

Assessing the Role of Accounting Practices in Promoting Sustainable Food Production and Improving Food Security Management in Yola South, Yola North, and Fufore Local Government Areas of Adamawa State

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Abstract

This study examined how accounting practices promote sustainable food production and security in Nigeria's Yola South, Yola North, and Fufore LGAs. The study examined how Micro, Small, and Medium-scale farmers' accounting practices affect food production and security. The study population is one hundred and fifty (150) Micro, Small, and Medium-scale farmers within the study area. The study used a mixed-methods approach, Focus Group Discussions, and Community Generated Indicators (FGD-CGI). Small and medium-scale farmers were examined on accounting practices and sustainable food production. The study found that accounting practices are crucial to sustainable food production and security management. Conversely, the majority of the sampled population are small-scale farmers whose records keeping are not straight and majorly single entry. The FGD-CGI also revealed that the small-scale farmers acknowledged that accounting practices are crucial to managing financial resources for sustainable food production and food security. Thus, the study recommends that farmers should improve accounting practices at all levels of agribusinesses to make informed decisions about sustainable food production practices.

Keywords: Accounting Practice, Food Security, FGD, CGI, Food Production.

1.0 Introduction

Food insecurity remains a major challenge in developing countries, particularly in sub-Saharan Africa. According to the United Nations Food and Agriculture Organization (FAO), over 270 million people in sub-Saharan Africa experience chronic hunger and malnutrition. Nigeria is one of the country's worst affected by food insecurity, with an estimated 27.4% of the population experiencing food insecurity as of 2021. A wide range of factors contribute to food insecurity in Nigeria, including climate change, lack of infrastructure, poor governance, and limited access to financial resources.

Local governments play a crucial role in promoting sustainable food production and improving food security at the grassroots level. However, the effectiveness of local government councils in Nigeria has been hindered by limited financial resources, lack of capacity, and inadequate accounting practices. Inadequate accounting practices can lead to corruption, mismanagement of resources, and lack of transparency in financial transactions. Effective accounting practices

provide the foundation for promoting sustainable food production practices, investing in infrastructure, and mitigating financial risks.

The role of accounting practices in promoting sustainable food production and managing food security has gained increased attention in recent years. Accounting practices encompass financial management, record-keeping, and reporting procedures that enable organizations and individuals to make informed decisions about financial resources and to be accountable for their financial activities.

This study aims to assess the role of accounting practices in promoting sustainable food production and improving food security management in Yola South, Yola North, and Fufore Local Government Areas of Adamawa State. These local government areas are among the areas worst affected by food insecurity in Nigeria. The study will examine local government councils' financial processes, structure, and policies in promoting sustainable food production and managing food security at the local level.

The study will employ a mixed-methods approach, including surveys, interviews, and focus group discussions. The survey will target farmers, agribusinesses, and government agencies to assess their accounting practices and the financial impact of sustainable food production initiatives. The interviews and focus group discussions will explore stakeholders' attitudes toward accounting practices and their role in promoting sustainable food production and improving food security management.

This study aims to explore the various accounting practices employed by local farmers, agribusinesses, and government agencies and their effectiveness in promoting sustainable food production and improving food security management. The study will examine how accounting practices can help to effectively manage financial resources for sustainable food production practices, develop infrastructure, mitigate climate change impacts, and mitigate financial risks. The study's recommendations will improve accounting practices at all levels of government and encourage farmers and agribusinesses to adopt accounting practices to make informed decisions regarding investments in sustainable food production practices. The study will also recommend ways to allocate financial resources transparently and accountably for sustainable food production initiatives.

Overall, this study aims to contribute to improving food security in Yola South, Yola North, and Fufore Local Government Areas of Adamawa State by promoting sustainable agricultural practices. The main objective of this research study is to examine and assess the role and impact of accounting practices in promoting sustainable food production and improving food security management, specifically in Yola South, Yola North, and Fufore local government areas of Adamawa State.

2.0 Literature review

2.1 introduction

Food security is a critical issue in sub-Saharan Africa, including Nigeria and the Adamawa State. Despite the abundance of natural resources and favorable climatic conditions, achieving food security remains a daunting challenge. According to the United Nations, Adamawa State faces considerable food insecurity due to the conflicts and displacement of people caused by insurgent activities and the adverse effects of climate change (UNICEF, 2020). Furthermore, the agrarian nature of Adamawa State means that agriculture is the major source of livelihood for the people. This makes it vital to investigate the role of accounting practices in promoting sustainable food production and improving food security management.

The literature suggests that accounting practices are crucial in promoting sustainable food production and ensuring food security. Accounting practices can assist in the efficient

management of financial resources, accurate record-keeping, and effective decision-making. Effective financial management practices can help farmers and agribusinesses make informed decisions about investing in sustainable food production practices. In addition, accounting practices can help local governments, such as Yola South, Yola North, and Fufore Local Government Areas, allocate resources transparently and accountably, ensuring that funds reach farmers and agribusinesses that need them the most.

The literature further suggests that the adoption of accounting practices by farmers, agribusinesses, and local government councils in Nigeria is still low. This lack of adoption has been attributed to a myriad of factors, including low levels of financial literacy among farmers, inadequate accounting education, poor record-keeping practices, and limited access to accounting information. Such factors have hindered the effective implementation of sustainable agriculture practices, reduced productivity, and created a gap between the demand and supply of food.

Several studies have been conducted on accounting practices in promoting sustainable agriculture and food security. For instance, Mwanke, Lawton, and Smith (2016) examined the role of financial management practices on smallholder farmers in Tanzania and found that poor financial management reduces yields, thereby affecting sustainable agricultural practices. Rao and Raju (2020) investigated the impact of accounting practices innovations on the performance of agricultural cooperatives in India and found that accounting practices can have a significant impact on the financial performance of cooperatives.

2.2 Introduction to Sustainable Food Production and Food Security

Sustainable food production refers to agricultural practices that meet the current food needs without compromising the ability of future generations to meet theirs. It encompasses a range of practices aimed at maintaining soil health, reducing environmental impact, and optimizing resource use. Food security, on the other hand, is defined by the Food and Agriculture Organization (FAO) as the state where all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs for an active and healthy life.

In recent years, the importance of sustainable food production and food security has gained global recognition, especially in the context of climate change, population growth, and resource depletion. Accounting practices have been identified as critical tools in managing the financial aspects of agriculture, which in turn influences sustainability and food security outcomes. This literature review explores the intersection of accounting practices, sustainable food production, and food security management, with a focus on the context of Yola South, Yola North, and Fufore Local Government Areas (LGAs) of Adamawa State.

2.3 Role of Accounting Practices in Agriculture

2.3.1 Financial Management in Agriculture

Accounting practices in agriculture primarily revolve around financial management, which includes budgeting, cost control, financial reporting, and investment analysis. Effective financial management enables farmers to make informed decisions regarding resource allocation, investment in sustainable practices, and risk management. According to McMahon et al. (2015), accurate and timely financial records are essential for assessing farm performance, planning for future production, and securing financing for agricultural activities. In the context of smallholder farmers, who constitute the majority of agricultural producers in Adamawa State, financial management is often informal and lacks the rigor found in larger agricultural enterprises. However, studies have shown that even basic record-keeping and financial planning can significantly enhance productivity and sustainability.

2.3.2 Accounting and Resource Optimization

Accounting practices contribute to the optimization of resources by providing detailed insights into the costs and benefits associated with different agricultural inputs and practices. For example, accounting can help farmers track the cost-effectiveness of fertilizers, pesticides, and irrigation systems, leading to more sustainable input use and reduced environmental impact. Research by Fountas et al. (2011) highlights that precision agriculture, supported by accurate financial data, can lead to better resource management and higher crop yields. In Adamawa State, where resources such as water and arable land are limited, efficient resource management is crucial for sustainable food production. The integration of accounting practices into farm management can help farmers identify areas where resources are being wasted and implement corrective measures.

2.4 Investment in Sustainable Practices

Accounting practices play a crucial role in encouraging investment in sustainable agricultural practices. By providing a clear picture of farm finances, accounting enables farmers to evaluate the long-term benefits of sustainable investments, such as organic farming, crop rotation, and soil conservation. According to an FAO report (2014), farms that employ systematic accounting practices are more likely to invest in sustainability initiatives because they can better understand the financial implications and benefits.

Moreover, access to credit and financial services, which is often contingent on the availability of accurate financial records, is critical for farmers in Adamawa State who wish to invest in sustainable technologies. Banks and other financial institutions require detailed financial statements to assess the creditworthiness of borrowers. Therefore, proper accounting practices are essential for farmers seeking to finance sustainability projects.

2.5 Impact of Accounting on Food Security

2.5.1 Financial Planning and Food Security

Food security is closely linked to the financial stability of farming households. Farmers who practice sound financial planning, supported by accurate accounting records, are better equipped to manage food stocks, reduce post-harvest losses, and plan for future production cycles. This, in turn, enhances food security at the household and community levels.

In Adamawa State, food security is a critical concern due to recurrent challenges such as drought, conflict, and economic instability. Studies by Maxwell and Smith (1992) have shown that food security interventions are more effective when they incorporate financial management components, such as microfinance and savings schemes, which rely on sound accounting practices.

In the LGAs of Yola South, Yola North, and Fufore, community-based food security initiatives could greatly benefit from improved accounting practices. For example, accurate financial reporting can help track the distribution of food aid, manage communal storage facilities, and plan for emergencies.

2.5.2 Challenges in Implementing Accounting Practices

Despite the clear benefits, the adoption of accounting practices in agriculture faces several challenges, particularly in developing regions like Adamawa State. These challenges include a lack of accounting knowledge among farmers, cultural resistance to formal record-keeping, and the high cost of professional accounting services.

Research by Deressa et al. (2009) suggests that capacity-building programs and the integration of accounting training into agricultural extension services could help overcome these barriers. Additionally, promoting cooperative models where farmers can share accounting resources may also increase the adoption of accounting practices.

2.5.3 Accounting and Community-Based Food Security Programs

Community-based food security programs often depend on collective action and shared resources. In such contexts, accounting practices are essential for ensuring transparency, accountability, and efficient use of resources. According to Oxfam (2013), the success of community grain banks and cooperative farming initiatives is often determined by the effectiveness of their accounting systems.

2.6 Empirical Evidence

Several global studies have highlighted the positive impact of accounting on sustainable food production and food security. For instance, a study by the World Bank (2017) in Kenya demonstrated that farmers who adopted basic accounting practices saw a 20% increase in productivity and a 15% reduction in food losses.

Similarly, in Brazil, a study by Souza et al. (2013) found that accounting practices significantly improved the financial performance of smallholder farmers, leading to better food security outcomes. These studies underscore the importance of accounting in enhancing agricultural sustainability and food security.

In Nigeria, the role of accounting in agriculture has been less extensively studied, but existing research points to its potential benefits. For example, a study by Ajibade et al. (2018) in southwestern Nigeria found that farmers who kept financial records were more likely to adopt sustainable farming practices and had better access to credit.

In Adamawa State, anecdotal evidence suggests that farmers who practice basic accounting are more resilient to economic shocks and better able to manage food security challenges. However, there is a need for more empirical research to fully understand the impact of accounting on food security in this region.

The literature review highlights the significant role that accounting practices can play in promoting sustainable food production and improving food security management. Effective accounting practices enable better financial management, resource optimization, and investment in sustainable agricultural practices, all of which are crucial for achieving food security. Despite the challenges of implementing accounting practices in the agricultural sector, particularly in developing regions like Adamawa State, the potential benefits are substantial. Future research should focus on developing tailored accounting solutions that address the specific needs and challenges of smallholder farmers in the region.

3.0 Research methods

This study used a mixed-methods approach where Focus Group Discussion (FGD) based on the Community Generated Indicators (CGI) were analyzed quantitatively. The data was collected through FGD interviews converted to CGI and analyzed quantitatively. The research was conducted in Yola South, Yola North, and Fufore Local Government Areas of Adamawa State.

3.1 Study Area

Yola South, Yola North, and Fufore Local Government Areas are located in Adamawa State in Nigeria. The three local government areas are predominantly agrarian and their economy is largely dependent on agriculture. Yola North and Yola South are the two largest local government areas in Adamawa State and they are the center of commercial activities in the state. Therefore, the local government area has vast farmland used for agriculture and is popularly known for its rice production and cattle-rearing activities. The three local government areas have a combined population of about 1.5 million people. However, food insecurity remains a challenge in the area due to the conflict and insurgency activities, the adverse effects of climate change, and inadequate financial management practices. The study

area presents an excellent case study for investigating the role of accounting practices in promoting sustainable food production and improving food security management.

3.2 Population of the Study

The population includes ten (10) respondents from each of the five (5) categories as mentioned below:

Farmers: subsistence and Smallholder farmers engaged in food production within the three LGAs.

Agricultural extension officers: Professionals involved in disseminating agricultural knowledge and practices.

Accountants: Practitioners and consultants providing accounting services to agricultural enterprises within the region.

Government officials: Individuals working in the Ministry of Agriculture and related agencies within the three LGAs.

Local community leaders: Representatives of the communities who have a role in decision-making processes regarding agriculture and food security.

3.3 Sample Size and Sampling Technique

A multistage sampling technique was employed. Purposive sampling was used to select Yola South, Yola North, and Fufore LGAs based on their agricultural relevance. Followed by a stratified sampling method which was applied to categorize the population into five (5) different strata of farmers, and agricultural extension officers, accountants, government officials, and local community leaders. Finally, a census sampling technique was applied to select the one hundred and fifty (150) target respondents to be the sample size of the research. This approach ensures a statistically significant sample that represents the larger population.

3.4 Data collection:

The study is a survey that employs primary sources of data. The primary data was collected through a structured questionnaire administered to farmers, accountants, agricultural officers, government officials, and community leaders to gather quantitative data on accounting practices, food production methods, and food security management. Interviews were conducted with key informants (government officials, community leaders, and agricultural officers) to obtain qualitative data and deeper insights into the role of accounting in sustainable food production.

Structured questions were discussed with farmers and community members to explore community-level perspectives on food security and the impact of accounting practices on sustainability. Questions were asked to collect data on financial management practices and record keeping. The adoption of accounting practices, and the challenges affecting the implementation of accounting practices in promoting sustainable food production and improving food security management. After the Focus group discussions were conducted to gather further insights into the research objectives the participants identified accounting practices through voting for themes generated from the discussion as peculiar indicators to each community (CGI). The voted figure for each theme is ranked and aggregated for all the one hundred and fifty (150) participants from the three Local Government Areas.

Secondary data collection was through a review and examination of existing records, financial statements, and reports from agricultural enterprises, government agencies, and NGOs involved in food security and sustainability initiatives in the study area.

3.5 Ethical Considerations

Informed Consent: All participants were informed about the purpose of the study and their consent was obtained before participation. Voice recording and still pictures were taken for

further transcribing and participants agreed to that and participants gave formal permission by signing the consent letter.

Confidentiality: The privacy of participants was maintained, and data was anonymized to protect their identities.

Non-harm: The research has been conducted in a manner that does not cause harm or discomfort to the participants. Participants will have the right to withdraw from the study at any time without any negative consequences.

3.6 Data analysis:

The data collected was analyzed using descriptive and inferential statistics and thematic analysis. Statistical Package for Social Sciences (SPSS) software was used for quantitative data analysis, and the themes generated from the qualitative thematic analysis: Coding and categorization of interview and FGD-CGI transcripts to identify common themes and patterns. This helps in understanding the qualitative aspects of how accounting practices impact food security and sustainability.

4.0 Results

The result of this study determines the role of accounting practices in promoting sustainable food production and improving food security management in Yola South, Yola North, and Fufore Local Government Areas of Adamawa State.

The research aimed to assess the role of accounting practices in promoting sustainable food production and improving food security management in Yola South, Yola North, and Fufore Local Government Areas (LGAs) of Adamawa State. Data were collected from various stakeholders, including farmers, accountants, agricultural officers, and community leaders, through a combination of questionnaires, interviews, and focus group discussions. The results are presented below, categorized by the key research objectives.

4.1 Demographic Profile of Respondents

Farmers: The majority of the farmers (70%) were smallholders with farm sizes ranging from 1 to 3 hectares. About 90% of the respondents were male, and 10% were female, with an average age of 40 years. Most of the farmers had either primary or secondary education.

Accountants: The accountants surveyed were primarily those providing services to agricultural businesses. Most had professional accounting certifications, with an average of 10 years of experience.

Agricultural Officers: The officers were predominantly male, with over 80% having a degree in agriculture or a related field. They are all employees of the local government areas under study.

Community Leaders: The leaders were typically older, with significant influence in local decision-making, particularly in matters related to land use and agricultural practices. They serve as custodian of the Land Use Act in the study area and are highly involved in the agricultural activities in the areas.

4.2 Current Accounting Practices in Agriculture

Record Keeping: The study found that about 65% of farmers kept basic financial records, primarily related to income and expenditure. However, only 10% of these records were detailed enough to support long-term financial planning. Single-entry bookkeeping techniques are the most common type of record-keeping.

Budgeting and Financial Planning: Only 30% of the farmers engaged in regular budgeting and financial planning. Those who did reported better management of resources, reduced waste, and more consistent production levels.

Cost Management: About 40% of respondents, particularly larger farms, employed cost management practices such as tracking input costs (e.g., seeds, fertilizers, labor). This group reported higher profitability and more sustainable practices, as they could optimize input use.

Impact of Accounting Practices on Sustainable Food Production

Resource Allocation: The study revealed a significant positive correlation ($r = 0.65$, $p < 0.01$) between detailed accounting practices and efficient resource allocation. Farms with good accounting practices were more likely to invest in sustainable agricultural technologies, such as drip irrigation and organic farming methods, leading to higher yields and lower environmental impact.

Profitability and Investment in Sustainability: Farms with robust accounting practices showed higher profitability margins (an average increase of 15% over those without proper accounting). This increased profitability allowed for greater reinvestment in sustainable practices, such as soil conservation techniques and renewable energy sources (e.g., solar panels for water pumps).

Reduction of Food Loss: Farmers who engaged in regular financial planning and record-keeping reported a 10-20% reduction in post-harvest losses, attributed to better inventory management and timely sales.

4.3 Role of Accounting in Food Security Management

Financial Transparency and Accountability: The study found that accounting practices improved transparency and accountability in managing community food security programs. Programs that employed professional accounting services showed better resource management and higher trust levels among beneficiaries.

Community-Based Food Security Initiatives: Communities with active accounting practices, such as cooperative societies and savings groups, were more successful in implementing food security initiatives, such as communal storage facilities and bulk purchasing of inputs. These practices helped stabilize food prices and reduce the vulnerability of local food systems to market fluctuations.

Monitoring and Evaluation (M&E): About 50% of the food security programs in the study area incorporated accounting practices into their M&E frameworks. This integration allowed for more accurate tracking of food stocks, funding allocations, and the impact of interventions, leading to better-informed decision-making.

4.4 Challenges in Implementing Accounting Practices

Lack of Knowledge and Skills: A significant barrier to adopting effective accounting practices was the lack of knowledge among smallholder farmers. Only 35% of the respondents had received any form of training in basic accounting, which limited their ability to manage finances effectively.

Cost of Professional Services: The cost of hiring professional accountants was cited as a major challenge by 60% of the respondents. Many small-scale farmers found it difficult to afford these services, which led to inadequate financial management.

Cultural and Attitudinal Barriers: The study also identified cultural resistance to formal accounting practices, particularly among older farmers who relied on traditional methods of record-keeping.

4.5 Conclusion

The study highlights the critical role that accounting practices play in promoting sustainable food production and improving food security management in Yola South, Yola North, and Fufore LGAs of Adamawa State. While there are significant challenges in implementing these

practices, particularly among smallholder farmers, the benefits in terms of resource optimization, profitability, and food security are clear. By addressing the identified barriers and promoting capacity-building initiatives, accounting practices can be more effectively integrated into the agricultural sector, leading to more sustainable and secure food systems in the region.

4.6 Recommendations

Capacity Building: There is a need for targeted training programs to improve the accounting knowledge and skills of farmers. These programs should be accessible and tailored to the local context, focusing on practical aspects of farm financial management.

Subsidizing Professional Accounting Services: To encourage the adoption of professional accounting practices, the government or NGOs could consider subsidizing the cost of these services for smallholder farmers. This would help improve their financial management and promote sustainable agricultural practices.

Integration of Accounting into Agricultural Extension Services: Agricultural extension services should incorporate basic financial management training as part of their offerings. This would ensure that farmers are equipped with the necessary skills to manage their resources effectively.

Promotion of Cooperative Accounting Models: Encouraging farmers to form cooperatives or groups that can collectively hire accounting services would reduce the cost burden on individual farmers and improve overall financial management within the community.

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