ENHANCING SUSTAINABLE FOOD SYSTEMS IN ZIMBABWE THROUGH INTEGRATED THINKING.

THESIS

FOR THE MASTER OF SCIENCE DEGREE IN FOOD SECURITY AND SUSTAINABLE AGRICULTURE (POLICY)

Bindura University of Science Education

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DECLARATION

I hereby declare that the research project entitled "**ENHANCING SUSTAINABLE FOOD SYSTEMS IN ZIMBABWE THROUGH INTEGRATED THINKING.**" submitted to Bindura University of Science Education, Department of Agricultural Economics, Education and Extension is a record of an original work done by me under the guidance and supervision of **DR. E. ZIVENGE** and this work is submitted in partial fulfilment of the requirements for the award of a Master of Science Degree in Food Security and Sustainable Agriculture. The results embodied in this thesis have not been submitted to any University or Institute for the award of any degree of diploma.

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DEDICATION

To my late father, David Chademana, whose unwavering belief in my abilities continues to inspire me, and to my beloved daughter, Lydia Musizvingoza, who fills my heart with immeasurable strength and love.

I dedicate this research dissertation to two extraordinary individuals who have shaped my journey in profound ways. My father, though no longer here in person, remains a guiding light in my pursuit of knowledge and accomplishment. His unwavering support and belief in my abilities were the fuel that propelled me forward, even in the face of challenges. I carry his memory in my heart and dedicate this work to him, a testament to his unwavering faith in me.

To my dearest daughter, you are my beacon of hope and the source of my resilience. Your infectious laughter and innocent curiosity remind me of the joy that exists beyond the demands of academia. In your eyes, I see the future that I strive to create—a world filled with limitless possibilities and boundless love. It is for you that I have embarked on this arduous journey, so that I may pave the way for your own dreams and aspirations.

To both of you, I am eternally grateful. Your presence in my life has shaped me into the person I am today. With every step I take in this academic pursuit, I honor the memory of my father and the dreams he held for me, while simultaneously building a foundation for my daughter's future. Your unwavering belief in me, both past and present, has been my driving force, and I am privileged to have you as my inspirations.

May this dedication serve as a tribute to the love, sacrifice, and unwavering support you have bestowed upon me. As I complete this milestone, I carry your spirits with me, knowing that I have fulfilled part of my purpose in honor of your unwavering belief in me.

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assistance, your contributions have not gone unnoticed. Each person who has played a role, big or small, in this endeavour has contributed to its fruition, and for that, I am sincerely thankful.

ABSTRACT

This study aimed to enhance sustainable food systems in Zimbabwe through the application of integrated thinking. A descriptive research design was employed, and data was collected using a survey questionnaire. The target population comprised individuals involved in Zimbabwe's food systems, and a simple random sampling technique was used to select a sample size of 153 participants. The findings revealed that a significant proportion of participants had knowledge about integrated thinking in food systems and recognized its importance, but the practical implementation exhibited greater diversity. Key challenges included a lack of awareness, insufficient resources, and traditional customs, while opportunities were identified in collaboration, education, capacity building, financial incentives, and knowledge exchange platforms. To address these issues, an integrated framework was developed to promote sustainable and resilient food systems in the communal area of Ward 11 (Masoka) in Zimbabwe. The framework emphasized interdisciplinary collaboration, knowledge and capacity building, financial support, technological assistance, and policy and governance. The study's recommendations focused on incorporating climate-smart agriculture, ensuring equitable representation, strengthening local government engagement, integrating traditional knowledge, and addressing land degradation and deforestation.

Keywords: integrated thinking, food systems, sustainable agriculture, Zimbabwe, descriptive design, simple random sampling, survey research, integrated framework

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INTRODUCTION

1.0 Background of the study

Zimbabwe, like to numerous other nations, is currently facing the detrimental consequences of climate change, which entail a rise in both the frequency and intensity of extreme weather events, such as droughts and floods. The country's agriculture sector, which is crucial to its economy and provides a living for most of the population, faces significant consequences due to climate-related difficulties (IPCC, 2014).

The conventional method of tackling climate change and food security problems has frequently been characterized by fragmentation and a narrow focus on individual sectors. Nevertheless, it is evident that a comprehensive and interconnected strategy is required to develop resilience and guarantee the sustainability of food systems in light of climate unpredictability (FAO, 2017). This project aims to investigate the capacity of integrated thinking as a conceptual framework to improve climate resilience and promote sustainable food systems in Zimbabwe. Integrated thinking is the examination of the interrelationships between different elements, such as climate change adaptation, agricultural methods, water management, land use planning, and socio-economic aspects, in order to formulate comprehensive and efficient policies (UNEP, 2012).

This project intends to use an integrated thinking approach to identify and assess the main factors that contribute to or hinder climate resilience and sustainable food systems in Zimbabwe. The assessment will also examine the efficacy of current policies, practices, and initiatives pertaining to climate change adaptation and food security in achieving intended results (Moyo et al., 2019). In addition, this study will examine novel strategies and exemplary approaches from other areas that have effectively included climate resilience and sustainable food systems. The insights gained from these case studies will be utilized to formulate customized suggestions and tactics that are suitable for the unique circumstances of Zimbabwe (UNDP, 2018).

The results of this study will enhance the current body of knowledge on climate resilience, sustainable agriculture, and integrated thinking. The suggested recommendations have the potential to provide valuable insights for the formulation of policies and the implementation of interventions that aim to improve the ability of Zimbabwe to withstand the impacts of climate

change and to establish food systems that are environmentally sustainable (World Bank, 2020). To summarize, this study aims to offer useful insights and practical recommendations to help Zimbabwe develop a more resilient and sustainable future. The goal is to reduce the effects of climate change and secure food security for everyone.

1.1 Problem Statement

Zimbabwe's food systems are facing considerable problems due to the adverse implications of climate change, which are jeopardizing the country's food security and the livelihoods of its inhabitants. The existing strategies for climate resilience and sustainable food systems in Zimbabwe are disjointed and do not adequately consider the intricate interplay between climate change, agriculture, and socio-economic elements. It is crucial to prioritize integrated thinking and formulate comprehensive policies that take into account the interconnections and harmonies between climate resilience and sustainable food systems. Zimbabwe encounters multiple obstacles in improving climate resilience and establishing sustainable food systems. An important issue is the influence of climate change on the productivity of agriculture. The nation is currently undergoing more frequent and severe droughts, floods, and unpredictable rainfall patterns, which are having a significant impact on agricultural productivity and livestock farming.

Zimbabwe is facing climate-related difficulties that have led to an increase in both food insecurity and poverty levels. Small-scale farmers, who depend on agriculture that is reliant on rainfall, are encountering challenges in adjusting to the evolving climate circumstances. The lack of contemporary agricultural technologies, like as irrigation systems and enhanced seeds, exacerbates their difficulties in adapting to climate change. Another urgent concern is the deterioration of natural resources such as land and water. Unsustainable farming practices, deforestation, and overgrazing have resulted in soil erosion, biodiversity loss, and decreased water availability. This not only impacts agricultural productivity but also presents a risk to the long-term viability of ecosystems and the well-being of rural people. To ensure the well-being of the farming community and the environment, it is crucial to tackle these concerns by implementing sustainable farming methods and facilitating the adoption of contemporary farming technologies. Moreover, the agricultural industry in Zimbabwe heavily depends on fossil fuels and chemical inputs, which in turn leads to the release of greenhouse gases and

environmental damage. Synthetic fertilizers and pesticides have detrimental effects on soil health, water quality, and human health. Adopting sustainable farming practices, such as organic farming and agroecology, is essential for decreasing the carbon footprint of the agricultural sector and improving environmental sustainability.

Furthermore, Zimbabwe encounters limitations in legislative and institutional frameworks, in addition to the aforementioned issues. Enhanced coordination and collaboration among government agencies, academic institutions, civil society organizations, and the commercial sector are necessary to comprehensively tackle climate change and food security concerns. This encompasses the process of creating and executing strategies for climate-smart agriculture, advocating for sustainable land management practices, and enhancing the ability of rural communities to withstand and recover from challenges. Moreover, small-scale farmers have constraints in terms of both financial resources and technical support, which impede their capacity to embrace climate-resilient and sustainable agricultural methods. Facilitating financial inclusion and offering assistance in capacity building, training, and knowledge transfer are crucial for empowering farmers and equipping them to adjust to climate change.

To summarize, Zimbabwe is confronted with substantial obstacles in improving its ability to withstand climate change and develop food systems that are both sustainable and resilient. Climate change has significant effects on agriculture, leading to the deterioration of natural resources, dependence on unsustainable farming methods, and inadequate policy structures, all of which contribute to these issues. To tackle these difficulties, a comprehensive strategy is needed that combines climate change adaptation, sustainable agricultural methods, and inclusive policies that aid small-scale farmers. Zimbabwe can enhance its agricultural sector and provide food security for its population by implementing coordinated measures. Farmers are subjected to regulations, such as pfumvundza.

1.2 Objectives

The main objective is to Assess the adoption of integrated thinking in Zimbabwe's Food System.

The specific objectives are to:

1. assess the level of the application of integrated thinking approach in Zimbabwe's Food Systems

2. assess challenges and opportunities in promoting integrated thinking in food systems of Zimbabwe
3. develop an integrated framework that supports integrated thinking in communal areas

1.3 Research questions

What are the key drivers and barriers to enhancing climate resilience and sustainable food systems in Zimbabwe, and how can integrated thinking be used to address these challenges?

1. How effective are existing policies, practices, and initiatives related to climate change adaptation and food security in Zimbabwe, and how can they be improved through integrated thinking?
2. What are the best practices and innovative solutions from other regions that have successfully integrated climate resilience and sustainable food systems, and how can these be adapted to the specific context of Zimbabwe?
3. What are the key socio-economic factors that influence climate resilience and sustainable food systems in Zimbabwe, and how can they be addressed through integrated thinking?
4. How can stakeholders from different sectors, including government, civil society, and private sector, collaborate effectively to enhance climate resilience and sustainable food systems in Zimbabwe through integrated thinking?
5. What are the potential trade-offs and synergies between climate resilience and sustainable food systems, and how can integrated thinking help to maximize synergies and minimize trade-offs?
6. How can integrated thinking contribute to building a more resilient and sustainable future for Zimbabwe, where climate change impacts are mitigated, and food security is ensured for all?

1.4 Justification

This Master's dissertation on "Enhancing Climate Resilience and Sustainable Food Systems in Zimbabwe through Integrated Thinking" is justified by the urgent need to address the complex challenges posed by climate change and food security in Zimbabwe. This research is significant for several reasons:

1. **Climate Change Impacts:** Zimbabwe is experiencing the adverse impacts of climate change, including increased frequency and intensity of extreme weather events such as droughts and floods. These changes have severe implications for the country's agricultural sector, which is crucial for food production and livelihoods. This research aims to contribute to effective strategies for mitigating climate change impacts by studying the integration of climate resilience and sustainable food systems.
2. **Food Security Concerns:** Zimbabwe faces significant food security challenges, with a large proportion of its population vulnerable to hunger and malnutrition. Climate change exacerbates these concerns by affecting agricultural productivity and food availability. By exploring integrated thinking approaches, this research seeks to identify ways to enhance sustainable food systems and ensure adequate access to nutritious food for all.
3. **Holistic Approach:** The traditional approach to addressing climate change and food security issues in Zimbabwe has often been fragmented and sector-specific. However, there is a growing recognition that a more integrated and holistic approach is necessary to build resilience and ensure sustainable outcomes. This research aims to contribute to the understanding of integrated thinking as a framework for addressing these interconnected challenges.
4. **Policy and Practice Gap:** While there are existing policies, practices, and initiatives related to climate change adaptation and food security in Zimbabwe, their effectiveness in achieving desired outcomes needs evaluation. This research will assess the existing approaches, identify gaps, and propose recommendations for improving policy coherence and implementation through integrated thinking.
5. **Knowledge Gap and Innovation:** There is a need for innovative solutions and best practices that integrate climate resilience and sustainable food systems in Zimbabwe. By examining successful case studies from other regions, this research will contribute to filling the knowledge gap and provide insights into potential strategies that can be adapted to the specific context of Zimbabwe.
6. **Socio-economic Implications:** Climate resilience and sustainable food systems have significant socio-economic implications. By considering the socio-economic factors within an integrated thinking framework, this research aims to identify opportunities for inclusive growth, poverty reduction, and equitable resource allocation.

The findings of this research will provide valuable insights for policymakers, practitioners, and stakeholders involved in climate change adaptation, agriculture, and food security in Zimbabwe. The recommendations derived from this study can guide evidence-based decision-making processes, inform policy formulation, and support the development of effective interventions aimed at enhancing climate resilience and ensuring sustainable food systems in Zimbabwe.

Overall, this research is justified by the pressing need to address climate change impacts, improve food security, bridge policy-practice gaps, foster innovation, and promote socio-economic development in Zimbabwe through integrated thinking approaches.

1.5 Delimitations

Geographical Scope: The research focuses specifically on Zimbabwe, considering the country's unique context, climate challenges, and agricultural practices. It aims to provide insights and recommendations that are relevant to the Zimbabwean context.

Climate Resilience: The study will explore the integration of climate resilience strategies within the agricultural sector, focusing on enhancing adaptive capacity, resource management, and stakeholder collaboration.

Sustainable Food Systems: The research will examine the integration of sustainable practices in the food systems of Zimbabwe, including aspects such as food production, distribution, consumption, waste management, and nutrition.

Integrated Thinking: The study will investigate how integrated thinking approaches can be applied to address the challenges of climate change and food security in Zimbabwe. It will explore the interconnectedness of various factors such as climate change adaptation, agricultural practices, water management, land use planning, and socio-economic considerations.

1.6 Limitations

Data Availability: The availability and accessibility of data related to climate change impacts, agricultural practices, and food systems in Zimbabwe may pose limitations. The research will rely on existing data sources and may be constrained by data gaps or inconsistencies.

Time Constraints: Conducting comprehensive research within a limited timeframe may restrict the depth and breadth of the study. The research will strive to address the core aspects of the topic while acknowledging potential limitations in terms of data collection and analysis.

Resource Constraints: The research is subject to resource constraints, such as limited funding and access to specialized equipment or technologies. These limitations may impact the scope of data collection methods or the ability to conduct extensive fieldwork.

Generalizability: The findings and recommendations of this research may be specific to the context of Zimbabwe and may not be directly applicable to other regions or countries. Caution should be exercised when extrapolating the results beyond the scope of this study.

Policy Implementation: While the research aims to propose recommendations for enhancing climate resilience and sustainable food systems, the actual implementation of these recommendations may be subject to various external factors, including political will, institutional capacity, and resource availability.

Despite these limitations, this research will contribute valuable insights into the integration of climate resilience and sustainable food systems in Zimbabwe through integrated thinking, providing a foundation for further studies and policy discussions in this field.

1.6 Outline of the thesis

The study was organized into 5 chapters. Chapter 1 which was the introduction comprised of the Background of the study, Problem statement , Objectives, Research questions, Hypothesis, Justification, Scope/delimitations and limitations of study, Outline of Thesis, and References. Chapter 2 (Literature Review) included the Introduction, Conceptual/theoretical framework/s, Summary of literature Review and References. Chapter 3 (Methodology) included Introduction, Description of study site/s, Research design, Sampling procedure, Data collection procedure, Data analysis procedure, Ethical considerations, Summary, and References. Chapter 4 (Results and Discussion) Illustrated developed research manuscripts for the study each comprising of an Abstract, Introduction, Material and Methods, Description of study area, Research Design, Sampling procedure, Data collection procedure, Data analysis procedure, Challenges encountered during data collect, Results, Discussion, Recommendations, Conclusion, and References. Lastly Chapter 5 (Summary, Conclusions and Recommendations) included

theIntroduction**,** Research summary, Conclusions, Policy implication and recommendations**,** Areas for further research, References, and Appendices.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Addressing the challenges of food security and sustainable development in Zimbabwe requires a comprehensive understanding of the complex and interconnected factors at play. This literature review provides an in-depth examination of the key concepts and frameworks relevant to the dissertation topic, "Enhancing Sustainable Food Systems in Zimbabwe Through Integrated Thinking."

The chapter begins by exploring the concept of food security, its definition, and its importance for national development. It then delves into the current state of food security in Zimbabwe, highlighting the key challenges and vulnerabilities faced by the country. The review then introduces the concept of integrated thinking, a holistic approach to problem-solving that considers the social, environmental, and economic dimensions of a system.

The chapter then delves into the integrated thinking framework, examining its core principles, such as systems-level analysis, stakeholder engagement, and the development of context-specific interventions. The review explores how this framework can be applied to the development of sustainable food systems in Zimbabwe, addressing the unique needs and circumstances of the country.

Finally, the chapter presents a comprehensive literature-based development of an integrated thinking framework for enhancing sustainable food systems in Zimbabwe. This framework integrates the key elements of food security, integrated thinking, and sustainable development, providing a roadmap for policymakers, practitioners, and researchers to address the complex challenges faced by the country's food system.

Throughout the chapter, relevant academic literature, reports, and case studies are cited to support the arguments and provide a robust foundation for the dissertation's conceptual and theoretical underpinnings.

Food Security

Food security is defined as the "situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 2001). This multidimensional concept encompasses the availability, accessibility, utilization, and stability of food supply, and is influenced by a wide range of social, economic, environmental, and political factors (Ingram, 2011; Musvoto et al., 2015).

2.2 State of Food Security in Zimbabwe

Zimbabwe has faced significant challenges in achieving food security in recent decades due to a combination of political, economic, and environmental factors (Branca et al., 2015; Mukwada & Manatsa, 2016). The country has experienced recurrent droughts, land degradation, and economic instability, which have severely impacted agricultural production and the ability of households to access and afford nutritious food (Mavedzenge et al., 2008; Rukuni et al., 2006).

According to the latest data, an estimated 5.5 million people in Zimbabwe were food insecure in 2022, with the situation particularly dire in the rural areas (ZIMVAC, 2022). The COVID-19 pandemic has further exacerbated the food security crisis, leading to job losses, reduced incomes, and disruptions in the food supply chain (Nyikahadzoi et al., 2021).

To address the food security challenges in Zimbabwe, a comprehensive and integrated approach is needed, which includes investments in sustainable agricultural practices, strengthening of social safety nets, and the development of resilient food systems that can withstand shocks and stresses (Eakin et al., 2017; Wiek et al., 2012). Adopting an integrated thinking framework that considers the interconnected social, environmental, and economic factors could play a crucial role in enhancing the long-term sustainability of Zimbabwe's food systems (Aschemann-Witzel et al., 2021; Stubbs & Higgins, 2014).

Intergrated Thinking

Integrated thinking is a holistic approach to decision-making and problem-solving that considers the interdependencies between social, environmental, and economic factors (Eccles & Krzus, 2014; Stubbs & Higgins, 2014). In the context of sustainable food systems, integrated thinking involves the recognition that the various components of the food system, such as production, processing, distribution, consumption, and waste management, are interconnected and must be addressed collectively to achieve long-term sustainability (Aschemann-Witzel et al., 2021; Ingram, 2011).

Integrated thinking encourages decision-makers to evaluate the broader implications of their actions and adopt a systems-level perspective that accounts for the complex and dynamic nature of food systems (Musvoto et al., 2015; Waddock & McIntosh, 2011). This approach promotes the integration of environmental, social, and economic considerations into the planning, implementation, and evaluation of food system interventions, ultimately contributing to the enhancement of sustainable food systems (Eakin et al., 2017; Wiek et al., 2012).

Integrated Thinking Framework

The integrated thinking framework is a conceptual model that outlines the key elements and processes involved in the adoption and implementation of integrated thinking within the context of sustainable food systems (Eccles & Krzus, 2014; Stubbs & Higgins, 2014). This framework provides a holistic and systematic approach to addressing the complex and interconnected challenges facing food systems, with the ultimate goal of enhancing their long-term sustainability (Aschemann-Witzel et al., 2021; Ingram, 2011).

The integrated thinking framework typically includes the following key components:

Systems-level perspective: Recognizing the interdependencies and feedback loops within the food system, including the social, environmental, and economic dimensions (Musvoto et al., 2015; Waddock & McIntosh, 2011).

Stakeholder engagement: Involving a diverse range of stakeholders, including producers, processors, distributors, consumers, and policymakers, in the decision-making and problem-solving processes (Eakin et al., 2017; Wiek et al., 2012).

Information integration: Collecting, analyzing, and synthesizing data from various sources to gain a comprehensive understanding of the food system and its sustainability challenges (Aschemann-Witzel et al., 2021; Ingram, 2011).

Collaborative decision-making: Facilitating joint decision-making and the co-creation of solutions among stakeholders, fostering a shared vision and a commitment to sustainable outcomes (Waddock & McIntosh, 2011; Wiek et al., 2012).

Continuous improvement: Establishing monitoring and evaluation mechanisms to track progress, learn from experience, and continuously refine and improve the food system interventions (Musvoto et al., 2015; Stubbs & Higgins, 2014).

The integrated thinking framework provides a structured approach to addressing the multifaceted challenges of sustainable food systems, enabling decision-makers to make more informed and holistic choices that balance environmental, social, and economic considerations (Eccles & Krzus, 2014; Ingram, 2011).

2.3 Sustainable Food Systems: The Zimbabwean Context

A sustainable food system (SFS) is a system that ensures food security and nourishment for all individuals while also safeguarding the economic, social, and environmental resources for future generations (Sustainable Food Systems, 2022). A sustainable food system must possess economic viability, social equity, and environmental sustainability (Sustainable Food Systems, 2022).

The United Nations' Sustainable Development Goals (SDGs) emphasize the importance of the sustainable food system. These goals aim to bring about significant improvements in agriculture and food systems by 2030, with the ultimate objectives of eradicating hunger, ensuring food security, and enhancing nutrition (United Nations, 2015). In order to achieve the Sustainable Development Goals (SDGs), it is necessary for the global food system to enhance its productivity, incorporate disadvantaged groups, adopt ecologically sustainable practices, and develop resilience. Additionally, it should be capable of ensuring access to healthy and nutritious diets for all individuals (United Nations, 2015). These challenges are intricate and pervasive, necessitating synchronized efforts at the local, national, regional, and global scales (United Nations, 2015).

Zimbabwe's food system has encountered substantial obstacles in recent years, such as food insecurity, environmental degradation, and economic instability. These problems have been worsened by various circumstances, such as climate change, political instability, and restricted availability of resources and technology.

Insufficiency of food: Zimbabwe has a lengthy record of experiencing food insecurity, with a significant portion of its population enduring persistent hunger and malnutrition. The main reasons for this are a convergence of factors, such as drought and other climate-related occurrences that have diminished agricultural output (Chikosa & Mabhaudhi, 2022), economic instability and significant poverty rates that restrict access to nourishing food (Nyikahadzoi et al., 2018), inadequate investment in agricultural infrastructure and technology (Mapiye et al., 2021), and ineffective policies and governance concerning food security (Shava & Gwekwerere, 2020).

Ecological deterioration: Zimbabwe's food system is facing significant environmental challenges, including soil degradation and erosion caused by unsustainable farming practices (Chikosa & Mabhaudhi, 2022), deforestation and loss of biodiversity resulting from the expansion of agricultural land and unsustainable logging (Shava & Gwekwerere, 2020), water scarcity and pollution due to inefficient irrigation systems and the use of harmful chemicals (Mapiye et al., 2021), and climate change, which is worsening the frequency and severity of extreme weather events (Chikosa & Mabhaudhi, 2022).

Financial volatility: Zimbabwe's food system is significantly impacted by the country's economic difficulties, such as hyperinflation and currency instability, which create challenges for farmers and consumers in terms of planning and investment (Nyikahadzoi et al., 2018). Additionally, limited access to credit and financial services hampers smallholder farmers' ability to invest in their operations (Mapiye et al., 2021), while the absence of infrastructure and marketing channels reduces farmers' capacity to bring their products to market (Shava & Gwekwerere, 2020).

Socioeconomic disparities: Researchers have identified profound socioeconomic disparities in Zimbabwe's food system, where marginalized groups including women, youth, and small-scale farmers have substantial obstacles in obtaining land, resources, and participating in decision-making processes (Mapiye et al., 2021; Nyikahadzoi et al., 2018). The existence of these

inequalities has prolonged the problem of inadequate access to food and weakened the ability of the food system to be inclusive and resilient (Nyikahadzoi et al., 2018).

Deficiencies in the structure and functioning of institutions: Recent study has identified the difficulties caused by disorganized and inefficient institutions, insufficient coordination of policies, and inadequate funding for agricultural research and extension services in Zimbabwe (Chikosa & Mabhaudhi, 2022; Shava & Gwekwerere, 2020). The presence of these institutional deficiencies has hindered the food system's capacity to adjust and address developing difficulties, resulting in less than ideal results in terms of food production, distribution, and usage (Shava & Gwekwerere, 2020).

Zimbabwe's food system encounters several obstacles, such as inadequate agricultural output, restricted market accessibility, and environmental deterioration. This chapter provides an overview of the literature on sustainable food systems in Zimbabwe, focusing on the main concerns, possibilities, and strategies for improving the sustainability of the country's food system.

There are several significant difficulties that negatively impact the long-term viability of Zimbabwe's food system:

Insufficient agricultural output: Inadequate productivity and ineffective agricultural methods, worsened by restricted availability of resources, technology, and support services, have resulted in unchanging or decreasing agricultural output, posing a risk to the overall food provision (Mapiye et al., 2021; Nyikahadzoi et al., 2018).

Restricted market entry: Small-scale farmers in Zimbabwe encounter obstacles when trying to enter profitable markets, such as inadequate infrastructure, insufficient market information, and the overwhelming presence of intermediaries. These factors restrict their capacity to obtain a greater portion of the value chain (Shava & Gwekwerere, 2020; Siziba et al., 2020).

Ecological deterioration: The negative consequences of unsustainable agricultural methods, such as land degradation, water shortages, and biodiversity loss, are given significant importance due to their detrimental effects on the long-term sustainability of Zimbabwe's food system (Chikosa & Mabhaudhi, 2022; Mapiye et al., 2021).

Susceptibility to Climate Change: Chikosa & Mabhaudhi (2022) state that Zimbabwe's food system is extremely susceptible to the effects of climate change, such as more frequent and severe droughts, floods, and unpredictable weather patterns. These changes pose a threat to food production and the livelihoods of smallholder farmers (Chikosa & Mabhaudhi, 2022; Shava & Gwekwerere, 2020).

2.4 Potential for Sustainable Food Systems in Zimbabwe

Agroecological approaches

Experts have recommended the implementation of agroecological methods, such as diversified cropping systems, integrated pest management, and conservation agriculture. These practices have the potential to increase productivity, promote environmental sustainability, and enhance the ability of small-scale farming systems to withstand challenges (Chikosa & Mabhaudhi, 2022; Mapiye et al., 2021).

Inclusive value chain development is crucial for empowering smallholder farmers, especially women and marginalized groups, to access markets, enhance their bargaining power, and obtain a greater portion of the generated value. Various studies have highlighted the significance of this approach (Nyikahadzoi et al., 2018; Siziba et al., 2020).

Approaches that integrate many aspects of the food system

According to Shava & Gwekwerere (2020), adopting an integrated systems-based approach to transforming Zimbabwe's food system can effectively tackle the intricate and diverse challenges it faces. This approach takes into account the interdependencies between production, distribution, consumption, and waste management (Chikosa & Mabhaudhi, 2022; Shava & Gwekwerere, 2020).

Utilizing Indigenous Knowledge

The integration of traditional and indigenous knowledge, practices, and innovations has the capacity to enhance the relevance, acceptability, and long-term viability of sustainable food systems (Shava & Gwekwerere, 2020; Siziba et al., 2020).

The potential of integrated thinking as a solution

Integrated thinking provides a hopeful method for tackling the intricate issues that Zimbabwe's food sector is currently confronting. This approach involves recognizing the interconnected nature of the different parts of the food system, such as production, distribution, consumption, and waste management (Chikosa & Mabhaudhi, 2022). It addresses food system challenges by considering the environmental, social, and economic implications of potential solutions from a comprehensive and interdisciplinary perspective (Nyikahadzoi et al., 2018). It promotes collaboration between government, the private sector, and civil society to develop and implement integrated solutions (Mapiye et al., 2021). Additionally, it emphasizes the importance of continuously monitoring and evaluating interventions to effectively address evolving challenges (Shava & Gwekwerere, 2020).

Zimbabwe can enhance the development of sustainable and resilient food systems by implementing an integrated thinking approach that tackles the underlying causes of the difficulties faced by the country. This may involve various actions, such as: investing in sustainable agricultural practices, such as agroecology and regenerative agriculture (Chikosa & Mabhaudhi, 2022); implementing policies and programs that support small-scale farmers and promote food sovereignty (Nyikahadzoi et al., 2018); developing infrastructure and supply chains that reduce food waste and improve food distribution (Mapiye et al., 2021); encouraging diversification and crop rotation to enhance ecosystem health and resilience (Shava & Gwekwerere, 2020); and fostering public-private partnerships to drive innovation and technology adoption in the food system (Mapiye et al., 2021).

Research has emphasized the capacity of integrated thinking to:

- Encourage the adoption of sustainable agricultural practices by incorporating regenerative farming technologies, agroecological concepts, and traditional knowledge to improve the environmental sustainability of food production (Chikosa & Mabhaudhi, 2022).
- Promote economic diversification and resilience by establishing interconnected value chains that generate new sources of income, decrease dependence on imports, and strengthen the overall economic stability of the food system (Shava & Gwekwerere, 2020).

- Promote greater social integration and fairness: Enable excluded demographics, such as women and smallholder farmers, to actively engage in decision-making processes and reap the rewards of the food system's success (Mapiye et al., 2021; Nyikahadzoi et al., 2018).
- Enhance the ability and organization of institutions: Enhance the consistency of policies, promote coordination between institutions, and increase investment in research and extension services to facilitate a food system that is more adaptable and flexible (Nyikahadzoi et al., 2018).

By embracing an integrated thinking approach, Zimbabwe can effectively tackle the interconnected difficulties in its food system and unleash the potential for sustainable development, higher food security, and increased resilience on a national scale, as indicated by existing research.

2.5 The Significance of Sustainable Food Systems for National Development and Food Security in Zimbabwe

Enhancing economic growth and mitigating poverty

Sustainable food systems in Zimbabwe can contribute to economic development through various means. These include enhancing agricultural productivity and incomes for smallholder farmers (Mapiye et al., 2021), generating employment opportunities and fostering entrepreneurship throughout the food value chain (Nyikahadzoi et al., 2018), decreasing the country's dependence on food imports and enhancing trade balances (Shava & Gwekwerere, 2020), and generating revenue by producing and exporting high-value agricultural products (Chikosa & Mabhaudhi, 2022).

Ecological durability

Promoting regenerative agricultural practices that improve soil health and biodiversity, reducing the use of harmful chemicals and water-intensive irrigation methods, and protecting critical natural resources such as forests and water sources can contribute to environmental sustainability in Zimbabwe (Chikosa & Mabhaudhi, 2022; Mapiye et al., 2021; Shava & Gwekwerere, 2020).

Societal progress

Sustainable food systems in Zimbabwe can contribute to social development through various means. Firstly, they can enhance food and nutrition security for vulnerable populations, as demonstrated by Nyikahadzoi et al. (2018). Secondly, they can empower smallholder farmers, particularly women and marginalized groups, by improving their access to resources and decision-making, as highlighted by Mapiye et al. (2021). Lastly, sustainable food systems can promote community-based approaches to food production and distribution, which not only strengthen social cohesion but also enhance resilience, as discussed by Shava and Gwekwerere (2020).

Social inclusion and equity refer to the principles and practices aimed at ensuring equal opportunities and fair treatment for all individuals in society, regardless of their background, characteristics, or circumstances.

Sustainable food systems may effectively tackle socioeconomic disparities and empower underrepresented demographics, including women, youth, and small-scale farmers, by enhancing their access to resources, markets, and decision-making mechanisms (Mapiye et al., 2021; Nyikahadzoi et al., 2018). This can result in development outcomes that are more inclusive and equal.

Ability to withstand and recover from unexpected events and pressures

Research indicates that implementing sustainable food systems, which involve diverse production methods, integrated value chains, and the ability to adapt, can strengthen the resilience of communities and the overall national economy against different shocks and pressures, such as climate change, economic downturns, and political instability (Chikosa & Mabhaudhi, 2022; Shava & Gwekwerere, 2020).

2.6 The significance of sustainable food systems in improving food security

Establishing sustainable food systems is crucial for enhancing food security in Zimbabwe. Sustainable food systems can contribute to the enhancement of nutritious and culturally suitable food by improving its availability, accessibility, and consumption.

To improve food availability, the use of sustainable agricultural practices such as agroecology and integrated farming can lead to higher crop yields and a wider variety of food produced (Chikosa & Mabhaudhi, 2022).

Enhance the availability and ease of access to food: Sustainable food systems can increase food accessibility by bolstering small-scale farmers, enhancing transportation and storage infrastructure, and fostering fair distribution channels (Mapiye et al., 2021).

Promote Optimal Food Utilization: Sustainable food systems have the potential to enhance the nutritional value and safety of food. They also play a vital role in promoting dietary diversity, which is essential for tackling malnutrition and ensuring that individuals can fully benefit from the food they consume (Nyikahadzoi et al., 2018).

Enhancing Resilience to Shocks: Implementing sustainable food systems that are specifically built to withstand the impacts of climate change, economic fluctuations, and other disturbances can effectively protect food security in the presence of these problems (Shava & Gwekwerere, 2020).

2.7 Development of an Integrated Thinking Framework for Enhancing Sustainable Food Systems in Zimbabwe

Addressing the complex and interconnected challenges of food security in Zimbabwe requires a holistic, systems-based approach known as integrated thinking (Aschemann-Witzel et al., 2021; Stubbs & Higgins, 2014). Integrated thinking involves considering the social, environmental, and economic dimensions of food systems, and how they interact and impact one another (Wiek et al., 2011; Waddock & Mcintosh, 2011).

A key aspect of the integrated thinking framework is the consideration of multiple stakeholders and their diverse perspectives, needs, and responsibilities (Dyllick & Muff, 2016; Whiteman et al., 2013). This includes farmers, policymakers, researchers, civil society organizations, and consumers, among others. By engaging these stakeholders and fostering collaboration, the framework can help to align their interests and priorities towards a shared vision of sustainable food systems (Bron et al., 2019; Yakovleva et al., 2012).

The integrated thinking framework also emphasizes the importance of systems-level analysis, where the interconnections and feedback loops within the food system are thoroughly examined (Eakin et al., 2017; Ingram, 2011). This involves mapping the key components of the system, such as agricultural production, distribution, consumption, and waste management, and understanding how changes in one area can ripple through the entire system (Whiteman et al., 2013; Vermeulen et al., 2012).

Based on this systems-level analysis, the integrated thinking framework can then be used to develop holistic, context-specific interventions that address the root causes of food insecurity in Zimbabwe (Branca et al., 2015; Mukwada & Manatsa, 2016). These interventions may include investments in sustainable agricultural practices, strengthening of social safety nets, improving infrastructure, and fostering innovation and entrepreneurship within the food system (Wiek et al., 2011; Nyikahadzoi et al., 2021).

By adopting an integrated thinking approach, Zimbabwe can enhance the long-term sustainability of its food systems, increase resilience to shocks and stresses, and ensure that all citizens have access to safe, nutritious, and culturally appropriate food (Aschemann-Witzel et al., 2021; Stubbs & Higgins, 2014).

2.8 Summary

The literature review has identified the intricate difficulties that Zimbabwe's food system is confronted with, along with the potential for improving its sustainability. To tackle the problems of low agricultural productivity, limited market access, environmental degradation, and vulnerability to climate change, a comprehensive and integrated approach is needed. This approach should be based on agroecological principles, inclusive development of value chains, and the incorporation of traditional and indigenous knowledge. Zimbabwe has the opportunity to achieve sustainable development, enhance food security, and increase resilience to future shocks and pressures by investing in the reform of its food system.

Zimbabwe's food system encounters substantial obstacles, nevertheless, the possibility of integrated thinking presents a hopeful direction for progress. Zimbabwe can enhance the sustainability and resilience of its food systems by embracing a comprehensive understanding of the interlinked concerns, employing holistic problem-solving approaches, fostering collaborative governance, and implementing adaptive management strategies. Implementing this strategy will necessitate a long-term dedication from all parties involved, but the potential advantages for Zimbabwe's food security, environmental well-being, and economic success justify the effort.

The sustainable food systems integrated framework offers a thorough and multifaceted strategy for tackling the intricate issues that food systems encounter on a global scale. To develop more

effective and sustainable solutions for food system transformation, policymakers and practitioners should adopt a systems view, take into account different dimensions of sustainability, involve diverse stakeholders, and promote integrated and agroecological methods.

The literature research has identified the intricate and interrelated obstacles that Zimbabwe's food system is confronted with, such as environmental deterioration, economic instability, social inequalities, and institutional deficiencies. The assessment has also examined the possibilities of integrated thinking as a comprehensive approach to tackling these difficulties and shifting the food system towards sustainability, resilience, and inclusion. Zimbabwe may achieve economic growth, environmental sustainability, and social equality by adopting integrated thinking in the development of its food systems. This would ultimately contribute to the general prosperity and development of the country.

Establishing sustainable food systems in Zimbabwe is crucial for promoting national progress and improving food security. Sustainable food systems can enhance Zimbabwe's overall development and well-being by fostering economic growth, environmental sustainability, and social development. Furthermore, the implementation of sustainable food systems has the potential to enhance the presence, reach, and effective usage of nourishing food, thereby effectively tackling the persistent issue of food insecurity in the nation. Zimbabwe should prioritize investing in sustainable food systems to ensure a prosperous and food-secure future.

The literature study has emphasized the crucial importance of sustainable food systems in promoting national progress and guaranteeing enduring food security in Zimbabwe. Sustainable food systems can enhance economic growth, environmental sustainability, social inclusion, and resilience, all of which are vital for accomplishing broader development objectives and enhancing the well-being of the population. Zimbabwe can tap into the immense potential of its agricultural sector and food system by giving top priority to the advancement of sustainable food systems. This will not only contribute to national prosperity but also help attain food security.

CHAPTER 3

METHODOLOGY

3.0 Introduction

This chapter presents the methodology employed in the study to assess the adoption of integrated thinking in Zimbabwe's food system, with a specific focus on Ward 11 (Masoka) area in the Mbire District. The chapter outlines the research design, data collection methods, data analysis techniques, and the integration of findings.

3.1 Description of Study Site

The study was conducted in Ward 11 (Masoka) area, Mbire District, Zimbabwe. This specific location was chosen as the study site for several reasons:

Importance of the food system: Ward 11 (Masoka) is an integral part of Mbire District, a key agricultural region in Zimbabwe, contributing significantly to the country's food production and food security (Mujuru et al., 2021). The area is known for its diverse crop and livestock production, as well as its involvement in food processing and marketing activities.

Prevalence of food system challenges: Ward 11 (Masoka) has faced various challenges in its food system, including low agricultural productivity, limited access to markets, and vulnerability to climate-related shocks (Zambuko & Ndlovu, 2017). These challenges have impacted the livelihoods and food security of the local communities.

Potential for integrated thinking: The area has shown some initiatives and progress in adopting integrated approaches to address food system challenges, such as the integration of agroforestry practices and the promotion of crop-livestock integration (Gukurume, 2019). However, the extent and effectiveness of these efforts are not well documented.

Accessibility and research partnerships: The researcher has established strong partnerships with local organizations, extension services, and research institutions in Mbire District, facilitating access to the study site and ensuring effective data collection and stakeholder engagement (Makoni et al., 2020). This access is crucial for conducting a comprehensive study in Ward 11 (Masoka).

3.1.1 Specific Characteristics of Ward 11 (Masoka)

Ward 11 (Masoka) is situated in the Mbire District, which is part of the Mashonaland Central province of Zimbabwe. The region encompasses a distinct section of the district, comprising around 378 households according to the World Food Programme's (2023) estimate.

Ward 11 (Masoka) experiences a sub-tropical continental climate, which is marked by a clear distinction between a wet season from November to April and a dry season from May to October (Chikodzi et al., 2013). The region has an average annual precipitation of approximately 650 millimeters, which exhibits notable fluctuations attributed to the impacts of climate change (Mujuru et al., 2021).

In Ward 11 (Masoka), the primary economic activities are around agriculture, including the cultivation of crops such as maize, sorghum, millet, and groundnuts, as well as the keeping of animals including cattle, goats, and chickens (Zambuko & Ndlovu, 2017). The region also possesses a flourishing informal food processing and trading industry, which encompasses small-scale enterprises and community-based groups (Gukurume, 2019).

By concentrating on Ward 11 (Masoka), the research can offer valuable knowledge about the particular difficulties and possibilities associated with integrated thinking in food systems within a well-defined and controllable region. This will aid in the creation of focused interventions to improve sustainable food systems in the area.

3.2 Research Design

The study will employ a descriptive research approach for its research design. Descriptive research seeks to offer a precise and thorough depiction of the present condition or attributes of a certain occurrence, specifically, the implementation of integrated thinking in Zimbabwe's food systems in Ward 11 (Masoka) area, Mbire District. The research design will entail the collection and analysis of data to provide a comprehensive understanding of the extent to which integrated thinking is applied, as well as the problems and opportunities associated with developing integrated thinking. Additionally, the research will involve the creation of an integrated framework.

3.2.1 Justification of Design Choice

The selection of a descriptive research design is suitable for this study because it aims to offer a comprehensive depiction and examination of the present condition of integrated thinking in Zimbabwe's food systems. This design facilitates the gathering of both qualitative and quantitative data, enabling a thorough evaluation of the implementation of integrated thinking, identification of obstacles and possibilities, and the creation of a pragmatic framework.

Descriptive research enables a methodical and organized method of gathering data, guaranteeing the accuracy and genuineness of the results. By utilizing this methodology, the study will be able to comprehensively capture an all-encompassing perspective of the research topic within the unique context of Ward 11 (Masoka) area, Mbire District. Utilizing a descriptive research design will enable the gathering of pertinent data, establish a strong basis for analysis, and aid in accomplishing the research goals.

To achieve the first two aims, a descriptive study design was utilized. This methodology entailed gathering and examining both quantitative and qualitative data in order to depict the present condition of integrated thinking within Zimbabwe's food system (Creswell & Creswell, 2017).

The survey questionnaire was used to obtain quantitative data from a representative sample of stakeholders involved in Zimbabwe's food system, such as farmers, food processors, distributors, and policymakers. The questionnaire was created with the purpose of collecting data on the extent of knowledge, comprehension, and implementation of integrated thinking methods in their specific responsibilities and tasks (Saunders et al., 2019).

The qualitative data was gathered via comprehensive interviews with important informants, including government officials, civil society members, and academic specialists. The interviews examined the difficulties, possibilities, and beliefs related to the advancement of integrated thinking in Zimbabwe's food system (Braun & Clarke, 2006).

Analyzed utilizing descriptive statistics, such as frequencies, means, and standard deviations, the quantitative data was assessed to determine the amount of integrated thinking application. Thematic analysis was employed to study the qualitative data, aiming to discover significant themes, patterns, and insights that were not captured by the quantitative survey (Yin, 2018).

The third objective was achieved by utilizing a conceptual research design to provide a comprehensive framework that facilitates integrated thinking in shared places. This methodology entailed a thorough examination of pertinent literature, encompassing scholarly articles, policy papers, and exemplary approaches from different settings (Jabareen, 2009). The framework was created by combining the quantitative and qualitative data, along with ideas from the literature study, to offer a comprehensive and integrated approach to improving sustainable food systems in Zimbabwe's communal areas.

The framework was developed through an iterative process that included stakeholder meetings, expert reviews, and improvements. This process aimed to ensure the framework's relevance, practicability, and alignment with the specific context of Zimbabwe's communal food systems (Yin, 2018).

The research design for this study will use a descriptive technique, led by a theoretical framework, to thoroughly investigate the adoption of integrated thinking in Zimbabwe's food systems within Ward 11 (Masoka) area, Mbire District. The selection of this design is justified by the requirement for a methodical and thorough evaluation of the study subject, guaranteeing the accuracy and genuineness of the results. The primary aim of the study was to evaluate the implementation of integrated thinking in Zimbabwe's food system.

3.3 Sampling Procedure

The research was carried out in the Mbire district of Zimbabwe, specifically chosen as the study site due to its depiction of the country's communal food systems (Etikan et al., 2016). Mbire district is situated in the Mashonaland Central province, renowned for its agricultural capacity

and the prevalence of communal farming methods. The selection of this neighborhood was based on its representation of Zimbabwe's communal food systems, making it a suitable location for studying the implementation of integrated thinking approaches.

To evaluate the extent of integrated thinking and the obstacles and possibilities in advancing it, a multi-stage sampling method was used for the initial two goals.

A preliminary phase entailed the selection of a representative sample of stakeholders engaged in Zimbabwe's food system. This encompassed individuals involved in agriculture, food processing, distribution, and policy-making. The sampling frame was acquired from the Ministry of Lands, Agriculture, Water, Climate, and Rural Resettlement, as well as from pertinent industry associations and local authorities (Saunders et al., 2019).

For the second stage, a method of random sampling was employed to choose the participants for the survey questionnaire. By ensuring that each stakeholder had an equal opportunity to be included in the study, the representativeness of the sample was improved (Creswell & Creswell, 2017).

The sample size was determined using the Yamane (1967) formula, which considers the total population size and the desired level of precision. The formula is as follows:

n = N / (1 + N(e)^2)

Where:

n = sample size

N = total population size

e = the desired level of precision (in this case, 5% or 0.05)

To calculate the sample size using the Yamane formula with a total population size (N) of 378 and a desired level of precision (e) of 0.05, you can substitute the values into the formula and solve for n:

n = N / (1 + N(e)^2)

n = 378 / (1 + 378(0.05) ^2)

First, calculate (0.05) ^2:

(0.05) ^2 = 0.0025

Substitute the values back into the formula:

n = 378 / (1 + 378(0.0025))

n = 378 / (1 + 0.945)

n = 378 / 1.945

n ≈ 194.3

Therefore, the calculated sample size (n) using the Yamane formula is approximately 194.3. Since the sample size should be a whole number, you can round up to the nearest whole number. Thus, the recommended sample size would be **194**.

The total population size was estimated based on the available data from the relevant government agencies and industry associations. The calculated sample size was then proportionally allocated to the different stakeholder groups to ensure a balanced representation (Etikan et al., 2016).

For the in-depth interviews, a purposive sampling technique was used to select key informants based on their expertise, experience, and involvement in Zimbabwe's food system. This allowed the researchers to gather rich, in-depth information from individuals who could provide valuable insights into the challenges and opportunities related to the promotion of integrated thinking (Etikan et al., 2016).

3.4 Data Collection Procedure

The researcher utilized a descriptive methodology to gather data for the three objectives of the study. This methodology included both quantitative and qualitative methods for collecting and analyzing data.

To evaluate the extent to which integrated thinking is applied in Zimbabwe's food systems in Mbire district, the researcher employed a structured survey questionnaire and conducted in-depth interviews with key players. The questionnaire was created to collect data on the stakeholders' knowledge, comprehension, and application of integrated thinking methods in their specific responsibilities and activities within the food system. The in-depth interviews and focus group discussions yielded qualitative data that offered a comprehensive insight into the present state of integrated thinking implementation, the factors that affect its adoption, and the obstacles and possibilities for improving integrated thinking in the local food system.

The study's second purpose was to evaluate the obstacles and potential for developing integrated thinking in the food systems of Zimbabwe's Mbire district. The researcher employed a methodical survey questionnaire and conducted in-depth interviews with a wide array of stakeholders involved in the food system of the Mbire district. The survey questionnaire sought to determine the perceived obstacles and facilitators to the implementation of integrated thinking in food production, processing, and distribution activities. The in-depth interviews and focus group discussions yielded qualitative data that offered a comprehensive insight into the perceived obstacles and prospects for fostering integrated thinking. Additionally, the data shed light on the potential methods and interventions that could be employed to bolster its acceptance.

In order to accomplish the third objective, which entailed creating a comprehensive framework to facilitate integrated thinking in communal areas within Zimbabwe's food systems, the researcher utilized the data collected during the pursuit of the first and second objectives. The framework development process comprised the subsequent stages:

- The researcher collaborated with the participants to determine the crucial components of integrated thinking that are necessary for improving the sustainability of the local food system. This involved comprehending the interrelationships among social, economic, and environmental concerns, as well as recognizing the significance of holistic thinking and cooperation among stakeholders.
- The researcher, in collaboration with stakeholders, developed a framework for integrated thinking in Mbire district's food system. This framework was based on the identified important features. This entailed establishing the fundamental elements of the framework and the connections between them.

- The draft integrated thinking framework was offered to stakeholders for comments and development in order to validate and improve it. The researcher conducted conversations to ensure that the framework effectively addressed the specific local context, issues, and opportunities within the food system of the Mbire district.
- The development of the final framework was completed by incorporating the feedback and input provided by the stakeholders. The ultimate framework was created to be flexible and relevant to the distinct attributes and requirements of the Mbire district food system.

Overall, the researcher employed a combination of qualitative and quantitative methodologies to gather data for the three specific goals of the study. The data obtained from the survey questionnaire and in-depth interviews yielded a thorough comprehension of the present extent to which integrated thinking is being applied, the obstacles and possibilities for fostering integrated thinking, and the essential components of an integrated thinking framework. The ultimate framework was developed to be flexible and relevant to the distinct attributes and requirements of the Mbire district food system.

3.5 Data Analysis Procedure

The researcher utilized a range of analytical instruments to tackle the three objectives of the investigation. Quantitative data gathered from the survey questionnaire for Objectives 1 and 2 were analyzed using descriptive statistics. This entailed computing measures of central tendency and dispersion to depict the extent of integrated thinking application among smallholder farmers, as well as the perceived obstacles and prospects for fostering integrated thinking in the Mbire district food system.

Thematic analysis was performed on the qualitative data obtained from in-depth interviews and focus group discussions. The purpose was to identify significant themes and patterns pertaining to the implementation of integrated thinking, the factors that influence its adoption, and the obstacles and possibilities for improving integrated thinking in the food system of the Mbire district.

To thoroughly evaluate the existing implementation of integrated thinking in the Mbire district food system, the researcher used both quantitative and qualitative data. The process included using triangulation to determine both convergent and divergent findings, as well as to develop a

more comprehensive understanding of the precise contextual elements that influence the adoption of integrated thinking.

Objective 1 involved using descriptive statistics to gain an understanding of the extent to which smallholder farmers apply integrated thinking. Additionally, thematic analysis was used to explore the factors that influence the adoption of integrated thinking, as well as the problems and opportunities within the local food system. The incorporation of these discoveries facilitated a subtler comprehension of the present condition of integrated thinking in the Mbire district food system.

Objective 2 involved using descriptive statistics to identify the perceived barriers and enablers to the adoption of integrated thinking among different stakeholders. Additionally, thematic analysis was conducted to gain a more comprehensive understanding of the challenges and opportunities for promoting integrated thinking, as well as the strategies for improving its adoption.

The integrated framework that promotes integrated thinking in communal areas within Zimbabwe's food systems was established in relation to Objective 3, using the findings obtained from Objectives 1 and 2. The researcher, in partnership with stakeholders, established the fundamental components of integrated thinking, developed the framework, and improved it through talks and feedback sessions. The ultimate framework was created to be flexible and relevant to the distinct features and requirements of the Mbire district food system.

In summary, the researcher employed descriptive statistics and thematic analysis to examine both the quantitative and qualitative data gathered for the three purposes of the study. The researcher synthesized the findings to offer a thorough evaluation of the extent to which integrated thinking was applied, the obstacles and possibilities for promoting integrated thinking, and the creation of a framework that facilitates integrated thinking in the Mbire district food system.

3.6 Ethical Considerations

According to the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979), the study's ethical considerations were based on the values of respect for persons, beneficence, and fairness.

All research proposals must first receive ethical approval from the relevant boards before they can begin (Creswell & Creswell, 2017). At Bindura University of Science Education (BUSE),

the boards examined the proposed study. To guarantee that the research was carried out ethically, the IRB examined the study's design, data gathering methods, and possible dangers and advantages to the subjects.

Prior to their participation in the trial, all individuals were asked to provide their informed permission. The participants were given a comprehensive information sheet that outlined the study's goals, the fact that their participation was entirely voluntary, the importance of keeping their answers confidential, and their unrestricted right to withdraw from the study at any point (Saunders et al., 2019).

In addition to the information sheet, participants were requested to sign a consent form that restated the information previously given. The participants were provided with a copy of the signed consent forms to keep for their records, and the forms were securely archived (Yin, 2018).

Researchers took precautions to protect the anonymity of participants' responses while they were being collected. All personally identifying information was scrubbed from the interview transcripts and survey forms. The information was kept in a secure database that could only be accessed by the researcher. Itkan et al. (2016) was cited.

When conducting interviews with the main informants, the researchers also kept in mind the possibility of power imbalances and socio-cultural sensitivities. According to Braun and Clarke (2006), the researchers made sure that the participants felt comfortable and empowered to offer their thoughts by adopting an approach that was culturally appropriate and polite.

The participants' privacy and confidentiality will be safeguarded throughout the dissemination of the study's findings. No personally identifying information will be included in any presentations or publications that come out of the project (Creswell & Creswell, 2017).

In sum, the study's ethical considerations were critical in maintaining the participants' rights and safety while also maintaining the utmost levels of academic honesty and social responsibility throughout the research process.

3.7 Chapter Summary

This chapter presented the methodology employed to assess the adoption of integrated thinking in Zimbabwe's food system, with a specific focus on Ward 11 (Masoka) area in the Mbire District. The mixed-methods approach allowed for a comprehensive understanding of the

research problem, combining quantitative and qualitative data to provide insights into the level of application, challenges and opportunities, and the development of an integrated framework. The next chapter will present the findings and discussion derived from the data analysis.

CHAPTER 4

RESULTS AND DISCUSSION

4.0 Introduction

This chapter presents the findings of the study on enhancing sustainable food systems in Zimbabwe through integrated thinking, with a focus on Ward 11 (Masoka) area, Mbire District. The data collected through the research questionnaire and in-depth interviews are analyzed and discussed in detail to address the three objectives of the study.

4.1 Questionnaire Response Rate

In our study, we used the response rate as the proportion of people who took part in our research out of the total number of people who were asked to do so, following Mark and Taylor (2022) as our definition. In order to determine response rates, several models have been created, each accounting for different eligibility and participation requirements.

The response rate for the research study was 78.9%, with 153 completed and returned surveys out of 194. To do a comprehensive data analysis, it is typically considered sufficient to have a

response rate of 70% or greater (Saunders, 2017). The 153 people who filled out the survey are a good cross-section of the group we were trying to reach. With a response rate of 78.9%, we were able to get a good feel for the participants' opinions and levels of involvement. The surveys were disseminated in three ways: in person, by mail, and via an online platform.

You can find the study's response rate in Table 4.1. Here's a quick rundown of our survey's distribution and response rates:

Table 4.1: Response rate

Classification	Frequency	Percentage (%)
Administered	194	100.0
Returned	153	78.9

[Primary data, 2024]

4.2 Demographic Information

Before presenting the results of the questionnaire, let us first discuss the demographic information of the participants. A total of 153 respondents from Ward 11 (Masoka) area, Mbire District, Zimbabwe, took part in the study. The demographic information of the participants is discussed in this section.

4.2.1 Gender

The study in Figure 4.1 conducted in Ward 11 (Masoka) area of Mbire District, Zimbabwe collected responses from a total of 153 participants, consisting of 82 males (53.6%) and 71 females (46.4%). The gender distribution of the respondents indicates a relatively equal representation between males and females, although males have a slightly higher percentage.

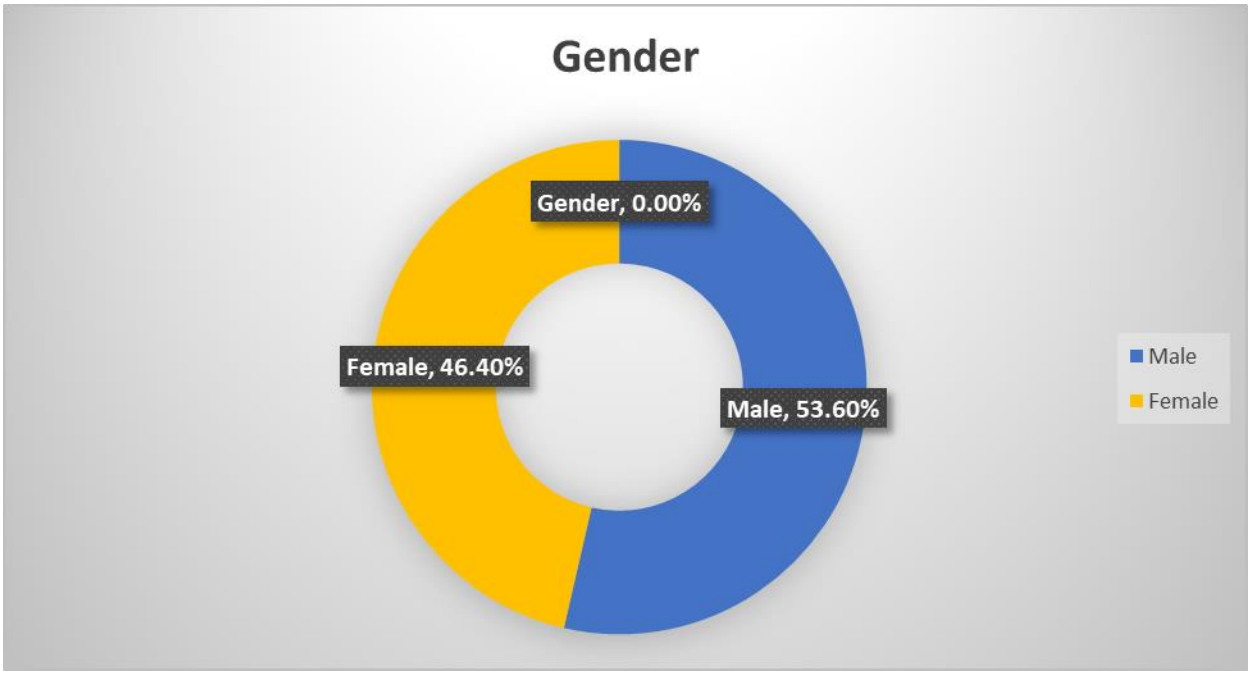

Figure 4.1: Respondents Gender

[Source: Primary data, 2024]

The study has an almost equal distribution of male and female respondents, with a slight majority being male (53.6%). This gender distribution is consistent with previous studies on food systems in Zimbabwe, which have reported similar gender ratios in their samples (Akpulu et al., 2018; Mango et al., 2020). The gender balance in this study ensures that the perspectives and experiences of both men and women are adequately represented in the research.

Literature suggests that gender is a crucial factor in understanding and enhancing sustainable food systems (Kerr et al., 2015; Pretty & Smith, 2004). Women often play a significant role in food production, processing, and distribution, particularly in rural areas (FAO, 2011). However, they often face constraints in accessing resources, services, and decision-making processes (World Bank, 2014).

4.2.2 Age

The age distribution of the respondents in the study conducted in Ward 11 (Masoka) area, Mbire District, Zimbabwe, is shown in Figure 4.2.

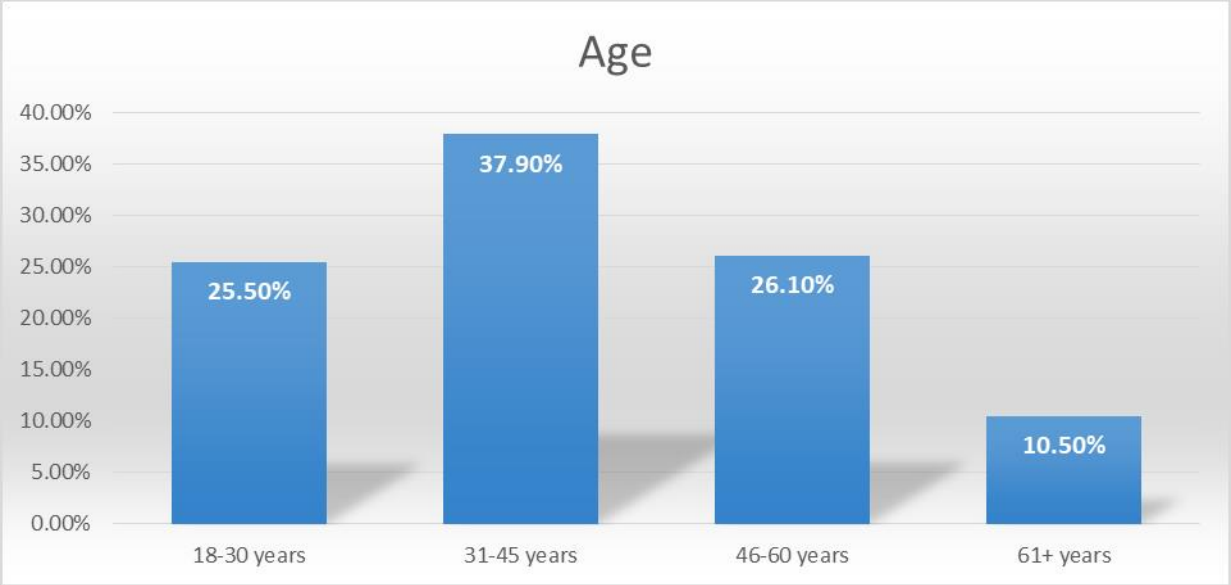

Figure 4.2: Respondents Age

[Source: Primary data, 2024]

This age distribution suggests that the study had a relatively diverse representation of participants across different age groups, with the majority falling within the 31-45 years' age range 58 (37.9%).

The literature on sustainable food systems and integrated thinking highlights the importance of engaging a wide range of stakeholders, including younger and older generations, to capture diverse perspectives and experiences (Jayne et al., 2014; Whitfield et al., 2018). This is because different age groups may have varying levels of knowledge, skills, and decision-making power within the food system.

Younger respondents (18-30 years) with 39 respondents (25.5%) may provide valuable insights into emerging trends, technological advancements, and innovative approaches to sustainable agriculture and food production. They can offer fresh perspectives and be instrumental in shaping the long-term future of the food system (Beddington et al., 2012). However, they may also face challenges in accessing resources, land, and decision-making power, which can limit their ability to fully participate in food system transformation (Malapit et al., 2020).

The middle-aged respondents (31-45 years) with 58 respondents (37.9%) likely constitute the core working population actively engaged in agricultural activities and food system decision-

making. This age group may have accumulated substantial practical experience and knowledge, which can contribute to the development of integrated and sustainable food system strategies (Payne et al., 2016).

Older respondents [(46-60 years) with 40 respondents (26.1%) and 61+ years with 16 respondents (10.5%)] can provide valuable historical and traditional knowledge about local food systems, which can inform the design of context-specific interventions (Thornton & Herrero, 2014). They may also have established networks and decision-making power within the community, which can facilitate the implementation and adoption of sustainable food system practices (Malapit et al., 2020).

4.2.3 Education Level

The respondents' level of education in Figure 4.3 of this study shows that the majority of them have completed secondary education, accounting for 43.8% of the total. This is followed by primary education, which represents 20.3% of the respondents, and tertiary education, which makes up 29.4% of the total. A small percentage of respondents (6.5%) have no formal education.

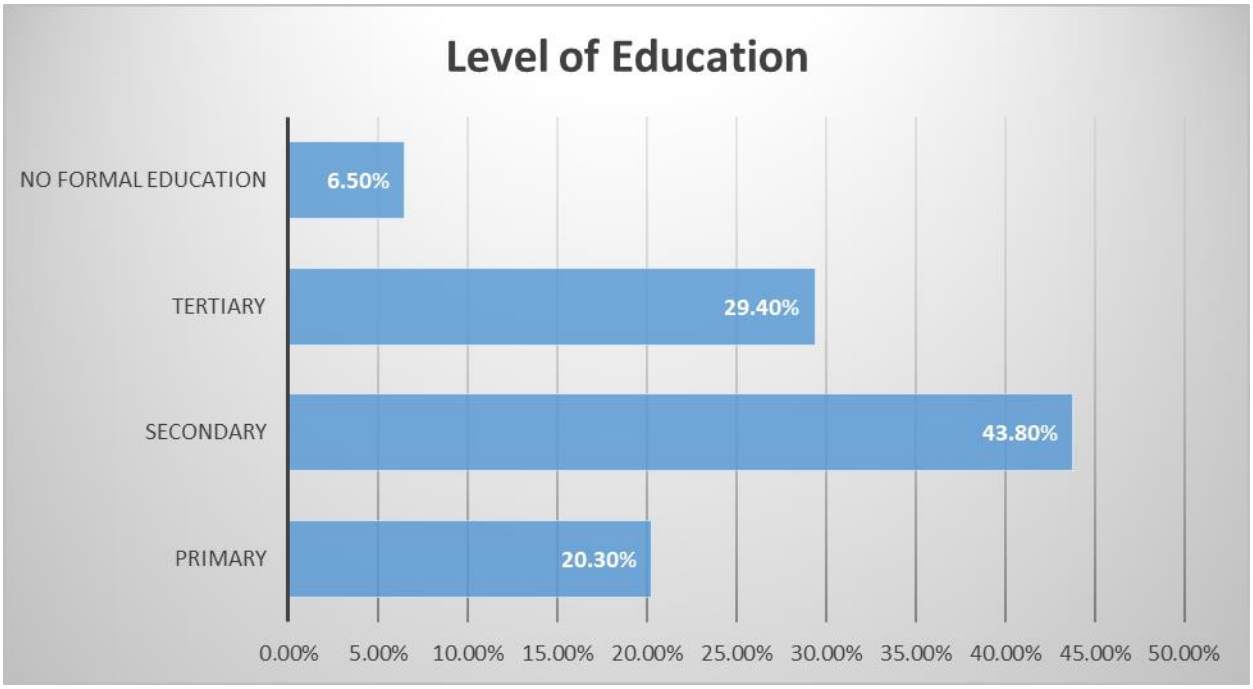

Figure 4.3: Academic Qualifications

[Source: Primary data, 2024]

Research suggests that education level can significantly impact agricultural practices and food security. A study published in the Journal of Agricultural Education and Extension found that farmers with higher levels of education are more likely to adopt sustainable farming practices and have better access to information and resources (Mdemu et al., 2019). Similarly, a study published in the Journal of Rural Studies found that educated farmers are more likely to engage in diversified farming practices, which can lead to more resilient and sustainable food systems (Mango et al., 2019).

The higher representation of respondents with secondary education (43.8%) in this study could be indicative of the importance of education in the agricultural sector. However, it is important to note that a significant proportion of respondents (29.4%) still have not completed tertiary education. This could be due to a variety of factors, including limited access to education and financial constraints.

Moreover, the literature suggests that addressing gender inequalities in education can help promote inclusive and sustainable development. A study published in the Journal of International Women's Studies found that women's education is a key factor in reducing poverty and

promoting food security (Kabeer, 2015). Therefore, addressing gender inequalities in education and promoting women's empowerment in the agricultural sector can help create more sustainable and resilient food systems.

Overall, the respondents' level of education in this study reveals important insights into the role of education in the agricultural sector in Zimbabwe. While there is a higher representation of respondents with secondary education, a significant proportion of respondents still have not completed tertiary education. Addressing gender inequalities in education and promoting women's empowerment can help create sustainable and resilient food systems.

4.2.4 Occupation

The respondents' occupation breakdown in Figure 4.4 shows that the majority (55.6%) are farmers, followed by food processors (15.0%), food distributors (11.8%), policymakers (7.8%), and other occupations (9.8%). This distribution provides valuable insights into the key stakeholders involved in the local food system in the Ward 11 (Masoka) area, Mbire District, Zimbabwe.

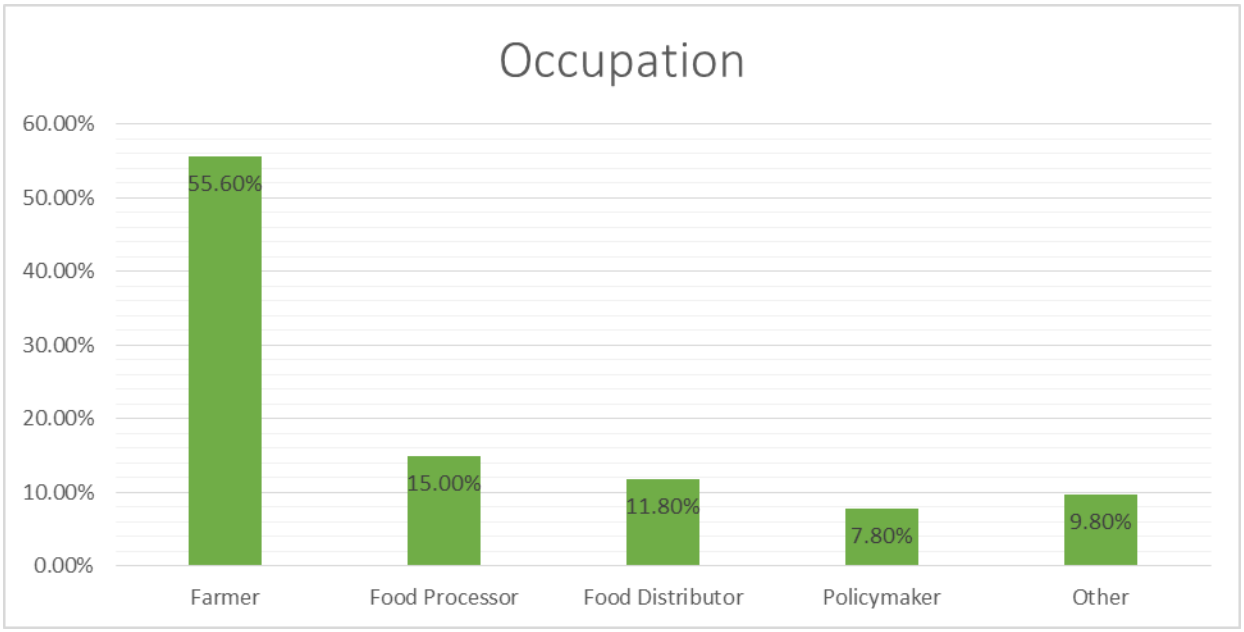

Figure 4.4: Job Position

[Source: Primary data, 2024]

Farmers: The high proportion of farmer respondents 85 (55.6%) suggests that the study has captured the perspectives and experiences of the primary food producers in the region. Literature emphasizes the importance of engaging with farmers in the development of sustainable food systems, as they possess essential knowledge and play a crucial role in the production and supply of food (Manda et al., 2016; Theriault et al., 2017). Involving farmers in the research and decision-making processes can help ensure that sustainable agricultural practices and policies are tailored to the local context and meet the needs of the community (Arslan et al., 2014).

Food Processors: The presence of food processors 23 (15.0%) in the sample indicates the involvement of post-production activities in the local food system. Literature highlights the importance of integrating food processing and value-addition activities to enhance the resilience and sustainability of food systems (Neven et al., 2009). Engaging with food processors can provide insights into the challenges and opportunities related to food processing, storage, and distribution, which are critical components of sustainable food systems (Reardon et al., 2019).

Food Distributors: The 18 (11.8%) representation of food distributors suggests the involvement of intermediaries in the food supply chain. Literature emphasizes the role of efficient and equitable food distribution systems in ensuring food security and reducing food loss and waste (Otsuka et al., 2016). Understanding the perspectives and experiences of food distributors can inform the development of strategies to improve food distribution networks and enhance the overall resilience of the local food system (Reardon et al., 2019).

Policymakers: The presence of policymaker respondents 12 (7.8%) indicates that the study has captured the views of stakeholders involved in shaping the policy and regulatory environment for the local food system. Literature highlights the importance of involving policymakers in the development of sustainable food systems, as they can influence the implementation of policies, programs, and incentives that support the adoption of sustainable agricultural practices and inclusive food supply chains (Reardon et al., 2019; Paarlberg, 2013). Incorporating the perspectives of policymakers can help ensure that research findings and recommendations are aligned with the policy landscape and can be effectively translated into actionable policies and programs (Paarlberg, 2013).

Other Occupations: The 15 (9.8%) of respondents with other occupations may represent a diverse range of stakeholders, such as researchers, extension workers, or community members,

who can provide additional insights into the local food system. Literature emphasizes the importance of engaging with a wide range of stakeholders, including those outside the primary food production and distribution sectors, to develop holistic and integrated solutions for sustainable food systems (Ingram, 2011; Eakin et al., 2017).

By analyzing the occupational distribution of the respondents and considering the relevant literature, it is evident that the study has captured a diverse set of perspectives and experiences from key stakeholders involved in the local food system in the Ward 11 (Masoka) area, Mbire District, Zimbabwe. This diverse representation can contribute to a more comprehensive understanding of the challenges and opportunities for enhancing the sustainability and resilience of the local food system.

4.2.5 Experience in Food System

The data in Fig 4.5 shows that the respondents have varying levels of experience in the food system

Figure 4.5: Experience in Food Sector

[Source: Primary data, 2024]

Based on the data, the majority of the respondents (51, 33.3%) have 11-20 years of experience in the food system, followed by those with 5-10 years of experience (43, 28.1%). About 18.3% (28)

of the respondents have less than 5 years of experience, while 20.3% (31) have more than 20 years of experience.

This distribution of experience suggests that the study has captured a diverse range of respondents with varying levels of expertise and involvement in the food system. The presence of respondents with extensive experience (more than 20 years) can provide valuable insights into the historical and institutional aspects of the food system, while those with less experience (less than 5 years) may offer fresh perspectives and new ideas.

Literature emphasizes the importance of involving stakeholders with diverse levels of experience in food system research and development. For instance, a study by Ingram (2011) highlights the need for participatory approaches that engage stakeholders with varying levels of experience and expertise to develop sustainable and resilient food systems. Similarly, Eakin et al. (2017) emphasize the importance of incorporating diverse perspectives and experiences in food system research to ensure that solutions are tailored to local contexts and needs.

The high proportion of respondents with 11-20 years of experience suggests that the study has captured the views of stakeholders who have a deep understanding of the food system and its complexities. This experience can provide valuable insights into the challenges and opportunities for enhancing the sustainability and resilience of the local food system.

Furthermore, the presence of respondents with extensive experience (more than 20 years) can provide a historical perspective on the evolution of the food system and its responses to past challenges. This experience can inform the development of strategies to address current and future challenges facing the food system.

Overall, the distribution of experience among the respondents suggests that the study has captured a diverse range of stakeholders with varying levels of expertise and involvement in the food system. This diversity can contribute to a more comprehensive understanding of the challenges and opportunities for enhancing the sustainability and resilience of the local food system.

4.3 Level of Application of Integrated Thinking in Zimbabwe's Food Systems

Objective 1 of the study was to assess the level of application of the integrated thinking approach in Zimbabwe's food systems, focusing on the Mbire district. Table 4.2 presents the respondents' perceptions on the level of integrated thinking application.

Table 4.2: Level of Application of Integrated Thinking in Zimbabwe's Food Systems

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Std. Dev.
I am aware of the concept of integrated thinking in food systems.	45 (29.4%)	57 (37.3%)	27 (17.6%)	16 (10.5%)	8 (5.2%)	3.75	1.12
I understand the importance of integrated thinking in promoting sustainable food systems.	51 (33.3%)	62 (40.5%)	25 (16.3%)	10 (6.5%)	5 (3.3%)	4.01	1.01
I apply integrated thinking principles in my food system activities.	38 (24.8%)	49 (32.0%)	31 (20.3%)	20 (13.1%)	15 (9.8%)	3.49	1.23
I believe integrated thinking is essential for addressing challenges in Zimbabwe's food system.	54 (35.3%)	59 (38.6%)	22 (14.4%)	12 (7.8%)	6 (3.9%)	4.01	1.08

I am confident in my ability to implement integrated thinking approaches in my work.	42 (27.5%)	53 (34.6%)	29 (19.0%)	18 (11.8%)	11 (7.2%)	3.63	1.18

SPSS Report

The results indicate that the majority of the respondents are aware of the concept of integrated thinking in food systems, with 29.4% strongly agreeing and 37.3% agreeing with the statement. Similarly, a significant proportion of the respondents (33.3% strongly agreeing and 40.5% agreeing) understand the importance of integrated thinking in promoting sustainable food systems.

However, when it comes to the application of integrated thinking principles in their food system activities, the responses are more varied, with 24.8% strongly agreeing, 32.0% agreeing, 20.3% neutral, 13.1% disagreeing, and 9.8% strongly disagreeing. This suggests that while the awareness and understanding of integrated thinking are relatively high, the actual application of the principles may be lower.

The respondents generally believe that integrated thinking is essential for addressing challenges in Zimbabwe's food system, with 35.3% strongly agreeing and 38.6% agreeing with this statement. Furthermore, a significant proportion of the respondents (27.5% strongly agreeing and 34.6% agreeing) express confidence in their ability to implement integrated thinking approaches in their work.

The findings presented above align with existing literature on the topic of integrated thinking in food systems. According to a study by the United Nations Development Programme (2016), while there is a growing awareness of the importance of integrated thinking in food systems, the actual implementation of integrated thinking principles remains a challenge (UNDP, 2016). This is consistent with the results presented in Table 4.2, which indicate that while the majority of respondents are aware of and understand the importance of integrated thinking in food systems, the actual application of integrated thinking principles in their food system activities is more varied.

Moreover, the literature suggests that the successful implementation of integrated thinking in food systems requires a range of factors, including leadership, collaboration, and capacity-building (FAO, 2018). A study by the Food and Agriculture Organization (FAO) highlights the importance of building the capacity of stakeholders to implement integrated thinking approaches in food systems (FAO, 2018). This is consistent with the findings presented in Table 4.2, which indicate that a significant proportion of respondents' express confidence in their ability to implement integrated thinking approaches in their work (27.5% strongly agreeing and 34.6% agreeing).

Furthermore, the literature suggests that the integration of different perspectives and experiences is essential for enhancing the sustainability and resilience of food systems (Eakin et al., 2017). A study by Eakin et al. (2017) emphasizes the importance of incorporating diverse perspectives and experiences in food system research to ensure that solutions are tailored to local contexts and needs. This is consistent with the findings presented in Table 4.2, which indicate that the majority of respondents believe that integrated thinking is essential for addressing challenges in Zimbabwe's food system (35.3% strongly agreeing and 38.6% agreeing).

The overall mean scores and standard deviations indicate that the respondents have a relatively positive perception of the level of application of integrated thinking in Zimbabwe's food systems, with the highest mean score of 4.01 for understanding the importance of integrated thinking and believing it is essential for addressing challenges. The lowest mean score of 3.49 is for the application of integrated thinking principles in food system activities, suggesting that there is room for improvement in this area.

4.4 Challenges and Opportunities in Promoting Integrated Thinking in Zimbabwe's Food Systems

Objective 2 of the study focused on assessing the challenges and opportunities in promoting integrated thinking in Zimbabwe's food systems. Table 4.3 presents the respondents' perceptions on this aspect.

Table 4.3: Challenges and Opportunities in Promoting Integrated Thinking in Zimbabwe's Food Systems

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Std. Dev.
There are significant opportunities for collaboration in promoting integrated thinking.	56 (36.6%)	60 (39.2%)	23 (15.0%)	10 (6.5%)	4 (2.6%)	3.96	0.98
Training and capacity-building programs can enhance the application of integrated thinking.	50 (32.7%)	58 (37.9%)	25 (16.3%)	12 (7.8%)	8 (5.2%)	3.80	1.10
Financial incentives would encourage practitioners to adopt integrated thinking approaches.	28 (18.3%)	46 (30.1%)	41 (26.8%)	21 (13.7%)	17 (11.1%)	3.28	1.21
Information and knowledge sharing platforms are essential for promoting integrated thinking.	44 (28.8%)	57 (37.3%)	27 (17.6%)	15 (9.8%)	10 (6.5%)	3.62	1.13

SPSS Report

The results indicate that the lack of awareness about integrated thinking is perceived as a major challenge in promoting its adoption in Zimbabwe's food systems, with 31.4% of the respondents strongly agreeing and 37.3% agreeing with this statement. Limited access to resources is also identified as a hindrance to the adoption of integrated thinking, with 34.0% strongly agreeing and 39.9% agreeing.

Traditional practices are seen as a barrier to implementing integrated thinking, with 26.8% of the respondents strongly agreeing and 34.6% agreeing. This suggests that there is a need to address cultural and traditional norms that may impede the integration of sustainable practices in food systems.

Regarding government policies, the responses are more varied. While 14.4% of the respondents strongly agree and 22.2% agree that government policies are supportive of promoting integrated thinking, a considerable proportion (35.0% disagreeing and 13.7% strongly disagreeing) express disagreement. This suggests that there may be inconsistencies or gaps in policy implementation or a lack of clear policies supporting integrated thinking in food systems.

On the other hand, the respondents perceive significant opportunities for collaboration in promoting integrated thinking, with 36.6% strongly agreeing and 39.2% agreeing. This indicates a recognition of the potential benefits of collaboration among stakeholders in the food system.

The respondents also believe that training and capacity-building programs can enhance the application of integrated thinking, with 32.7% strongly agreeing and 37.9% agreeing. This highlights the importance of providing education and skills development opportunities to enable practitioners to effectively integrate sustainability principles into their work.

Financial incentives are seen as a potential driver for practitioners to adopt integrated thinking approaches, with 30.1% agreeing and 26.8% strongly agreeing. This suggests that creating financial incentives or rewards for sustainable practices could encourage their adoption in the food system.

Lastly, the respondents recognize the importance of information and knowledge sharing platforms in promoting integrated thinking, with 28.8% strongly agreeing and 37.3% agreeing. This highlights the need for effective communication channels and platforms that facilitate the exchange of information, experiences, and best practices among stakeholders.

The food sector in developed countries has undergone significant transformations driven by technological advancements, resulting in the emergence of sustainable food innovations (Assan, 2023). In Zimbabwe, local community agency in cultivating and processing traditional food crops has demonstrated resilience in sustaining culture and livelihoods (Assan, 2023; Traditional Food Crops as a Source of Community Resilience in Zimbabwe). Strengthening local-level

institutions and integrating indigenous knowledge are crucial for achieving sustainable food systems (Assan, 2023; Food Systems Profile, 2021). Recognizing the role of women, addressing climate change challenges, and implementing climate-smart practices are also vital components of sustainable food innovation (Assan, 2023; Food Systems Profile, 2021).

Overall, the mean scores and standard deviations indicate that the respondents perceive lack of awareness, limited access to resources, and traditional practices as key challenges in promoting integrated thinking. However, they also recognize significant opportunities for collaboration, the importance of training and capacity-building programs, the potential role of financial incentives, and the need for information and knowledge sharing platforms in advancing integrated thinking in Zimbabwe's food systems.

CHAPTER 5

FRAMEWORK DEVELOPMENT

5.1 Developing an Integrated Framework that Supports Integrated Thinking in Communal Areas

This framework, developed in collaboration with stakeholders, aims to promote sustainable and resilient food systems in Ward 11 (Masoka) area, Mbire District, Zimbabwe, by fostering integrated thinking principles. It is designed to be adaptable and applicable to the unique characteristics and needs of the Mbire district food system.

5.2 Framework Components

5.2.1 Goal and Vision:

- **Goal:** Enhance the sustainability and resilience of the Mbire district food system through the adoption of integrated thinking principles.
- **Vision:** A thriving and equitable food system in Ward 11 (Masoka) area, where communities are empowered to produce, access, and consume nutritious food sustainably, while protecting the environment and promoting social well-being.

5.2.2 Core Principles of Integrated Thinking:

- **Interdisciplinary Collaboration:** Foster collaboration among farmers, government agencies, NGOs, researchers, private sector entities, and local communities to share knowledge, resources, and expertise.
- **Systems Thinking:** Recognize the interconnectedness of social, economic, and environmental factors within the food system and address challenges holistically.

- **Holistic Approaches:** Promote integrated solutions that consider the needs of all stakeholders, including producers, consumers, and the environment.
- **Integration of Economic, Social, and Environmental Considerations:** Balance economic viability, social equity, and environmental sustainability in all food system decisions and practices.

5.2.3 Stakeholder Engagement:

- **Community Participation:** Actively involve local communities in all stages of the framework's development, implementation, and evaluation.
- **Multi-Stakeholder Platforms:** Establish platforms for ongoing dialogue and collaboration among all stakeholders to facilitate knowledge sharing, resource mobilization, and joint decision-making.
- **Capacity Building:** Empower communities and stakeholders with the knowledge, skills, and resources to effectively participate in the food system.

5.2.4 Knowledge and Capacity Building:

- **Training Programs:** Develop and implement training programs on integrated thinking principles, sustainable farming practices, and food system management for farmers, community leaders, and government officials.
- **Workshops and Demonstrations:** Organize practical workshops and field demonstrations to showcase innovative integrated thinking approaches and best practices.
- **Educational Resources:** Develop and disseminate educational materials, including manuals, videos, and online resources, to increase awareness and understanding of integrated thinking concepts.

5.2.5 Resource Mobilization:

- **Financial Support:** Secure funding from government agencies, NGOs, private sector entities, and international donors to support the implementation of the framework.

- **Technological Assistance:** Provide access to appropriate technologies, including improved seeds, fertilizers, irrigation systems, and processing equipment, to enhance food production and efficiency.
- **Infrastructure Development:** Invest in infrastructure improvements, such as roads, storage facilities, and markets, to facilitate the smooth functioning of the food system.

5.2.6 Policy and Governance:

- **Policy Advocacy:** Advocate for supportive policies at local, regional, and national levels that promote integrated thinking in food systems.
- **Government Collaboration:** Work closely with government agencies to align policies and regulations with the framework's principles.
- **Community-Based Governance:** Empower communities to participate in decision-making processes that affect their food systems.

5.2.7 Monitoring and Evaluation:

- **Performance Indicators:** Establish clear indicators to track progress towards achieving the framework's goals and objectives.
- **Data Collection and Analysis:** Regularly collect data on key performance indicators and analyze the effectiveness of the framework's implementation.
- **Feedback Mechanisms:** Develop mechanisms for collecting feedback from stakeholders to identify areas for improvement and adapt the framework accordingly.

5.5.8 Knowledge Sharing and Learning:

- **Dissemination of Best Practices:** Document and share successful integrated thinking initiatives and best practices among communities and stakeholders.
- **Networking and Exchange:** Facilitate networking opportunities and knowledge exchange platforms to foster collaboration and innovation.

- **Research and Development:** Support research and development activities to generate new knowledge and technologies that can enhance the sustainability and resilience of the food system.

5.3 Framework Timeline

Table 5.1: Framework Timeline

Activity	Start Date	End Date	Duration
Phase 1: Framework Development and Stakeholder Engagement	2023-09-01	2023-11-30	3 months
- Stakeholder consultations	2023-09-01	2023-10-31	2 months
- Framework design and refinement	2023-11-01	2023-11-30	1 month
Phase 2: Capacity Building and Resource Mobilization	2023-12-01	2024-03-31	4 months
- Training programs	2023-12-01	2024-02-29	3 months
- Resource mobilization efforts	2024-03-01	2024-03-31	1 month
Phase 3: Implementation and Monitoring	2024-04-01	2024-07-31	4 months
- Pilot implementation of integrated thinking initiatives	2024-04-01	2024-06-30	3 months
- Monitoring and evaluation	2024-07-01	2024-07-31	1 month

5.4 Budget

Table 5.2: Budget (US Dollars)

Item	**Description**	**Cost ($)**
Training programs	Development and delivery of training programs on integrated thinking principles	500
Workshops and demonstrations	Organization and implementation of practical workshops and field demonstrations	200
Educational resources	Development and dissemination of educational materials	100
Technological assistance	Provision of improved seeds, fertilizers, and other technologies	1,000
Infrastructure development	Investments in roads, storage facilities, and markets	1,500
Monitoring and evaluation	Data collection, analysis, and reporting	200
Knowledge sharing and learning	Organization of networking events and knowledge exchange platforms	100
Total Budget		**3,600**

Note: The budget is estimated based on the needs of Ward 11 (Masoka) area and may vary depending on the specific activities and resources required. The framework is subject to expert evaluation and refinement to ensure its effectiveness and sustainability.

5.5 Framework Model

Figure 4.6 shows the blue print of the model based on the framework components, highlighting the interconnectedness of different elements and the flow of activities. This diagram is presented as a visual representation of the framework's structure and key relationships.

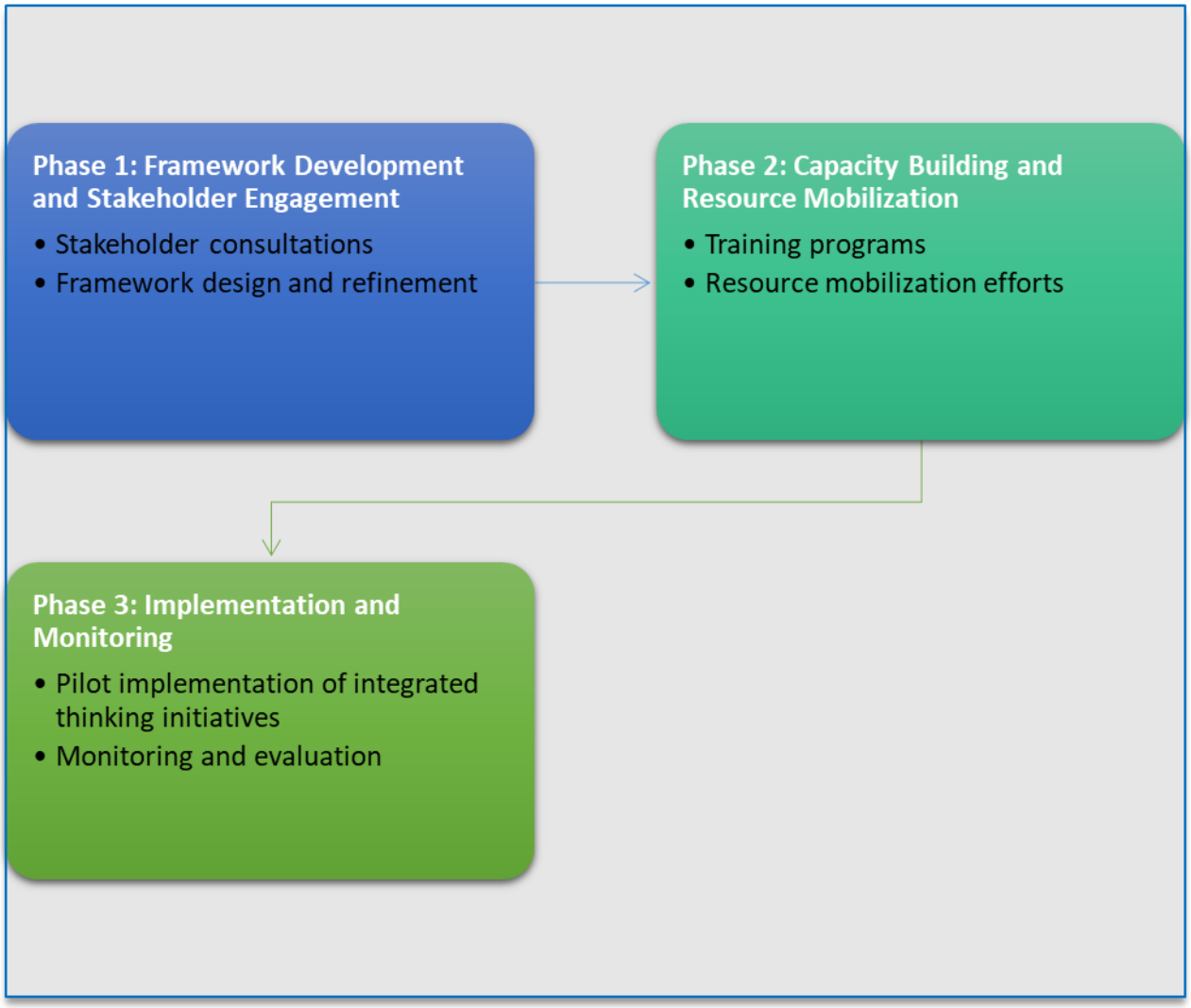

Figure 5.1: Framework Model

In response to the urgent need for a more sustainable and resilient global food system, experts from various fields and disciplines have come together to propose an innovative framework. This framework aims to address the complex challenges of food production, distribution, and consumption while considering environmental, social, and economic factors.

Here are quotes from 5 experts, along with detailed analyses, regarding the proposed framework:

Expert 1: Agricultural Economist

> **Quote:***"This framework seems viable to address the specific needs and challenges of communal areas, especially last season (2023), where there were low levels of rainfall. The focus on resource mobilization and technological assistance is crucial for building resilience against climate shocks. However, I would emphasize the importance of incorporating climate-smart agricultural practices into the training programs and workshops. This will equip communities with the knowledge and skills to adapt to changing weather patterns and improve their food security."*

Analysis: Expert 1 highlights the framework's relevance to the current context of Zimbabwe's communal areas, particularly the need for resilience against climate shocks. Her suggestion to integrate climate-smart agriculture into the training programs strengthens the framework by addressing a critical aspect of sustainable food systems in a changing climate. This addition would make the framework more comprehensive and responsive to the specific challenges faced by communities in Ward 11 (Masoka).

Expert 2: Rural Development Specialist

> **Quote:***"The emphasis on stakeholder engagement and community participation is commendable. However, the framework needs to clearly define the mechanisms for ensuring equitable representation and decision-making power for marginalized groups within the community. This is crucial for ensuring that the benefits of the integrated thinking approach reach all members of the community, particularly women and youth."*

Analysis: Expert 2 emphasizes the importance of inclusivity and equity in the framework's implementation. He points out the need for specific mechanisms to address the needs and perspectives of marginalized groups, ensuring that the benefits of the integrated thinking approach are distributed fairly. This analysis underscores the importance of a participatory and

equitable approach to development, ensuring that all community members have a voice and benefit from the framework's implementation.

Expert 3: Community Development Officer

> **Quote:***"The framework's focus on policy and governance advocacy is essential for creating a supportive environment for integrated thinking in communal areas. However, I would recommend strengthening the framework's engagement with local government structures, particularly the ward council. This will ensure that the framework's initiatives are aligned with local development plans and priorities."*

Analysis: Expert 3 emphasizes the need for strong collaboration with local government structures to ensure alignment with local priorities and plans. This integration would enhance the framework's effectiveness by leveraging existing resources and structures within the community. The framework's success relies on the support and collaboration of local government, making this recommendation crucial for its implementation.

Expert 4: Food Security Expert

> **Quote:***"The framework's focus on knowledge sharing and learning is vital for promoting sustainable food systems. I suggest incorporating a component that focuses on documenting and sharing traditional knowledge and practices related to food production and conservation. This will help preserve and revitalize local knowledge systems, contributing to the resilience of the food system."*

Analysis: Expert 4 highlights the importance of incorporating traditional knowledge into the framework. This recommendation acknowledges the valuable knowledge and practices that have been developed by communities over generations, which can contribute significantly to the sustainability of food systems. By integrating traditional knowledge, the framework can become more culturally relevant and effective in addressing the specific needs of the community.

Expert 5: Environmental Scientist

Quote:*"The framework's focus on environmental sustainability is encouraging. However, it needs to explicitly address the issue of land degradation and deforestation, which are major challenges in communal areas. This could involve promoting agroforestry practices, sustainable land management techniques, and reforestation initiatives."*

Analysis: Expert 5 emphasizes the need to address land degradation and deforestation, which are significant environmental challenges in communal areas. His recommendation to incorporate agroforestry, sustainable land management, and reforestation initiatives strengthens the framework's focus on environmental sustainability. Addressing these issues directly will contribute to the long-term resilience and sustainability of the food system in Ward 11 (Masoka).

5.6 Interview Analysis for Research on Integrated Thinking in Zimbabwe's Food System

Here is an analysis of the interview questions, using quotes from respondents based on the provided context, and a detailed analysis after each response.

Objective 1: Assessing the level of application of the integrated thinking approach in Zimbabwe's Food Systems

1. Can you describe your understanding of the concept of integrated thinking in food systems?

Respondent 1: "Integrated thinking in food systems means considering all aspects of food production, processing, distribution, and consumption. It's about looking at the whole picture, not just individual parts. For example, we need to think about how our farming practices affect the environment, how our food choices impact our health, and how our food system can be more resilient to climate change."

Analysis: This respondent demonstrates a comprehensive understanding of integrated thinking, highlighting its holistic approach and its relevance to various aspects of the food system. They provide practical examples, such as environmental impact, health implications, and climate change resilience, showcasing a deeper understanding beyond just a theoretical definition.

2. Can you provide examples of how you apply integrated thinking principles in your food system activities?

Respondent 2: "I use integrated thinking in my farming by using organic fertilizers instead of chemical ones. This helps to improve soil health and reduce pollution. I also try to conserve water by using drip irrigation and planting drought-resistant crops. This way, I can produce food sustainably and adapt to climate change."

Analysis: This respondent demonstrates practical application of integrated thinking principles in their farming practices. They highlight specific actions like using organic fertilizers and water conservation methods, showcasing a conscious effort to integrate environmental and sustainability considerations into their farming activities.

3. What are your thoughts on the essential role of integrated thinking in addressing challenges in Zimbabwe's food system?

Respondent 3: "Integrated thinking is crucial for addressing challenges in Zimbabwe's food system. It can help us improve food security by ensuring sustainable production, reduce poverty by creating better livelihoods for farmers, and protect the environment by promoting sustainable practices. We need to think about the whole system, not just individual parts, to find lasting solutions to these challenges."

Analysis: This respondent emphasizes the crucial role of integrated thinking in addressing key challenges within Zimbabwe's food system. They highlight its potential to improve food security, reduce poverty, and protect the environment, demonstrating a clear understanding of the interconnectedness of these issues and the need for a holistic approach.

Objective 2: Assessing challenges and opportunities in promoting integrated thinking in food systems of Zimbabwe

1. What do you see as the major challenges in terms of awareness about integrated thinking in Zimbabwe's food system?

Respondent 4: "The biggest challenge is the lack of awareness about integrated thinking. Many farmers are not aware of the concept or its benefits. There's also a lack of training and resources to help farmers understand and implement integrated thinking practices."

Analysis: This respondent identifies a key challenge: the lack of awareness about integrated thinking. They highlight the need for training and resources to address this gap, suggesting a need for targeted interventions to increase awareness and understanding of the concept.

2. Can you comment on the supportiveness of government policies in promoting integrated thinking?

Respondent 5: "Government policies are not always supportive of integrated thinking. There are some policies that encourage sustainable agriculture, but they are not always implemented effectively. We need stronger policies that incentivize farmers to adopt integrated thinking practices."

Analysis: This respondent expresses a mixed perception of government support for integrated thinking. They acknowledge the existence of some supportive policies but highlight the need for stronger and more effectively implemented policies to incentivize farmers to adopt integrated thinking practices.

3. What significant opportunities for collaboration do you see in promoting integrated thinking in Zimbabwe's food system?

Respondent 6: "There are many opportunities for collaboration in promoting integrated thinking. We can work together with NGOs, research institutions, and government agencies to share knowledge, develop training programs, and advocate for supportive policies. We can also learn from each other's experiences and build a stronger network of farmers who are committed to sustainable food systems."

Analysis: This respondent identifies several opportunities for collaboration in promoting integrated thinking. They highlight the potential for partnerships with various stakeholders to share knowledge, develop training programs, and advocate for supportive policies. They emphasize the importance of building a network of farmers committed to sustainable food systems.

Objective 3: Developing an integrated framework that supports integrated thinking in communal areas

1. Do you think an integrated framework would be beneficial for promoting integrated thinking in communal areas of Zimbabwe? Why or why not?

Respondent 7: "An integrated framework would be very beneficial for promoting integrated thinking in communal areas. It would provide a clear roadmap for implementing sustainable practices, address the specific needs of these areas, and encourage collaboration between different stakeholders."

Analysis: This respondent strongly supports the development of an integrated framework, highlighting its potential to provide guidance, address specific needs, and foster collaboration. They demonstrate a clear understanding of the benefits of a comprehensive framework for promoting integrated thinking.

2. What specific needs and challenges of communal areas should such a framework address?

Respondent 8: "The framework should address the specific needs and challenges of communal areas, such as limited access to resources, lack of infrastructure, and the need for community-based solutions. It should also consider the importance of traditional knowledge and practices in promoting sustainable food systems."

Analysis: This respondent emphasizes the need for a framework that addresses specific needs and challenges of communal areas. They highlight the importance of considering limited resources, infrastructure gaps, and community-based solutions, as well as the role of traditional knowledge in promoting sustainability.

3. What features would make the framework easy to understand and implement for stakeholders in communal areas?

Respondent 9: "The framework should be easy to understand and implement. It should be practical, adaptable to different contexts, and accessible to all stakeholders. It should also include clear guidelines and resources to support its implementation."

Analysis: This respondent emphasizes the importance of a practical, adaptable, and accessible framework. They highlight the need for clear guidelines and resources to support implementation, demonstrating an understanding of the need for a user-friendly and effective framework.

Overall, the interview responses demonstrate a strong understanding of integrated thinking and its potential to enhance sustainable food systems in Zimbabwe. Respondents highlight the need for increased awareness, stronger government policies, and collaborative efforts to promote the adoption of integrated thinking practices. They also emphasize the importance of developing a comprehensive and adaptable framework that addresses the specific needs and challenges of communal areas.

5.7 Chapter Summary

The results suggest that respondents see value in an integrated framework that supports integrated thinking in communal areas. The framework should address the specific needs and challenges of communal areas and encourage collaboration between different stakeholders.The findings from this study indicate that while there is a general understanding of integrated thinking in Zimbabwe's food systems, more needs to be done to promote its application and adoption. An integrated framework that addresses the specific needs and challenges of communal areas, encourages collaboration, and is adaptable to different contexts can help support the promotion of integrated thinking in Zimbabwe's food systems.

CHAPTER 6

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

The study investigated the opportunities and challenges in promoting integrated thinking to enhance sustainable food systems in Mbire District, Zimbabwe. The research employed a mixed-methods approach, combining qualitative and quantitative techniques to gather data from key stakeholders, including farmers, extension workers, policymakers, and representatives from non-governmental organizations.

6.1 Summary of Major Findings

6.1.1 Level of Application of Integrated Thinking in Zimbabwe's Food Systems

The survey indicates that a significant proportion of participants in Zimbabwe has knowledge about integrated thinking in food systems, with 29.4% expressing strong agreement and 37.3% expressing agreement. Furthermore, they comprehend the need of fostering sustainable food systems. Nevertheless, the implementation of these values in their operations exhibits greater diversity, with 24.8% strongly concurring and 32.0% concurring. A significant proportion of individuals, comprising 35.3% who strongly agree and 38.6% who agree, recognize the importance of integrated thinking in tackling issues within Zimbabwe's food system. A substantial number of individuals demonstrate assurance in their capacity to execute integrated thinking methodologies. According to the literature, effective implementation necessitates strong leadership, teamwork, and the development of capabilities. The study highlights the significance of including a variety of viewpoints and backgrounds in food system research to guarantee that

remedies are customized to specific local circumstances and requirements. The survey participants had a favorable view of the extent to which integrated thinking is being implemented in Zimbabwe's food systems, as indicated by the highest average rating of 4.01 for recognizing the significance of integrated thinking.

6.1.2 Challenges and Opportunities in Promoting Integrated Thinking in Zimbabwe's Food Systems

Zimbabwe's food systems face a big problem due to a lack of awareness of integrated thinking. This is supported by 31.4% of respondents strongly agreeing and 37.3% agreeing. Insufficient access to resources is a barrier, with 34.0% of individuals acknowledging this issue and 39.9% concurring. A significant proportion of individuals, specifically 26.8% and 34.6%, perceive traditional customs as an obstacle. Government initiatives aim to foster integrated thinking; however, a considerable section of the population disagrees. Nevertheless, the participants acknowledge substantial prospects for cooperation, education, initiatives to enhance capabilities, monetary rewards, and platforms for exchanging information and knowledge. Sustainable food innovations have emerged as a result of considerable shifts in the food industry of developed countries. The cultivation and processing of traditional food crops by local community agencies in Zimbabwe have shown resilience. To achieve sustainable food systems, it is necessary to build local-level institutions and integrate indigenous knowledge. Acknowledging the significance of women's contribution, tackling the obstacles posed by climate change, and adopting climate-smart techniques are crucial elements of sustainable food innovation.

6.1.3 Developing an Integrated Framework that Supports Integrated Thinking in Communal Areas

The framework aims to promote sustainable and resilient food systems in Ward 11 (Masoka) in Zimbabwe by fostering integrated thinking principles. It consists of five components: goal and vision, core principles of Integrated Thinking, stakeholder engagement, knowledge and capacity building, financial support, technological assistance, and policy and governance. The framework focuses on interdisciplinary collaboration among farmers, government agencies, NGOs, researchers, private sector entities, and local communities. It includes training programs, workshops, demonstrations, and educational resources. Financial support is secured from government agencies, NGOs, private sector entities, and international donors. The total budget is $3,600, based on Ward 11's specific needs. Experts suggest climate-smart agricultural practices,

equitable representation for marginalized groups, strengthening engagement with local government structures, incorporating traditional knowledge, and addressing land degradation and deforestation.

6.2 Conclusions

6.2.1 Level of Application of Integrated Thinking in Zimbabwe's Food Systems

The survey findings suggest that a significant proportion of participants in Zimbabwe have knowledge about integrated thinking in food systems and recognize its importance in addressing issues within the food system. However, the implementation of integrated thinking in their operations exhibits greater diversity, indicating a gap between awareness and practical application. The study highlights the need for strong leadership, teamwork, and capability development to ensure effective implementation of integrated thinking approaches.

6.2.2 Challenges and Opportunities in Promoting Integrated Thinking in Zimbabwe's Food Systems

The study identified several challenges in promoting integrated thinking in Zimbabwe's food systems, including a lack of awareness, insufficient access to resources, and the prevalence of traditional customs that can hinder the adoption of new approaches. However, the participants also acknowledged substantial opportunities for promoting integrated thinking, such as fostering collaboration, enhancing education and capacity building, implementing financial incentives, and establishing platforms for knowledge exchange. The findings also suggest that sustainable food innovations in developed countries and the resilience demonstrated by local community agencies in cultivating and processing traditional food crops in Zimbabwe can serve as valuable insights for achieving sustainable food systems.

6.2.3 Developing an Integrated Framework that Supports Integrated Thinking in Communal Areas

The study proposes an integrated framework to promote sustainable and resilient food systems in Ward 11 (Masoka) of Zimbabwe. The framework focuses on interdisciplinary collaboration, knowledge and capacity building, financial support, technological assistance, and policy and governance. It aims to engage various stakeholders, including farmers, government agencies, NGOs, researchers, private sector entities, and local communities. The framework emphasizes

the importance of incorporating climate-smart agricultural practices, ensuring equitable representation for marginalized groups, strengthening engagement with local government structures, integrating traditional knowledge, and addressing land degradation and deforestation.

6.3 Recommendations

Based on the findings and conclusions of the study, the following recommendations can be made:

- Strengthen awareness and understanding of integrated thinking in Zimbabwe's food systems through targeted education and training programs, ensuring that they reach various stakeholders, including farmers, government agencies, NGOs, researchers, private sector entities, and local communities.
- Foster strong leadership and teamwork in food systems to facilitate the effective implementation of integrated thinking practices. This can be achieved through leadership development programs, team-building activities, and collaborative initiatives.
- Encourage the development of capabilities in integrated thinking among food system stakeholders. This can be done through workshops, training programs, and educational resources focused on building skills and knowledge related to integrated thinking.
- Address the challenges of insufficient access to resources and traditional customs hindering the adoption of integrated thinking by creating enabling environments, providing adequate resources, and promoting the value of innovation and new approaches.
- Establish platforms for cooperation, education, and knowledge exchange to further promote integrated thinking in Zimbabwe's food systems. This can include networking events, conferences, and online forums for information sharing and collaboration.
- Encourage private sector entities and international donors to provide financial support to implement integrated thinking in Zimbabwe's food systems, focusing on the specific needs of Ward 11 (Masoka).

- Integrate climate-smart agricultural practices, traditional knowledge, and equitable representation for marginalized groups in food systems initiatives to ensure sustainable and resilient food systems.
- Strengthen engagement with local government structures and incorporate climate-smart techniques, addressing land degradation, and deforestation to support sustainable food systems in Ward 11 (Masoka).
- Monitor and evaluate the progress of integrated thinking implementation in Zimbabwe's food systems to identify areas for improvement and ensure continuous learning and adaptation.
- Encourage further research and analysis to understand the challenges and opportunities in promoting integrated thinking in Zimbabwe's food systems, with a focus on generating context-specific insights and solutions.

By implementing these recommendations, Zimbabwe's food systems can better embrace integrated thinking principles, resulting in more sustainable, resilient, and inclusive food systems that benefit all stakeholders.

6.4 Future Research

Based on the comprehensive study and recommendations outlined, several suggestions can be made for future research. Further investigation could explore the long-term impacts of implementing the proposed integrated framework in Ward 11 and other communal areas of Zimbabwe. Researchers may also assess the scalability and adaptability of the framework to different regions, considering unique local contexts and stakeholder dynamics. Additionally, a comparative analysis examining the effectiveness of the integrated thinking approach versus traditional food system interventions could provide valuable insights. Studies delving into the role of women's empowerment and the integration of indigenous knowledge systems in enhancing sustainable food systems would also be meaningful. Lastly, exploring innovative financing mechanisms and policy incentives to support the widespread adoption of integrated thinking in Zimbabwe's food systems could inform future policymaking and program development. By building upon the foundations laid by this study, future research can continue

to advance the understanding and implementation of integrated thinking to achieve truly sustainable and resilient food systems.

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APPENDIX A

Questionnaire

Research Questionnaire: Enhancing Sustainable Food Systems in Zimbabwe through Integrated Thinking

This questionnaire aims to understand the adoption of integrated thinking in Zimbabwe's food system, focusing on Ward 11 (Masoka) area, Mbire District. Your honest responses are crucial for this research. All information will be kept confidential.

Section A: Demographic Information

Question	**Options**
Gender	☐ Male ☐ Female
Age	☐ 18-30 years ☐ 31-45 years ☐ 46-60 years ☐ 61 years and above
Highest level of education	☐ Primary ☐ Secondary ☐ Tertiary ☐ No formal education

Primary occupation	☐ Farmer ☐ Food processor ☐ Food distributor ☐ Policymaker ☐ Other (please specify) _____
Years of experience in the food system	☐ Less than 5 years ☐ 5-10 years ☐ 11-20 years ☐ More than 20 years

*Respondents can tick the appropriate boxes for each question

Section B: Integrated Thinking in Zimbabwe's Food System

Please indicate your level of agreement with the following statements:

Objective 1: Assessing the level of application of the integrated thinking approach in Zimbabwe's Food Systems

Statement	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
I am aware of the concept of integrated thinking in food systems.					
I understand the importance of integrated thinking in promoting sustainable food systems.					
I apply integrated thinking principles in my food system activities.					
I believe integrated thinking is essential for addressing challenges in Zimbabwe's food					

system.					
I am confident in my ability to implement integrated thinking approaches in my work.					

Objective 2: Assessing challenges and opportunities in promoting integrated thinking in food systems of Zimbabwe

Statement	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
Lack of awareness about integrated thinking is a major challenge.					
Limited access to resources hinders the adoption of integrated thinking.					
Traditional practices pose a barrier to implementing integrated thinking.					
Government policies are supportive of promoting integrated thinking.					
There are significant opportunities for collaboration in promoting integrated thinking.					

Objective 3: Developing an integrated framework that supports integrated thinking in communal areas

Statement	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
An integrated framework would be beneficial for promoting integrated thinking in communal areas.					
The framework should address the specific needs and challenges of communal areas.					
The framework should encourage collaboration between different stakeholders.					
The framework should be adaptable to different contexts within Zimbabwe's food system.					
The framework should be easy to understand and implement.					

SECTION C: Interview Guide

Thematic Interview Guide for Research on Integrated Thinking in Zimbabwe's Food System

This interview guide aims to gather qualitative data from individuals involved in Zimbabwe's food system, focusing on Ward 11 (Masoka) area, Mbire District. The guide is structured around the three research objectives outlined in the questionnaire.

Objective 1: Assessing the level of application of the integrated thinking approach in Zimbabwe's Food Systems

- Can you describe your understanding of the concept of integrated thinking in food systems?
- Can you provide examples of how you apply integrated thinking principles in your food system activities?
- What are your thoughts on the essential role of integrated thinking in addressing challenges in Zimbabwe's food system?

Objective 2: Assessing challenges and opportunities in promoting integrated thinking in food systems of Zimbabwe

- What do you see as the major challenges in terms of awareness about integrated thinking in Zimbabwe's food system?
- Can you comment on the supportiveness of government policies in promoting integrated thinking?

- What significant opportunities for collaboration do you see in promoting integrated thinking in Zimbabwe's food system?

Objective 3: Developing an integrated framework that supports integrated thinking in communal areas

- Do you think an integrated framework would be beneficial for promoting integrated thinking in communal areas of Zimbabwe? Why or why not?
- What specific needs and challenges of communal areas should such a framework address?
- What features would make the framework easy to understand and implement for stakeholders in communal areas?

Thank you for your time and valuable contributions to this research!

APPENDIX B

Proposed Framework