

# Perspectives on the village savings and loans association activities and household food security in Uganda

## ABSTRACT

The study examined various perspectives on VSLA activities and household food security in Uganda. Specifically, the study examined the effect of VSLA on household food Availability, established the contribution of VSLA on household food Access, and determined the effects of VSLA on household food Stability. The study adopted a literature review approach to collect information. The results suggest a positive relationship between VSLA activities and household food security in Uganda. It further reveals that VSLA activities have an effect on food availability, food accessibility and food stability. It is concluded that if the government of Uganda can improve on the quality of VSLA activities, the level of household food security will improve. This study contributes to the understanding of the association between VSLA activities and household food security in the country. Therefore, for improved household food security, it is encouraged that the leadership of Local Governments focus more attention towards mobilising local communities to join VSLA groups so that they can be able to access affordable capital to increase their level of production, which can translate in sustainable household food security in the long run.

**Key words:** VSLA, availability, access, stability, household food security.

## 1. INTRODUCTION

The concept of food security dates back to the Palaeolithic or old stone age era about 11,000 years ago which was a time in human history when foraging, hunting, and fishing were the primary means of obtaining food and their diets were dependent on the fluctuations of natural

ecosystems (1). In terms of gender roles, men would go for hunting and fishing as women would go for foraging. They had to worry about whether overfishing a lake would deplete a crucial food source or whether a drought would wither up important plants and if such occur, then there was a threat on food security and in order to ensure

enough food production for their communities, they worked to manipulate those systems in certain ways, such as rotational hunting and gathering. This period was followed by Neolithic era which started after a prolonged period of hunting and gathering and in this period, there were introduction of many things including agriculture using rudimentary tools made out of stones and wild movement in search for food reduced. Crops were introduced intentionally or unintentionally at first and provided a stable food source for the group which ensured food security. But even so natural occurrence like thunder storm, prolonged dry spell and wild animals were challenges to food security (2).

As civilization came in force later where there were sense of institutionalization after several years of realization of the need for belonging, the concept of food security and particularly household food security came in to administrative recognition when The United Nations Conference on Food and Agriculture, convened by President at Hot Springs, Virginia, USA in May/June 1943, during the Second World War which led to the creation of the Food and Agriculture Organization, (FAO) of the United Nations Organisation (3) .FAO's founding conference was organized

'to consider the goal of freedom from want in relation to food and agriculture'. It was recognized that 'freedom from want means a secure, an adequate, and a suitable supply of food for every man at household level (4). Its ultimate objective was defined as insuring an abundant supply of the right kinds of food for all mankind at household level. The primary responsibility for ensuring that people had the food needed for life and health lay with each nation. But each nation could fully achieve that goal only if all work together (3).

Globally, in September 2017, there was jointly launched "The State of Food Security and Nutrition in the World", marking the beginning of a new era in monitoring progress towards achieving a world without hunger and malnutrition, within the framework of the Sustainable Development Goals (SDGs). This report monitors progress towards the target of ending hunger (SDG Target 2.1) and provides an analysis of the underlying causes and drivers of observed trends. While monitoring hunger, the prevalence of severe food insecurity based on the Food Insecurity Experience Scale (FIES) introduced in the year to provide an estimate of the proportion of the population facing serious constraints on their ability to obtain safe, nutritious and sufficient food

(5;6;7;8). Of great concern is the finding of 2015, after a prolonged decline, the most recent estimates showed that global food insecurity is still increasing in a number of countries around the world.

In Sub-Saharan Africa (SSA), household food insecurity has been on the increase and it is a growing concern to states institutions in Africa. It is estimated by the Food and Agriculture Organization that the number of malnourished people in Sub Saharan Africa indicates a shoot up from 165.5 million in 1990-92 to 198.4 million in 1999-2001. This statistic collaborates with a recent study regarding the food insecurity situation in South Africa and Senegal (9). Obtainable studies reveal a similar trend in the Eastern African region, (10). Despite the various interventions to enhance food security in East Africa, low productivity which tantamount to food insecurity is still a challenge. While, in Uganda, in December 2016 to January 2017, there was conducted household food security assessment which was concluded with the production of the Uganda Emergency Food Security Assessment report and this is conducted by a number of government Ministries, departments, agencies, as well as international agencies such as World Bank, World Food Programme,

United Nations Development Programme, United Nations Food and Agricultural Organisation, and United Nations Children Emergency Fund. The main objective of the exercise was to establish the food security situation using the integrated food security Phase Classification (IPC) for Uganda for the period from January to March 2017. It is preceded by a nation-wide household food security assessment which is done in three phases using the same tool. The IPC analysis estimated an ever increasing number of population in the sub-Saharan Africa as being minimally food insecure (11).

The analysis further reveals that 26% of the total population in the country is facing stressed food insecurity (IPC Phase 2). This population has minimum adequate food consumption, and are unable to afford some essential non-food expenditures. The analysis finds that 5% of the total population in the country is in Crisis (IPC Phase 3). However in October 2018, a joint departmental survey was done in all the six sub counties and one town council of Uganda to establish the household food security situation where a selected senior members of staffs identified from all the departments in the district were tasked with the role of administering a tool that was developed and used

to interview a selected members involving leaders, and a number of community members at household level within a period of one month and they came up with a report that was adapted by the council. This survey which focused on household food security was conducted to test the contribution of Operation Wealth Creation on food security at household level. The survey revealed that only 21% of the population of Kole are food secure, 23% are moderately food secure and 56% are food insecure.

## **2. THEORETICAL REVIEW**

Several theories have been advanced to describe the relationship between VSLA and household food security. Accordingly, the theory of access states that easy access to productive resources such as land, water, labour capital is fundamental for households that rely on crop and livestock production for their livelihoods (12). Each of these resources has a bearing in the livelihood of poor households to settle their needs and demands. This theory proposes that access to such means of production can enable any household to among others remain food secure. While the theory of financial inclusion states that financial inclusion is the ease of access to, and the availability of basic financial services to all members of

the population (13). Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs such as food, health, education among others in a responsible and sustainable way (14; 15; 16; 17).

Both propositions suggest that poor households have got needs and demands and these demands need some form of resources to settle their domestic problems and needs like household food security, health and education among others and these resources should be accessed with ease without much procedures especially to the very most poor (14; 18). Both theories have a point of linkage on economic/ financial resource as a requirement to poor households for their demands. Meanwhile, they both fail to address the source of this economic or financial power which they both emphasize. Whereas both theories admit that there is need to have easy and accessible financial services, they did not explain which source these financial services can be got as there are several financial services but which of the series has not been addressed here implying that there is a gap which this study seeks to find out. In view of the issues raised above, the relationship between VSLA and food security should be

characterised by easy access of financial resources which is through a clear and notable source which is provided in this study as VSLA and this source can be used to achieve key pillars of food security like food availability, food access and food stability. The theory of financial inclusion is related to this study in that it enable members of VSLA to be empowered financially and this in turn makes them to be in position to have availability, accessibility and stability of food in their households.

### **3. CONCEPTUAL REVIEW**

#### ***Village Savings and Loans Association (VSLA)***

The concept VSLA refers to a group of people always ranging from 5-30 members from within the same vicinity who save together and take small loans from those saving groups, meet weekly and members save through the purchase of shares (19). The definition of VSLA adapted in this study is that it is a village banking methodology, which offers the productive poor mostly in the rural communities, the opportunity to collectively mobilize their resources under an administrative arrangements and lend to themselves with agreed interest rate on group basis so as to continuously meet their household basic needs. VSLA will be characterised by autonomous and

self-managing grouping, basically the poor led by the group constitution, periodic collection of money to the central pool, loan scheme to meet household needs, periodic repayment of loans with minimally agreed interest rate, sharing of interest among members on agreed formulae.

#### **3.1 Household Food Security (HFS)**

The term HFS is defined by the United Nations Committee on World Food Security to mean a situation when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life. The definition of household food security adapted in this study is that it is a situation when a household has access to the food needed for a healthy life for all its members in terms of quality, quantity, safety, and culturally acceptable at all times (5). In this study, food security will be characterised by availability of food, Access to food and food Stability at all times at the household level. On the inverse, other studies (9) describe food insecurity as a situation when a community faces dearth of acceptable food to attain a secure and useful way of life.

### **3.2 Household food availability (HFA)**

The notion HFA refers to the physical existence of food where at household level food could be from own production or bought from the local markets. Food availability is an important aspect of food security because when food is not physically present in a household, there is then clear food insecurity and malnutrition. Accordingly, household food availability requires that food has to be available in its physical form in enough quantity and good quality in every household so as to offer safeguard against food insecurity (20). In another study, it is suggested that VSLA has got a direct influence on food availability (21). Many households do not have access to formal financial institutions and yet they need economic power for ensuring that food is available through production processes and in the event that access to formal financial services are limited, it is likely to impact negatively on food availability. However, the current gap in this situation is that there is inadequate financial access by poor local households that limits them from having food availability as the production processes and purchase of food require financial support (22)

### **3.3 Household food accessibility (HFAc)**

The term HFAc refers to a situation when all households have enough and available economic resources to obtain food in sufficient quantity, quality and diversity for a nutritious diet. According to recent studies (4), household food access depends mainly on the amount of household resources and on prices while, accessibility is also a question of the economic, physical, social and policy environment and changes in these dimensions may seriously disrupt production strategies and threaten food access of affected households.

In a different study (23), it is realised that VSLA has a direct bearing to food access and thereby food security at household level. Food access require economic power to buy food from the markets and the absence of clear financial services which can be easily accessed by the household, it can negatively impact on the level of access to food by different household. The gap here is that the economic power to venture the available markets to access food for household is lacking due to difficulty in accessing formal financial services which would otherwise give then economic capacity to acquire food (24). However, food Stability as used in this study refers to a situation

when the food supply at household level remains constant during the year and in the long-term which includes food, income and economic resources. Accordingly, household food stability requires that food must be present at all times in terms of availability, access and utilization without any fluctuation (24). It can be realized that VSLA has got a direct bearing on household food stability because to ensure stability of food at all times there has got to be economic capacity to acquire food at the time it is needed throughout the year (25).

The absence of a clear and easily accessible financial source is likely to impact negatively on the food security situation especially food stability at the household level. However, the gap in attaining food stability is caused when the stock produced and attained through other means are depleted, the current state of financial incapacitation which would help in accessing more food to attain stability of food at all times of the year becomes a problem to the affected household.

#### **4. STATEMENT OF THE PROBLEM**

Despite several attempts by the Government of Uganda, and other non-State actors to improve household food security through

interventions strategies such as Plan for Modernisation of Agriculture, National Agricultural Advisory Services (NAADS), Community Agriculture Infrastructure Improvement Programme (CAIIP), Operation Wealth Creation (OWC), Physical food presence in households in times of severe difficulties by government and other non-state actors, distribution of Agro inputs through Ministry of Agriculture, Animal Industry and Fisheries there is still rampant household food security in all regions of Uganda with eastern and northern Uganda leading (26). As a consequence, undernourishment affects 41.4 percent of the population, and wasting and stunting in children are a major concern. 25 percent of the population is food insecure, while the remaining 75 percent gets at least one basal meal a day. The Global Hunger Index 2019 ranks Uganda in position 104 out of 117 countries with a score of 30.6, qualifying it to be one of the countries with a serious level of hunger. The Report of a joint departmental survey conducted in October 2018 in all the six sub counties and one town council of Uganda to establish the household food security situation. In the survey, selected senior members of staffs were identified from all the departments in the district and

tasked to administer a tool that was used to interview selected members involving leaders, and a number of community members at household level within a period of one month. The survey revealed that only 21% of the population of Kole are food secure, 23% are moderately food secure and 56% is food insecure. Due to the problem of food insecurity, many households adapted the VSLA model as a strategy to fight food insecurity which model seems to be gaining ground in the fight against household food insecurity. It is against this background that the researcher seeks to establish how VSLA can be used to enhance household food availability, access and stability in Uganda.

## **5. PURPOSE OF THE STUDY**

This study aims to examine the relationship between VSLA activities and household food security in Uganda. Specifically, research Questions are answered, namely; (i) what is the effect of VSLA on household food availability in Uganda? (ii) To what extent does VSLA contribute to household food access in Uganda? And (iii) what are the effects of VSLA in enhancing household food stability in Uganda?

The idea of VSLA is treated as the independent variable while Household Food Security is treated as

the dependent variable. The role of VSLA was be measured by the number of active VSLA groups registered in the study areas and the participation of members in each of those groupings. While the household food security situation in the study area was measured by the average number of households having food access, food availability and food stability in the study area (13). However, there were other moderating variables that could lead to household food security, but for the purpose of this study, they had insignificant impact. In this paper, VSLA refers to a group of people always ranging from 5-30 members from within the same vicinity who save together and take small loans from those saving groups, meet weekly and members save through the purchase of shares (19). On the other hand, food availability as the physical availability and presence of food stocks in desired quantities given by domestic production or bought from any available source within a nation (27). Also, household food access as the ability to access food by all people at all times in enough quantity and quality for an active and healthy life through various means like purchases, donations, domestic production among others (24). While, food Stability denotes to a situation when

the food supply in household level remains constant during the year and in the long-term that includes food, income and economic resources.

## **6. RESULTS**

### **6.1 Household Food Security**

Food security 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 (24). The definition of household food security adapted in this study is that it is a situation when a household has access to the food needed for a healthy life for all its members in terms of quality, quantity, safety, and culturally acceptable at all times. In this study variable, food security will be characterised by Availability of food, Access to food and food Stability at all times at the household level (28). The household food security for the purpose of this study will be examined at three different levels of food availability which seeks to examine the availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports. Food access is based on the economic ability of individual household to acquire their own food which is enough for the household members without running into shortage.

However, the dependent variable being food security for the purpose of this study in this review will be grounded by the Maslow theory of motivation and specifically focusing the basic needs aspect. Maslow stated that people are motivated to achieve certain needs and that some needs take precedence over others (29). Our most basic need is for physical survival, and this will be the first thing that motivates our behaviour. Once that level is fulfilled the next level up is what motivates us, and so on. Maslow identified the first need in his hierarchy of needs as being Physiological needs which are biological requirements for human survival, and they include: air, food, drink, shelter, clothing, warmth, sex, and sleep (30). If these needs are not satisfied the human body cannot function optimally. Maslow (29) considered physiological needs the most important as all the other needs become secondary until these needs are met. For the purpose of this study the focus is on food as a need and we are looking at this at a household level and looking at how this need can be achieved at the house level with the three areas of availability, access and stability.

The Maslow's theory of motivation which focuses basic needs as central matter only provides the fact that food is a basic requirement at

household (29); however it fails to identify the means in which this basic need should be acquired and yet the means of acquiring food at household level is very pivotal to this study. Mere stating of the need for food at household without considering the means through which it should be acquired fall short of this study. This particular study emphasizes the means through which food can be made available, accessible and in a stable form. Food security is manifested at different level which can be measured at continental level, regional level, and national level up to household level (31). For the purpose of this study, food security will be analysed from the household level and specifically focusing food availability, food access and food stability against the source identified for this study which is VSLA practices within the community of the study area.

## **6.2 Village savings and loans association and household food availability**

Accordingly, food availability refers to the physical availability and presence of food stocks in desired quantities given by domestic production or bought from any available source within a nation and this depends on storage and transport infrastructure and market integration within the

national territory (32). Thus, food availability as sufficient quantities of food available on a consistent basis which is determined by the level of food production, net trade, and food stock levels (34). Food availability is defined as the availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (35). A study on the contribution of VSLA activities on food security of its members was conducted with the purpose of the study was to assess the contribution of VSLA activities on the availability of food in the household of its members (36). It was both quantitative and qualitative in nature. It employed cross-sectional study design where data collections were done using survey and interview methods. The instruments that were used in the collection of data were self-administered questionnaires and interview guide. The finding of the study indicated that VSLA activities had a significant effect of the availability of food in the household of its members.

Another study on the effect of VSLA on the availability of food in the household of its members (20) employed quantitative and qualitative approaches while the design used in the study was cross-sectional survey design. The methods that were used in the collection

included the questionnaires and the interview methods. Data collection was done with the help of self-administered questionnaires and interview guide. Pearson's correlation and regression was done on the data collected. The finding of the study indicated that VSLA activities had a significant effect on food availability in the household of its members.

### **6.3 Village savings and loans association and household food accessibility**

Accordingly, food access refers to the household's ability to get food in the marketplace or from other sources like transfers, gifts, among others (37). He asserts that food access depends largely on household purchasing power, which varies in relation to market integration, price policies and temporal market conditions. Meanwhile, other studies (24) define household food access as the ability to access food by all people at all times in enough quantity and quality for an active and healthy life through various means like purchases, donations, domestic production among others. Whereas a different study (38) asserts that food access refers to the ability of an individual or household to acquire food, either through market purchase or own production.

A separate study on the effect of VSLA activities on household food accessibility indicated that VSLA had a significant effect on the level of accessibility in the household of its members (39). According to a study on the effect of VSLA activities on food security (4), the study which purposely focussed on the effect of VSLA activities on food accessibility indicated that VSLA activities had a significant effect on the level of accessibility of food in the household of its members. Different findings appear to suggest that VSLA activities have a significant effect of accessibility of food.

### **6.4 Village savings and loans association and household food stability**

Food stability refers to the ability of a population, household or individual to have access to adequate food at all times and they should not risk losing access to food as a consequence of sudden shocks like economic or climatic crisis or cyclical events like seasonal food insecurity (40). It is a situation when the food supply in household level remains constant during the year and in the long-term that includes food, income and economic resources and it is important to minimize external risks such as natural disaster and climate change and price volatility (41).

Meanwhile, food stability is the ability to secure the constance of the other pillars of food security being availability, access and utilization at all times without fluctuation due to several factors that may be natural or otherwise (24).

Accordingly, the role of microfinance in ensuring all the four pillars of food security being availability, access, utilization and stability is very key as all the pillars tend to rely on the households' economic/ financial ability in order to achieve them (42). The implication of this assertion in this study is that as this study seeks to find out how VSLA can be used to enhance food security and focusing food stability as an objective, the role of micro finance as stated above in ensuring this is achieved as VSLA is classified under Micro-finance whose role as by the above scholar is to ensure food stability. Studies on the effect of VSLA activities in food appear to suggest that VSLA activities have a significant effect of the level of food stability in the household of its members.

### **6.5 Linking VSLA to household food security**

A different investigation was conducted to determine the relationship between VSLA and food security in Sembabule District on the population involved household

members who are at the same time members of existing VSL groups in the selected areas and the key informants were the local leaders from Sembabule and SCC-Vi staff (23) where the study population was 1520 using a sample of one hundred twenty (120) respondents who were selected from the study population of about 1500 farmers that are working with SCC-Vi in the two sub-counties (Mijwala and Sembabule town council) plus key informants (10 local leaders and 10 SCC-Vi staff) totalling to 140. It was found out that majority of the members who are in VSLA groups have witnessed a reduction in food insecurity challenges among their households. This is due to the fact that when it comes to share out, many members receive a lot of money at the end of the cycle which is then invested into farming enterprises. More so there is reasonable amount of money that members borrow and pay after a maximum period of 3 months. This is also used to finance the farming enterprises.

A similar study in Bondo District of Kenya and according to records at the District Gender and Social Development Office in Bondo (21), reveals that there were about 248 registered Village Savings and Loans Associations, each with approximate membership of 30. The target

population therefore comprised all the 248 registered VSLAs in Bondo District. The study concluded that credit has enhanced their ability of 78.6% of the respondents to produce more food, while the ability of 21.4% of the respondents had not been enhanced. This has proved that there is a close relationship between VSLA and food security where savings and borrowing improves food production and thereby enhancing food security.

These studies both support the theories of Myers (43; 17), which contend that households have got needs and demands and these demands needs some form of financial resources to settle their domestic problems and needs like food security, health and education among others and these resources should be accessed with ease without much procedures especially to the very most poor. The two theories all have a point of agreement on the linkage of economic/ financial resource as a requirement to poor household's food security. They however fail to state the level of VSLA intervention at specific pillars of food security where both studies have generalised the general food security intervention all of them focusing at production and farming as the way out for food security, while the gap this study is seeking to investigate is how food security can be enhanced

at the level of availability, access and stability which was not specifically handled in the two studies above.

The different literatures reviewed in this chapter about the relationship between the two variables points to common factors. Several literatures reviewed about variable one which is Village Savings and Loans Association suggested that it is a common practice among the common poor especially in rural areas with limited access to formal financial services to come together in an administrative arrangement in a group of usually 15-30 members with the intention of saving their financial resources and they borrow it with lower interest rate among members so as to handle their basic needs like food, education and health among others. While literatures reviewed about variable two which is household food security suggested that there is still household food insecurity especially when it comes to the key pillars of food availability, food access and food stability and these problems is generally attributed to the economic inability of households to facilitate the production processes and or the means to acquire food from the market sustainably. It is thought to date that the practice of VSLA model of financial access could be a solution to economic capacity to the poor households to enable them reduces

household food insecurity through easy and affordable financial access with low interest rates that could enable the production processes and the acquisition processes.

## 7. CONCLUSION

This study undertook to examine different perspectives regarding the interface between VSLA activities and household food security in Uganda. Evidence from obtained secondary data suggests that VSLA activities, if well implemented can lead to improved household food security in Uganda. It is emphasised that whether local voluntary associations or formal groups initiated by local governments and/or civil society organisations, have a fundamental role to play towards enhancing the level of household food security in Uganda.

## 8. RECOMMENDATIONS

From the study, it is encouraged that:

- a) The leadership of Local Governments to focus additional consideration rallying local communities to join and partake in the activities of VSLA groups so as to access affordable capitals (in form of agri-inputs) that are aimed to increase their level of production, which can then translate into sustainable

household food security in the long run.

- b) Community members work in unison including women, the youths and persons with special abilities towards ensuring successful VSLA group sustainability.

## REFERENCES

1. Liu, L., Bestel, S., Shi, J., Song, Y., & Chen, X. (2013). Paleolithic human exploitation of plant foods during the last glacial maximum in North China. *Proceedings of the National Academy of Sciences of the United States of America*, 110(14), 5380–5385. <https://doi.org/10.1073/pnas.1217864110>
2. Bar-Yosef, O. (2002). The Upper Paleolithic Revolution. *Annual Review of Anthropology*, 31, 363–393.
3. Akram-Lodhi, A. H. (2009a). World Food Security: A History since 1945. *Canadian Journal of Development Studies/Revue Canadienne d'études Du Développement*, 28(3–4), 605–608. <https://doi.org/10.1080/02255189.2009.9669233>
4. Adhikari. S. (2018a, July 29). Food security: Pillars,

- Determinants and Factors Affecting It. *Public Health Notes*.  
<https://www.publichealthnotes.com/food-security-determinants-and-urbanization/>
5. McCordic, C., Riley, L. & Raimundo, I. (2021). Household food security in Maputo: the role of gendered access to education and employment. *Development southern Africa*, 38(5), 816-27. Doi: [10.1080/0376835X.2021.1932423](https://doi.org/10.1080/0376835X.2021.1932423)
  6. Mwesigwa, D. (2016). Household food security in Uganda: Reflections on the role of the country's Prosperity-For-All programme. *Loyola journal of social sciences*, XXX(2), 229-246.
  7. Mwesigwa, D. & Mubangizi, B.C. (2019). Agricultural practices in mid-western Uganda: Challenges and prospects for food security in rural areas. *Journal of Gender and behaviour*. 17(3), 13820-37.
  8. Ogwal, J.B., Obici, G. & Mwesigwa, D. (2022). Village savings and loans associations (VSLAs) and household food security: a case study in Kole district, mid-north Uganda. *International journal of poverty, investment and development*, 2(1), 20-35. <https://doi.org/10.47941/ijpid.964>
  9. Ogwal, J.B., Amot, J. & Mwesigwa, D. (2020). Impact of agri-input on food security in Lango sub-region of Uganda, *Journal of Agricultural and Rural Research*, 5(2), 22-35.
  10. Ngingi, T., Taruvinga, A., Zhou, L. & Ngarava, S. (2022). Factors that influence household food security in Hamburg and Melani, Eastern Cape, South Africa. *African journal of science, technology, innovation and development*, 14(4), 1050-58. Doi: [10.1080/20421338.2021.1927467](https://doi.org/10.1080/20421338.2021.1927467)
  11. Matere, S., Busienei, R.J., Irungu, P., Mbatia, E.L.O. & Kwena, K. (2022). Gender in adoption of improved pigeon peas and its effect on food security Kenya. *Development in practice*, 32(4), 421-33. Doi: [10.1080/09614524.2022.2049705](https://doi.org/10.1080/09614524.2022.2049705)
  12. Saha, S., Behnke, A., Oldewage-Theron, W., Mubtasim, N. & Miller, M. (2021). Prevalence and factors associated with food insecurity among older adults in Sub-Saharan Africa: a

- systematic review. *Journal of nutrition in gerontology and geriatrics*, 40(4), 171-96. Doi: [10.1080/21551197.2021.1988027](https://doi.org/10.1080/21551197.2021.1988027)
13. Ribot, C.J. & Peluso, L.N. (2003). A theory of access. *Rural sociology*, 68(2), 153-181.
14. Kling, G., Pesque-Cela, V., Tian, L. & Luo, D. (2022). A theory of financial inclusion and income inequality. *The European journal of finance*, 28(1), 137-57. Doi: [10.1080/1351847X.2020.1792960](https://doi.org/10.1080/1351847X.2020.1792960)
15. Wang, L., Wang, Y., Sun, Y., Han, K. & Chen, Y. (2022). Financial inclusion and green economic efficiency: evidence from China. *Journal of environmental planning and management*, 65(2), 240-71. Doi: [10.1080/09640568.2021.1881459](https://doi.org/10.1080/09640568.2021.1881459)
- Danso-Abebeam, G., Baiyegunhi, J.S.L., Laing, D.M. & Shimelis, H. (2022). Understanding the determinants of food security among rural farming households in Rwanda. *Ecology of food and nutrition*, 61(1), 1-19. Doi: [10.1080/03670244.2021.1913585](https://doi.org/10.1080/03670244.2021.1913585)
16. Sakyi-Nyarko, C., Ahmad, H.A. & Green, J.C. (2022). The gender-differential effect of financial inclusion on household financial resilience. *The journal of development studies*, 58(4), 692-712. Doi: [10.1080/00220388.2021.2013467](https://doi.org/10.1080/00220388.2021.2013467)
17. Atellu, R.A. & Muriu, W.P. (2021). Does financial inclusion enhance financial stability? Evidence from a developing economy. *Transnational corporations review*. Doi: [10.1080/19186444.2021.2019555](https://doi.org/10.1080/19186444.2021.2019555)
18. Ozili, P. K. (2020). Theories of Financial Inclusion (SSRN Scholarly Paper ID 3526548). Social Science Research Network. <https://doi.org/10.2139/ssrn.3526548>

19. Rahman, S.M., Huang, W., Toiba, H. & Efani, A. (2022). Does adaptation to climate change promote household food security? Insights from Indonesian fishermen. *International journal of sustainable development & world ecology*. Doi: [10.1080/13504509.2022.2063433](https://doi.org/10.1080/13504509.2022.2063433)
20. Ozili, K.P. (2021). Financial inclusion research around the world: a review. *Forum for social economics*, 50(4), 457-79. Doi: [10.1080/07360932.2020.1715238](https://doi.org/10.1080/07360932.2020.1715238)
21. Pierre, D., Habumuremyi, Habamenshi, V., & Mvunabo, G. (2019). Village Savings and Loan Associations and Social Economic Development of Poor Households in Rwanda. A Case of Murundi Sector (2015-2019).
22. Semazzi, J. B., & Kakungulu, M. (2020). Household determinants of food security in rural Central Uganda. *African Journal of Agricultural Research*, 16(9), 1245–1252. <https://doi.org/10.5897/AJAR2020.14992>
23. Awiti, L. H. (2013). Influence of Savings and Loans Associations in empowering women towards household food security in Bondo District, Kenya [PhD Thesis]. University of Nairobi.
24. Abdullah, P., Zhou, D., Shah, T., Ali, S., Ahmad, W., Din, I. U., & Ilyas, A. (2019). Factors affecting household food security in rural northern hinterland of Pakistan. *Journal of the Saudi Society of Agricultural Sciences*, 18(2), 201–210. <https://doi.org/10.1016/j.jssas.2017.05.003>
25. Masiga, M. (2014). An Assessment of the VSL Model in Enhancing Food Security in Sembabule District. A case study of selected SCC-VI groups of Mijwala and Sembabule Town Council.
26. Hamad, H., & Khashroum, A. (2016a). Household Food Insecurity (HFIS): Definitions, Measurements, Socio-Demographic and Economic Aspects.
27. Kurniawan, B. (2016). Food Security and entitlement: A critical analysis.
28. Yikii, F., Turyahabwe, N., & Bashaasha, B. (2017). Prevalence of household food insecurity in wetland adjacent areas of Uganda. *Agriculture & Food Security*, 6(1), 63.

- <https://doi.org/10.1186/s40066-017-0147-z>
29. Soon, L., Gilliland, J. & Minaker, M.L. (2022). Junk food accessibility after 10 years of a restrictive food environment zoning policy around schools. *Journal of the American planning association*. Doi: [10.1080/01944363.2022.2050280](https://doi.org/10.1080/01944363.2022.2050280)
30. Dutil, P. (2022). What do people want from politics? Rediscovering and repurposing the “Maslow Hierarchy” to teach political needs. *Journal of political science education*, 18(1), 138-49. Doi: [10.1080/15512169.2021.1987259](https://doi.org/10.1080/15512169.2021.1987259)
31. Mcleod, S. (2020, December 29). Maslow’s Hierarchy of Needs. *Simply Psychology*. <https://www.simplypsychology.org/maslow.html>
32. Sinha, D. (2021). Hunger and food security in the times of Covid-19. *Journal of Social and Economic Development*. <https://doi.org/10.1007/s40847-020-00124-y>
33. Swaminathan, M. S., & Bhavani, R. V. (2013). Food production & availability—Essential prerequisites for sustainable food security. *The Indian Journal of Medical Research*, 138(3), 383–391.
34. Bilali, H. E., Callenius, C., Strassner, C., & Probst, L. (2019). Food and nutrition security and sustainability transitions in food systems. *Food and Energy Security*, 8(2), e00154. <https://doi.org/10.1002/fes3.154>
35. Gibson, M. (2012). Food Security—A Commentary: What Is It and Why Is It So Complicated? *Foods*, 1(1), 18–27. <https://doi.org/10.3390/foods1010018>
36. Brunie, A., Fumagalli, L., Martin, T., Field, S., & Rutherford, D. (2014). Can Village Savings and Loan groups be a potential tool in the malnutrition fight? Mixed method findings from Mozambique. *Children and Youth Services Review*, 47.
37. Abbade, E. (2017). Availability, access and utilization: Identifying the main fragilities for promoting food security in developing countries. *World Journal of Science, Technology and Sustainable Development*, 14, 00–00. <https://doi.org/10.1108/WJSTS-D-05-2016-0033>

38. Rose, D. (2010). Access to Healthy Food: A Key Focus for Research on Domestic Food Insecurity. *The Journal of Nutrition*, 140(6), 1167–1169. <https://doi.org/10.3945/jn.109.113183>
39. Ksoll, C., Lilleør, H. B., Lønborg, J. H., & Rasmussen, O. D. (2016). Impact of Village Savings and Loan Associations: Evidence from a cluster randomized trial. *Journal of Development Economics*, 120, 70–85. <https://doi.org/10.1016/j.jdeveco.2015.12.003>
40. Fisher, M. R. (2017). 8.1 Food Security. <https://openoregon.pressbook>
- s.pub/envirobiology/chapter/8-1-food-security/
41. Peng, W., & Berry, E. (2018). The Concept of Food Security. In *Encyclopedia of Food Security and Sustainability*. <https://doi.org/10.1016/B978-0-08-100596-5.22314-7>
42. Badarau, C., & Turcu, C. (2019). New insights into macro-financial stability and welfare. *Economic Modelling*, 81, 441–443. <https://doi.org/10.1016/j.econmod.2019.08.013>
43. Myers, R., & Hansen, C. P. (2020). Revisiting A Theory of Access: A review. *Society & Natural Resources*, 33(2), 146–166. <https://doi.org/10.1080/08941920.2018.1560522>

UNDER PEER REVIEW