security during the lockdown. But due to cultural norms, men are worried about being stigmatized for taking on women’s roles, hence be considered ‘less’ men by society.” (KII on 13.02.2021)

Domestic violence related to water provision was reported by 67% of the respondents. Water-related violence was largely attributed by long distances and long waiting time at the water sources. A female local leader explained that

“long distances to the water source and long queues delayed women at water sources. And usually, some men were suspicious that their wives were not at the water sources but rather engaging in extramarital affairs with other men” (KII on 06.02.2021).

Similarly a male key informant expounded

“the inability of men to cater for their families due to economic hardships posed by the lockdown fuelled suspicions of extramarital relations, domestic violence, and marital breakdown (KII on 12.02.2021).

In support of long waiting time at the water sources, a local leader reported that

“more than 200 residents scramble for water at the only two water sources in the village” (KII on 16.02.2021).

Further explained that

“those who wished to avoid the overcrowding and long queues were forced to use unsafe water sources such as open ponds and rivers” (Ibid).

Overcrowding on the few communal water sources increased the risk of spreading Covid-19 pandemic due to the inability to adhere to standard operation procedures such as hygiene and social distancing and using unsafe water increased the risk of waterborne diseases.

Discussion and Conclusion

Drawing from the results, COVID-19-related restrictions negatively impacted the quantity and quality of water and food consumed by income-poor households in the urban setting. The findings further indicate that food consumption during the COVID-19 lockdown was directly determined by the level of income especially savings accumulated before the lockdown but also the source of earnings especially the type of employment at the time of the pandemic. The effect on food consumption was evidenced by over 90% of the respondents reporting having high levels of food insecurity and employing harsh food-based coping strategies such as having one to two meals a day and disregarding a balanced diet. On the other hand, the type of employment was indicated by over 80% of

the respondents working in the informal sector as casual labourers. Similar changes in food consumption and diet due to the pandemic were reported elsewhere. For example, studies in Kenya and Uganda showed that more than two-thirds of the respondents experienced income shocks due to the COVID-19 crisis and that the income-poor households and those dependent on labour income were more vulnerable to income shocks and had poorer food consumption during the COVID-19 pandemic compared to other respondent categories (Kansiime et al. 2021: 1). Like Uganda, the results from Kenya further revealed that food security and dietary quality worsened, as measured by the consumption of nutritionally rich foods. The same study further revealed that the proportion of food-insecure respondents increased by 38% and 44% in Kenya and Uganda respectively, and in both countries, the regular consumption of fruits decreased by 30% during the COVID-19 pandemic, compared to the period before the pandemic (Kansiime et al. 2021: 1). As a result, they were more likely to employ food-based coping strategies compared to those pursuing alternative livelihoods, who generally relied on savings (Ibid).

The study further shows the centrality of water and food security towards the containment of the pandemic in developing countries like Uganda. The results, therefore, reveal the unsustainable nature of water and food systems in Uganda. Hence, calls for the need to ensure water and food security to guard against exacerbating gender inequality and domestic violence among vulnerable populations. Drawing from the results, it is also clear that talking about access and rights to water and food security also means talking about violence against women and children. Gender-based violence before, during, and after the pandemic remains a significant barrier to affirming the right to food and water for women and children. Food and water insecurity can exacerbate the severity or impact of gender-based violence during but also after the pandemic. Henceforth, the COVID-19 pandemic has posed new challenges to poor women with regard to their roles in household food security, as agricultural producers, women farmers, informal sector workers, and entrepreneurs.

Disrupted supply chains and water insecurity as key contributors to conflict and violence have been highlighted before (Naiga 2020: 2). Gleick and Iceland highlight three pathways that significantly contribute to water insecurity: water supply decline, heightened water demand, and natural disasters (2018: 2). COVID-19 has highlighted the three pathways in Uganda where sustainable access to water and robust food supply chains are still a challenge. Importantly, the study findings highlight that women are more likely to feel the acute effects of water insecurity due to gender roles and expectations. Women are primarily responsible for household water supply, access, and usage (Cooper-Vince et al.

2018: 2). Further, women are the agricultural workforce's primary labourers, a significant sector dependent on water supplies (Tsai et al. 2021: 8). The unequal placement of water-related responsibilities on women leads to a greater rate of depression and anxiety compared to male counterparts in Uganda (Cooper-Vince et al. 2018: 1). For example, a study on depression in Uganda indicates that 38% of women had probable depression compared to only 17% of men and living in a "water insecurity hotspot" correlated with a 70% higher risk of depression in women (Cooper-Vince et al. 2018: 4-5). These studies resonate well with the findings of this study indicating that water and food insecurity affected women most and made it very difficult for women to maintain their roles and obligations as mothers and wives to the household. Therefore, without stable food supply chains and sustainable water supplies, efforts to achieve the right to food, address gender-based violence, and also contain the pandemic now and in the future will remain elusive.

COVID-19 also underscored the importance of water in sustaining life, socio-economic well-being, and the rule of law. Accordingly, the research findings indicate that in the face of water insecurity, urban households resorted to illegal water connections as a strategy to access water. Sometimes households meet their immediate water needs using social networks such as friends and neighbours. Illegal water connection as a coping mechanism adopted at the household level to deal with water scarcity was also reported in Dar es Salaam, Tanzania (Nganyanyuka et al. 2014: 360). However, any of the coping strategies had a cost, either financial or indirect costs such as water reuse or collecting water from distant alternative sources including social networks. It is therefore unsurprising that household income was overstretched given the competing household needs such as food and health during the COVID-19 lockdown. Hence, the importance of access to high-quality and fit-for-purpose water in ensuring sustainable food security and supply cannot be overemphasized. As the demand for safe water resources increased due to the COVID-19 pandemic, community-based water management and collective action among users should be promoted and supported through capacity building. However, to reduce the likelihood of disease outbreaks and ensure a safe food supply in the face of dwindling water resources, water quality and management, public health, and food safety and hygiene must be integrated into efforts towards containing COVID-19 and multi-sectoral joint policies such as water, agriculture, and health.

These findings confirm the clear link between socio-economic status and access to water in Uganda. Perhaps the most obvious finding emerging from this study is that unreliable water supplies impose significant coping burdens on women and children. In particular, the poorest sections of society suffer most from the

impacts of unreliable water supplies and rely on coping strategies that are risky, labour and time intensive. Consequently, the poorest sections of society may be missing out on health and other benefits of sustainable access to safe water. Without systematic efforts to improve service delivery of basic resources such as water, COVID-19 restrictions that aimed at curbing the spread of the pandemic only served to disadvantage the most vulnerable sections of the population and reinforce existing social inequalities. As such, efforts to increase water coverage and mitigate water supply unreliability should target the poor and vulnerable sections of the population. Such a shift is imperative to ensuring universal and equitable access to safe and affordable drinking water for all.

More important still, the study findings reveal that food and water insecurity during the COVID-19 lockdown reinforced gender inequalities. Domestic violence and early marriages increased more than ever before. Rural women are disproportionately affected by health and economic crises including but not limited to food security and nutrition, time poverty, access to water and health facilities, services and economic opportunities, and gender-based violence. Accordingly, the results also indicate that food insecurity was exacerbated by the limited physical and psychosocial well-being of the respondents at the household level limiting their ability to produce or secure food for themselves and their families. Stigma and exclusion due to lockdown and social distancing restrictions further reduced access to food distributions and other forms of support given the poor and unreliable food systems in Uganda. These findings are supported by studies from Asia and USA, indicating that many of the strategies enacted by governments to help mitigate the spread of COVID-19 resulted in greater risk for food insecurity and adverse mental health and physical violence (Bradbury-Jones/ Isham 2020: 2047; Shamasunder et al. 2020: 1083; Horesh/ Brown 2020: 331). Additionally, the COVID-19 protocols, such as stay-at-home orders, tended to give abusive partners more freedom to perpetrate abuse without consequence (Bradbury-Jones/ Isham 2020: 2047). This paper, therefore, provides further context-specific evidence from Uganda to determine COVID-19's impact on food security and gender relations. Accordingly, there are more long-term lessons to learn from the COVID-19-related lockdown in Uganda. Pointing out the multifaceted vulnerabilities of the urban poor people highlights the importance of the missing social safety net programmes and poor food systems in Uganda. Food systems have complex social, economic, and ecological components that call for a fundamental transformation to make them sustainable, especially in developing countries. Major transformations in the food systems will lead to an increase in productivity but also a change in food supply chains. However, these changes need to happen collectively rather than

individually. Therefore, this calls for good governance at local, national, and international levels. This is particularly important because the pandemic's far-reaching impact goes well beyond health to undermine the already achieved development gains. Therefore, this calls for concerted efforts among all actors – international, regional, national, and local to pay special attention to robust safety nets and ensure the resilience of food supply chains as strands towards achieving socially and economically inclusive and equitable sustainable development.

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