

An Examination of Factors Contributing to the Maize-Centric Procurement Approach in Zambia: Case of The Food Research Agency

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African Journal of Commercial Studies, 2025, 6(1), 163-171

DOI Link: <https://doi.org/10.59413/ajocs/v6.i.1.15>

Abstract

The main aim of the qualitative research was to explore the main factors contributing to the FRA's maize-centric procurement approach. The research employed the interpretivist philosophy and the exploratory case-study design. Data was gathered using key informant interviews, document analysis and focus group interviews. The thematic analysis was employed to analyse the data. The findings revealed that the main factors include unavailability of designated grain commodities, policy inconsistency, government/political interference, commercialization of the FRA and limited storage capacity. The study concluded that there are numerous factors driving the maize-centric procurement approach of the Zambia's FRA. The study recommended the government of the Republic of Zambia to consider prioritising incentivizing production of the designated commodities. The study further recommended the government of Zambia to undertake reforms to decommercialize the FRA in order to transition from the maize-centric approach to a diversified SGR in Zambia. The study further recommended the management of the FRA to strengthen the implementation of its Storage Investment Plan in order to improve its storage capacity can create an enabling environment for a diversified SGR. The study recommended further studies to be undertaken using a larger sample.

Keywords: Maize-centric approach; Food Reserve Agency; Procurement; Agriculture, Zambia

Article Info

Volume 6, Issue 1

Publication history:

Accepted on 4 March 2025;

Published: 8 March 2025

Article DOI:

10.59413/ajocs/v6.i.1.15

1. Introduction

The threat posed by persistent food shortages in many parts of the world and rising global food prices has pushed the issue of food reserves to the top of the current political agenda, leading to a number of proposals for the establishment of a global food reserve system. - and/or regionally managed food stocks (Elrasheed, 2024; Lassa et al., 2019). Holding strategic grain reserves (SGRs) to address food price hikes and food insecurity has received renewed attention in recent years (Chellai, 2024). There has been renewed interest both by government and development partners in instituting SGRs in developing countries since the global food crisis of 2007/08, when 75 to 80 million people were exposed to hunger and poverty (Kitsuki & Sakurai, 2023; Mulugeta, 2015). In developing countries, strategic grain reserves are an integral part of agricultural policies to stabilize food prices. SGRs have gained prominence as strategic tools to meet emergency food demand and address food insecurity (Middleton et al., 2018; World Bank, 2021). According to Elrasheed (2024), strategic food reserves have been implemented by many countries in the world, to sustain food security and encounter international food market shocks.

In Zambia, food security through a well functional SGR has been the national agenda towards attaining the agenda 2030 for sustainable development (Mulenga & Chapoto, 2020). Over the years, food insecurity has been a persistent challenge in Zambia, where more than 50% of the national population are considered food insecure (Zambia Statistics Agency, 2022). In addition, the Food Security Cluster (FSC) Joint Rapid Assessment (2024) report revealed that in Zambia, 2.2% of households are food secure, 15.3% are marginally food secure, 62.5% moderately food insecure and 20% severely food insecure.

Approximately 1.4 million people in Zambia face high levels of food insecurity (Edet, 2022; Lubungu & Singogo, 2021). This situation has been a concern to the Government of Zambia seeking to achieve Sustainable Development Goal (SDG) 2 of ending hunger and ensuring access to safe, nutritious and sufficient food by all people, in particular the poor and people in vulnerable situations. In this regard, the Zambia’s SGR, the Food Reserve Agency (FRA) has been found to have a key role towards promoting food security in Zambia. The FRA was established as a strategic grain reserve to cope with food emergencies and other functions to ensure availability of food (World Bank, 2021).

Despite this broad mandate, the FRA has primarily focused on maize, a staple food in Zambia despite the Statutory Instrument No. 73 of 2017 which has designated eight (8) agricultural commodities for the national strategic food reserves namely orange maize, rice, soya beans, sunflower, groundnuts, sorghum and beans. However, maize accounts for over 96% of FRA’s purchases (Hadunka & Teschemacher, 2024), implying a maize-centric approach. This maize-centric approach poses risks to Zambia’s food security, as it does not account for the diversified food needs of the population or the potential for agricultural diversification. For instance, the maize-centric approach has been attributed to the FRA failing to meet its prescribed SGR target of 500,000 metric tons for the past five years where the FRA has a capacity storage of 850,000 metric tons (World Bank, 2021).

The maize-centric approach of the FRA has resulted in analysts and policymakers questioning effectiveness and efficiency of the FRA in meeting its food security mandate. Scholars such as Chapoto et al. (2015), Chapoto et al. (2016) and Mazhambe and Mukololo (2023) reported that there are challenges facing the FRA. However, there is dearth of empirical evidence on the subject in the context of the Zambia’s SGR. This research therefore seeks to fill this gap by examining factors contributing to the maize-centric procurement approach by the Zambia’s FRA. Understanding the factors would help in policy-making and decision-making towards transitioning from the maize-centric approach to a diversified grain reserve in Zambia.

The rest of the research is structured as follows: review of literature followed by methods section, presentation and discussion of findings and lastly the conclusions and recommendations.

2. Literature Review

2.1 Theoretical foundation

The study is based on the theoretical lens of the framework for food and nutritional security developed by Sassi (2015). According to this framework, there are multiple pathways to achieve food and nutrition security. Sassi (2015) developed a framework to explain food and nutrition security that is centered on the concepts of assets, food supply, food access, and other confounders (see Figure 2.1). The framework consists of three components: food economy, household environment, and confounders (Sassi, 2017).

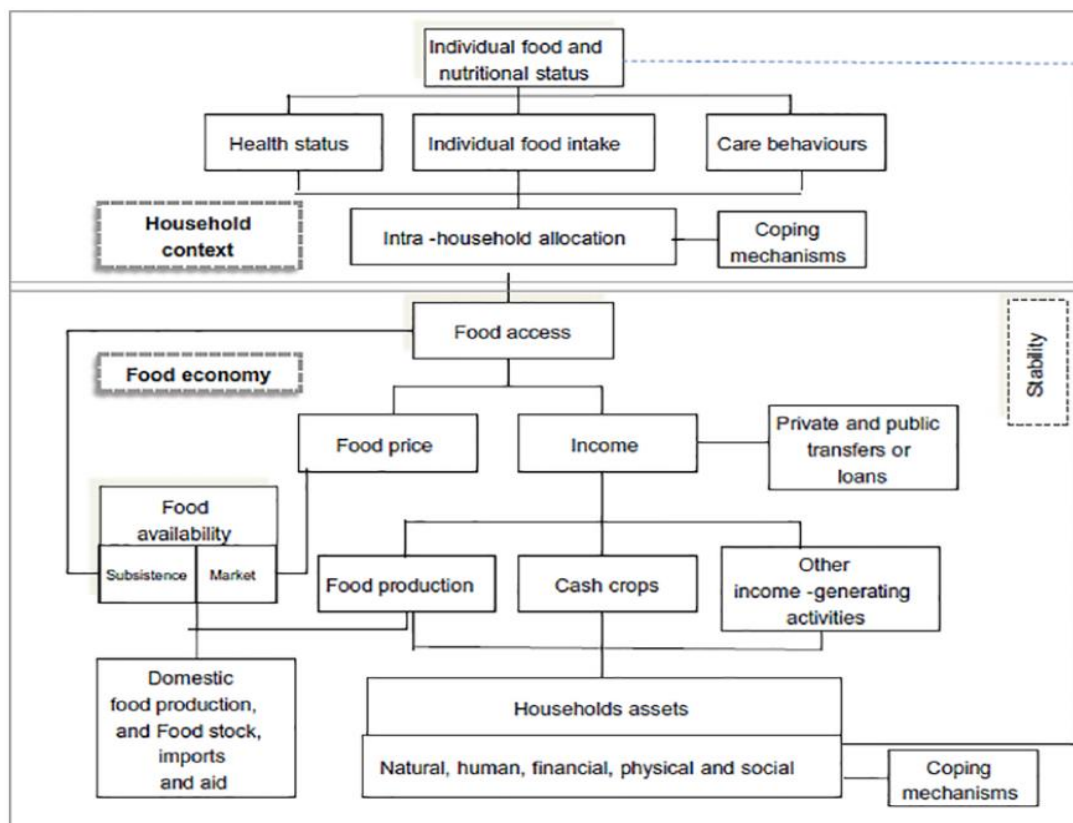


Figure 2.1: Framework for food and nutritional security
Source: Sassi (2015)

Sassi's (2015) framework for food and nutritional security is a pivotal contribution to understanding the multifaceted nature of food insecurity. This framework emphasizes the interconnections between various sectors, including agriculture, health, and education, advocating for a multi-sectoral approach to address malnutrition effectively (Sassi et al., 2018). By integrating these sectors, the framework aims to create sustainable solutions that not only enhance food availability but also ensure that individuals can access and utilize nutritious food (Sassi, 2017).

Sassi (2015) also identified other (confounding) factors that may affect food and nutrition security. These factors can be physical, policy or social. Physical factors include weather patterns and soil conditions, while policy factors include government policies on the agricultural sector, or any policy that may affect the ability to access food (Bulawayo et al., 2019). Social factors include any cultural attitudes and other social institutions that affect access to food (Sassi, 2015). In summary, Sassi's (2015) framework offers valuable insights into addressing food and nutritional security comprehensively. Hence, the framework was adopted to aid in explaining the main factors contributing to the FRA's maize-centric procurement approach.

2.2 Statutory Instrument No. 73 of 2017 on Designated Agricultural Commodities

The Statutory Instrument (S.I.) No. 73 of 2017 has designated eight (8) agricultural commodities for Zambia's national strategic food reserves namely orange maize, rice, soya beans, sunflower, groundnuts, sorghum and beans. These commodities set out were designated as being essential for the food security of the country (Government of Zambia, 2017). This legislation represents a significant regulatory framework aimed at enhancing the agricultural sector's sustainability and productivity.

This S.I. No. 73 of 2017 represents a significant regulatory framework within Zambia's agricultural sector, specifically addressing the management of designated agricultural commodities. Enacted under the Food Reserve Act, it aims to enhance food security and regulate the production and distribution of essential crops (Mulenga & Chapoto, 2020). The instrument delineates specific commodities that are deemed critical for national food security, thereby establishing guidelines for their procurement, marketing and storage. The SI No. 73 of 2017 is against the maize-centric procurement approach and aims to promote a diversified strategic grain reserve in Zambia.

2.3 Factors influencing diversification of strategic grain reserves

The diversification of SGRs is influenced by various interrelated. Iftekhar et al. (2021), Mangla et al. (2021) and Tusha et al. (2023) submit that SGRs face a lot of challenges that require creativity, novelty, development and innovation. The research by Das et al. (2023) found that that inadequate government policies, political interference, insufficient infrastructure, lack of coordination between stakeholders, inadequate storage capacity, non-utilization of existing capacity and lack of top management commitment were the major challenges faced by SGRs. Choudhary et al. (2023) also found that lack of stakeholder engagement through public-private partnerships (PPPs) is one of the factors contributing to the maize-centric procurement model in Nepal. In the same vein, Liu et al. (2023) revealed that technological advancements, environmental concerns and resource shortages directly influenced grain supply capacity security in China.

Furthermore, Chapoto et al. (2016) and Mason et al. (2019) revealed that overreliance on smallholder farmers leads to maize-centric procurement approaches. According to Mpehongwa and Cassian (2024), corruption and commercialization lead to maize-centric procurement as SGRs may shift away from low profitable traditional food crops. The study by Pattanaik and Tripathi (2016) also reported that India faces the challenge of limited storage capacity for its SGRs. Similarly, Ngumbi and Iravo (2013) reported that the National Cereals and Produce Board (NCPB) in Kenya had been failing to deliver its mandate of promoting food security due to the challenges it faced such as lack of infrastructure and grain storage capacity.

Oparinde et al. (2020) reported that commercialization of the grain sector in Nigeria adversely impacted efficiency of SGRs. In the same vein, Chinsinga (2018) also reported that commercialisation of agriculture sector of Malawi brought about challenges such as food insecurity. Similarly, Cheruiyot and Sitienei (2021) suggest that commercialization of maize in Kenya exacerbated household food insecurity by limiting diversification of SGRs.

From the aforementioned review of literature, there are several factors which inhibit effectiveness of SGRs in most developing countries across the globe. However, there is paucity of empirical evidence in the context of Zambia which is the knowledge gap that this research seeks address by examining factors contributing to the maize-centric procurement approach by the Zambia's FRA.

3. Methodology

3.1 Research philosophy and design

The study adopted the qualitative methodology following the interpretivist or constructivist philosophy. The research method adopted by the interpretivist paradigm was based on inductive logic in a process of theory building or generation through discussions in interviews and focus groups. Based on the qualitative nature of the study, the exploratory case-study research design was employed. This research design was preferred as it permitted the researcher to employ various

research methods such as interviews, document analysis and focus group discussions. The case study strategy allowed the researcher to gain in-depth understanding of the phenomenon.

3.2 Study area

The study area focused on the FRA's main depots in Zambia namely Lusaka, Monze, Kabwe and Ndola. These four depots represent the case-studies for the research.

3.3 Population and sampling

The target population included key stakeholders including top management and board members at the FRA and experts from the Food Security Pack Programme (FSPP), Indaba Agricultural Policy Research Institute (IAPRI) and Ministry of Agriculture and Livestock (MAL). The sample for the study was determined through employing the data saturation technique where a total of 12 participants were interviewed whilst 24 participated in the focus groups. Four focus groups were undertaken where each group contained six participants. Sim and Waterfield (2019) recommended sample size for focus group discussions of 5 to 10 arguing that focus groups with more than 10 participants are difficult to control. Expert purposive sampling was employed to select the most suitable participants. Likando et al. (2023) support that expert purposive sampling is useful when selecting participants better positioned to comprehend the phenomenon studied.

3.4 Data collection and analysis

Both primary and secondary qualitative data was gathered. Primary data was gathered using key informant interviews, focus group interviews and document analysis. In this study, secondary data sources included government reports, policy documents including the Strategic Plan (2022-2026) for the Food Reserve Agency and peer reviewed journal articles. Data was analysed using the thematic analysis technique following the six steps by Braun and Clarke (2023) namely familiarisation of data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing a final report.

3.5 Ethical considerations

Ethical approval was sought from the University of Zambia Research Ethics Committee. Permission to access the participants and depots was sought from the FRA, MAL, FSPP and IAPRI. Informed consent was sought from the participants where the participants indicated their voluntary will to participate in the study. The data collected from the respondents were treated as confidential, as was the identity of the respondents. The research assured confidentiality and anonymity by not sharing information provided to third parties as well as not using real names of the participants but pseudo names such as Participant 1, Participant 2 and so on. This research did not cause any physical or psychological harm to the respondents in any way as questions that would cause anxiety, stress, low self-esteem or make the respondents feel bad were avoided.

3.6 Trustworthiness

Trustworthiness was determined based on Lincoln and Guba's (1986) criteria: credibility, transferability, reliability, and confirmability. Credibility was attained through preliminary visits to the FRA's depots in order to understand the culture of the cases and participants and establish a trusting relationship. For transferability, the research provided adequate contextual information about the fieldwork that is 'thick description' of methodology. Dependability and confirmability were achieved through use of "overlapping methods" such as focus groups, document analysis and key informant interviews (triangulation).

4 Results and Discussion

The findings from the key informant interviews, focus group discussions and document analysis are presented and discussed in this section.

4.1 Characteristics of participants

The actual number of the participants was 36 distributed where 12 individuals participated in the key informant interviews following application of the data saturation technique and the 24 participated in the FGDs held. In terms of gender distribution, 64% of the participants were males whilst 36% were females. In terms of the working experience or length of service, majority of the participants had served in their respective organisations for more than 5 years. In terms of educational qualifications, 42% had Master's degrees, 28% had Bachelor's degrees, 19% had diplomas or college certificates and 11% had doctorate degrees.

4.2 Findings on factors contributing to the FRA's maize-centric procurement approach

This section presents the findings of the study employing the thematic analysis technique. The sub-themes that emerged from the data collected included unavailability of designated grain commodities, policy inconsistency, government/political interference, commercialization of the entity, and limited storage capacity.

Unavailability of other designated grain commodities

A number of participants from the key informant interviews and FGDs reported unavailability of designated grain commodities as one of the factors contributing to the FRA's maize-centric approach. One of the key informants said:

“Yes, there is no doubt that the FRA has been only focusing on purchasing and selling maize for its years of existence. This does not mean that maize is the only grain that the agency can purchase and sell. But the only challenge is that the other grain commodities such as rice and wheat are available in limited quantities as most farmers focus on the staple grain that is main. As a result, much of the purchases by the FRA focuses on white maize” [Participant 1; Key Informant Interview]

Another participant from the FGDs also stated:

“The unavailability of other grain commodities in the market has significantly influenced the FRA's maize-centric approach. This is because in Zambia, maize has historically been prioritized due to its significance as a staple food. The lack of alternative grains such as rice, sorghum and wheat in sufficient quantities limit the FRA's capacity to diversify its reserves. As for now, maize has become the default grain choice for the FRA despite the potential benefits of purchasing other grains” [Participant 20; FGD1]

Similar findings were also found from the document analysis. For instance, one of the reviewed documents by Mulenga and Chapoto (2020, p.1)

“Typically, the FRA is mandated to purchase grains such as maize, wheat, rice, soybeans, etc., for strategic food reserves. However, maize purchases form the bulk of all the FRA's purchases owing to the commodity being the country's main staple crop produced in large quantities” (p.1).

The findings have revealed that one of the factors contributing to the maize centric approach of the FRA is unavailability of other grain commodities in the grain market of Zambia due to limited production as most farmers focus on maize. The findings corroborate the findings by Mulenga and Chapoto (2020) that the staple nature of maize in Zambia is the reason behind its increased bulk maize purchases by the FRA.

Policy inconsistency and lack of policy implementation

From the findings, it came to light that policy inconsistency is among the factors leading to the maize-centric approach of the Zambia's FRA. One of the key informants stated:

“The FRA's concentrated focus on maize at the expense of other grains (designated commodities), is significantly influenced by the unavailability of alternative grains in sufficient quantities linked to agricultural policies that favour staple grains”. [Participant 2; Key Informant Interview]

Another participant from the FGDs remarked:

“Policy inconsistency in the Zambia's agriculture sector significantly contributes to the FRA's maize-centric approach thereby ultimately undermining the broader diversification for sustainable food and nutrition security. The FRA was originally established to enhance food security and stabilize market prices by purchasing grains. However, lack of consistent policies has led to the focus on maize” [Participant 17; FGD1]

The aforementioned findings demonstrate that policy inconsistency and lack of effective implementation of supporting policies significantly contribute to the FRA's maize-centric approach. The findings align with the findings by Mazhambe and Mukololo (2023) that the grain reserves do not functioning efficiently due to policy inconsistency. Similarly, according to Chapoto et al. (2016), the issue of ineffective response policies in the agricultural sector of Zambia is a concern. Mubanga and Ferguson (2017) also cited that biased government policies towards maize production and marketing were attributable to the maize-centric approach in Zambia.

Political interference and lack of political will

Political interference and lack of political will was also found to be one of the major factors contributing to the maize-centric approach of the Food Reserve Agency in Zambia. One of the key informants stated:

“Another challenge is that the FRA tends to be the main buyer rather than the buyer of last resort. This is all attributed to the high degree of political interference as we have seen that some decisions are made by the top elite and other individuals from the ruling party”. [Participant 3; Key Informant Interview]

In one of the FGDs, one of the participants stated:

“To add on, political interference has significantly inhibited the Zambia's FRA from diversifying grain procurement beyond white maize. Deep-rooted political interests within the institution, particularly those associated with powerful lobbying groups have create a challenging environment for policy reform to promote the FRA's mandate. These interests tend to resist changes that would weaken their interests, perpetuating reliance on white corn and inhibiting wider grain diversification. This illustrates how vested political interests obscure the agency's mission to enhance food security through the procurement of variety of grains through the SI 73 of 2017” [Participant 13; FGD1]

Political interference and lack of political will are among the major factors contributing to the maize-centric approach of the FRA in Zambia. The findings are supported by Chapoto et al. (2016) who cited the challenge of politicized maize policies in Zambia stating that most of the maize policies in Zambia are made by political actors. Similarly, Das et al. (2023) found that political interference influenced efficiency of the SGRs in India.

Commercialization of the FRA

The other key factor mentioned by the participants was commercialization of the FRA. One of the participants to the key

informant interviews undertaken by the researcher stated:

“Well, the other key contributing factor is the commercialization of the food reserve agency such that there is increased focus on maize which is grain with a larger market demand and profitable. [Participant 6, Key Informant Interview]

The issue of commercialization was also mentioned by a participant from FGDs:

“The profit motive of the FRA following its commercialization is also another contributing factor to the agency’s narrowed focus on maize as a strategic reserve at the expense of other grains such as sorghum” [Participant 27; FGD2]

From the findings, the other key factor found to be contributing to the maize-centric approach of the FRA in Zambia is commercialization of the FRA. The commercialization of the entity results in making the FRA a profit-motive entity leading to increased focus on maize, the only grain with a large and ready market in Zambia. Similarly, Mpehongwa and Cassian (2024) found that commercialization of SGRs result in SGRs shifting away from low profitable traditional food crops. Chinsinga (2018) also reported that commercialisation in Malawi brought about challenges such as maize-centric production and procurement. Oparinde et al. (2020) also found that commercialization of the grain sector in Nigeria contributed to the maize-centric approach.

Limited capacity due to infrastructural challenges

A significant number of participants to the study also singled out that limited storage capacity also contributed to the maize-centric approach of the FRA. Some of the participants said:

“The concentration on procurement of maize at the FRA has also been reinforced by infrastructural challenges as the agency have few physical infrastructures for grain storage as most of them are satellite collection points” [Participant 10, Key Informant Interview]

“The FRA of Zambia plays a central role in management of the national food reserves; however, reserve faces significant challenges which limit its capacity to fulfill its food security mandate. Among these challenges, is lack of suitable storage infrastructure. Inadequate storage facilities networks hinder the FRA’s ability to efficiently procure, store, and distribute diversified agricultural commodities as strategic grain reserves”. [Participant 25; FGD2]

The findings indicate limited capacity due to lack of suitable storage infrastructure for multiple grain crops has limited the FRA in procuring other designated commodities thereby leading to the maize-centric approach. The findings are comparable to those by Das et al. (2023) inadequate storage capacity and non-utilization of existing capacity are among the factors influencing efficiency of SGRs. Similarly, Ngumbi and Iravo (2013) reported that the NCPB in Kenya had been failing to deliver its mandate of promoting food security due to the challenges it faced such as lack of infrastructure and grain storage capacity. Pattanaik and Tripathi (2016) also reported that India faces the challenge of limited storage capacity for its SGRs.

Reliance on smallholder farmers

A notable number of participants from the key informant interviews and FGDs also reported that reliance on smallholder farmers was among the factors contributing to the FRA’s maize-centric approach. Some of the key informants said:

“The other contributing factor is that majority of the producers of maize in Zambia are smallholder farmers who are also the main suppliers of grain to the FRA” [Participant 3; Key Informant Interview]

“For the years, the government’s interventions including the FISP have been targeting smallholder farmers who have been the major contributors to maize production in Zambia” [Participant 6; Key Informant Interview]

Other participants from the FGDs also stated:

“I can also say that there is the issue of reliance on smallholder and subsistence farmers and this significantly contributes to the maize-centric practices of the FRA. This is because, smallholder farmers mostly produce the staple crop, maize thereby resulting in most of the FRA’s purchases being maize” [Participant 27; FGD2]

“The other issue is that most of our suppliers are smallholder farmers who rely on maize production and this makes over 90% of our purchases being maize. Most of the other grains are produced by medium and large-scale farmers who have established local and international markets and may not be willing to sell to FRA as based on the FRA’s “willing buyer, willing seller” principle.” [Participant 31; FGD3]

The findings show that reliance on smallholder farmers contributes to the maize-centric approach of the Zambia’s FRA. The findings corroborate the findings by Mason et al. (2019) that overreliance on smallholder farmers in Zambia had led to maize-centric procurement by the FRA. Chapoto et al. (2016) also revealed that reliance on smallholder farmers lead to maize-centric procurement for strategic grain reserve in African developing countries. The research by Chinsinga (2018) also reported that reliance on smallholder farmers contributed to maize-centric procurement for strategic grain reserve in Malawi.

5 Conclusion and Recommendations

Conclusions

The main aim of the qualitative research was to explore the main factors contributing to the FRA’s maize-centric procurement approach. The research employed the interpretivist philosophy and the exploratory case-study design. Data was gathered using key informant interviews, document analysis and focus group interviews. The thematic analysis was

employed to analyse the data. The findings revealed that the main factors include unavailability of designated grain commodities, policy inconsistency, government/political interference, commercialization of the FRA and limited storage capacity. The study concluded that there are numerous factors driving the maize-centric procurement approach of the Zambia's FRA. These factors represent barriers to the diversified grain model which is key for sustainable food security where the factors range from internal factors to external factors.

Recommendations

The study recommended the government of the Republic of Zambia to consider prioritising incentivizing production of the designated commodities. The study further recommended the government of Zambia to undertake reforms to decommmercialize the FRA in order to transition from the maize-centric approach to a comprehensive SGR in Zambia. The study further recommended the management of the FRA to strengthen the implementation of its Storage Investment Plan in order to improve its storage capacity can create an enabling environment for a diversified SGR.

Limitations and avenues for future research

The study could not be completed without any limitations. One of the limitations was that the research was purely qualitative focusing on a single case-study of the Zambia's FRA such that the findings lacked generalisability. The study recommends further studies to be undertaken using a larger sample. The study also recommends for use of other data collection methods such as observations.

Conflict of Interest

The authors declare that they have no conflicting interests

Funding

This study did not receive any specific grant from funding agencies in the public, commercial, or nonprofit sectors.

Data Availability statement

The data used to support the findings of this study are available from the corresponding author upon request.

Ethical considerations

The article followed all ethical standards appropriate for this kind of research.

Acknowledgments

I wish to acknowledge all the study participants who took part in this study.

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