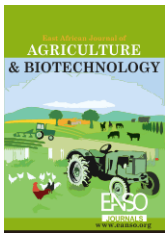

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Original Article

Effect of Covid-19 on Female-Headed Farming Household Food Security in Northern Bahr El Ghazal State, South Sudan

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COVID-19, Food Security, Availability, Access, Copping Strategies, South Sudan.

ABSTRACT

At the beginning of 2020, global food security was interrupted by the unprecedented occurrence of the COVID-19 pandemic and its associated restrictions to contain it. In South Sudan, women were among the most vulnerable groups due to restrictions and standard operating procedures (SoPs). This study was conducted to determine the effect of COVID-19 on the food security of female-headed households from three counties in Northern Bahr el Ghazal state, South Sudan. The analysis of the food security status was based on the Consolidated Approach for Reporting Indicators of Food Security (CARI) and food security was viewed in terms of availability of, and accessibility to food among households. Findings revealed that only 15.5% of the female-headed households sampled were food secure while 84.5% of them were food insecure on the 2-level scale. There was a significant reduction in average household income, size of land under agricultural production and crop harvest. Households lost access to produce markets, supermarkets, agro-input markets and produce stores, lowering their food production potential and farm output. Coping strategies included sale of household items, finding other work to supplement their agricultural activities, revision of household food consumption tendencies, new sales channels, while some of the households did nothing. These strategies are indicators of poverty, hunger and food insecurity which can lead to malnutrition. The study concluded that food security among female-headed households is low post-COVID, pushing women into life-threatening coping strategies in South Sudan. Development efforts in the country should be directed towards supporting recovery and resilience systems among these households in the country.

APA CITATION

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INTRODUCTION

The Food and Agricultural Organisation (FAO, 2002) defines food security as a situation that exists when all people at all times have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Food security has four dimensions which include availability, accessibility, utilisation and stability (FAO, 2019). Today, the importance of food security is at the forefront of the development agenda (Rahut et al., 2022) and this is amplified by the fact that it is Goal 2 of the Sustainable Development Goals (SDGs) (Maghrabi et al., 2018). This goal is stressed to the extent that by 2030, there will be no one who will go to bed hungry (United Nations, 2020). In the developed regions of the world, the proportion of undernourished people does not exceed 5% of the population but in developing regions and Asia, it reaches 13%, while in African countries, it is estimated at 20% (FAO 2015). This implies that the food security situation is worse in Asia and Africa compared to the rest of the world. In South Sudan, according to the Office of the Coordination of Humanitarian Affairs (OCHA), the scale and severity of acute food insecurity in South Sudan through January 2021 remained among the highest recorded since 2014 (OCHA, 2021). Generally, women's contribution to the household's well-being and food security in the country cannot be underestimated (IFAD, 2020). They are in charge of ploughing, farming and gardening to provide what to eat for the family, and according to UNESCO (2018), the percentage of female-headed households is estimated at 75%. At the same time, female-headed households are the most vulnerable in terms of both poverty and food security (Hannah, 2020).

Corona Virus Disease (COVID-19) was declared a health pandemic at the beginning of 2020, calling for a global response. The disease is highly contagious, caused by SARS-CoV-2 (Ranjan et al., 2020), and at its outbreak various actions to minimize the spread (self- isolation, lockdown, restaurant closing, etc.) had various effects on food security and nutrition, and the disease itself interfered with food production and distribution especially among rural households (Daudu *et al*., 2020). Generally, women generate income largely through selling produce in cross-border markets, petty trade and in the services industries that were hardest hit by COVID-19 prevention and control measures (FAO, 2021). Consequently, female-headed households and those that heavily rely on women's incomes were likely to face increased levels of food insecurity due to COVID-19 (Care International, 2020). Globally, the food security situation was interrupted by the unprecedented occurrence of the COVID-19 pandemic. FAO (2021) reported that the women in South Sudan were particularly hard hit by COVID-19 regarding food security in their households.

In the food crisis contexts, many families in South Sudan are headed by women, as men migrated in search of employment in this country. The women rely on remittances that almost completely stopped during the pandemic, and they also face numerous protection risks, including greater exposure to gender-based violence (FAO, 2020). Furthermore, FAO (2021) notes that food availability was visibly disrupted in South Sudan due to COVID-19; particularly supplies of imported fresh food, by transport restrictions and it was anticipated to decline further due to limited cross-border movements with grave impacts observed in the cross-border areas. Despite different interventions by humanitarian agencies (International NGOs, National NGOs and UN agencies such as WFP) to improve food security

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situation in Northern Bahr el Ghazal state, very many households remained hungry without food during this pandemic period. The World Health Organization (WHO, 2020) stated that the COVID-19 pandemic led to dramatic loss of human life worldwide and presented unprecedented challenges to public health and food systems. The economic and social disruption caused by the pandemic was devastating world over, putting millions of people at risk of falling into extreme poverty (Oxfam, 2021). WHO (2020) emphasized that without any means to earn an income during lockdowns, many were unable to feed themselves and their families. For most, no income meant no food or at best, less food and less nutritious food. The pandemic affected the entire food system and laid bare its fragility. With the emergency of COVID-19, the level of food insecurity was likely to escalate in the country, especially among vulnerable groups, women inclusive (Nuwematsiko et al. 2022).

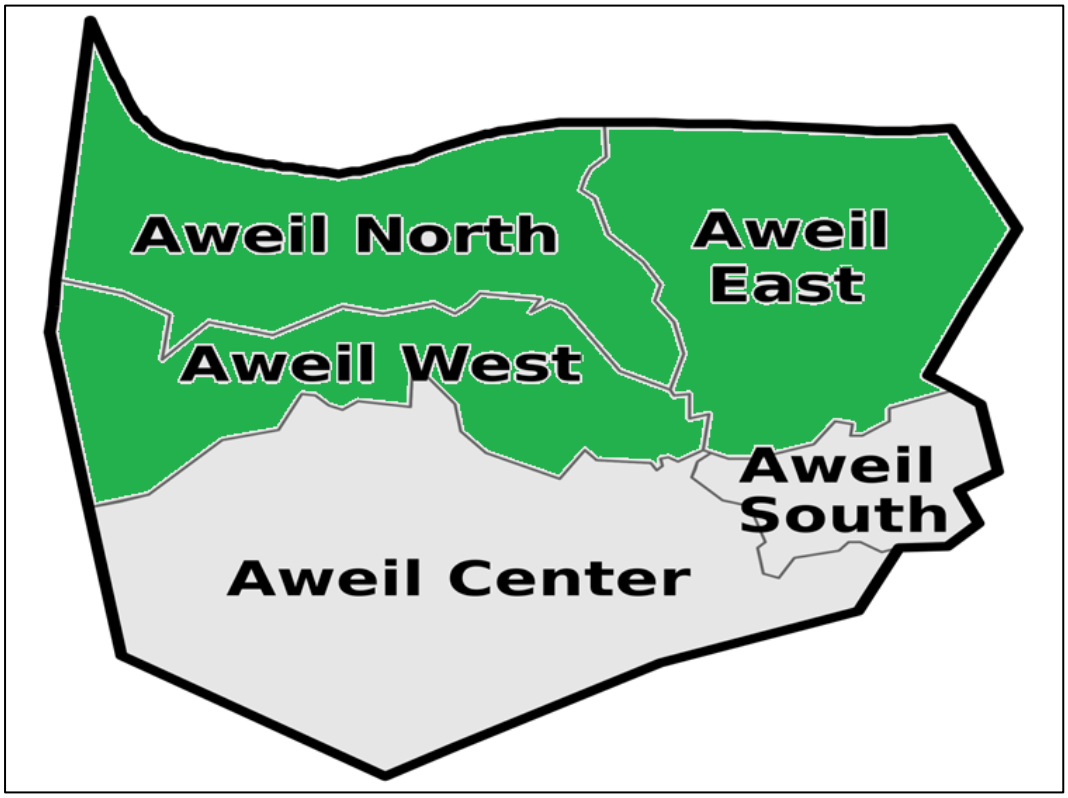
Until this study, it was not yet clear how the female-headed households were affected by the COVID-19 pandemic and how these were coping with the situation, to stimulate appropriate intervention and support specifically on issues of food security in Northern *Bahr el Ghazal, South Sudan*. This study was conducted to determine the effect of COVID-19 on food security among female-headed households and the coping strategies they employed in Northern *Bahr el Ghazal* during the COVID-19 pandemic.

STUDY METHODOLOGY

Study Area

The study examined the effect of COVID-19 on female-headed household food security in Northern *Bahr el Ghazal* state, South Sudan and was conducted between August 2021 and January 2022. The study was conducted in Northern Bahr-El Ghazal state in three counties including; Aweil East, Aweil West and Aweil North (Fig. 1). These counties were selected based on accessibility and having country borderlines. Twelve Payams (the equivalent of sub-counties) were covered overall, selected randomly in each county, in consideration of the county population size and accessibility. The total population of the state under study (Northern Bahr-el Ghazal state) was 212,228 farming households (FAO, 2021).

Figure 1: Map of Northern Bahr El Gazal state showing the study counties



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Study Design and Selection Of Households

This study covered a sample size (*S*) of 341 farming households initially based on the sample size determination of Krejcie and *Morgan* (1970), considering the state population (*N*) of 212,288 households. The estimated sample size in each county was proportionally distributed to targeted counties based on the total number of farming households per county. The number of households to be sampled per county was obtained by the following formula; $s = (n/N)^* S$ where; *s* is the household sample size for a particular county; *n* is the household population of that county; *N* is the household population of the state from which that county is selected; *S* is the overall sample size of the study.

Based on this, the total number of households to be sampled was meant to be 386 households but due to COVID-19 travel restrictions, 341 households were covered after which female-headed household data was extracted for analysis (*Table 1*). The study adopted a cross-sectional research design as a survey study, with a questionnaire. Usually, cross-sectional surveys help to assess the frequency and distribution of a particular phenomenon in a defined population (Aggarwal & Ranganathan, 2019).

Table 1: Sampling distribution and sample size per county within the study area

County	Population (*n*)	Sample size (*s*)	Payams per county
Aweil east	86,457	165	6
Aweil west	42,977	85	2
Aweil north	46,200	91	4
Total	*N* = 175,634	*S* = 341	12

Data Collection and Analysis

The analysis of the food security status was conducted on female-headed household data using the Consolidated Approach for Reporting Indicators of Food Security (CARI). Each surveyed household was classified into one of four food security categories. This classification was based on the household's prevailing status of food security (using food consumption indicators) and their coping capacity (using indicators measuring economic vulnerability and asset depletion). Results were recorded and summarized in a CARI food security console which was used to categorize each household's overall food security outcome, the Food Security Index (FSI). FSI categorizes households as food secure, moderately food secure, moderately food insecure and severely food insecure using a scale of 1 to 4. These were later converted to a 1-2 food security scale which categorized households as either food secure or food insecure. Excel and SPSS (16.0) were used for processing and analysing the data.

RESULTS

The characteristics of participating households are summarised in *Table 2*. Of the 341 households, 77% (263 households) were female-headed while 23% (78 households) were male-headed. Among the female-headed households, some of the women were widowed, divorced, never married or in polygamous marriages, leaving many married women heading their households. In some, the men had moved to other places looking for work amidst the COVID-19 hardships. The average age of the household head was 36 years with a minimum age of 17 and a maximum of 65. Among the female-headed households, the largest proportion of the respondents never went to school (53.7%) followed by upper primary (18.8%) in terms of the highest level of education attained. Average number of years spent in school by the household head was 3. The average land size under agriculture during the COVID-19 period was 1.96 acres. The minimum was 0 and the maximum was 9.27 acres. At the time of the study, the average household income was $114.13 per month with most of the households deriving their incomes from the sale of farm produce,

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salaries, commissions on sales, hiring out excess of idle land and support from relatives.

Table 2: Descriptive statistics of the respondents

Variable	Result(s)	Variable	Result(s)
Gender of household heads	Female-headed = 263 (78%) Male-headed = 78 (22%)	Landholding	Minimum = 0 acres Average = 1.96 acres Maximum = 7.21 acres
Age of household head	Average age = 36 years Minimum = 17 years Maximum = 65 years	Household income	Minimum = $10 Average = $114.13 Maximum = $3,000
Highest level of education	Never went to school = 141 (53.7%) Lower primary = 48 (18.2%) Upper primary = 49 (18.8%) Ordinary secondary level = 14 (5.3%) Advanced secondary level = 4 (1.5%) Certificate = 4 (1.5%) Diploma = 3 (1.2%)	Farm labour	Minimum = 0 Average = 3 Maximum = 7
Average Land under production	Before COVID-19 = 2.47 acres After COVID-19 = 1.28 acres	Marital status of household head	Married = 77% Unmarried = 23%

Food security status among female-headed households

Results revealed that only 9.3% were food secure, 8.3% were moderately food secure, 32.8% were moderately food insecure and 49.7% were severely food insecure on the four-level scale (*Figure. 2*). Similarly, only 15.5% were in the food secure category while 84.5% of the households were food insecure on the 2-level scale (*Table 3*).

Figure 2: Status of food security among female-headed households in the study area

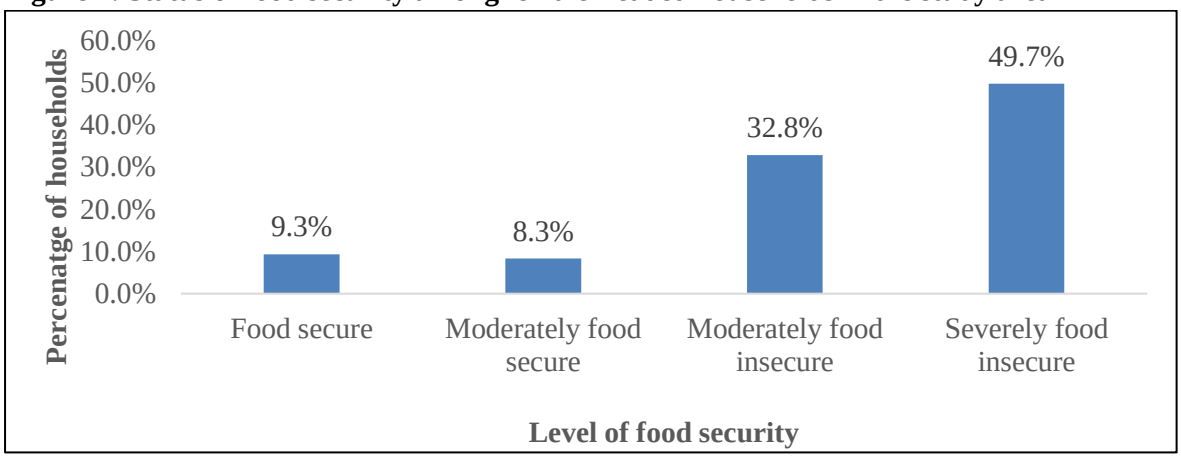

Table 3: Description of food security status in the study area

Food security status	Description	Observed %
Food secure	Able to meet essential food and non-food needs without engaging in typical coping strategies. Has minimally adequate food consumption without engaging in irreversible coping strategies; unable to afford some essential non-food expenditures.	15.5%
Food insecure	Has significant food consumption gaps OR is marginally able to meet minimum food needs only with irreversible coping strategies. Has extreme food consumption gaps, OR extreme loss of livelihood assets will lead to food consumption gaps or worse.	84.5%

Adapted from VAM[1] food security analysis

[1] VAM = Vulnerability analysis and mapping

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Food security coping strategies employed during the COVID-19 pandemic

Sale of household items. Up to 61.4% of the households sold some of their household items during the COVID-19 lockdown to be able to cope with food security and livelihood requirements as part of a coping strategy through the COVID-19 situation. Items sold according to the study include; land, food items, beds, Clothes, bed sheets, shops/businesses, chairs, computers, poultry, livestock (animals), shoes, generators, cars, fishing nets, utensils, bicycles, motorcycles. The choice of the item to be sold depended on what was needed in the household and the items available in the home. Those who sold household items and equipment used the money for; buying food, medical care, paying rent, house rehabilitation, paying school fees, setting up small businesses for income, buying clothes, paying farm labourers, buying shoes for children, loan settlement, buying farm implements and farm inputs.

Finding other work to supplement their agricultural activities. Over 77.6% of the respondents supplemented their farming activities with additional work as a survival strategy. These activities included, among others; casual labour, trade, gambling and brokering among others.

Revision of household food consumption. Up to 86.8% of the households sampled ate any kind of food they were able to access without regard to diet in order to cope with the food scarcity that came with the COVID-19 situation. Over 72% cut meal size especially for adults at the time of serving in order to reduce the amount of food served per meal and to be able to save food for the subsequent meals. Furthermore, in 72.6% of the households sampled, adults skipped some meals unwillingly but because of scarcity in order to spread the availability of the little food acquired. In some households, some or all adults ate one meal a day or even could skip a day, giving chance to the children the little. In fact, based on this study 76.3% of the population represented went through this situation, trying to survive Covid-19 on the margins of life. In some households, even children skipped some meals. This was true in 49.6% of the female-headed households sampled.

New sales channels: About 20.1% of the households resorted to new sales channels since the traditional channels of produce sales were completely or at least partially blocked by the COVID-19 restrictions; 13% of the households diversified their production activities or switched to other types of crops for production; 7% of the households applied for government household support systems; 3.5% applied for public procurement schemes; 5.9% of the households decreased their overall production in order to reserve resources only for survival while 5% increased their overall production; 2.1% increased their overall production for sale while 11.8% decreased their overall production available for sale; 46% of the households did nothing in terms of sales channels/strategies and only waited for fate.

Impact of COVID-19 on food security among female-headed households

There was a strong correlation between the income before and income during Covid-19 (r = 0.824, P = 0.000). Average household income before COVID-19 was $147.47 compared to the average household income of $87.62 during Covid-19. This reduction in income due to the pandemic situation was significant ($t_{0.05}$ = 5.942, df = 262, P = 0.000). The implication of this was that the ability of households to buy food was reduced due to reduced financial purchasing power. There was a significant reduction (P = 0.000) in the size of land under agricultural production due to COVID-19. Household land under agricultural production reduced from an average of 2.06 acres to 1.96 acres. Precisely, 79.5% of the households reported a decrease in crop harvest. About 50.6% of the households lost access to produce markets while 48.4% lost access to supermarkets and could no longer supply their produce to those supermarkets. Furthermore, 40.1% of the households no longer had access to input markets and therefore could not get agro inputs to support their farming activities while 26.7% of the households had no or limited access

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to produce stores and shops arising from the Covid-19 pandemic restrictions and SoPs.

DISCUSSION

Of the 341 households, 77% (263 households were female-headed while 23% (78 households) were male-headed. This implies that there are more female-headed households (FHHs) than male-headed households in the study area. This result is close to that of UNESCO (2018) which estimated the percentage of female-headed households to be higher (75%) than that of male-headed households in South Sudan. According to Yoosefi et al. (2020), female-headed households face many challenges that can become a big threat or an opportunity in a community. Therefore, their health improvement can be achieved through training and helping them to adapt to new and multifaceted roles, providing more economic support and helping them raise their social status.

The average age of 36 years indicates that almost all the respondents and household heads involved in the study were adults and mature enough to provide reliable information regarding the household situation. This age is indicative of mature decision making at the household level while taking into account the basic needs, nutrient uptake and the various nutritional requirements of the different individuals. The largest proportion of the respondents never went to school followed by upper primary and the average number of years spent in school by the household head was 3 years. This result indicates a very high level of illiteracy among female-headed households in South Sudan. Education level of household heads plays a major role in decision making as well as use of knowledge information in meeting the dietary requirements of specific individuals in a family like young children, the sick and the pregnant women. In fact, the ability and level of productivity of households are linked to the level of training attained especially by household heads. According to Drajea et al. (2014), deficiency of family financial resources is more common in households where the household heads have attained no or low level of education. Cases of acute malnutrition are expected to happen more frequently among uneducated mothers compared to their counterparts. According to Piscopo (2019), educated mothers create a more conducive home environment in terms of nutrition for their children, making them more nutritional and food secure.

The average size of land under agriculture before COVID-19 was 2.47 acres with average land size under agriculture during the COVID-19 period (3 months before the study). Patterson and Kristen (2018) noted that small agricultural areas weaken use of modern equipment in agricultural work thereby negatively impacting production and productivity. At the time of the study, the average household income was $114.13 per month. Most households derived income from sale of farm produce, salary, commissions on sales, hiring out excess of idle land and support from relatives. Low income is considered one of the most important factors responsible for food insecurity and hunger among populations since hunger rates decline sharply with rising incomes (Silvestri et al., 2015). According to Njeru (2020), households with low or inadequate income are at a higher risk of food insecurity and are not able to consume enough calories for a healthy lifestyle. The average number of family members working on the farm was 3. Larger household sizes have been reported to have a negative impact on calorie availability, especially in the context of female-headed households (Kraybill & Bashaasha, 2005). On the other hand, since resources are very limited, the increase in family size may put more pressure on consumption than it contributes to production.

Results revealed that 84.5% of the study households were food insecure. The status and score of food security are indicators used to monitor food security. The prevalence of moderate and severe food insecurity suggests concern about food security status among the female-headed households in the study area. According to the “Economist Impact” report, food insecurity continued to rise in 2021. Based on Food Insecurity Experience Scale (FIES) data, women have a 27% higher chance than men of experiencing severe food insecurity (FAO, 2020).

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This means that governments need to put in place inclusive and responsive approaches and policies to create equity for women as far as food security is concerned. Accordingly, development agencies have been reported to engage in building instruments for women's empowerment within specific food security programmes (WEAI, 2020) and across agricultural value chains. Such efforts to build disaggregated food security datasets can inform inclusive policy decisions on food security that effectively cater for the needs of all vulnerable social groups. However, agricultural resilience is of particular importance to those most vulnerable to food insecurity, including women, children, and migrant workers. These were also the groups hit hardest in 2020 by the COVID-19 pandemic according to the GFSI (2020) report.

The sale of household items reported as a coping strategy is common among many households as a survival mechanism in times of crisis. Up to 61.4% of the female-headed households sold some of their household items during the Covid-19 lockdown to be able to cope with food security and livelihood requirements as part of a coping strategy. Items sold according to the study included; land, food items, beds, Clothes, bed sheets, shops/businesses, chairs, computers, poultry, livestock (animals), shoes, generators, cars, fishing nets, utensils, bicycles, motorcycles. The choice of the item to be sold depended on what was needed in the household and the items available in the home. According to Dhruba (2014), the sale of household items is a non-adaptive coping strategy. Those who sold household items and equipment used the money for; buying food, medical care, paying rent, house rehabilitation, paying school fees, setting up small businesses for income, buying clothes, paying farm labourers, buying shoes for children, loan settlement, buying farm implements and farm inputs.

The study revealed that some female-headed households could forego some meals or went for low-quality meals as a survival strategy during the Covid-19 crisis. Such diets that lack essential nutrients can lead to serious health consequences; for instance, zinc deficiency can weaken immune function (Lassi et al., 2020). Over 77.6% of the respondents supplemented their farming activities with additional work as a survival strategy. These activities included, among others; casual labour, trade, gambling and brokering among others. Up to 86.8% of the households sampled ate any kind of food they were able to access without regard to diet in order to cope with the food scarcity that came with the COVID-19 situation. Over 72% cut meal size especially for adults at the time of serving in order to reduce the amount of food served per meal and to be able to save food for the subsequent meals. Furthermore, in 72.6% of the households sampled, adults skipped some meals unwillingly but because of scarcity in order to spread the availability of the little food acquired. In some households, some or all adults ate one meal a day or even could skip a day, giving chance to the children the little. In fact, based on this study 76.3% of the population represented went through this situation trying to survive Covid-19 on the margins of life. In some households, even children skipped some meals. This was true in 49.6% of the households sampled. In a similar study reported by Icheria *et al*., (2021), female-headed households skipped meals, reduced meal size and changed meal times as part of strategies to cope with food scarcity. These are detrimental coping strategies that are likely to push such household into serious health complications (Sehar and Anayat, 2021).

The study revealed important impact areas of the pandemic on female-headed households in South Sudan. For the purpose of this study, food security was viewed in terms of access and ability to access food. Accordingly, there was a strong correlation between the income before and income during Covid-19. The average household income before Covid-19 decreased from $147.47 to $87.62. This reduction in income due to the pandemic situation was significant. The implication of this was that the ability of households to buy food was reduced due to reduced financial purchasing power. There was a significant reduction ($P = 0.000$) in the size of land under agricultural production due to COVID-19 from 2.06 acres to 1.96 acres. This could have resulted from restrictions imposed by

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the government in observance of the COVID-19 standard operating procedures (SOPs). This further implies that less food could be produced on the reduced land resource and thus less food was available. The decrease in crop harvest reported among 79.5% of the female-headed was noticed because of less production that was going on, as well as less land coverage which had been planted due to COVID-19 restrictions. In addition, most of the harvest that was realized was wasted since transportation of produce was a challenge and most produce got rotten before being taken to markets. Female-headed households lost access to produce markets and supermarkets which made them unable to supply their produce to those supermarkets and affecting their household incomes and food purchasing power. Some of the households no longer had access to input markets and therefore could not get agro-inputs to support their farming activities. This means that their farm activities and productivity were hampered lower their food production potential and farm output. The loss of access to produce stores and shops arising from the COVID-19 pandemic restrictions and SoPs could also have reduced the potential of food access and availability among the affected female-headed households. Border closures, trade restrictions and confinement measures prevented farmers from accessing markets including buying inputs, and selling their produce and agricultural workers were unable to harvest crops, thus, disrupting domestic and international food supply chains and access to healthy, safe and diverse diets (ILO et al., 2020).

Globally, women play a central role in ensuring food security for their households even in situations where they are not households, making their children and husbands priorities. In times of food insecurity, women's health is thus compromised, placing them at risk of maternal death or at great risk of obesity from poor nutrition in a poor environment. Globally, hunger levels have risen following COVID-19 and the various restrictions that came with it. This means that the need to deal with food insecurity among female-headed households in South Sudan is more urgent now than ever before.

CONCLUSION

The food security situation among female-headed households in South Sudan is poor, with women opting to skip meals among other options. Efforts that promote nutrition-sensitive agriculture and food systems should be put in place, paying special attention to the food security and nutrition of women and children in critical times in order to halt circumstantial poverty and food insecurity. As the country recovers from the COVID-19 crisis, a combination of income growth, supported by direct food security interventions and investment in agriculture and education is necessary.

CONFLICT OF INTEREST

Authors declare **NO** conflict of interest.

REFERENCES

Aggarwal, R., & Ranganathan, P. (2019). Study Designs Part 2– Descriptive studies. *Perspect ives in clinical research*, *10*(1), 34-36.

Care International 2020. Left out and left behind: Ignoring women will prevent us from solving the hunger crisis. *Policy report.*

Daudu, A.K., Salami, O.S., Kareem, O.W., and Olatinwo, L.K. 2020. Assessing the impact of corona virus (Covid-19) on rural household food security in South-western Nigeria: A Gender-household head Perspective. *African Economic Conference*.

Dhruba Raj Ghimire (2014). International Journal of Scientific & Research Publications, Volume 4, Issue 9, September. ISSN 2250 – 3153.

Drajea, Alice J. & O'Sullivan, Carmel (2014). Influence of parental education and family income on children's education in rural Uganda. *Global educational review 1 (3). 149-166.*

Food and Agricultural Organisation (FAO). 2015. The impact of disasters on agriculture and food security. *Rome, FAO. (also available at*

Article DOI : https://doi.org/10.37284/eajab.7.1.1926

https://agris.fao.org/agris-search/search. do? recordID=XF2017001238).

Food and Agricultural Organisation (FAO). 2021. Special Report - 2020 FAO/WFP Crop and Food Security Assessment Mission (CFSAM) to the Republic of South Sudan. *Rome. https://doi.org/10.4060/cb4498en*

Food and Agricultural Organisation FAO. 2022. National agrifood systems and COVID-19 in South Sudan: Effects, policy responses and long-term implications. *Rome. https://doi.org/10.4060/cb8613en.*

Food and Agricultural Organization (FAO) 2020. "Gendered impacts of COVID-19 and equitable policy responses in agriculture, food security and nutrition". 2020. *Available at: https://reliefweb. int/sites/reliefweb.int/files/resources/CA9198EN.pdf*

Icheria, B. K., Carbonatto, C. L., and Bila, N. J. 2021. Key informants' perspectives on food security among female-headed households in Kenya. *Social Work/Maatskaplike Werk Vol 57 No 1; Issue 5, http://socialwork.journals.ac.za/pub,doi:http://dx.doi.org/10.15270/52-2-907.*

International Labour Organisation (ILO), Food and Agricultural Organisation (FAO), International Fund for Agriculture Development (IFAD) and World Health Organisation (WHO) 2020. Impact of COVID-19 on people's livelihoods, their health and our food systems. Food security, Joint statement 13th October, 2020.

Kraybill DS, Bashaasha B. (2005). Explaining Poverty in Uganda: Evidence from the Uganda National Household Survey. In: Omare MN, Makokha MO, Oluoch-Kosura W. Shaping the future of African agriculture for development: role of social scientists. *Proceedings of the Inaugural Symposium of African Association of Agricultural Economists, Nairobi. http://www.aaae-africa.org.*

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30,* 607-610.

Lassi ZS, Kurji J, Oliveira CSD, Moin A, Bhutta ZA. 2020 Zinc supplementation for the promotion of growth and prevention of infections in infants less than six months of age. *Cochrane Database of Systematic Reviews 2020, Issue 4. Art. No.: CD010205. DOI: 10.1002/14651858.CD010205.pub2.*

Maghrabi, M. H. E, Gable, S., Rodarte, I. Osorio and Verbeek, J. 2018. Sustainable Development Goals Diagnostics: An Application of Network Theory and Complexity Measures to Set Country Priorities. *World Bank group, Policy Research paper working 8481.*

Nuwematsiko, R., Nabiryo, M., Bomboka, J. B. Nalinya, S., Musoke, D., Okello, D. and K. Wanyenze R. 2022. Unintended socio-economic and health consequences of COVID-19 among slum dwellers in Kampala, Uganda. *MBC Public Health.*

Oxfam 2021. World in the midst of a 'hunger pandemic': conflict, coronavirus and climate crisis threaten to push millions into starvation. *https://www.oxfam.org/en/world-midst-hunger-pandemic-conflict-coronavirus-and-climate-crisis-threaten-push-millions.* Accessed on 11th April, 2022).

Piscopo, S. 2019. Nutritional education: an overview. The Encyclopedia of Food Security and Sustainability, Three Volume.

Ranjan K. Mohapatra, Lucia Pintilie, Venkataramana Kandi, Ashish K. Sarangi, Debadutta Das, Raghaba Sahu, Lina Perekhoda 2020. The recent challenges of highly contagious COVID-19, causing respiratory infections: Symptoms, diagnosis, transmission, possible vaccines, animal models, and immunotherapy. *Chemistr Biol Drug Des. 2020;96:1187–1208. DOI: 10.1111/cbdd.13761.*

Article DOI : https://doi.org/10.37284/eajab.7.1.1926

Sehar, I and Anayat, A. 2021. Maternal food insecurity in low-income countries: Revisiting its causes and consequences for maternal and neonatal health. *Journal of Agriculture and Food Research Volume 3, 100091*.

Silvestri, S., Sabine, D., Patti, K. *et al.* Households and food security: lessons from food secure households in East Africa. *Agriculture & Food Security.* ***4****, 23 (2015). https://doi.org/10.1186/s40066-015-0042-4*.

United Nations, 2020. Analyses of the socioeconomic impact of Covid-19 in Uganda; leaving no one behind.

United Nations, Educational, Scientific and Cultural Organization (UNESCO) 2018. Global Initiative on Out-of-School Children (2018). South Sudan Country Study.

United Nations. 2020. The Impact of COVID-19 on Women. *Policy Brief.*

World Health Organization (WHO). 2020. Novel Coronavirus (2019-nCoV) situation report.

Yoosefi, L. J., Ali, M., Gharehghani, M., Soofizad, G., Khosravi, B., Ziapour, A. and Fahim, S. I. 2020. Challenges and opportunities confronting female-headed households in Iran: a qualitative study. *BMC Women's Health (2020) 20:183. https://doi.org/10.1186/s12905-020-01046-x.*

