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The conceptualisation of food security based on programme evaluations in Sub-Saharan Africa

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A research report submitted to the School of Governance, University of the Witwatersrand, in 50% requirement of the requirements for the degree of Master of Management (in the field of Public and Development Sector Monitoring and Evaluation).

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ABSTRACT

This study contributes to the emerging literature on household food security by employing food security programme evaluations, conducted in sub-Saharan Africa, to understand how food security is conceptualised on the ground. This is done through the analysis of programme evaluations against five key conceptual approaches to food security namely the availability, entitlement, capability, sustainable livelihoods, and food system approach. The findings indicate that programmes have conceptualised food security across all five approaches and supports the description of food security being a multidimensional and interdisciplinary phenomenon. The findings also show that the conceptualisation of food security also includes other socioeconomic challenges such as gender inequality and HIV. Lastly, the findings highlight the need for programmes to consider building in sustainability and self-resilience into their conceptualisations of food security.

DECLARATION

I declare that this report is my own, unaided work. It is submitted in partial fulfilment of the requirements of the degree of Master of Management (in the field of Public and Development Sector Monitoring and Evaluation) in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other university.

_____

Prinesa Reddy

31 March 2023

DEDICATION

This thesis is dedicated to my late grandmother who always supported and encouraged my educational endeavours and whose love, humour, wit, and cheerleading will always be missed. This thesis is also dedicated to my sweet nephew in heaven who left before the world got to know him but will forever be loved and remembered.

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I would also like to thank the various authors, evaluators, programmes, and evaluation participants who contributed to the 27 evaluation reports used in this research. Without your work, this research would not have been possible.

Thank you to my family for their encouragement, support, love and understanding during this process.

A special thank you to my partner for his unlimited emotional support and for giving me the time to focus on my Masters. Thank you for listening to my frustrations and being a springboard for discussions.

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LIST OF ABBREVIATIONS

ART: Antiretroviral therapy

CSI: Coping Strategy Index

FAO: Food and Agriculture Organisation

M&E: Monitoring and Evaluation

MMAT: Mixed Method Appraisal Tool

PLHIV: People living with HIV

SDG: Sustainable Development Goals

VSLA: Village Savings and Loan Association

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CHAPTER ONE: INTRODUCTION

Programme evaluations in the social development space hold valuable and insightful information about the programme background, research methodology, measurements and definitions of success, lessons learnt and programme findings. The programme evaluations offer the unique opportunity to test underlying programme and social theories about the particular social development issue at hand is gained.

However, it is often, that the valuable information held in evaluations is limited to specific programmes or projects. This limits access to evidence-based programmes and limits the application of the evaluation to the programme instead of the social development challenges as a whole.

Considering the value of programme evaluation, this research conducts an adjusted systematic review to understand the conceptualisation of food security based on programme evaluations in sub-Saharan Africa.

The research focuses on food security due to the severity and complexity of the challenge as well as its multidimensional nature. Sub-Saharan Africa was chosen as the location for the research as it is the most food insecure region in the world and it is, therefore, more likely to have diverse policies and programmes implemented.

The research findings contribute to the monitoring and evaluation of household food security programmes as well as the programme theories employed to address household food security challenges.

1.1 Defining and contextualising household food security

Attaining food security is a global public health pandemic. Approximately 821 million people across the globe are undernourished, and two billion people experience a deficiency in one or more micronutrients (Food and Agriculture Organisation (FAO) et al., 2018). Nutrition-related factors contribute to approximately 45% of deaths in children under five years of age (World Health Organisation, 2022). The lack of food security, hereafter referred to as food insecurity, is a violation of the basic human right to safe and nutritious food (Lawlis et al., 2018). Food insecurity not only violates the basic human right to food but also violates the right to human dignity and health and has negative impacts on attaining other human rights, such as education.

It is the result of and a cause of a variety of societal challenges that result from interlinking social, economic, environmental, and political stressors. These factors make it difficult to observe and define food security (Barrett & Lentz, 2009); as a result, there are many definitions of food security.

The prevailing and most commonly agreed-upon definition defines household food security as the situation in which "all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 1996). This definition encompasses four dimensions or "pillars" of food security.

The first dimension is availability. Availability represents the supply side of food security (Barrett & Lentz, 2009) and is defined as the presence of food through the market, domestic production, commercial imports, reserves and food aid (World Food Programme, 2012). At a national level, food availability is a sum of domestic production, imports and exports, domestic food stocks and food aid. At a household level, food security is based on own food production, food obtained through the market and food received though aid (World Food Programme, 2012).

Access, the second dimension of food security, refers to the ability to acquire adequate food through own production and stocks, purchases, barter, gifts, borrowing and food aid (World Food Programme, 2012). Households have access to food when they have sufficient resources to obtain food. These resources are a function of the physical, social, economic, and political environment.

The third dimension is utilisation which refers to the household's ability to make use of the food that they have accessed (World Food Programme, 2012). Food utility is dependent on knowledge and habit i.e., deciding what food to purchase, how to prepare the purchased food and how much to consume. The utilisation of food is also linked to hygiene, food preferences and the physiological condition affecting food absorption (Ericksen, 2008).

The fourth pillar is food stability, which considers the changes in the household food security condition over time (Magrini & Vigani, 2016). A household is food secure in terms of stability if it has continuous availability, access, and utilisation of food regardless of shocks and fluctuations. Households may experience food insecurity in

one or more of the four dimensions. However, the dimensions of food security are inherently hierarchical (Webb et al., 2006). This means meeting availability requirements is necessary but insufficient to ensure that a household has access to food. In the same sense, access to food is necessary but insufficient to ensure food utilisation.

While this research focuses on food security at a household level, food security is also defined and discussed at an individual, national/regional and global level. Each level provides a unique perspective on food security. Global and national levels of food security focus on aggregate food availability by estimating production, stock levels and import capacities of countries. As the food security status narrows from a global level to a household level, distributional challenges prevent the status from being transferred. This means that while a country may be food secure at a global level, based on overall supply and demand, however, households may lack availability and access to food, thus rendering them food insecure.

The importance of attaining food security is acknowledged in the 2nd Sustainable Development Goal (SDG) of zero hunger by 2030. The goal is not only linked to hunger but also to ensuring food security and improved nutrition to address the challenges of malnutrition (Giller, 2020). Food security is also addressed indirectly by other SDGs such as SDG 1: no poverty; SDG 5: gender equality; SDG 12: sustainable consumption and production, and SDG 13: climate change.

1.2 Food security in Sub-Saharan Africa

Sub-Saharan Africa describes the geographical region below the Sahara Desert on the African continent. According to the United Nations definition, sub-Saharan Africa encompasses 49 of the 54 African countries (Lange, 2019). The region is diverse in its climatic and ecological zones and cultures (Serdeczny et al., 2017). An estimated 1.14 billion people inhabit the region (Statista, 2022) with a continuously expanding population.

Sub-Saharan Africa has the most food-insecure people in the world (El Bilali et al., 2020), where one in four people is estimated to be undernourished (FAO et al., 2018). Much of the food produced in Sub-Saharan Africa is produced by smallholder farmers who, ironically, are the most affected by food insecurity (Sibhatu & Qaim, 2017).

A variety of social, environmental, and political factors have contributed to and resulted from food insecurity in Sub-Saharan Africa such as climate change, poverty, and poor governance. These factors are expanded on in the literature review. However, the complicated nature of food insecurity can also be linked to the long and complicated history of colonialism in sub-Saharan Africa which has had long-term developmental effects on many countries.

Research shows that transitionary food insecurity, as a result of droughts, floods or pests, existed before colonialism (Bjornlund et al., 2022a). However, policies introduced under colonial rule (Bjornlund et al., 2022b) stagnated development, changed institutional structures and damaged agricultural resources. This contributed to the chronic food insecurity currently experienced in the region.

Policies were introduced to act in the interest of and meet the growing demands of metropoles (Ocheni & Nwankwo, 2012). Raw materials and food were one of the agendas which forced colonies to replace traditional food crops with non-food crops and cash crops. To ensure that their agenda was realised, access to land became conditional on the crops farmed, and taxes were expected to be paid in colonial currencies and/or crops for export (Bjornlund et al., 2022b). In addition, local processing and cottage industries were discontinued, which forced people to work for a wage (Bjornlund et al., 2022b). The introduction of export crops disrupted African indigenous knowledge systems that understood conservation practices and the proper utilisation of land (Murei et al., 2020). Instead, colonies were forced to engage in land clearance and mono-cropping which took away land for hunting and grazing and the production of nutritious food (Bjornlund et al., 2022b). This depleted the fertility of the soil and decreased agricultural productivity.

The focus on colonial needs also distorted traditional African marketing centres and routes which were created based on the needs of the locals (Ocheni & Nwankwo, 2012). The new marketing centres and routes were based on the ease of getting raw materials back to the metropole. As a result, certain areas were more developed than others and the potential African development pattern was distorted. Potential rural development was further impacted by the debt inherited by countries with their independence. Colonial powers embedded the African elite with Western approaches that supported the metropoles' interest; however, when said technologies and

practices failed, the colonised were left to bear the brunt which included debt and non-productive assets (Bjornlund et al., 2022b).

Current poverty and lack of access to goods and services, including food, in underdeveloped regions are linked to the decisions of development made by the colonial powers (Bjornlund et al., 2022b). In addition to disregarding indigenous knowledge systems and changing the potential development landscape, the colonial rule also disrupted the social fabric of inter-dependency within communities (Bjornlund et al., 2022b). Due to the weak presence of colonial administration, chiefs were given the responsibility of collecting taxes, recruiting labour, and ensuring food quotas were met (van de Walle, 2009). They were incentivised with a portion of the taxes and privileges that gave them power beyond their traditional roles. This created a loyalty toward the colonial administration and shifted focus away from the collective well-being of the community. This meant that social support systems, which communities previously relied on during times of food insecurity, could no longer be relied on.

1.3 Problem Statement

Attaining household food security is a severe challenge affecting millions of people across the globe, especially in sub-Saharan Africa. The complex nature of household food security means that there is no single programme or intervention to address it. The literature shows that various interventions ranging from the establishment of food gardens to farmer skills training sessions to the provision of agricultural inputs have been implemented. However, despite the relentless efforts of governments and non-profit organisations, the challenge persists (Visser & Wangu, 2021).

Many of these programmes undergo evaluations to measure the effectiveness of the programme or gain valuable insights to improve the programme to essentially assist in decision-making, problem-solving or showing impact. These evaluations contain valuable information as it provides a unique opportunity to test underlying programme and social theories.

While many singular household food security programme evaluations exist, there is very little literature that combines evaluation processes and findings to create a repository of information. This suggests that evaluation findings are used in silos to address specific programmes instead of being used to address household food

security challenges as a whole. Studies conducted by (Adu et al., 2018; Holley & Mason, 2019) take on a systematic approach to food security programmes however, Adu et al. (2018) focus on agricultural inventions in northern Ghana and (Holley & Mason, 2019) focuses on interventions addressing child food insecurity. Based on the consulted literature, there appears to be limited consolidated information on household food security interventions in sub-Saharan Africa.

By synthesising relevant evaluations into a concise document, policy and programme designers have access to information that can be used to make more efficient and timely decisions. This maximises resource use and avoids the implementation of ineffective programmes.

The study focuses on household food security programmes conducted in sub-Saharan Africa as the severity of food security challenges and the vastness of the region, it is likely to provide diverse policies and programmes for analysis, thus increasing the relevance of the document to programme and policy designers.

1.4 Research Purpose

The purpose of this research is to conduct an adjusted systematic review of food security programme evaluations to understand how food security is conceptualised in sub-Saharan Africa.

1.5 Research Question

The research aims to answer the question: How have food security programmes and interventions conceptualised the issue of household food insecurity? To answer this question, the research will focus on the following sub-questions:

- In what contexts are the programmes employed?
- What programme interventions have been employed to address food security?
- What do programmes consider impactful?
- What are the important lessons gained from the evaluation?
- What indicators have been used to define programme success?
- What evaluation designs and tools have been used to evaluate food security programmes?
- What limitations were experienced during the evaluation process?

1.6 Summary of Chapters in the Report

Chapter 2 discusses the literature surrounding the conceptualisation of food security. This is done by exploring the evolution of the concept as well as by looking at the factors that contribute to food insecurity, how food security is measured and food security interventions. Chapter 3 discusses the research design and the adjusted systematic review methodology. It details the process based on the PRISMA tool and the five-step method outlined by ten Ham-Baloyi & Jordan (2016). The chapter also discusses the research's limitations, feasibility, positionality, validity, reliability, and ethical considerations. Chapter 4 provides an overview of the results that have been analysed through content analysis. Chapter 5 discusses the results from Chapter 4 against the literature review. Lastly, Chapter 6 provides a conclusion of the study's finding and provides areas for further studies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter begins by discussing the various factors that have contributed to food security challenges in Sub-Saharan Africa. In doing so, the section highlights the interdisciplinary and complex nature of food security. The chapter then discusses the key approaches and concepts that have contributed to the conceptual evolution of food security. Within each approach, examples of potential interventions are also discussed. The chapter then goes on to discuss the common food security measurements to understand food security from a measurement point of view. Lastly, the capture looks at some of the main challenges experienced when evaluating food security programmes.

2.2 Food Security in sub-Saharan Africa

Attaining food security is a multidimensional, interdisciplinary, and complex challenge. The following section provides an overview of key factors that have contributed to food security challenges in sub-Saharan Africa. These factors provide the context that programmes are designed to address and therefore account for the chosen pathways/activities/intervention and the programme's overall conceptualisation of food security.

2.2.1 Food Security and Poverty

Similarly, to food insecurity, poverty is the result of several interlinking factors including but not limited to unemployment, lack of education, illness, food insecurity, conflict, political instability and climate change and natural disasters. A cyclical relationship exists between poverty and food insecurity as food insecurity perpetuates and reinforces the cycle of poverty (Siddiqui et al., 2020).

People who are poor face challenges when purchasing food, such as not being able to buy enough food or not being able to purchase dietary diverse food. Expected and

unexpected food price hikes further exacerbate these challenges. Expected price fluctuations occur based on the agricultural production cycle, i.e. lower prices in the harvest season and higher prices in the non-harvest seasons (Amolegbe et al., 2021). Unexpected price acts result from shocks within the system, such as natural disasters and conflict.

The effect of price fluctuation on household food security is based on the household's level of wealth. Drawing on Engel's law, which posits that the proportion of a household's budget allocated to food decreases and household income increases, an unexpected increase in the price of staple goods will lead to a sharper increase in the food share budget allocation of less wealthy households that wealthy households (Amolegbe et al., 2021). Food quality and nutritional value decrease as households buy cheaper bulk staple foods instead of diverse and nutritious food (Rozelle et al., 2020). In addition, people who live in poor conditions often experience challenges with water and sanitation, which can result in the preparation of unsafe food.

On the other hand, people who are deprived of food are unable to learn and produce or grow healthy immune systems and recover from illnesses which results in a lower earning potential and negatively affects their ability to purchase food. Thus, showing that poverty is not only a cause of food insecurity but also a result of it.

2.2.2 Food Security and Climate Change

Food, water, health, ecosystems, human habitats and infrastructure are most vulnerable to the effects of climate change (Fawzy et al., 2020). The most direct effect on household food security is the interconnected relationship between climate change, agriculture, and nutrition (Fanzo et al., 2018).

Climate change affects temperatures and precipitation rates which, in extreme cases, leads to droughts and floods, two climatic events that are increasingly becoming more frequent and severe. Changes in precipitation are an important factor in sub-Saharan Africa as much of the food production is rain-fed (Ayanlade & Radeny, 2020), and countries do not have the agricultural technologies to adapt to changing weather patterns. These changes, and temperature changes, result in shortened and disrupted growing seasons, decreased land area that is suitable for agriculture, declined crop yields (Connolly-Boutin & Smit, 2016) and declined livestock and fish productivity. The

decreased supply of food, based on climatic events, leads to an increase in food prices making food less financially accessible to the poor. Households that rely on the sale of agricultural produce for an income, have less money to purchase other foods thus decreasing their dietary diversity.

Climatic changes also impact physical access to food. Distributional centres and routes are damaged or cut off by climatic events, thus placing households in a state of transitionary food security. In some cases- families are displaced and are unable to utilise food.

Lastly, climate change impacts the safety of food as it is a potential driver of increasing the bacterial, viral and pathogenic contamination of water and food (Misiou & Koutsoumanis, 2021). People, therefore, have an increased chance of consuming contaminated food. This means that even when food is available, and households can access it, the food is not safe or nutritious.

2.2.3 Food Security and Water

Water plays an important role in the production, processing, and consumption of food. From an availability point of view, droughts, because of climate change, have negatively affected the production of rainfed crops. Even when water is available, the underinvestment in the operations and maintenance of water infrastructure (Young et al., 2021) such as irrigation systems, makes accessing water difficult.

In addition to the availability and accessibility of water, the quality of water plays a vital role in the food system. Poor water quality leads to a decrease in the production of quality food. Poor water quality is a result of water pollution which in itself has several causes. Interestingly, irrigation agriculture, while a solution to increased food production, is a cause of water pollution (Vilakazi et al., 2021). When farmers irrigate land that contains fertiliser, pesticides and other chemicals, the water runs off to nearby water systems. Toxins in the air released by other industries also enter the water systems. These chemicals and toxins decrease the quality of the water and can harm crops when used for irrigation. The toxins also harm aquatic life, which communities depend on for food.

Water plays an important role in the preparation of food for consumption. Where food is handled unhygienically, household members may fall ill. Therefore, water not only affects the availability of food but also the utilisation of food.

2.2.4 Food Security and Health

Health impediments, illnesses and diseases are both contributing and resulting factors of household food insecurity. This is especially an important factor in sub-Saharan Africa given the poor healthcare facilities in the region (Ayanlade & Radeny, 2020).

This paragraph uses the prevalent HIV/AIDS epidemic in sub-Saharan Africa as a case to explore the impact of health on food security. The impact of HIV/AIDS on households, and food security thereafter, is a result of chronic illnesses, the death of a household member and having to support orphans as a result of a death (O'Donnell, 2004). Chronic illnesses lead to a decrease in household income and/or agricultural productivity (Masuku & Sithole, 2009) as one's labour capacity is diminished. In addition, income previously used to purchase food is now shared to purchase medicine which may result in families selling productive assets for cash. The utilisation of food is also affected as some people who are ill, and have no one to care for them, are unable to prepare healthy and safe meals for themselves. In the case of death, income generated by the individual is lost and money is used for funerals (Masuku & Sithole, 2009).

Food insecurity also has an impact on health. Hunger reduces the body's natural defences thus making it more susceptible to illnesses. The lack of food security in children is especially disruptive as it results in dietary deficiencies; physical growth impairments such as stunting and wasting; impaired cognitive development (Schmeer & Piperata, 2017) and increased risk of infections and non-communicable diseases (De Sanctis et al., 2021) that has long-lasting implications into their adulthood. These factors also increase the incidents of childhood mortality (Quamme & Iversen, 2022). Poor nutrition is linked to low school admission, absenteeism, early dropout and low academic achievement (Aguayo et al., 2016) and, subsequently lower work wages (Quamme & Iversen, 2022).

In addition, food insecurity also harms mental illnesses due to the psychosocial stressors that arise from food insecurity. This stems from uncertainty around the

procurement of food; social stigma from resorting to unacceptable methods of obtaining food; isolation; shame, guilt, and tension from the inability to provide food for one's family (Trudell et al., 2021).

2.2.5 Food Security and Gender Inequality

Discrimination and unequal access to opportunities affect the food security status of female-headed households. Female-headed households are more food insecure than male-headed households (Bulawayo et al., 2019) despite women farmers making up a substantial and growing proportion of agricultural workers (Agarwal, 2018). In the agricultural sector, women face discrimination in accessing land, technical information, credit, extension services and productive inputs such as fertilisers, water and seeds (Matemilola & Elegbede, 2017) as a result of social norms and practices that affect how people view a woman's role in agriculture (Gebre et al., 2021). These institutional constraints have limited women's access and control over productive resources (Ingutia & Sumelius, 2022). One such resource is irrigation technologies, which have a positive relationship with household food security (Eshetu & Guye, 2021; Getaneh et al., 2022), as it allows farmers to produce food despite changes in weather patterns and allows for extended growing seasons (Ingutia & Sumelius, 2022).

For example, in Ethiopia, men are seen as the primary producer of food whereas women are considered helpers to men. These factors limit women's food production and potential earnings from the sale of crops which is used to purchase other foods thus impacting the dietary diversity of households. Women also face discrimination when seeking education and jobs (Matemilola & Elegbede, 2017) which negatively affects their financial capacity to purchase food.

2.2.6 Food Security and Conflict

Over the years, African countries have experienced both internal and external conflicts. Conflict is a result of many factors including arbitrary borders created by the colonial powers, ethnic clashes, incompetent political leadership, corruption and poverty (Aremu, 2021) and limited resources such as water. Interestingly, food insecurity is not only a result of conflict but also an indirect cause of conflict (Murshed et al., 2018). Volatile food prices that cause food security are usually one of the many factors that result in grievances with the state.

From an availability point of view, conflict may destroy agricultural land and infrastructure (Kemmerling et al., 2022), thus decreasing production. Availability of food is also diminished when farmers abandon crops due to eviction or fleeing for safety or if labour decreases due to death as a result of a conflict (Baumann & Kuemmerle, 2016). From an access point of view, physical access to food is hindered by damaged roads, bridges and farm markets (George et al., 2020), and financial access is affected by food price volatility coupled with the loss of income and unemployment. From a utilisation angle, people who are displaced due to conflict or live in unsafe environments may not have the capabilities to produce safe and nutritious food. Finally, food security is not stable as the availability, access and utilisation of food are not certain.

The Boko Haram conflicts in the Borno state in Nigeria for example, have a tremendous effect on food security (George et al., 2020). The state experienced a decrease in food production due to restricted access to farms, delays in planting and harvest due to limited physical and human capital, the abandonment of fields due to population displacement and disruptions in input markets, storage, transportation, and sales of harvested crops. In addition, food insecurity was also experienced in the areas where the population was displaced due to food supply deficits because of increased demand.

2.2.7 Food security and Poor Feeding Practices

Poor eating behaviours and practices and a lack of nutritional knowledge contribute to poor nutritional statuses that can lead to people being overweight or underweight (Gebru et al., 2021). Women of reproductive age and children under the age of five are more likely to experience poor health as a result of malnutrition and micronutrient deficiencies (Mortazavi et al., 2021). In infant and young child feeding, cultural norms and beliefs such as the use of pre-lacteals, the early introduction of complementary foods and the low rate of exclusive breastfeeding contributes to poor feeding practices (Kinabo et al., 2017). These practices have negative long-term effects on children such as poor cognitive development and malnutrition.

2.3 Defining Food Security: The Conceptual Evolution

Challenges relating to food security have always been an integral part of societies, however, the concept of food security originated in the 1970s during a time of global

food crises (Dube et al., 2014). The following section highlights the key concepts and approaches that have contributed to the conceptualisation of food security. This breakdown, when compared to programme evaluations, provides a framework to understand how food security programmes have conceptualised food security in their programme design. The overview of the conceptual approaches also includes examples of programme interventions that speak to the approach. However, it should be noted that considering the interdisciplinary and complex nature of food security, these interventions can overlap into multiple approaches.

2.3.1 The Availability Approach

Dry weather conditions; emerging import demand from socialist countries (Gerlach, 2015); extreme volatility of agricultural commodity prices; and turbulence in the energy markets (Berry et al., 2015), led to extreme hunger and famine in Africa and Asia. Bangladesh, Ethiopia and the West African Sahel were the most affected regions (Gerlach, 2015).

To resolve the crisis, the first World Food Conference was held in 1974. The conference defined food security as "availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices" (United Nations, 1975). This definition conceptualised food security from a global food supply angle (Peng & Berry, 2019) and measurements of food security were based on global/national food balance sheets. Based on this understanding, interventions and recommendations to improve food security focused on increasing food production (Gerlach, 2015).

The focus on food availability and increasing food supply is supported by Malthusian Theory. Malthusian Theory (Malthus, 1976) focuses on the (dis)equilibrium between food and population and suggests that to avoid famine, war, and disease, the rate of growth of food production must be higher than the rate of growth of the population. Based on his analysis, the population increased geometrically, whereas food production increased at an arithmetical ratio resulting in a food deficit if the population is not controlled. This theory is supported by the earlier works of Botero (1558), who believed that the limit of population growth was unknown, whereas the means of subsistence was limited, resulting in wars and diseases to restore balance.

The concept of availability was later adapted to a household level which is seen in the FAO (1996) definition of food security as one of the key dimensions of food security. At a household level, food security is based on own food production, food that can be obtained through the market and food received through aid. (World Food Programme, 2012).

Food gardens, also referred to as home gardens, are one intervention that speaks to improving household food production. It refers to a small portion of land within close proximity to a household (Galhena et al., 2013). Food gardens are often introduced to improve the availability of nutritious food for households (Whitney et al., 2018), however, they also allow for income-generating activities for households that produce more than they consume. In addition, food gardens also contribute to building resilience and a sense of social connectedness within communities (Walsh et al., 2020). The success of food gardens requires complementary interventions such as dealing with adverse weather conditions (Walsh et al., 2020) to maximise the programme's gains.

The challenge with the availability approach lies in its failure to recognise the interconnectedness and interdisciplinary nature of food security, instead, responses and interventions focused solely on the agricultural sector (Burchi & De Muro, 2016). It also assumed that global food security with cascade to food security at an individual level, however, this was not the case as food insecurity persisted at household and individual levels.

2.3.2 The Entitlement Approach

In the 1980s, there was a shift in focus from food availability to food accessibility (Burchi & De Muro, 2016). This shift was the result of the entitlement approach introduced by Sen (1983), which gave reason to why food insecurity existed despite adequate food availability. Sen posited that hunger and starvation were a result of people not having enough food instead of it being a matter of there not being enough food to eat. The entitlement approach shifted thinking about food security issues from the supply of food to the demand for food. It moved the focus from the role of aggregate food supply to considering the socio-economic conditions of people. These shifts introduced the idea that one's food security status is based on one's entitlement set.

An entitlement set consists of the goods and services that one can acquire by converting one's endowments (legally owned resources such as livestock and land and labour power) through exchange entitlement mappings (trade and production) (Devereux, 2001). Where entitlement fails, starvation and hunger persist. Sen (1983) discusses four entitlement sets that are legal sources for food, namely: production-based (growing food), labour-based (working for food), trade-based (buying food) and transfer-based (being given food by others).

Devereux (2007) shows how each of these entitlements can fail in the presence of floods and droughts. From a production-based point of view, floods and droughts cause crop failures, reducing national and household food availability (a food availability decline) and income from crop sales. This has varying implications for households depending on how dependent a household/nation is on agriculture for food and income. From a labour-based entitlement perspective, there is a decrease in employment opportunities in both the agricultural and non-agricultural sectors. With an increased supply of labour and a decreased demand, there is a decrease in the real wage rate, which affects households' purchasing power to access food. From a trade-based entitlement perspective, people who cannot produce their own food or raise income through employment are likely to resort to selling their assets. However, when droughts and floods occur, there is an increase in food prices which is met with decreased asset prices due to surplus assets in the market. As a result, households have limited purchasing power and fewer assets which may have contributed to more sustainable livelihoods. From a transfer-based perspective, floods and droughts impact entire communities and regions; therefore, households are less likely to benefit from social transfers.

The shift in thinking essentially added in the accessibility dimension to food security. This addition introduced a link between poverty and food security. More especially, food poverty which a sub-category of poverty that refers to the lack of sufficient income to buy adequate food for survival (Sibrian et al., 2007).

Cash transfer programmes speak to the challenge of limited financial access to food. Its success is dependent on the size and frequency of the transfer (Tiwari et al., 2016) as well as the decisions made by recipients. Cash transfer programmes have both direct and indirect impacts on household food security (Tiwari et al., 2016).

Directly, cash transfers increase a household's income allowing them to purchase more nutritious and diverse food. However, this is dependent on how households use the money as some may choose to buy products in bulk (Hoddinott et al., 2018) as opposed to dietary diverse options while others may use the money for other expenses or luxuries.

Indirectly, where excess money from transfers exists, households have access to financial capital to increase their agricultural production through investments in technologies and crop diversification which indirectly improves food security. These elements of the cash transfer speak to the sustainable livelihood approach that is discussed in section 2.3.4.

Cash transfer programmes also deter households from engaging in negative coping strategies that exacerbate household food insecurity (FAO, 2015). This includes substituting nutritious food for poor-quality food, reducing the quantity of food consumed and selling productive assets to cater for food expenses (FAO, 2015).

Critics question the effectiveness of cash transfer programmes in tackling poverty, considering the size of the cash transfers and the lack of transformative aspects such as linkages to skills training (Molyneux et al., 2016). An evaluation of Malawi's Social Cash Transfer Program shows beneficiary households were protected against worsened calorie insecurity; however, the programme did little to improve current economic vulnerability (Brugh et al., 2018) therefore providing evidence for the lack of transformative aspects.

2.3.3 The Capability Approach

The capability approach to development, also introduced by Sen, builds onto the entitlement approach. It accommodates the influence of socioeconomic structures and individual agency (Gombert et al., 2017) on food choices. It provides reasoning for why food insecurity can persist in households despite the provision of resources to address economic vulnerabilities (Tauseef, 2022).

While the entitlement approach focuses on one's command over commodities, the capability approach also includes one's nutritional capability to be free from hunger (Drèze and Sen, 1989) and introduces the utilisation component of food security (De Muro & Burchi, 2012). The approach focuses on what people can effectively do

(Robeyns, 2005) to avoid starvation and undernourishment, taking personal, social and environmental conversion factors into account (De Muro & Burchi, 2012) which may not be in their control. Personal conversion factors include age, sex and metabolism and health in general that affect an individual's ability to absorb food (De Muro & Burchi, 2012). Social conversions include rules, norms and customs (De Muro & Burchi, 2012) that may hinder freedom of choice and decision-making. Environmental conversions refer to the conversion of seeds and plants into actual food (De Muro & Burchi, 2012).

Nutritional training, counselling, information sessions and behaviour change communications promote nutritional literacy and positive nutritional behaviours. These sessions provide people with the knowledge to make better decisions. Tauseef (2022) found that cash and food transfers had a greater impact on the quality and quantity of food consumed when coupled with behavioural change communication.

2.3.4 The Sustainable Livelihood Approach

The sustainable livelihood approach is another developmental framework that focuses on equity, sustainability, and capabilities (Chambers & Conway,1992) The framework aims to understand the livelihood and lifestyles of individuals and households by analysing their ownership of assets. It considers the factors that contribute to wealth (Jessup-Varnum, 2018) instead of wealth on its own when determining a household's economic well-being.

Considering household assets allows for analyses of households' responses to vulnerability and instability (Chambers & Conway,1992) and shifts food security analysis from a food-first perspective to a livelihood perspective (Maxwell, 1996).

It also allows for the long-term measurement of a household's food security status and analysis of how households make decisions. Based on Maslow's hierarchy of needs, food is a basic need. However, during the 1984/5 famine in Sudan, de Waal (1989) observed that people chose to go hungry to preserve assets, such as seed and livestock, for their future livelihoods. This introduced the concept of time preference (Maxwell, 1996), i.e. people chose to go hungry in the present to avoid going (more) hungry in the future.

Assets analyses in the sustainable livelihood approach include human capital (knowledge and skills); social capital (networking and social relations); financial capital (cash, savings and investments); physical capital (infrastructure and equipment) and natural capital (natural resources such as water and soil quality) (Karki, 2021).

Training, skills development, and capacity-building programmes speak to improving human capital. Farmer Field Schools, for example, provide farmers with critical thinking and creativity skills to make decisions that promote sustainable farming practices (van den Berg et al., 2020). Farmer Field Schools help farmers improve their resilience against resource constraints and harsh climatic conditions (van den Berg et al., 2020).

Village Loans and Savings Association (VLSA) initiatives speak to improving financial capacity. The VSLA relies on members' savings that create a financial base for credit. Rural communities have limited access to formal financial services (Abdulai et al., 2022) and also have to wait long periods between planting and reaping and face other uncertainties such as erratic weather conditions (Ksoll et al., 2016), which affects their financial stability.

The VSLA contributes to consumption smoothing (Ksoll et al., 2016), increased investments, economic empowerment, and poverty reduction (Abdulai et al., 2022).

2.3.5 The Food System Approach

A food system is defined as "all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the output of these activities, including socioeconomic and environmental outcomes" (Daviron et al., 2011). The food system approach recognises the dynamic and interdependent nature of the various elements and actors within the system (Devereux et al., 2020); therefore providing a better understanding of the complexity of food security (Ericksen, 2008). It allows for a more holistic approach that considers human-environment interactions that may be indirectly linked but affects food security.

Neff et al., (2015) highlight key benefits of employing a food system approach. The first is that, by considering the various elements, the relationships that exist and the complexity of the system, the systems approach opens avenues for new interventions

to address food security. The second benefit is that the systems approach allows for feedback loops and influences folding over time are captured. Thirdly, acknowledging and considering the complexity of food systems opens avenues for interdisciplinary collaboration which allows for more effective responses.

Water security is one of the elements in the food system. Common water support interventions, that support water security, include the provision of small-scale irrigation systems and rehabilitating boreholes and water points. However, the relationship between water provision and food security is not linear and is affected by contextual factors such as agroecological conditions, access to technology, gender dynamics, and policy and institutional factors (Passarelli et al., 2018). These factors also act as elements within the food system.

2.3.6 Section Overview

The various approaches to food security allow for the consideration of different pathways to address food security challenges. For example, from an availability point of view, food gardens have been found to potentially address food security during an economic crisis (Carstens et al., 2021); however, interventions that prioritise addressing poor socioeconomic circumstances may have a better impact on food security compared to food gardens (Walsh et al., 2020).

This does not suggest that the entitlement approach surpasses the availability approach but rather highlights the importance of context. For example. an income-based conceptualisation of food insecurity that provides cash transfers to beneficiaries can result in bulk purchases (Hoddinott et al., 2018) of one type of food group, which provides very little nutritional value, or may lead to cash being used for other expenses or to pay off debt. On the other hand, an availability approach that provides food baskets may significantly improve dietary diversity (Hoddinott et al., 2018) and food access as a whole.

A Ugandan study (Sseguya et al., 2018) found a significant positive relationship between social capital and household food security and no significant relationship between physical and financial capital and household food security. However, in other cases, physical and natural capital such as technological adoption, labour and farm size (Baba & Abdulai, 2021) is linked to crop diversification which has a significant

relationship with household food security (Baba & Abdulai, 2021). This shows that even within a specific approach, in this case, the sustainable livelihood approach, context plays an important role and exploring the relationship between assets and household food security allows for the creation of efficient programme design.

2.4 Measuring Food Security Programmes

Accurate measures of household food security are needed to understand food security challenges and generate solutions (Haysom & Tawodzera, 2018), identify and target vulnerable and at-risk households (Webb et al., 2006) and monitor and evaluate programmes and policies (Maxwell et al., 2013).

Ideally, a single measurement of household food security that is valid, reliable, comparable over time and captures the different elements of food security (Maxwell et al., 2013) is needed. However, due to the complex nature of food security, such a measurement does not exist, and proxy indicators (Webb et al., 2006) are used instead. The inability of proxy measures to measure food security holistically can lead to misestimations of food-insecure households (Coates, 2013). In addition, measures are used interchangeably without understanding the dimension of food security being measured (Coates, 2013), thus affecting the effectiveness of programme design and obscuring evaluation findings. The choice of indicators is also influenced by time, resources, capacities, and ideological and political agenda (Haysom & Tawodzera, 2018), which impacts the reliability of the results.

In addition to the predefined food security indices, programmes require a diverse set of indicators to monitor interventions and programme reach. The following section discusses some of the indicators used in food security programmes. The indicators provide insight into which elements of the programmes have been prioritised for measurement and how programmes have chosen to define success. This provides insight into how programmes conceptualise food security.

2.4.1 Dietary Diversity and Food Frequency

Dietary diversity and food frequency indicators capture the variety of food or food groups that people eat and the frequency with which they consume them (Maxwell et al., 2014).

The Food Consumption Score is one such indicator that is based on the frequency in which households consume different food groups during the seven-day period before completing the survey (World Food Programme, 2008). The list of food groups is created based on contextual food habits and nutritional considerations and usually ranges from 10 to 25 food groups (World Food Programme, 2008).

The Household Dietary Diversity Score (HHDS), similar to the Food Consumption Score, measures the dietary diversity of a household but counts the number of food groups consumed in the last 24 hours (Vellema et al., 2016). The indicator consists of 12 food groups where a higher score indicates greater access to food.

Both indexes are context-specific therefore hindering possible comparative analysis between different locations (Fawole & Ozkan, 2017). Recall biases may be present (Fawole & Ozkan, 2017) as the data relies on household members' recollections.

The food frequency approach measure asks people about the number of meals they consume or how frequently they consume different food items. A drawback of this measurement is that frequency does not translate to quantity (De Muro & Burchi, 2012), making it difficult to calculate the number of calories consumed.

Direct food observation takes on an ethnographic study as it requires the researcher to observe the food that is consumed directly. An advantage of this approach is that it is done on an individual level and provides a lens into the dynamics of the household and how food distribution choices are made. The approach puts food at the centre of the measurement as opposed to the income-based approach, which calculates food in terms of money spent on food.

2.4.2 Food Consumption Behaviours

These indicators indirectly measure food security by measuring behaviours related to food consumption. The Coping Strategy Index (CSI) is one such index. The CSI is based on the many possible answers to the question: "What do you do when you do not have adequate food and do not have the money to buy food?" (Maxwell & Caldwell, 2008). There are four overall types of strategies that households employ. Firstly, they change their diets to cheaper, less preferred foods. Secondly, they attempt to increase their food using short-term, unsustainable practices such as borrowing food, begging, or purchasing food on credit. Thirdly, they reduce the number of people that need to

be fed by moving them elsewhere, such as relatives or neighbours. And lastly, they ration food supplies by cutting down portion sizes or skipping meals. The coping strategy chosen by a household depends on the severity, type and duration of food security (Kruger et al., 2008).

The CSI measures the frequency in which the coping strategies are employed and the severity of the strategies to get one numeric number. Similar to the FSC and the HHDS, it is difficult to use the CSI for comparative analysis across locations and cultures (Maxwell & Caldwell, 2008) as the list of possible coping strategies under each category is specific to the local context.

In response to this challenge, the Reduced Coping Strategy Index was developed. The index is a subset of the CSI and is based on five standard coping strategies: eating less-preferred foods; borrowing food/money from friends and relatives; limiting portions at mealtime; limiting adult intake and reducing the number of meals per day. While the index allows for comparative analysis, it is less likely to identify the most vulnerable food-insecure households due to the lack of detailed information collected.

2.4.3 Experiential measures

Some food security measures combine items that seek to capture the different behavioural and psychological dimensions (Maxwell et al., 2014).

The Household Hunger Scale measures a household's quantitative access to food (Ballard et al., 2011). The scale is based on a set of occurrence and frequency of occurrence questions to understand how households experience food security. The questions focus mainly on anxiety about household food supply, insufficient quality, which includes variety, preferences, and social acceptability, and insufficient food supply and intake and the physical consequences (Ballard et al., 2011). The scale uses a recall period of 30 days and is also subject to recall bias. However, as opposed to other measures that are unable to conduct comparisons across contexts, the HSS was developed and validated for cross-cultural use.

2.4.4 Anthropometric Measures

Anthropometric measurements are concerned with measurements of the body and are used to assess the nutritional status of individuals. Common measurements include height, weight, and mid-upper arm circumference. These measurements are used to

construct indices such as height-for-age, weight-for-age, weight-for-height, mid-upper arm circumference-for-age and, body mass index, BMI-for-age. The anthropometric indicators are used to measure food utilisation (Hendriks et al., 2016).

2.5 Evaluation Challenges and Limitations

In addition to the programme learnings that are gained through the evaluations, the evaluation process itself also provides valuable insights. The evaluation challenges and limitations are particularly insightful and provide explanations for possible inaccuracies in the evaluation process. These insights can be taken into consideration when creating and implementing new evaluations. Numerous challenges affect the evaluation process that can be discussed based on evaluation design, methodology or social context. However, the following provides an overview of some of the common challenges experienced across all evaluations.

A lack of a systematic approach to collect data (Halstead, 2019) is a common challenge faced by evaluators which results in missing data (Halstead, 2019) which results in challenges to identify trends in the programme data and informed programmatic decisions.

The length of programme implementation versus the time for outcomes and impacts to be released is another evaluation challenge. For example, the outcome and impacts of nutrition-sensitive programmes (Leroy et al., 2015) are likely to be felt in the long-term and not at the time of the evaluation. As a result, the true impact of the intervention may not be evaluated.

Research biases are a common evaluation challenge experienced during the evaluation process. Bias is defined as “any trend or deviation from the truth in data collection, data analysis, interpretation and publication which can cause false conclusions” (Simundic, 2013). A variety of biases exist based on the source and context of the bias. Some common biases are design bias, selection bias, measurement bias, analysis bias and publication bias (Smith & Noble, 2014).

Challenges also exist in the actual data collection process. This is a result of the participant characteristics and research logistics and procedures (Holden et al., 2015). Some of the challenges under participant characteristics include participants having scheduling conflicts, having transportation challenges, not being able to articulate their

thoughts and being disinterested in the interview (Holden et al., 2015). Challenges under research logistics and procedures include researchers having limited time to engage with participants due to long travel times to their households, a time-consuming interview process, and participants forgetting about scheduled interviews (Holden et al., 2015).

2.6 Literature Gap

Food security programmes are implemented with implicit programme theories to address food security. The theories provide insight into the different pathways that address food security with each pathway offering a unique conceptualisation of food security which may differ from the currently accepted conceptualisations of food security. The evaluation of these programmes provides a unique opportunity to test underlying programme and social theories and provide valuable insight and learnings that can be used to respond to food security challenges given the chosen approach.

This research identifies two gaps in the literature. The first gap is that often, the conceptualisation of food security is often discussed at a theoretical level without considering the value and the practical information that can be gathered through programme evaluations.

The second gap is that the valuable information extracted from evaluations is programme specific and there is a limited body of knowledge that collates the information for easy use to inform new and existing food security programmes.

2.7 Theoretical Framework

In exploring the literature, five key conceptual approaches to food security were identified namely the availability approach, the entitlement approach, the capabilities approach, the sustainable livelihoods approach and the food systems approach. Each of these approaches considers various elements that add to a more holistic understanding of food security and shows the multidimensional and complex nature of food security The unique perspectives allow for the creation of multiple pathways to understand and address food security challenges.

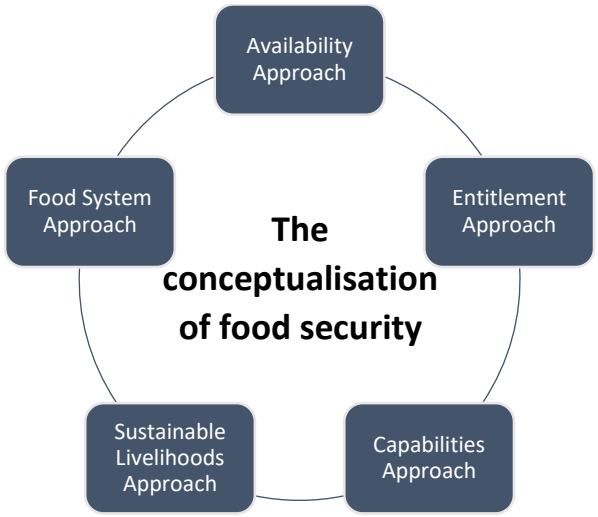


Figure 1: Theoretical framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the adjusted systematic review methodological approach that was taken. It details the process based on the five-step method outlined by ten Ham-Baloyi & Jordan (2016). The five-step method includes formulating a research question, searching for literature, conducting critical appraisals, and extracting and synthesising data. Within this process, the four-phase PRISMA tool is also discussed. The chapter also discusses the research's limitations, feasibility, positionality, validity, reliability, and ethical considerations.

3.2 Research Approach

A qualitative approach, specifically an adjusted systematic review, was undertaken to answer the research question. Qualitative approaches answer questions related to experience, meaning and perspective (Hammarberg et al., 2016) and prioritise collecting in-depth information. The purpose of the research is to understand how food security is conceptualised in sub-Saharan Africa and therefore requires in-depth information for analysis. The study also acts as a repository for food security interventions; therefore, detailed information is needed to efficiently and effectively replicate programmes.

According to the Cochrane Collaboration, a systematic review is "a comprehensive high-level summary of primary research on a specific research question that attempts to identify, select, synthesise, and appraise all high-quality evidence relevant to that question to answer it." The transparent, explicit and systematic methodology that is required of a systematic review minimises biases in the studies included in the review (Harris et al., 2014). A systematic review was appropriate for this research because it allowed for the systematic collection of evaluations and the data extraction and synthesis process directly spoke to the research questions. However, given the research's time limitations, the traditional methods involved in a systematic review were adjusted. These adjustments are discussed in the steps below.

The research employed the five-step process of a systematic review as outlined by ten Ham-Baloyi & Jordan (2016). The process is specified below:

Step one: Formulate a review question

As outlined in Chapter One, this research aimed to conduct a systematic review of food security programme evaluations to understand how food security is conceptualised in sub-Saharan Africa. The study focused on the following sub-questions:

- In what contexts are the programmes employed?
- What programme interventions have been employed to address food security?
- What do programmes consider impactful?
- What are the important lessons gained from the evaluation?
- What indicators have been used to define programme success?
- What evaluation designs and tools have been used to evaluate food security programmes?
- What limitations were experienced during the evaluation process?

It is advised that questions for systematic reviews, that focus on quantitative research, take on a PICO format (ten Ham-Baloyi & Jordan, 2016), i.e. population of interest (P), intervention (I), comparative interventions (C) and the outcomes of interest (O). A SIPDER format is used to develop review questions for qualitative and mixed-method studies (Cooke et al., 2012), where SPIDER stands for Sample, Phenomenon of Interest, Design, Evaluation and Research type. These formats allow for comprehensive and narrow searches of relevant studies. However, in contrast to traditionally narrow searches, this research takes a broad approach to understand how food security is conceptualised searches. If limitations are placed on interventions, populations and outcomes, the approach to understanding how food security is conceptualised will not be holistic.

Step two: Search for the relevant literature

This step is concerned with the selection of the data. The research drew on the Preferred Reporting Items for Systematic Reviews and Meta Analyzes (PRISMA) four-phase guide. The four phases include identification, screening, eligibility, and inclusion (Selcuk, 2019).

Identification

The African Evaluation Database (AfrED) was used to identify relevant evaluations. AfrED was established in 2015 with its primary goal being to present information on

evaluation projects and studies in 19 sub-Saharan African countries, including Botswana, Ethiopia, Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Namibia, Nigeria, Rwanda, Sierra Leone, South Africa, South Sudan, Eswatini, Tanzania, Uganda, Zambia, and Zimbabwe. AfrED is an appropriate database for this study as it focuses on countries in sub-Saharan Africa, which is in line with the research's geographical focus. The database was created in recognition of the growing institutionalisation of monitoring and evaluation in the African continent. It is, therefore, likely that the evaluations included in the database have a strong M&E focus that will respond to the research questions of understanding how programme success is measured.

The database provides the option to search "all documents", "evaluation articles", "evaluation reports,"; and "evaluation theses." A basic search was conducted under the option "evaluation reports". "Evaluation reports" focus on evaluations of programmatic interventions in sub-Saharan Africa that have been commissioned, funded, and placed in the public domain. This focus is appropriate as the research focuses on sub-Saharan Africa programmatic interventions, specifically food security interventions. Using the "evaluation reports" category, it is likely that documents completed for commentary or review purposes will not be included in the searches. The exclusion of commentary and review data is discussed below.

Using only one database is an adjustment to the traditional systematic review process that usually aims to search for all relevant literature that speaks to the research question. This would mean including other databases, such as PubMed or Science Direct, in the search process. However, due to time constraints, only one database was used.

Keywords and phrases used to search the database include: "food security", "food insecurity", "nutrition", and "food program." The words "food security", "food insecurity", and "food program" spoke directly to the category of programmes that the research aimed to include. The term "nutrition" was used as a keyword to cater for cases where nutrition security was used synonymously with food security.

All identified evaluations were saved in a folder titled "Step 1_Identified Evaluations." Research results that did not include an attachment of the evaluation report were excluded from the study.

Screening

A duplicate of the folder "Step 1_Identified Evaluations" was renamed to "Step 2_Duplicates Removed." The reports were ordered alphabetically, and duplicated evaluations were removed from the folder.

The remaining evaluations were then screened based on the inclusion and exclusion criteria. This was done by analysing the evaluations' titles and executive summaries. Traditionally, abstracts are reviewed at this stage; however, the evaluations did not provide any abstracts.

The following points outline the evaluation inclusion criteria: (1) The evaluation was completed in English, (2) The evaluation was completed between 2010 and 2022, (3) The programme being evaluated was implemented in a sub-Saharan African country, (4) The programme being evaluated is based on an NGO or government policy or programme, (5) the programmes or policies evaluated focus on household food security. All qualitative, quantitative, and mixed-method evaluation designs were considered.

The criterium for evaluations to be completed in English is based on the researcher's linguistic capabilities, which is limited to English. The chosen timeframe allows for the collection of more recent interventions which may be more applicable for replication to address current food security challenges. The geographical limitations of sub-Saharan Africa, as well as the focus on household food programmes, is in line with the research question. Lastly, the study only considered NGO and government policies as this allows for a repository of interventions and learnings that can aid the NGO and government sector in making efficient programme design and implementation decisions.

The following exclusion criteria were used: (1) The evaluation was conducted in a language that is not English, (2) The evaluation focuses on interventions that aim to address food security at a global, national, regional, or provincial level, (3) The returned document is a review or commentary document. Review and commentary documents are excluded from the document because the research aims to use evaluations only.

All evaluations that passed the screening phase were saved in a folder titled "Step 3_Screened Evaluations."

Eligibility

Once the evaluations were screened, they were further checked against the inclusion and exclusion criteria based on a more detailed read-through of the text. Those that did not meet the criteria, were excluded from the research. This process ensured that the most appropriate evaluations to respond to the research questions were included in the study. Evaluations were saved in a folder titled "Step 4_Eligible Evaluations."

Inclusion

All evaluations that met the eligibility criteria were included in the research for analysis.

Step three: Conduct critical appraisals

The mixed methods appraisal tool (MMAT), used by Holley & Mason (2019) in their study titled *"A Systematic Review of the Evaluation of Interventions to Tackle Children's Food Insecurity,* was used to critically appraise the strength of the evidence provided in the evaluation. The MMAT was chosen as the appraisal tool because it appraises qualitative, quantitative, and mixed-method approaches that align with the research's inclusion criteria. Appendix A provides the template of the MMAT.

Step four: Extract data

Data were extracted from the evaluations and entered into preconstructed tables in Microsoft Excel. The first table was based on the general description of the evaluations, including authors, evaluation title, year of publication, intervention and the country of programme implementation. This table is presented in Chapter 4.

The second table focused on the programme background, programme objectives and programme interventions.

The third table focused on the evaluation process, including the evaluation objectives, the research design (qualitative, quantitative, or mixed method), the evaluation tools and the evaluation limitations.

The fourth table focused on the lessons learnt and the findings towards impact. The final table summarised the programmes' output and outcome indicators.

Step five: Synthesise data

The data was analysed through both an inductive and deductive content analysis approach. And inductive approach was used to analyse the programme background, programme objectives, evaluation objective, evaluation limitations and data collect tools. Lessons learnt were analysed through both an inductive and deductive approach and the rest of the data was analysed through a deductive approach. Where a deductive approach was used, the data was analysed against the theoretical framework.

3.3 Limitations, Feasibility and Positionality

3.3.1 Limitations

Limitations arise due to resource constraints such as time and financial capacity. Research limitations may lead to inaccuracies in the data results and analysis and are therefore essential to acknowledge. The following limitations were experienced during the research process.

A limited number of evaluations were included in the study, which was a result of only extracting data from the African Evaluation Database. An increased number of evaluations may have allowed for more conceptualisations of food security to be explored. However, these limitations were necessary given the time constraints allocated to the research. In addition, some evaluations in the database that may have met the inclusion and exclusion criteria were excluded as no evaluation report was attached to the search results.

The research is conducted by one researcher; as a result, the selection of evaluations may not have inter-rater reliability. However, the full description of the application of the PRISMA guide will assist in ensuring the reliability of the data.

The research does not delve into background research on the contexts in which the programmes or policies exist; therefore, the research accepts the programme's conceptualisation of food security to represent the food security challenges experienced by the programme beneficiaries. In doing so, there may be a misrepresentation of the extent and type of food security experienced in specific areas. Programmes may also be biased to donor specifications and expectations. In addition, some evaluation reports did not include their appendices which may hold data vital to the study.

3.3.2 Feasibility

Apart from administrative costs related to printing evaluations and data costs for internet usage, the research did not require any other expenses. The research did not require any fieldwork; therefore, there were no travel or accommodation costs. In addition, only one primary researcher carried out the study; thus, there were no costs related to labour.

Overall, the research is feasible and aims to provide valuable findings that can contribute to social development and tackling food insecurity.

3.3.3 Positionality

Food insecurity is a matter of personal interest to the researcher. She believes everyone should have their fundamental right to food met for them to improve all spheres of their livelihoods.

She was born on a farm in rural KZN and is the daughter of a once small-time farmer who specialised in sugar cane farming but also sold vegetables, including tomatoes, green beans and madumbis (yams) at the market. She has seen food insecurity from a food production point of view and understands the hardships that small-time farmers face in terms of detrimental environmental factors and lack of access to financial resources and agricultural technology. Through living in a rural area, she has also seen the financial and infrastructural challenges that negatively affect access to markets to both sell and purchase food. She also understands the economic hardships that farming households face due to the time lags between sowing and selling crops.

3.4 Reliability and Validity

3.4.1 Reliability

The PRISMA Guide, together with the five-step process to a systematic review outlined in section 3.2, provides a clear description of how evaluations were chosen to be included in the research. This step-by-step process makes it possible to replicate the study.

3.4.2 Validity

The screening process, which consists of the inclusion and exclusion criteria and the process of reading full texts to discern their eligibility, ensures that the data used in the research is valid.

In addition, the mixed methods appraisal tool has been used to determine the strength of the evidence in evaluations which also contributes to the validity of the research.

3.5 Ethical Considerations

The research did not interact with any human participants therefore, no human-specific ethical considerations were required. An ethics waiver was granted by the Wits School of Governance Ethics Committee. From a data synthesis point of view, the research ensured that the work of the evaluators was not intentionally misused or misinterpreted and that evaluators were rightfully accredited for their work. A detailed description of the selection criteria has been provided in this chapter therefore readers of the researchers will understand how evaluations were chosen and not devalue the work of evaluators not included in the research.

From a storage point of view, documents are saved on Microsoft OneDrive. However, given that the evaluations included in the research are publicly available to any person, no extra security measures have been put in place.

3.6 Conclusion

This chapter discussed the methodological approach undertaken to respond to the research question. The research employed secondary data using a systematic review. A set of inclusion and exclusion criterium was applied to evaluation reports scoped from the African Evaluation Database. The quality of the evaluations was measured using the MMAT appraisal tool and self-constructed Microsoft Excel tables were used to extract data from the evaluation reports. Lastly, content analysis was used to synthesise the data. This chapter also discussed the limitations, feasibility and positionality concerned with the research as well as the research's validity, reliability, and ethical considerations. The next chapter provides a picture of the research results and is followed by chapter 5, which discusses the research results.

CHAPTER FOUR: RESEARCH RESULTS

4.1 Introduction

This chapter begins by outlining the data selection process, through the PRISMA process, which led to the inclusion of 27 programme evaluations into the study. The chapter then goes on to summarise the results drawn from the evaluation reports. The results focus on the programme background, interventions, measures, programme impact and lessons learnt. The results also look at the evaluation process taking into consideration the research design, data collection tools and evaluation limitations.

4.2 Process of Data Selection

The study used an adjusted systematic review process illustrated in Figure 2. Using the search terms “food security”, “food insecurity”, “nutrition”, and “food program”, the African Evaluation Database returned a total of 130 results. However, only 109 of the search results included an accompanying evaluation report and were considered for the next step of the process.

The next step of the data review process focused on removing duplicated evaluations. Overall, 34 evaluations were identified as duplicates and removed from the review process. Duplicates were first identified by comparing articles within the same search term. A total of 11 evaluations were uploaded by more than one source. Six evaluations covered the same programme at different time intervals, for example, a set of annual evaluations or a mid-term and a final evaluation. And one evaluation had a different title that covered the same content. Duplicate evaluations were then searched for across all search terms. A total of 16 evaluations appeared under more than one search term. Except for the evaluations that covered more than one timeframe, evaluations were chosen at random for the next stage of the review process. In the cases where evaluations covered different time intervals, the most recent evaluation was chosen for the next step of the review.

A total of 75 evaluations were screened based on their title and executive summaries. Traditionally, articles are screened based on their titles and abstracts; however, the evaluations did not have abstracts and the executive summaries were used instead. Suitable evaluations might have been excluded from the study if the content of the

study was poorly executed in the evaluation title or executive summary. A total of 35 evaluations were excluded in the screening phase, resulting in 40 evaluations being screened for eligibility.

Of the 40 evaluations, 13 were excluded based on a detailed read-through, resulting in 27 evaluations being included in the study. Reasons for exclusion include evaluations not having a household focus and evaluations not meeting the inclusion timeframe criteria, i.e., evaluations must have been completed between 2010 and 2022.

All 27 evaluations were assessed based on the MMAT for quality.

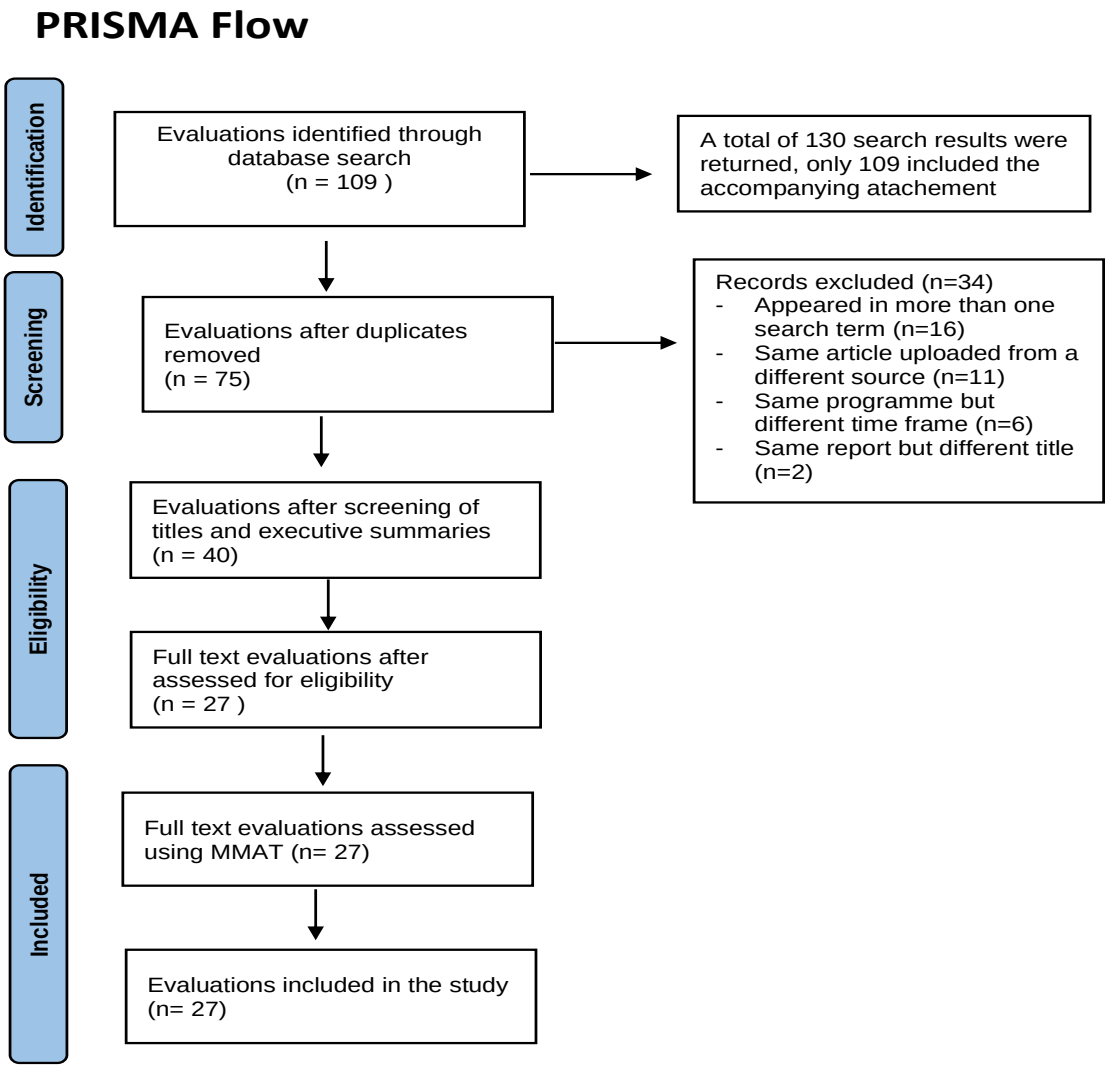


Figure 2: Systematic review process

4.3 General Description of the Sample

Table 1 introduces the 27 evaluations used in the study. It provides an overview of the evaluation title, the year of completion, the country of implementation, the implementing agents, and the names of the evaluators/authors.

Figure 3 shows the number of evaluations per country. Overall, the research covers 10 of the 46 sub-Saharan Africa countries. The highest number of evaluations come from Zimbabwe (8), followed by Ethiopia (6).

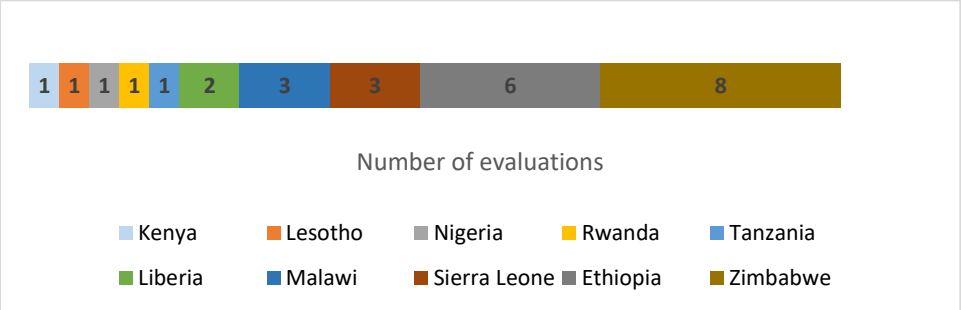


Figure 3: Number of evaluations per country

The date of publication ranges from 2010 to 2019. Overall, 2014 and 2018 had the highest number of evaluations completed, with five evaluations each. The first five years (2010 - 2014) cover 13 evaluations (48% of all included evaluations). The second five years (2015 – 2019) cover 14 evaluations (52% of all included evaluations).

The authors'/evaluators' names are based on the most available information in the evaluation reports. Where names were not available, the organisation carrying out the report have been provided. One study did not provide any information on the evaluation team.

In terms of implementing partners, there are some commonalities across programmes. Action Against Hunger implemented six programmes; the World Food Programme and the Red Cross Society implemented five programmes, respectively.

Table 1: Programme evaluations used in the study

Evaluation title	Country	Year	Evaluator/authors	Implementing agent
Reinforcing Institutional Capacity for Treatment of Acute Malnutrition, Prevention of Malnutrition in Freetown Peninsula, Western Area and National Sensitization For Nutrition Security In Sierra Leone	Sierra Leone	2018	Watanabe	Action Against Hunger
Final Evaluation of Protracted Relief and Recovery Operation 200938: 'Rebuilding food and nutrition security and strengthening disaster management capabilities in Sierra Leone	Sierra Leone	2018	Fisher, García & Moigua	World Food Programme
Impact Assessment of Small-Scale Pump Irrigation in the Somali Region of Ethiopia	Ethiopia	2010	Not specified	CHF International
Mid-Term Evaluation Report for the Program Implementation in Morogoro, Dodoma and Manyara Regions	Tanzania	2015	ST Associates	Africare
Mid-Term Evaluation of Improving Food Security and Nutrition Policies and Programme Outreach	Malawi	2014	Bellin-Sesay, Cabello & Jere	The Government of Malawi
Nutrition, Advocacy and Food Security Pilot Project Monrovia, Liberia	Liberia	2011	Aspin	Action Against Hunger
Protecting and promoting the food and nutrition security in the Yobe State, Phase II, North-Eastern Nigeria	Nigeria	2017	Yila	Action Against Hunger Nigeria
Mitigating the Impact of the Ebola Virus Disease on the Most Vulnerable Households through an Integrated Food and Nutrition Security Intervention in the District of Moyamba, Sierra Leone	Sierra Leone	2016	Dumas	Action Against Hunger Sierra-Leone
Livelihoods for Improved Nutrition Programme, Chipinge, Zimbabwe.	Zimbabwe	2012	Dengu & Moyo	Action Against Hunger
Operation Evaluation Ethiopia, PRRO 200290, Responding to Humanitarian Crises and Enhancing Resilience to Food Insecurity: An Evaluation of World Food Programme's Operation (2012-2013)	Ethiopia	2014	Frankenberger et. al	World Food Programme
Pro-Resilience Action – PRO-ACT 2015: Supporting the poor and food and nutrition insecure to react to crises and strengthen resilience in Liberia	Liberia	2017	Vigot	Action Against Hunger Liberia Mission
Evaluation of the Food Insecurity Cash Transfer Programme (Malawi)	Malawi	2016	Ibrahim, Knobel, Muhia & Yonamu	Malawi Red Cross Society
Evaluation of the Food Insecurity Emergency Appeal for Zimbabwe	Zimbabwe	2014	Sibanda	Zimbabwe Red Cross Society

Evaluation title	Country	Year	Evaluator/authors	Implementing agent
Operation Evaluation Zimbabwe, Protracted Relief and Recovery Operation 200453 "Responding to Humanitarian Needs and Strengthening Resilience to Food Insecurity" (September 2012–March 2014) Final Evaluation Report	Zimbabwe	2014	Brewin, Majoor, Siwadi & Rodríguez	World Food Programme
Mid-Term Evaluation Report for the Zimbabwe Development Food Assistance Programs: ENSURE and Amalima	Zimbabwe	2016	The Mitchell Group, Inc	ENSURE: World Vision Amalima: CNFA
Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience in Ethiopia	Ethiopia	2019	Anstey & Gayesa	Federal Environment, Forest, and Climate Change Commission
Evaluation Of Concern Kenya's Korogocho Emergency and Food Security Cash Transfer Initiative	Kenya	2011	MacAuslan & Schofield	Concern World
Mid-Term Review of Support to Able-Bodied Vulnerable Groups to Achieve Food Security Project (Safe) In Malawi (Food/2007/141-395)	Malawi	2010	Jere & Mapemba	CARE Malawi and ICRISAT
External End of Project Evaluation of the Food Security Project Supported by the Japanese Government and Implemented by International Federation of Red Cross and Red Crescent Societies and Zimbabwe Red Cross Society	Zimbabwe	2013	Hanyani-Mlambo & Mukorera	International Federation of Red Cross and Red Crescent Societies and Zimbabwe Red Cross Society
Zimbabwe Food Security MDRZW008 Emergency Appeal Evaluation	Zimbabwe	2014	Torto et. al	Zimbabwe Red Cross Society
C-SAFE Zimbabwe End of Program Evaluation	Zimbabwe	2010	TANGO International	World Vision, CARE, and CRS
Summative Evaluation of the Nutrition Component of the EU-SHARE program (2015-2018)	Ethiopia	2018	ACT for Performance BV, & JaRco consulting	UNICEF and Food and Agriculture Organisation
Impact evaluation of Lesotho's Child Grants Programme (CGP) and Sustainable Poverty Reduction through Income, Nutrition, and access to Government Services (SPRINGS) project	Lesotho	2018	FAO & UNICEF	UNICEF, MoSD, and CRS
Final Evaluation of The Joint Program "Food Security and Nutrition" In Ethiopia	Ethiopia	2013	Damiba	FMOH
Final Evaluation of the Project "Increased Household Food, Income and Nutrition Security through Commercialization of an Integrated and Sustainable Smallholder Livestock Sector in Zimbabwe"	Zimbabwe	2018	FAO: The United Nations Office of Evaluation	Food and Agriculture Organisation: Zimbabwe Country Office

Evaluation title	Country	Year	Evaluator/authors	Implementing agent
USAID/PEPFAR Funded Urban HIV/AIDS, Nutrition and Food Security Project in Ethiopia 2011–2017 Evaluation Report	Ethiopia	2017	Belew et al.	World Food Programme
Operation Evaluation Rwanda PRRO 200744: Food and Nutrition Assistance to Refugees and Returnees A mid-term evaluation of World Food Programme's Operation (2015 – 2016)	Rwanda	2016	Hedley, Dunn & Izabiriza	World Food Programme

4.4 Programme Overview

The programme overview consists of the programme background, objectives, and interventions. These three elements provide an understanding of the food security challenges, the pathways that were chosen to address the challenges and the intended outcomes of the interventions.

4.4.1 Programme background

The programme background contextualises the factors that have contributed to food insecurity that are specific to the targeted area and provides a foundation for the programme design process. The number of contributing factors listed varies across evaluations. Some evaluators discussed a variety of contributing factors, while others provided overarching themes or mentioned the most prominent factors. One evaluation did not provide any background information.

Table 2 provides an overview of the factors that contributed to household food insecurity. The factors have been characterised into eight categories, i.e., economic, environmental, health, war and conflict, governance, lack of knowledge, inadequate infrastructure, and gender inequality. Overall, a total of 47 non-unique (i.e., the contributing factor appeared in more than one evaluation) factors contributed to household food insecurity across the 27 evaluations resulting in an average of 1.7 factors per evaluation.

Table 2:Factors contributing to food security

Contributing factors	Number of evaluations	Description
Economic	13	Poverty Economic shocks and decline Limited investment in irrigation Lack of cash resources and limited credit Unemployment and limited off-farm income Limited access to inputs and markets
Environmental	12	Climatic change (droughts and floods) Erratic weather conditions Poor soil quality and soil erosion Unsafe water supply
Health	8	Adverse effects of HIV/AIDS Adverse effects of the Ebola Virus Inadequate health care
War and Conflict	4	Refugee camps Former refugees living in poverty Internal displacement and increased burden on host communities
Governance	3	Poor governance Policy constraints and changes Poor provision of social services
Lack of knowledge	3	Poor feeding practises
Inadequate infrastructure	2	Lack of sanitation Limited irrigation infrastructure
Gender inequality	2	Limited access to resources, land, and services
Total factors	**47**	

A total of 13 evaluations (28% of all evaluations) listed economic factors as a cause of food insecurity. Economic factors consist of challenges that affect household income and purchasing power. They are factors that limit a household's financial capacity to access food and assets to improve livelihoods. Poverty was one of the main sub-categories of economic factors that led to food insecure households. One of the causes of said poverty is unemployment and limited off-farm income. In addition to limited financial access to food, poor households have limited credit and cash resources to invest in farming assets to create sustainable livelihoods. These circumstances are exacerbated by external facts that result in economic shocks and decline.

Environmental factors were the second most mentioned contributing factor with a total of 12 evaluations drawing reference to it (26% of all evaluations). Environmental challenges were linked to climate change and erratic and extreme weather conditions that had a negative impact on agricultural productivity. Floods and droughts were the main weather conditions mentioned. Evaluations reported that these conditions not

only affected household food security but also the household's overall livelihoods, such as the loss of shelter. Agricultural productivity was also affected by poor soil quality and soil erosion which is the result of poor weather conditions as well as deforestation and unsafe water sources.

Health factors (mentioned by 8 evaluations i.e., 17% of the evaluations) that affected food security include inadequate health care and the adverse effects of HIV/AIDS and the Ebola Virus. The adverse health effects are interconnected with economic factors. From an individual's point of view, the adverse effects of HIV/AIDS and the Ebola Virus resulted in a loss of income for households as household members could no longer engage in income-generating activities. From an economy point of view, particularly for the Ebola Virus, the virus caused market failure for agricultural outputs and inputs, the collapse of income-generating activities, and increased food prices.

Four evaluations (9% of the evaluations) listed factors relating to war and conflict as a contributing factor to food insecurity. Like health factors, war and conflict were also linked to economic challenges as refugees lived in poverty and struggled to financially access food. The presence of the refugees also affected the availability of food as it put a strain on the food resources in the host countries.

Poor governance was mentioned in three evaluations (6% of evaluations). These factors include poor social services which do not meet the needs of the people living in poor conditions. It also consists of policy constraints and changes that have led to a decrease in agricultural infrastructure investments. These changes have resulted in a decline in agricultural productivity and, therefore, the supply of food.

The lack of knowledge in feeding practices (mentioned by 6% of the evaluations) relates to breast feeding practises as well as deriving nutrients from food. These factors affect the utilization of food.

Inadequate infrastructure and gender inequality were mentioned in two evaluations respectively. Inadequate infrastructure refers to limited irrigation infrastructure which limits households' access to water for agricultural production, therefore, resulting in poor produce. Inadequate infrastructure is also related to poor latrine systems which have negative health implications for individuals. This is related to food insecurity as sickness results in poor utilisation of food and, as discussed under health factors, affects a household's productivity to generate income.

In terms of gender equality, women face discrimination when accessing resources, land, and services. This has a negative impact on household earnings and women's ability to improve their livelihood. Given the substantial role women play in the agricultural sector, it also affects the local availability of food.

These categories and subcategories provide different opportunities and pathways to address food security. However, although the section categorised the programme backgrounds into eight categories, these categories are not mutually exclusive of one another. For example, factors relating to conflict and war and health are linked to economic factors. This relationship is unsurprising as it mirrors the complexity that is food security.

4.4.2 Programme objectives

The programme objectives provide insight into what the programmes consider a successful implementation to be. Although worded differently, the research found a common trend across all 27 evaluations. The most common objective is to improve the nutritional status of households, with some programmes focusing on pregnant and lactating women and children or people living with HIV (PLHIV). Other common objectives include preventing malnutrition, improving livelihoods, and increasing resilience to shock. On a broader level, some programmes aim to contribute to policy and play an active role in strengthening local and national capabilities in emergency response and administrative and technical capacities.

4.4.3 Programme interventions

Programme interventions bridge the gap between the identified challenges and the programme objective. In a theory of change, they are the activities that will lead to an intended output, outcome, and impact as per the programme theory. Each intervention highlights a different pathway to addressing food security, therefore, each pathway has a unique conceptualisation of food security.

Table 3 categorises the programme interventions across the 27 evaluations based on the theoretical framework. Given the interdisciplinary and complex nature of food security, interventions may fall under more than one approach. For this research, interventions were classified based on the most prominent feature of the conceptual approach. A further explanation of these features is discussed below. To allow for a

unique count of evaluations, single programmes that had more than one intervention fall under the same approach, were only counted once.

Interventions relating to the direct provision or production of food were placed under the availability approach this includes the provision of food rations, feeding programmes, the establishment of food gardens and conditional food transfers. Conditional food transfers refer to programmes such as the Food by Prescription Programme that provide food for PLHIV and tuberculosis on condition that they follow their treatment.

Interventions that provided households with financial access to food were classified under the entitlement approach. This includes interventions such as conditional and unconditional cash transfers and food vouchers. The conditional cash transfers include a Cash for Assets programme.

The capability approach builds onto the entitlement approach; therefore, all entitlement approaches essentially fall under the capability approach. However, for the purpose of the research, interventions that spoke to improving the utilisation of food were classified under the capability approach. This includes the provision of nutritional education, cooking demonstrations and breast-feeding training.

Interventions placed under the sustainable livelihood approach included those that spoke to improving the ownership of assets. The provision of agricultural inputs includes the provision of seeds (which can be used for seed multiplication and banking), farming tools and livestock. These interventions speak to improving physical assets. Skills development and training in farming practises include training on sustainable farming methods, seed selection and preservation, grazing and land management and income-generating activities. These interventions speak to improving human capital through improved knowledge and skills. Lastly, the sustainable livelihood approaches also include VLSA initiatives that speak to improving financial capital though cash, savings, and investments.

The food system approach considers the entire food system and its interlinking factors from food production to food disposal. All food security interventions that do not directly link to the previous approaches have been categorised under the food system approach. Within the interventions placed under the approach, there are four distinct

categories namely water, health, information generation and community strengthening initiative.

Water interventions include the rehabilitation and/or establishment of boreholes and irrigation systems. Health interventions include screening and monitoring for malnutrition, the provision of vitamin supplements and the construction of latrines. Information generation activities include strengthening M&E systems to track and monitor progress as well as conducting a detailed assessment of food security, nutrition and livelihoods, water, sanitation, and hygiene situation. Community strengthening refers to committee strengthening and establishing committees within communities such as Disaster Management Committees, Environmental Management, Watershed Sub-Committee and Early Warning Committees. It also includes capacity-building volunteers and community workers.

Table 3: Food security interventions

Food Security Approach	**Number of Evaluations**	**Types of Interventions**
Availability Approach	12	Provision of food rations Feeding programmes Establishment of food gardens Conditional food transfers
Entitlement Approach	10	Conditional cash transfers Unconditional cash transfers Food vouchers
Capability Approach	10	Provision of nutritional education Cooking demonstrations Breastfeeding training
Sustainable Livelihood Approach	20	Provision of agricultural inputs and equipment Establishment of VSLA Skills development and training in farming practises
Food Systems Approach	16	Rehabilitation/establishment of boreholes Establishment of irrigation systems Screening/monitoring for malnutrition Provision of vitamin supplements Construction of latrines Strengthening information systems/strategic information generation Strengthening and establishing committees Capacity building for volunteers

Figure 4 plots the number of conceptual food security approaches taken against the number of programmes. Figure 4 complements Table 4 which presents the combination of conceptual approaches taken.

Using two conceptual approaches was found to be the most common and was done by 11 programmes. Of the 11 programmes, the most common combination was a sustainable livelihood and a food systems approach which was used by four of the evaluations.

The most common combination for programmes using three approaches was the capability, sustainable livelihood, and food systems approach. This combination was used in three of the seven programmes.

Of the five programmes that used a combination of four approaches, three used a combination of the availability, entitlement, sustainable livelihood, and food systems approach.

Lastly, one approach was used by four programmes which were evenly spread across the availability, entitlement, sustainable livelihood, and the food system approach.

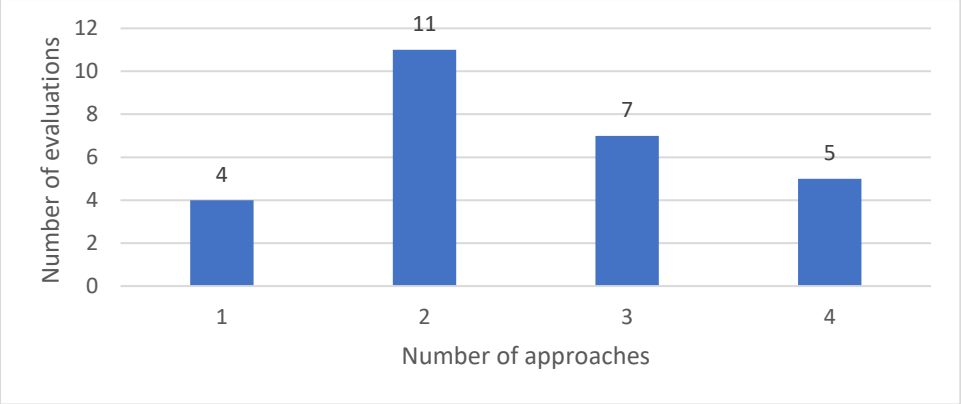


Figure 4: Number of conceptual approaches employed

Table 4: Combinations of conceptual approaches

Conceptual Approach to Food Security	Number of Evaluations
Availability Approach	1
Entitlement Approach	1
Sustainable Livelihood Approach	1
Food System Approach	1
Availability and Entitlement Approach	1
Availability and Sustainable Livelihood Approach	2
Entitlement and Capability Approach	1
Entitlement and Sustainable Livelihood Approach	2
Capability and Food Systems Approach	1
Sustainable Livelihood and Food Systems Approach	4
Availability, Entitlement and Food Systems Approach	1
Availability, Capability and Sustainable Livelihood Approach	2
Entitlement, Sustainable Livelihood and Food Systems Approach	1
Capability, Sustainable Livelihood and Food Systems Approach	3
Availability, Entitlement, Sustainable Livelihood and Food Systems Approach	3
Availability, Capability, Sustainable Livelihood and Food Systems Approach	2

4.5 Measuring Programme Success

The research looks at the programmes' output and outcome indicators to understand what constitutes programme success. Interestingly, not all programmes explicitly stated the outcomes and outputs of their programmes which raises questions as to whether the programmes have these indicators in place. Another interesting finding was that in some cases where outputs and outcomes are listed, the concepts appear to be used interchangeably questioning whether programmes understand the indicators' role and purpose. In some cases, programmes did not provide the actual indicators but rather the expected outputs and outcomes.

Table 5 presents the number of evaluations that made use of food security-specific indicators that were discussed in the literature review. Overall, only 10 evaluations used these measures. Of the 10 evaluations, seven used dietary diversity and food frequency measures, five used food consumption behaviour methods, four used anthropometric measures and one used experiential measures.

The limited use of these indicators may be the result of evaluations not explicitly mentioning them, poor monitoring and evaluation processes, limited resources for programmes to employ these methods of measurement, programmes having different

definitions of success or programme understanding that the implementation period may be too short to have a significant impact on these indicators.

Table 5: Food security indicators

Food Security Measure Category	Food Security Measure	Number of evaluations
Dietary Diversity and Food Frequency	Food Consumption Score Household Dietary Diversity Score Food Insecurity Experience Score	7
Food consumption behaviours	Coping Strategy Index Reduced Coping Strategy Index	5
Anthropometric	Not specified	4
Experiential	Household Hunger Scale	1

However, given that the study looks at food security programmes, indicators do not focus on measuring food security only but also on monitoring programme progress. This includes indicators that focus on counting beneficiary reach and programme delivery.

Table 6 provides an overview of the indicators that have suggested key insights. The indicators are categorised based on the interventions and their corresponding food security approach. These indicators show that programmes are interested in knowing the reach of beneficiaries and the number of outputs from programme interventions. This is unsurprising, as this information is valuable for programme monitoring, however, there appears to be a lack of outcome indictors (excluding the 10 evaluations that employ the pre-defined food security indicators).

Table 6: Programme indicators

Category	Programme indicators
Availability Approach	• Number of women, men, boys, and girls receiving food assistance, disaggregated by activity, beneficiary category, sex, food, non-food items, cash transfers and vouchers • Number of functional community gardens established • Percentage of household food entitlements (on rations cards/ lists) issued in women's name • Number/proportion of PLHIVs with severe acute malnutrition and moderate acute malnutrition provided with specialized food • Proportion of total annual food crop production • Total vegetables harvested and fruits grown or fetched
Entitlement Approach	• Number of women, men, girls, and boys receiving cash assistance as a percentage of planned. • Proportion of households where females and males together make decisions over the use of cash, voucher or food • Proportion of households where females make decisions over the use of cash, voucher, or food
Capabilities Approach	• Number of women of reproductive age receiving health services, nutrition messages and programmes • Number of children under five reached by nutrition programs • Proportion of mothers targeted demonstrate increased knowledge and practices of recommended maternal, infant, and young feeding practices
Sustainable Livelihoods Approach	• Number of people who receive agricultural inputs • Number and proportion of households in target communities benefiting from assets supported by the programme • Number of farmers' organisations trained in market access and post-harvest handling skill • Number/proportion of PLHIVs who have got loans from their VSLA • Proportion of VSL group members invest in small-scale businesses and diversify their livelihood sources by end of the project • The proportion of targeted beneficiaries that increase their monthly income. • Increase in household assets
Food systems approach	• Number of boreholes rehabilitated • Number of households with access to safe and clean water • Number of established water point committees • Number of functional water point committees • Proportion of women project management committee members trained on modalities of food, cash, or voucher distribution • Cure rate, defaulter rate, the death rate for acute malnutrition • Proportion of children under 5 screened quarterly for acute malnutrition in the communities of intervention • ART nutritional recovery rate • ART treatment default rate • Proportion of women beneficiaries in leadership positions of project management committees

4.6 What Programmes Consider Impactful

Table 7 summarises and presents the information reported under findings towards impact in the evaluations. This is mostly applicable to evaluations that took the OECD evaluation framework with a specific section allocated to findings towards impact. The findings mirror the classification of the programme interventions.

Table 7: Findings towards impact

Approach	Finding towards impact
Availability Approach	• Food gardens have shown increases in dietary diversity and food consumption. • Emergency programmes temporarily saved people from food insecurity. • The food-by-prescription activities showed encouraging signs in the stunting prevention programme; however, it was compromised by the lack of clarity on admission, discharge criteria, and limited food availability. • Targeted supplementary feeding has addressed malnutrition among the most vulnerable populations. • There was an improvement in ART adherence, the nutritional recovery rate for severe acute malnutrition, and the uptake of prevention of mother-to-child HIV transmission services.
Entitlement Approach	• Cash transfers had an immediate effect on improving food security status and covering other expenses; however, they did not promote self-reliance. • Beneficiaries receiving food vouchers show an improvement in household food diversity, the number of meals consumed per day, and adherence to treatment for PLHIV. • Cash transfers enabled targeted households to restart their livelihoods; vegetable production groups helped them to improve their vegetable production, consumption, and sales. • There was a 'spill-over' effect on the community due to the culture of sharing food and resources with other members in need, particularly for those not receiving any assistance.
Capability Approach	• Improved knowledge and practice from nutrition education programmes.
Sustainable Livelihood Approach	• Improved food consumption score among the beneficiaries of income-generating activities. • Improved skills from capacity building and training programme • Improved livestock management practices and improved income from the livestock pass-on programmes • Improved crop production and increased sales. • VSLAs have introduced a culture of saving among poor communities and improved access to loans used to invest in income-generating activities. • Farmers have transitioned from selling cassava in tubes to selling gari (processed cassava), which gives them a higher income. • Some participants have been able to build houses, buy land, and improve schools, businesses, or farms. • The limited financial base of the VLSA may not significantly impact household income. • VSLAs are giving women more flexibility and decision-making power over financial resources.
Food Systems Approach	• Reduced open defecation; increased general cleanliness and waste disposal; pot/utensil racks; safe water drinking practices • The provision of latrines improved hygiene and reduced pollution in their open water sources. However, due to the small number of latrines and the high proportion of households practising open defecation, the impact of the latrines on community sanitation was negligible. • Through referral linkages, strong linkages between the health facilities (the clinical aspect) and the non-clinical component (social mobilization and behavioural change) have been developed. As a result, the demand for and utilization of health services has increased. • The rehabilitation of the boreholes, gullies and dams significantly impacted the availability of clean and safe water for domestic, livestock, and agricultural use. • In some cases, the number of repaired and rehabilitated water points was too small to achieve an ideal water point-to-people ratio. • There is more community empowerment due to the structures that deal with community development issues.

4.6.1 Impact under the Availability Approach

Food gardens show to have improved dietary diversity and the number of meals eaten per day. One programme found there to be an improvement in school attendance and the nutritional condition of children visiting health centres for growth monitoring. There were high levels of participation in low-input gardens and food garden demonstration plots were found to positively impact the community as caretakers, staff and the surrounding community not involved in the project started their own gardens. There is a likelihood for a more significant impact from gardens even after the project has ended, as the community members now have more agricultural knowledge.

Emergency programmes saved people temporarily from food insecurity. The safety net and vulnerable group feeding components saved thousands of lives during extreme food shortages. The emergency school-based feeding scheme positively impacted school enrolment, improved household food distribution, and enabled parents to allocate cash previously used for food purchases to other expenses. In addition, relief rations enabled households to maintain their assets while overcoming food shortages. However, with the emergency programmes, it was also found that very little attention was placed on creating viable exit strategies. One programme mentioned that the provision of food had minimal long-term well-being impact and should not be prioritised as a future activity unless the vulnerability situation deteriorates dramatically, as food security was only temporarily addressed.

The food-by-prescription activities showed encouraging signs in the stunting prevention programme; however, it was compromised by the lack of clarity on admission, discharge criteria, and limited food availability. Targeted supplementary feeding has addressed malnutrition among the most vulnerable populations. However, there is a need for food supplementation and educational messages to improve impact.

4.6.2 Impact under the Entitlement Approach

Cash transfers had an immediate effect as a lifesaving and food security intervention with money being spent primarily on food but also household goods, school fees, and agricultural/livelihood inputs. Some beneficiaries stated that they could now consume three meals a day, invest in a business (poultry and goat rearing), reconstruct their

houses after the floods, get better medical treatment, save through VLSA, and take children back to school. However, the beneficiaries also cited needing additional support after the cash transfer programme ends. A programme focusing on refugees shared the same sentiment in that they had developed some resiliency and assets over time, but without an emphasis on self-reliance, they continued to be dependent and exposed to the risk of the interruption of assistance. Other adverse effects include community members, who were not included in the programme, being jealous of those who were and in some cases, children stealing from their parents.

The food voucher programme, similar to emergency relief and cash transfers, have a minimal long-term impact; however, beneficiaries receiving food vouchers show an improvement in household food diversity, the number of meals consumed per day, and adherence to treatment for PLHIV.

Cash transfers enabled targeted households to restart their livelihoods; vegetable production groups helped beneficiaries to improve their vegetable production, consumption, and sales.

4.6.3 Impact under the Capabilities Approach

Nutrition education programmes have shown improved knowledge and practice among beneficiaries. Those engaging in the mother support programmes show improved knowledge related to infant and young child feeding, pregnancy care, and maternal nutrition practices. Knowledge improvement from other programmes includes properly preparing vegetables, the importance of dietary diversity and infant and young child feeding practices. Nutrition messages were seen to be more effective when linked with food security activities such as workshops and house-to-house mentoring. In some cases, women's intended use of nutrition education was not adequately met due to a lack of quality resources in facilities and a lack of support from household members to make informed choices.

4.6.4 Impact under the Sustainable Livelihoods Approach

Programmes found income-generating activities to have a positive impact on food consumption scores. Money was used for food, VLSA share, household items, medical costs, electricity, water, and school fees. However, it was also found that income-

generating activities could have a negative impact on nutrition such as distracting members' interest towards business activities and away from food.

Households are also demonstrating new skills in land preparation, fertilising, use of seeds and pesticide control, and the use and maintenance of tools which have led to improved agricultural production. The asset creation training brought a sense of self-reliance to beneficiaries and made them feel responsible for their own development. Training impacts were found to be limited where programmes were under-planned, and resources were limited. This also resulted in beneficiaries not having the opportunity to apply their training.

In terms of livestock, there appear to be improved management practices linked to better veterinary and extension services, improved access to inputs, and heightened feeding at feedlots and fattening pens. There has also been reduced mortality and increasing numbers of animals due to access to water, fodder production, and effective disease control. The livestock pass-on programme shows some signs of improved income which is coupled with improved collaboration and social inclusion within communities.

Farming training and skills transfer led to better farming techniques that improved crop production and contributed to crop sales. Conservational agricultural interventions contributed to sustainable and diverse food production; however, their impact was limited by recurrent serve droughts. The Food Assistance for Assets rehabilitation activities shows improvement in the beneficiaries' livelihood levels through improved crop yields and sales.

VSLAs have introduced a culture of saving among poor communities and improved access to loans used to invest in income-generating activities such as agriculture and small-scale businesses. Such an initiative has improved food security and subsequently enabled beneficiaries to send their children to school. In communities where VSLAs have been implemented for years, participants have been able to build houses, buy land, and improve schools, businesses, or farms. However, in some communities, the VLSAs are estimated not to have a significant contribution to household income because the limited financial base of the VLSA only allows for

small-scale businesses. Another positive finding towards VLSA is that they are giving women more flexibility and decision-making power over financial resources.

4.6.5 Impact under the Food Systems Approach

Water initiatives have shown to have had positive impacts on food security and livelihoods as a whole. Overall, the rehabilitation of the boreholes, gullies and dams significantly impacted the availability of clean and safe water for domestic, livestock, and agricultural use. This supported crop production and reduced livestock mortality. However, in some cases, the number of repaired and rehabilitated water points was too small to achieve an ideal water point-to-people ratio.

Local community capacity building showed increased community empowerment due to structures that deal with community development issues. One such structure has provided the platform to advocate for friendlier, inclusive, and accommodative livestock regulations. There was also a ‘spill-over’ effect on the community due to the culture of sharing food and resources with other members in need, particularly for those not receiving any assistance.

4.7 Evaluation Background

The evaluation background consists of the evaluation objectives, design, data collection tools and limitations. This information provides valuable information on how programmes are evaluated and some of the challenges and limitations that should be taken into consideration when commencing with an evaluation.

4.7.1 Evaluation Objectives

Similar to the programme objectives, the evaluation objectives have a common trend across all evaluations. The two common broad evaluation objectives across programmes were to assess the interventions' performance and to extract lessons from programme implementation. In presenting this information, some evaluations took on the Organisation for Economic Co-operation and Development (OECD) evaluation criteria, which focused on the impact, sustainability, coherence, coverage, relevance/appropriateness, effectiveness, and efficiency of the programme.

4.7.2 Evaluation Design

The evaluation design provides insight into how people evaluate food security programmes. A total of 18 evaluations (67% of all evaluations) took a mixed methods approach and nine evaluations (33% of all evaluations) took a qualitative approach. Interestingly, no evaluation took a purely quantitative approach. However, one evaluation did choose to only provide their quantitative results and procedures but this was part of a bigger mixed method approach. It is therefore unsurprising that most data collection methods took a qualitative approach.

The majority use of qualitative approaches as opposed to quantitative approaches suggests the need for detailed information to be gathered. Given that one of the evaluations' main objectives was to extract lessons from programme implementation, the choice of a qualitative approach is fitting. The choice of a mixed methods approach is also fitting as it allows for data triangulation.

Table 8 presents the data collection tools used across all evaluations. There was a total of 97 evaluations across the 27 evaluations averaging four data tools per evaluation. Interviews were the most common data collection tool and were employed by all evaluations. Focus group discussions were the second most used data collection method and were used by 85% of evaluations. Interviews and focus group discussions included both key informants and beneficiaries.

Desk/document review (78% of evaluations) was the third most used data collection method followed by direct observations/field visits (44% of evaluations) and surveys (33% of evaluations). Data collection methods under "other" include outcome evidencing, proportional piling exercise, and stakeholder mapping and analysis. Desk/document review included literature reviews and research as well as project documents such as proposals, previous data collected, progress reports, publications, case stories and strategy documents. This use of desk and document reviews allowed for a more historical look at the programme and provided the evaluators with data that they would have otherwise not had access to.

Table 8: Data collection methods

Data collection method	Number of evaluations	% of evaluations
Interviews	27	100%
Focus groups discussions	23	85%
Desk/Document review	21	78%
Direct observation/field visits	12	44%
Surveys	9	33%
Other	5	19%
Total	**97**	

4.7.3 Evaluation Limitations

The previous section showed how programmes were evaluated. This section discusses the challenges and limitations that were experienced when conducting the evaluations.

Of the 27 evaluations, five evaluations (19% of evaluations) did not explicitly state limitations, and two evaluations stated that there were no significant limitations. Table 9 presents some of the common challenges experienced across the 20 evaluations that listed limitations.

Table 9: Evaluation limitations

Limitation	Explanation
Irregular and unavailable data	- Limited, incomplete, and poor-quality secondary data. - Challenges in comparing data - Quantitative data was not available in time for analysis - Not all targeted key informants could be interviewed - The data collected was not statistically valid due to the qualitative sampling design
Inaccessibility of research participants	- The unavailability of interviewees due to the holiday periods and government elections. - Internally displaced persons changing location resulted in a lower response rate. - Inability to track households due to incorrect spellings of village names and the lack of georeferenced coordinates. - Security threats, such as tribal conflicts, and limited access to interviewees. - The unwillingness of interviewees to engage in interviews
Research biases	- Recall bias. - Respondent fatigue - Availability bias - Confirmation bias - Reporting bias - Selection bias
Time constraints	- Not all intended interviewees were interviewed due to time constraints. - Limited time was spent in certain communities due to security procedures. - Change in data collection methods to accommodate time constraints.
Unattributable programme effects	- Unreliable methods of measuring programme outcomes - Similar interventions with similar goals were implemented in the same areas. - Short implementation period
Other	- Beneficiary views and perspectives are lost during the translation process. - Changes in the data collection process

4.7.3.1 Irregular and unavailable data

The most common evaluation limitation was linked to irregular and unavailable data. Evaluators reported limited, incomplete, and poor-quality secondary data. This was the result of a lack of project monitoring data, unreliable methods of measuring outcomes, inconsistency in output data, outdated data, and inaccessibility to key project documents. These inefficiencies made it difficult to compare data over time.

In one evaluation, the mid-term review for one region was not completed which affected the data comparison activity. In another evaluation, the baseline and end-line assessments were conducted at different times in the year which greatly affected the

comparability of the reports. This is because one report was conducted during a lean season and the other during a harvest season, therefore, changes in circumstances could not be seen as a direct result of the programmes.

Another challenge faced was data unavailability at the time of the evaluation. This includes both the collection of qualitative data and the completion of key informant interviews. In some cases where data was collected, the data was not statistically valid.

4.7.3.2 Inaccessibility of research participants

The second most common limitation was the inaccessibility of research participants. This included interviewees not being available during the holiday periods as well as government officials not being available during the election period. In some cases, government officials were replaced with other staff; however, the staff were not well known to the project.

Evaluators also experienced low response rates as internally displaced persons could not be located. Research participants could also not be located due to incorrect spellings of village names and the lack of georeferenced coordinates.

Security threats, such as tribal conflicts, also affected the accessibility of research participants. In one case, interviewees were transported to a central post for interviews as opposed to being interviewed in their households; however, in other cases, interviews were cancelled. Lastly, evaluators also experienced the unwillingness of key information holders to engage in discussions.

4.7.3.3 Research biases

A variety of biases may exist throughout the evaluation process. Recall bias may be present in programmes that have been running for an extended period. Interviews may have mixed recollections of events which could lead to the communicated impact being overestimate or underestimated. Beneficiaries who have been in the programme for an extended period may also be subjected to respondent fatigue. This is because they have grown accustomed to being interviewed and have learnt what interviewers are expecting to hear and provide standard answers. Participating in regular research may also be the cause of behaviour changes as opposed to changes being the result of programme participation.

The timing of the study may also lead to the presence of availability biases. In one evaluation, the interviews were conducted at the time that the programme deliverance system was experiencing a significant technical malfunction therefore it is likely that this event would heavily weigh responses regardless of it being a one-time occurrence. As a result, the true essence of the programme may be overshadowed.

Some programmes used care facilitators and volunteers in the data collection process. The facilitators' and volunteers' familiarity and knowledge of the area may have introduced confirmation bias into the research as they have pre-existing relationships with community members. The community's cultural sensitivity may also add to reporting biases as they may underreport activities that they are embarrassed or ashamed about. One example of this is the underreporting of negative coping strategies such as theft.

The final bias that may exist in the research is selection bias. This is especially in cases where purposive sampling is done and where participants are chosen in a constrained time frame.

4.7.3.4 Time constraints

Time constraints also posed limitations to the evaluation process. Due to time constraints, not all intended interviewees were interviewed, and not all intended vulnerable groups were included in the focus groups. This suggests that evaluations may be missing key information that may have been provided. Time constraints also resulted in limited interactions between the evaluation team, beneficiaries and implementing staff. In areas experiencing conflict, evaluators had limited time to engage with interviewees as they were required to adhere to safety procedures which may have affected the quality of conversations with interviewees.

4.7.3.5 Unattributable programme effects

Another evaluation limitation is the inability to attribute programme outcomes and impact to a specific project. This is a result of unreliable methods to measure outcomes as well as the presence of other interventions, in the same area, with similar goals. The short implementation period of some of the programmes also makes it difficult to register significant impacts as impact is likely to be felt in the longer term.

4.7.3.6 Other limitations

Other limitations include beneficiary views and perspectives being lost during the translation process as some thoughts are only expressible in that local language. The changes in data collection processes also pose a limitation to the evaluation process. For example, in one evaluation, individual household visits were done to conduct interviews as opposed to focus group approaches that were used in other districts. The different data collection process has different advantages and disadvantages, and inconsistent data collection process may therefore affect the validity of the results.

4.7 Lessons Learnt

The lessons gained from an evaluation provide valuable information for programme improvement as well as for the design of new programmes. As discussed in the evaluation objective section, the purpose of some evaluations was to extract programme lessons. Table 10 presents the lessons learnt. The first set of lessons is based on the implementation of specific interventions. The second set of lessons learnt are based on overall programme implementation lessons,

Table 10: Lessons learnt

Programme intervention specific lessons	
Food security Approach	**Lesson learnt**
Availability Approach	**Food gardens** Active stakeholder participation is needed for food garden interventions to be effective and sustainable **Food Rations/feeding programmes** - More food distribution points. - Review of ration sizes. - Blanket feeding instead of targeted feeding is a high severity of food insecurity. - Measure the nutritional status of children by tracking stunting to understand the impact of supplementary feeding
Entitlement Approach	**Cash transfers** - The electronic cash transfer system was convenient for beneficiaries, non-discriminatory, faster, efficient, and cost-effective. - The transfer amount needs to be adjusted to ensure beneficiary satisfaction. - Cash transfers proved to be both efficient and effective as compared to in-kind food aid. - The use of unconditional cash transfers as a modality offers flexibility to the beneficiaries to the extent that they can address their dearest needs. - Conditional cash transfers are an efficient way to bring support and an effective way of supporting inputs provision for items that beneficiaries can locally buy.
Sustainable Livelihood Approach	**Village Saving and Loan Associations** - Encourage the participation of men in community-led savings and loan schemes.

	- Strengthen initiatives by creating new groups, refresher training, and incentives. - VSLA members that are not beneficiaries of income-generating activities or agriculture support may affect the sustainability of VSLA. - VSLA is more likely to be successful in the absence of bank loans and saving groups. **Provision of agricultural inputs/Skills development** - Projects need to be planned around local agricultural seasons. - The number of inputs provided needs to be sufficient to ensure sustainability. - Provide market information to farmers. - Training should target owners and workers to create a broader knowledge base. - The absence of formalized land tenure arrangements may result in the displacement of clans in the future. - The adoption of conservation agriculture practices results in a high labour demand
Food system approach	**The provision of irrigation systems** - Long-term technical support is needed for sustainability. - Irrigation systems close to rivers are at risk of increasing water salinity; however, more powerful, and costly pumps are needed if placed further away.
Overall programme design and delivery lessons	
Lessons learnt	**Overview of lesson**
Improved monitoring and evaluation practises	- Project design and frameworks must be clear and concise. - In-depth inception reports must be completed. - Impact evaluations must be considered during programme design. - The evaluation process must be user-friendly. - Data systems play an important role in data quality and analysis.
Positive stakeholder relationships	- Involving partner institutions in planning emergency appeals allows for information sharing, ownership, and quick decision-making among partners. - The use of local staff and management is effective in programme implementation. - Relationships with public and private sector counterparts, including key players along the value chain, help generate programme support.
Effective communication	- Continuous communication and feedback to stakeholders, including beneficiaries, for smooth programme implementation. - Complaint mechanisms are needed for information flow between target communities and implementing partners. - Project structures are needed to overcome the lack of communication and coordination between management, policy, and outreach components.
Creating sustainability and resilience	- Training and capacity building is vital to ensure the success and sustainability of initiatives. - The involvement of Government and community-based institutions in the implementation of resilience activities provides a built-in exit strategy for the sustainability of interventions. - Due to the short duration of emergency operations, there is a need to have a long-term plan to build on the emergency programmes to enhance resilience and continuation of activities.
Other lessons learnt	- Transparency and community involvement in selecting beneficiaries aid successful targeting. - Successful interventions require combined in-depth due diligence with flexibility during implementation.

	- More efficient contractual, recruitment and procurement processes as late start caused delays in implementation. - The need to cluster interventions

4.7.1 Lessons learnt for interventions under the Availability Approach

For the success of food gardens, programmes must ensure the participation of local stakeholders. This allows for the local ownership of the project and there increases the likelihood of project sustainability after the programme has existed. With project sustainability, it also allows for the cascading of knowledge to people who were not involved in the project.

There is a need for more distribution points to decrease wait times, transportation costs, and the risk of violence among beneficiaries. There is also a need to continuously review ration sizes to ensure that household needs are met. In areas with high severity, programme designers should consider blanket feeding instead of targeting feeding. Blanket feeding is also seen as more cost-effective as it decreases admin costs related to targeting. With regards to measuring programme outcomes, programmes focusing on children should measure the nutritional status of children by tracking stunting to understand the impact of supplementary feeding.

4.7.2 Lessons learnt for interventions under the Entitlement Approach

Evaluators found the electronic cash transfer system convenient for beneficiaries, non-discriminatory, faster, efficient, and cost-effective. They also found it to be both efficient and effective as compared to in-kind food aid. Both conditional and unconditional grants were found to have positive effects. Unconditional grants allowed beneficiaries the flexibility to address their most important needs, while conditional grants effectively support inputs provision for items that beneficiaries can locally buy.

4.7.3 Lessons learnt for interventions under the Sustainable Livelihood Approach

One of the most common lessons learnt about agricultural support is ensuring that projects are planned in alignment with the local agricultural seasons. Delays in input provision result in households missing the seasonal calendar and not capitalising on the rehabilitation work completed on the farms. In addition to the timing of input provision, the number of inputs, such as seedlings, must be sufficient to ensure sustainability.

Knowledge sharing was another lesson learnt that pointed out the need to provide farmers with market knowledge to have the market intelligence to make effective and beneficial decisions. There is also a need for training with both owners and farmers to widen the knowledge base.

The lessons learnt also spoke to potential challenges that may occur, and should be considered, due to the programme's implementation. One such challenge is the absence of formalized land tenure arrangements for using the riverine land for agricultural purposes which may result in less influential clans being displaced in the future.

Programmes should also reconsider how they promote the adoption of conservation agricultural practices as the adoption of these practices results in a higher demand for labour which is expensive. This could be mitigated by spreading the land preparation over a longer time, however, wind erosion may undo the work if done too early before the rains.

With VSLA initiatives, there is a need to encourage more men to participate in the activities. This will consolidate the gains from the associations and promote support and appreciation for their partner's involvement. The initiatives can be further strengthened through refresher training, incentives, and the creation of new groups.

VSLA initiatives were found to have a greater likelihood of success in the absence of bank loans and saving groups, as bank loans and saving groups were found to have hindered saving practices. In addition, VSLA members are more likely to experience positive livelihood impacts if they are linked to income-generating activities and agricultural support programmes as they were able to use their savings to generate more income.

4.7.4 Lessons Learnt under the Food Systems Approach

Regarding the provision of irrigation systems, longer-term technical support is needed to ensure the project's sustainability. Short implementation periods do not allow for sufficient support as certain learning opportunities may not have presented themselves in the short term.

The placement of irrigation systems also needs to be considered as irrigation systems that are too close to rivers are at risk of increasing the salinity in rivers; however, if placed further away, pumps need to be more powerful, which is more costly.

4.7.5 Improved monitoring and evaluation practises

The most common lesson learnt was the need for improved M&E practises to guide project implementation and systematically track inputs, outputs and outcomes and enhance learning and accountability. M&E procedures also need to include in-depth inception reports and a plan for evaluations. Through these processes, data collection must be strengthened, and the data collected must be comparable over time. M&E plans must include clear and concise frameworks to guide projects. Data collection tools also need to be user-friendly and intentional, as one evaluation found that the surveys were too long and unfocused which could lose the interest of the interviewee.

4.7.6 Positive stakeholder relationships

Positive stakeholder relationships play a valuable role in the programme's success. The participation of local stakeholders was seen as key to programme efficiency. This included their active participation and the sharing of information with beneficiaries and key partners. These relationships allowed for programme ownership and quick decision-making among partners.

Having local staff involved in the implementation of the programme also assisted in more effective programme delivery as it was easier to deliver a range of messages, mobilize and motivate the households and disseminate skills and training. In addition to stakeholders that have a direct relationship with the programme, another key lesson was linked to creating relationships with external private and public sector stakeholders to generate support for the programme. With this, it was also deemed important to create relationships along the value chain. In one evaluation, the importance of having multiple retail options was stressed as it improved efficiency and empowered beneficiaries through a wider choice of options.

4.7.7 Effective communication

Communication was also mentioned as a key lesson learnt covering different levels of the programme implementation. Firstly, communication with the programme beneficiaries is important to ensure that the programme is understood. One evaluation

found that some households avoided registration because they were suspicious about the provenance of the money. This was because there was poor communication about the aims and objectives of the registration. In another case, beneficiaries were reluctant to engage in the use of biometric data as it was an untraditional practice that was not clearly explained to them.

Communication and feedback between the programme team and local traditional leaders and beneficiaries are also important for programme ownership and responsibility. To strengthen communication, it is also important to implement complaint mechanisms for information to flow between target communities and implementing partners. Effective communication is also needed between different levels of programme staff and management to ensure an aligned vision. A project structure and steering committee are needed to overcome the lack of communication and coordination between management, policy, and outreach components as well as to establish roles and responsibilities and clarify reporting structures.

4.7.8 Creating sustainability and resilience

Integrating elements that promote sustainability allows for the longevity of the programme where benefits can be felt after the programme has been phased out. The importance of partnerships is stressed here as the involvement of government and community-based institutions in the implementation of the programme provides a built-in exit strategy for the sustainability of interventions. Training and capacity building is also vital as it provides foundational knowledge that can be used and transferred over and above the implementation period. Sustainability is also related to resilience. In the case of emergency interventions, there is a need to have a long-term plan to build on the emergency programmes to enhance resilience and continuation of activities.

4.7.9 Other lessons learnt

Linking to the concept of positive stakeholder relationships and participation, some programmes involved the community in the beneficiary target and selection process. This allowed community members and local authorities to be a part of the selection process which promoted the transparency and credibility of the process. It also helped avoid conflict and jealousy between community members as the community members were involved in the process and understood why certain households were chosen. However, it was also noted that while the community participatory approach to

beneficiary selections has many positive outcomes, guidance and support from the programme implementors are also needed to ensure that fair processes are followed.

Overall targeting, whether community or programme based also need to consider possible inclusion and exclusion errors in the design and implementation of the targeting system to ensure that the right beneficiaries receive interventions. One evaluation, that looked at cash transfers, found that the set of beneficiaries who benefited the most from an intervention should have not received the interventions.

In terms of programme planning, planners must combine in-depth due diligence with flexibility during implementation as the targeted communities are susceptible to unforeseen circumstances. Planners also need to be more efficient in the contractual, recruitment and procurement processes as late starts delay implementation.

Finally, an important lesson noted was the need to consider clustering interventions. This will provide the opportunity to build on proven interventions and maximize learning and resource use for better multiplier effects. Packages of complementary interventions over an extended period were more likely to achieve better food security outcomes as they take on a more holistic approach to addressing food security. For example, clustering food support programmes such as cash vouchers with non-food support such as livestock generation and the provision of productive infrastructure and agricultural inputs. While the cash transfer focuses on immediate food consumption, the complementary programmes promote sustainable livelihoods. Another example is linking agricultural support programmes with water initiatives as water is a valuable resource needed to successfully produce food.

One of the evaluations clustered three interventions namely: the provision of unconditional cash transfers, the provision of agricultural inputs and knowledge to produce vegetables and training on group saving and knowledge management. Unconditional transfers address short-term food insecurity by increasing a household's purchasing power and may also have longer-term effects if money is saved or invested. Agricultural inputs and knowledge on farming and saving give households the capacity to provide for themselves long-term, as they can have the skills and resources to engage in income-generating activities and make long-term financial decisions. However clustering interventions should not be confused with multiple

interventions as multiple interventions may not necessarily complement each other for longer-term impact.

4.8 Conclusion

The chapter provided an outline of the data collection process and presented the research results against the theoretical framework. The results provided key insights from the evaluations that can be used to inform future programme design and implementation.

CHAPTER FIVE: DISCUSSION OF RESULTS

5.1 Introduction

This section discusses the results presented in Chapter 4 to answer the research question, "How have food security programmes and interventions conceptualised household food security?" The research question is explored through the following sub-questions:

- In what contexts are the programmes employed?
- What programme interventions have been employed to address food security?
- What do programmes consider impactful?
- What are the important lessons gained from the evaluation?
- What indicators have been used to define programme success?
- What evaluation designs and tools have been used to evaluate food security programmes?
- What limitations were experienced during the evaluation process?

The chapter discusses the first five sub-questions against the theoretical framework presented by the literature. It then discusses key points linked to the evaluation process. Finally, the chapter concludes by responding to the main research question "How have food security programmes and interventions conceptualised household food security?"

5.2 The Availability Approach

While the initial conceptualisation of the availability approach focused on increasing the production of food (Gerlach, 2015) to ensure a global food surplus , for the purpose of this discussion, availability will be viewed from a household level. Therefore, the WFP (2012), that defines food availability as food available through own production, that can be obtained through the market and received though aid. (WFP, 2012).

5.2.1 Programme contexts that link to the availability approach

The food production in sub-Saharan Africa is predominately rain-fed (Ayanlade & Radeny, 2020), it is therefore unsurprising that the research showed environmental challenges as the second most common factor contributing to food insecurity. The negative impact of floods, droughts and poor soil quality on food security, presented

in the findings, supports Fanzo et al. (2018) claim that there is an interconnected relationship between climate change, agriculture and nutrition.

The research also found the lack of water for agricultural purposes to be a challenge that affected crop production and agreed with Young et al. (2021) that even when water is available, challenges with accessing water exist. This is due to the lack of investment in irrigation infrastructure. The research found that the limited investment in irrigation systems is also a governance challenge as policy changes have resulted in decreased agricultural investments.

The research shared similar findings to Matemilola & Elegbede (2017) with regards to the role gender inequality plays in food insecurity. Both the research and the literature found that women have limited access to land, services, and resources. The literature also explored the impact gender inequality has on women education and jobs and the long-term effects it has on their ability to purchase food, however this was not found in the research. This may be an indication of programmes focusing on direct challenges that are facing food security as opposed to challenges that have long-term effects on food security.

War and conflict was also found to be a contributing factor to food security by both the literature and the research however, in terms of food availability, conflict resulted in the destruction of agricultural land and infrastructure (Kemmerling et al., 2022), and farmers abandoning their crops (Baumann & Kuemmerle, 2016). The research on the other hand found that war and conflict had a negative impact on food supply because of the burden that was placed on host countries.

5.2.2 Programme interventions and measures under the availability approach

The availability dimension encompasses three elements i.e., food through own production, food that is obtainable through the market and food that is provided through aid. When comparing these three elements with the research findings, interventions relating to food production and food aid were more prominent. This includes the provision of food rations, feeding programmes, the establishment of food gardens and conditional food transfers. Indirect interventions such as the training of farmers and the provision of agricultural assets can be linked to increasing the food available in the market, however, these interventions are more directing linked to sustainable livelihood approaches.

The interventions under the availability approach provide immediate relief to households. It is likely that these interventions may have ripple effects such as increasing educational attainment as children are no longer hungry and able to concentrate in class. However, from a purely food security point of view, these interventions only address transitory food security and not chronic food security. It is therefore unsurprising that programmes employed a combination of conceptual approaches that speak to addressing both short- and long-term food security challenges. Out of the 12 programmes that employed an availability approach, 11 of the programmes, coupled the availability approach with one or more other approach. The need for complementary programmes, specifically for food gardens, was highlighted by Walsh et al. (2020) to maximise the programme gains.

The research findings suggest that the success and sustainability of food gardens was dependent on programme ownership by beneficiaries and community members. Programme ownership leaves place for growth and continuity even after the project has exited. This finding shows that beyond programme implementation, there is a need for programmes to build strong relationships with beneficiaries and key community members to ensure that they understand the importance of continuing the activity.

Another key lesson from the research is the need for programme flexibility to ensure that the needs of beneficiaries are met. This includes being opened to different targeting methods and reviewing ration sizes. This finding suggests the need for feedback loops and engagement with beneficiaries to understand their needs and concerns. Programmes that are not flexible run the risk of being inefficient and are less likely for them to meet their programme goals. This has implications for programme funding for the potential replication and expansion of the programme.

The programme indicators in table six present two interesting findings. The first being that food security programmes are not only targeted to people who are hungry but are also used to address other socioeconomic challenges. In the case of the research, this refers to PLHIV. The second interesting finding is that there appears to be a gender focus as one of the indicators specifically looked at the percentage of food rations issued in a women’s name. This suggests that the programmes have considered issues of gender inequality in their programme design.

5.3 The Entitlement Approach

The entitlement approach introduced the concept of food accessibility to food security. Sen (1983) posited that hunger and starvation were a result of people not having access to enough food instead of it being a matter of there not being enough food to eat. Access to food is based on one's entitlement set. Sen (1983) discusses four entitlement sets that are legal sources for food, namely: production-based (growing food), labour-based (working for food), trade-based (buying food) and transfer-based (being given food by others).

There is some overlap when comparing the four entitlement sets with the three elements encompassed in the availability approach. Production-based entitlements are similar to food through own production and transfer-based entitlements is similar to food received though aid. However, considering Devereux (2007) discussion on the impact of floods and droughts on food security, entitlement sets place a focus on income. For example, the destruction of crops it's not only seen as decreasing the availability of food but also as a decrease in purchasing power because there is less income from the sale of crops and there is an increase price of food due to limited supply. From a transfer-based perspectives, communities are less likely to provide social transfers because they too have experiences decreases in purchasing power.

5.3.1 Programme contexts that link to the entitlement approach

The entitlement approach is concerned with purchasing power, therefore the factors, discussed above, that contribute to the decreased availability of food also affect the entitlement of food. This is because decreased availability leads to increased food process which decreases the purchasing power of households.

The most direct factor affecting one's entitlement set is the economic factors related to poverty, which includes unemployment, and economic shocks and decline. These factors directly decrease household purchasing power. The cyclical relationship between poverty and food security as explained by Siddiqui et al. (2020), is supported by the research findings. This is seen in the health-related issues where people are unable to engage in income generating activities due to their illnesses which results in a decreased ability to purchase food. Their poor health conditions are likely to persist without nutritional food which means they cannot engage in income generating activities.

5.3.2 Programme interventions and measures under the entitlement approach

The interventions included under the entitlement approach include conditional and unconditional cash transfers and food vouchers. These interventions speak to the trade-based entitlement set which focuses on endowments that can purchase food.

The findings on the impact of cash transfers shares a similar view to that of Molyneux et al. (2016) who questions its lack of having a transformative aspect. One evaluation reported that the cash transfers had an immediate effect on improving the household's food security status and covering expenses, but it did not promote self-reliance. Some beneficiaries also reported that they relied on the transfers and would require assistance when the programme ended. This suggests that on its own, the programme is not sustainable as the effects of the programme exits when the programme exits.

However, the findings also support the notion that the effectiveness of the cash transfers are based on the decisions made by households as some households used their money to invest in their own vegetable production. While this finding shows that cash transfers may have a positive impact on chronic food security, it also questions the efficiency of the programme targeting as it may be that the cash received by these households is excess which allows them to investment in income generating activities.. However, it may also be indicative of households focusing on a livelihood perspective as opposed to a food first perspective as seen during the 1984/5 famine in Sudan (de Waal, 1989).

The combination of different conceptual approaches with the entitlement approach support suggests that the entitlement approach is not sufficient to address food security, unless in cases of transitory food insecurity where immediate help is needed. Of the 10 evaluations that employed an entitlement approach, nine of the programmes coupled the approach with one or more other approach.

Similar to the availability approach, a key lesson under the entitlement approach is the importance of flexibility. Programmes need to review cash transfer amounts to ensure beneficiaries receive an amount that can create significant change to their lives. The findings also show that giving beneficiaries flexibility, such as providing them with cash transfers as opposed to food vouchers, is also valuable as people are able to make decisions based on their needs. This is important as programmes may have a misconception about what is important to beneficiaries.

Like the availability approach, the output and outcome indicators under the entitlement approach also show that gender was taken into consideration more particularly related to decision making in the household.

5.4 The Capability Approach

The capability approach builds on the entitlement approach by taking into account what people can effectively do (Robeyns, 2005) to avoid starvation and undernourishment. The entitlement approach provided an answer to why food security persisted despite there being sufficient food available. The capability approach expands to provide reasons for why food insecurity can persist in households even when economic vulnerabilities are addressed (Tauseef, 2022).

5.4.1 Programme contexts that link to the capability approach

One of the main factors contributing to food security that is linked to the capability approach is the lack of knowledge and more specifically poor feeding practices among children and infants. This finding is consistent with the literature that found that cultural norms and beliefs related to feeding results in a low rate of exclusive breastfeeding (Kinabo et al., 2017).

While the capabilities approach mentions the health factors that reduces one's physical ability to absorb food and the literature suggests that people who are ill are not able to physically prepare food for themselves, the research findings did not mirror this. Instead, the findings towards health were centred around an individual's ability to engage in income-generating activities.

5.4.2 Programme interventions and measures under the capability approach

The main interventions under the capability approach refer to improving nutritional knowledge and the utilisation of food. However, given that the capability approach is a build onto the entitlement approach, the interventions that improve one's entitlement also improves one's capability.

Tauseef (2022) reported that cash and food transfers are more effective when coupled with these types of interventions specifically behaviour change communication. From this finding and the research findings it appears that interventions relating to the capability approach act more as a complementary intervention as compared to a stand-alone intervention. All of the 10 evaluations that employed interventions linked

to the capability approach, linked the interventions to one or more approaches. However, even though limited to only one case each, the other four approaches have acted as stand-alone interventions.

Interestingly, only three programmes mentioned a lack of knowledge as a contributing factor to food security, however, 10 programmes responded with interventions that responded to this challenges. This may indicate that not all programmes explicitly reported the challenges that contributed to food insecurity in their target area, or it may highlight the value in adding in these interventions to complement other interventions as found by Tauseef (2022).

5.5 The Sustainability Livelihood Approach

The sustainable livelihood approach is another developmental framework that focuses on equity, sustainability and capabilities (Chambers & Conway,1992). More specifically it focuses on the ownership of assets which fits into five different categories (human, social, financial, physical and natural capital) (Karki, 2021). The definition of the sustainable livelihood approach suggests that it contains elements of the entitlement and capabilities approach. The focus on equity, sustainability and capabilities has a longer-term impact on food security, therefore, interventions are more likely to play a role in addressing chronic food insecurity challenges.

5.5.1 Programme contexts that link to the sustainable livelihood approach

Economic, environmental, health, war and conflict, governance and gender inequality factors all affect the ownership of assets. Economic, health, war and conflict and poor governance factors have resulted in households having limited financial capacity A limited financial capacity leads to limited physical capacity as households do not have the financial means to invest in physical equipment. Gender inequality limits access to assets land (natural capacity) and other resources (physical capacity). This is consistent with the literature that discusses women' limited access to irrigation technologies (Eshetu & Guye, 2021; Getaneh et al., 2022). Environmental factors result in poor quality which negatively affects natural assets.

The programmes that consider war and conflict as one of the contributing factors to food insecurity focused on the challenges experienced by the areas where refugees fled to as opposed to the actual war and conflict zone. As a result, the research does

not speak to the agricultural and infrastructure damage that wars and conflict cause as mentioned by Kemmerling et al. (2022) and George et al.(2020).

5.5.2 Programme interventions and measures under the sustainable livelihood approach

The interventions linked to the sustainability approach are linked to interventions that improve asset ownership. This includes the provision of agricultural inputs and equipment (improves physical capacity), the establishment of VSLAs (improves financial capacity) and skills development and training in farming practises (improves human capacity).

Through the implementation of the VLSA initiatives, the research found that VLSA introduced a culture of savings among communities improved their access to loans to engage in come generating activities. This finding was consistent with Abdulai et al., (2022) who found that VSLA initiatives contributed to investments and economic empowerment. The literature is further supported by households, especially were VLSAs have been implemented for years, who were able to build houses, buy land, and improve schools, businesses, or farms.

However, in other cases, the VLSAs were also found to have insignificant effects on households because of their limited financial base. This finding essentially goes against the main reasons for creating VSLAs which is to provide a financial base that households can rely on to improve their livelihoods. However, the lack of significant effects may be the result of VLSAs still being new and still needing to develop its financial base.

Households also benefited from farming and skills transfers. The training and skills development lead to sustainable food production which is consistent with van den Berg et al. (2020) who found that skills training promoted sustainable farming practices.

In comparison to the five asset categories that the sustainable livelihood approach is composed of, social and natural capacity directly reference in the research. However, in the food system approach, there are interventions that give people access to water which access to a natural resource but not ownership. Although not a direct intention of the programme, some programmes reported that interventions had spill over effects where a culture of sharing was established particularly with people who were not receiving any assistance. This was especially the case for programmes that involved

communities in the process of setting the targeting criteria and selecting household to be a part of the interventions. Therefore, the programme design in its essence fostered the spirit of sharing without there being a specific intervention in place.

The interventions relating to the sustainable livelihoods approach include the provision of inputs, the establishment of VSLA and skills development and training in farming practices. Based on these interventions, the programmes focus on interventions that speak to human, capital and physical capital.

The sustainable livelihood approach was used by 20 programmes and was the most used approach. Of the 20 evaluations that employed the sustainable livelihood approach, 19 programmes coupled the approach with one or more other approach.

5.6 The Food System Approach

A food system is defined as "all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the output of these activities, including socioeconomic and environmental outcomes" (Daviron et al., 2011). The food system approach provides a holistic view to understanding food security as it considers all factors that directly and indirectly affect food security. It is important to note that compared to the entitlement, capabilities and sustainable livelihoods approach, the food system approach does not focus on individuals and households but rather elements in the system making it useful when discussing national and global food security. However, the approach can be applied at a household level to consider the factors that affect household food security.

5.6.1 Programme contexts that link to the food system approach

Based on the definition of the food system approach, all contributing factors to food security listed in table two are linked to the food systems approach. Each of the relationships discussed in the paragraphs above are included in the food system approach.

5.6.2 Programme interventions and measures under the food system approach

The food system approach considers all elements and activities related to food. Based on its definition, all the interventions found in the evaluations fit under the approach. The programme interventions fall under all five activities (production, processing,

distribution, preparation, and consumption of food) listed in the definition of a food system. However, interventions under the production, distribution and preparation of food are most common.

Based on the criteria used to classify interventions, interventions relating to water, health, information generation and community strengthening initiative fall under the food system approach. These initiatives indirectly improve household food security. For example, giving people access to water allows them to irrigate food gardens which increases their food availability, and it also gives them the ability to prepare food with safe and clean water. The provision of latrines provides households with proper sanitation which decreases their chances of getting sick and allows them to continue engaging in income-generating activities to purchase their own food. As shared in the literature, illnesses lead to a decrease in household income and/or agricultural productivity (Masuku & Sithole, 2009).

An important lesson that comes through from the provision of irrigation systems, is the need to implement programmes that will be sustainable in the long run therefore the implementation period needs to be sufficient to allow for this.

Because the interventions placed under the food system approach are not necessarily linked directly to food security, the outcome and output indicators are not directly related to food. This refers to indicators such as ART recovery and default rates. With regards to leadership positions in the community strengthening initiatives, the indicators show a focus in understanding the number of women who have been empowered.

5.7 Lessons from the Evaluation Process

The analysis of the data collection tools, and research design is presented in section 4.7. Overall, the findings show that evaluations favoured qualitative methodology and data collection tools. This is unsurprising as the evaluation objectives suggested a need for in-depth information that could not be gathered through qualitative methods. However, this does not dismiss the value that quantitative data can add to the evaluation findings and the important role it plays in data triangulation where mixed method approaches are used. The rest of this section discusses the findings and literature related to evaluation challenges and limitations.

The case of a lack of a systematic approach to collect data (Halstead, 2019) is mirrored in the research findings as irregular and unavailable data. Both the research and the literature agree that these factors make it difficult to compare data over time. However the research goes further to not only include missing data but to also include unreliable methods of measuring data and outdated data.

The research also supports the literature's findings about the presence of biases in the research. However, while Simundic's (2013) definition of biases suggests that biases arise from the data collection, data analysis, interpretation and publication process, most of the biases in the research came from the data collection process. Within the data collection process, biases arose from the design of the data collection process, the people who collected the data, and the participants who provided the data.

Selection bias was introduced by the design of the data collection process as evaluations employed purpose sampling to respond to time constraints. Confirmation bias comes from the people who collected the data as some of them had pre-existing relationships with community members.

Most of the reported biases come from the research participants. This includes recall bias, respondent fatigue, availability bias and reporting bias. The impacts of these biases and how they enter the research are discussed in section 4.7.3.3

The research also reiterated some of the participant characteristics and research logistics and procedures (Holden et al., 2015) that caused challenges during the data collection process. This includes participants having scheduling conflicts, not being able to locate people, people not being willing to engage in interviews, and people being unreachable due to community challenges. and have limited time to engage with participants due to long travel times.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

When considering the conceptualisation of household food security, it appears that definitions take a top-down approach. However, programme evaluations contain valuable information at a ground level of how food security is conceptualised taking into considerations various resource constraints and parameters. Using the five key conceptualisations of food security, identified in the literature review, as a theoretical framework the research aimed to answer the "**How have food security programmes and interventions conceptualised household food security**?" by reviewing food security programme evaluations.

Of the 27 evaluations, none of the programmes explicitly stated how they defined and conceptualised household food security. The research therefore looked at the programme backgrounds, objectives, interventions, and measures to explore this.

Overall, using the programme background and interventions, the research results show that programmes have conceptualised food security across the five conceptual approaches i.e., the availability approach, the entitlement approach, the capabilities approach, the sustainable livelihood approach, and the food systems approach. Individual programmes have also used more than one conceptualisation of food security which suggests that programmes understand the complexity and multi-dimensional nature of food security.

While the research employed the five conceptual approaches as a framework to understand how food security programmes conceptualise food security, these frameworks are not mutually exclusive of one another. As seen in the discussion above, a single factor that contributes to food security can affect more than one food security dimension or approach. The discussion above also shows that a single programme intervention can also address more than one dimension of food security.

From a measurement point of view, although intensive work has gone into the creation of pre-defined food security indices, only 10 evaluations used these indicators. Programmes that have used these indictors conceptualise success in terms of the quantity, quality, and the frequency at which food is consumed.

An interesting finding from the analysis of programme measures shows that a level of focus on gender has been included in the food security programmes. The indicators

not only count the number of women who receive services but also consider women empowerment (by looking at the number of women in power) and gender-dynamics at a household level (by looking at who makes food related decisions in a household). In addition to gender, food security programmes have also been related to health initiatives specifically HIV. The food-for-prescription programme for example provided food to people who adhered to their treatment. This shows that the conceptualisation of food security is also used as a means to respond to other socioeconomic challenges highlighting its interdisciplinary nature.

A key lesson learnt is the need to conceptualise food security programmes in a way that fosters sustainability and self-reliance into programme design.

When conceptualising food security for programme design, programmes need to consider the long-term impacts of the programme except where the programmes aim to only address transitory food security in cases of emergency. Programmes need to build in sustainability and resilience into their design so that maximum benefits can be drawn from the programme and beneficiaries continue to benefit from the programme even after the programme has exited. Programmes need to ensure that beneficiaries do not become dependent on the programme and that beneficiaries are left in a better state as a result of the programme. One of the ways to do this is to consider clustering programmes as seen in the research where programmes implement multiple programmes at once. Clustering food security programme interventions is another key lesson taken from the research. Even would limited resources, programmes should aim to consider a more holistic conceptualisation of food security to cater for additional and complementary intervention pathways that will have a better long-term impact.

Based on the information provided, the research contributes to the limited body of knowledge that collates valuable information extracted from evaluations to inform new and existing programmes. The research also contributes to the literature by taking a bottom-up approach to understanding how programmes conceptualise food security. Understanding this conceptualisation is valuable because the findings are based on real life application of programme theories and can be replicated in new programme designs.

To complement this study, further research can be undertaken to place focus on the COVID-19 pandemic to understand it’s impact on food security and the programmes

that were put in place to address it. Further research on the food security-policy nexus could also be reviewed to understand if current Sub-Saharan African policies are relevant for the food security agenda and to recommend evidence-based interventions that have been explored.

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APPENDIX A

Mixed Method Appraisal Tool Template

Study Design	Methodological quality criteria	Responses		
		Yes	No	Can't tell
Screening questions for all study designs	S1. Are there clear research questions?			
	S2. Do the collected data allow to address the research questions?			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions			
Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?			
	1.2. Are the qualitative data collection methods adequate to address the research question?			
	1.3. Are the findings adequately derived from the data?			
	1.4. Is the interpretation of results sufficiently substantiated by data?			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?			
Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?			
	5.2. Are the different components of the study effectively integrated to answer the research question?			
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?			
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?			
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?			