UNIVERSITY FOR DEVELOPMENT STUDIES

FERTILIZER SUBSIDY PROGRAMME AND MAIZE PRODUCTION IN YUNYOO-NASUAN DISTRICT

GARIBA ELIJAH FEIDIIB

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FACULTY OF AGRICULTURE, FOOD AND CONSUMER SCIENCES

DEPARTMENT OF AGRICULTURAL AND FOOD ECONOMICS

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(UDS/MAPM/0002/23)

THESIS SUBMITTED TO THE DEPARTMENT OF AGRICULTURAL AND FOOD ECONOMICS, FACULTY OF AGRICULTURE, FOOD AND CONSUMER SCIENCES, UNIVERSITY FOR DEVELOPMENT STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE WARD OF MASTER SCIENCE (MSC) DEGREE IN AGRICULTURAL PROJECT MANAGEMENT.

MARCH, 2025

DECLARATION

I, Gariba Elijah Feidiib declare that this submission is my original research work except for references made to other people's work which have been duly cited and that no part of it has been presented for another MSc Agricultural Project Management in this university or elsewhere.

Candidate signature: …  … Date: 26/03/2025……

Gariba Elijah Feidiib

Approved By:

Supervisor signature:  …… Date: …26/03/2025…

Dr. Shamsudeen Abdulai

Head of Department Signature:  ..… Date…27/03/2025.

Prof Benjamin Tetteh Annang

DEDICATION

This survey (piece of work) is dedicated to my parents, siblings, wives and children.

ACKNOWLEDGEMENT

Frist of all, I want to thank God for the opportunity given me to offer this course at the University for Development Studies. I am most grateful to my supervisor Dr. Shamsudeen Abdulai who never gave up on me and under his direction and guidance this work has been a reality. I would sincerely like to express my heartfelt gratitude to him, for his patience, many in-depth and constructive criticism, and valuable suggestion, which have immensely contributed to the success of this work I am also grateful to our lecturers at the Department of Agriculture and Food Economics, whose tuition has brought me this far in my academic ladder. And again, to my family members for their support and prayers during this work.

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Acronyms

GDP = Gross Domestic Products

FGDs = Focus Group Discussion

GSS = Ghana statistical service

SSA = sub Saharan Africa

PFJ = Planning for food and Jobs

NPK= Nitrogen Phosphorus and Potassium

FAO = Food and Agriculture Organization

NGOs = Non-Government Organizations

CFA= Community Fertilizer Assistant

MAFAP =Monitoring and Analyzing Food and Agricultural Policies

SP= Subsidy program

GASIP = Ghana Agriculture Sector Investment Progromme

UNESCO = United Nations Educational, Scientific and Cultural Organization

ABSTRACT

This study examined the fertilizer subsidy programme and maize production in Yunyoo-Nasuan District in the North East Region of Ghana. Although, the FSP had a positive impact on promoting household maize production, the absence of extension agents and difficulty in accessing inputs had negative impact on the programme.

The program had a positive and significant impact on the amount of inorganic fertilizer used on maize and increased the amounts of maize produced by the program participants

The study concludes that the fertilizer subsidy program has positive effects on maize production, suggesting the need for policy continuity and expansion to enhance food security in the North East Region of Ghana.

CHAPTER ONE

INTRODUCTION

1.0 Background of The Study

The agricultural sector is a principal source of livelihoods for majority of Ghanaians. It employs over 60% of the labor force and contributes over 30% of Gross Domestic Product (GDP) in Ghana. (World Bank, 1990 and Ghana statistical service 2020.) Maize is the most important staple food crop and is the most widely grown cereal in Ghana, particularly in the northern parts (Ghana ministry of food and agriculture 2000) maize has been the dominant crop in terms of production since the early 2000 and continues to be so today. In the Northern regions, maize production increased significantly between 2008 to 2015 due to various agriculture policies and initiatives aimed at boosting food security. Despite its huge economic and social contributions to the nation, maize productivity remains low and have their roots tied to various challenges. Among these challenges are poor maintenance of seed and improved fertilization technology and inadequate access to fertilizers.

Maize farming households in Yunyoo-Nasuan District face many challenges in accessing fertilizers to enhance maize production because the majority belong to the low-income group. (Ghana statistical service 2021) and (planting for food and jobs (PFJ) 2017) The cost of fertilizer is often prohibitively high for smallholder farmers in rural area like Yunyoo-Nasuan (Amanor et al 2019) Many rural households struggle with poverty, which limited their ability to purchase inputs like fertilizer. Fertilizer subsidies by Government of Ghana have been aimed at improving access, but many

farmers in Yunyoo-Nasuan have found it difficult to benefit (Ragasa and chapoto 2017). In rural districts, poor infrastructure, especially inadequate road networks, makes it difficult for fertilizer to be transported to farming households in timely manner (International food policy Research institute 2016) The provision of input subsidy is essential and justifiable when poverty binds the rural poor, and this could provide a way for the agricultural sector to escape from the 'poverty trap.' The rationale behind fertilizer usage among smallholder maize farmers is to increase productivity, and generate income to improve their welfare.

In response to this, in recent years several governments in SSA (Sub-Saharan Africa with the assistance of international donors) have introduced input subsidy programs to foster the use of modern inputs and increase agricultural productivity (Druilhe and Barreiro-Hurlé, 2012; Jayne and Rashid, 2013). The discussion about these policies is still ongoing, with recent articles focusing primarily on the crowding out of the commercial fertilizer sector, diversion of inputs programs, and other factors related to the design of these programs (e.g. Pan and Christiaensen, 2012; Takeshima and Nkonya, 2014; Jayne et al., 2013). The results from these subsidy programs are mixed and their performance is found to vary depending on the country and the characteristics of the intervention (for a comprehensive overview, see Jayne and Rashid, 2013). This calls for further rigorous ex-post analyses assessing the effectiveness of these policies. Our article contributes to this literature by studying the profitability of chemical fertilizers using large-scale plot data from Northern region of Ghana. As far as we know, no such estimates have been produced so far for this particular country. The government of Ghana, following the example of a number of other countries in SSA,

launched a subsidy program in 2008 to encourage farmers' uptake of chemical fertilizers and foster cereal production. The intervention was universal but targeted at specific crops (maize in particular). The program cost was estimated at 9.2 billion CFA francs1 in 2008, about 8% of total agricultural spending (MAFAP, 2013). The subsequent decrease in the market price of fertilizers was estimated to be in the range 20-40% depending on the source (Wanzala-Mlobela et al., 2013; Siri, 2013). Although the intensity of fertilizer use has increased since the first year of the program implementation, it has remained low. In 2008, the average fertilizer use intensity (calculated as the ratio of total fertilizer use to total arable land in the country) was around 9.5 kg/ha. This level is slightly below the average level of fertilizer use for SSA (14.7 kg/ha), and well below the targeted level of 50 kg/ha that should be reached by 2015, according to the 2006 Abuja Declaration.2 Fertilizer use intensity has increased slightly since 2008, reaching an estimated 11 kg/ha in 2012.

1.1 Problem Statement

Maize farmers in the district face many barriers in accessing inputs such as fertilizers, which are very expensive. The existing input use in the district is limited by the cost and the knowledge about how, when, and where to apply fertilizer on maize fields. Evidence shows that limited access and intensive use of fertilizer on maize fields is a key factor contributing to the low yields of maize. Thus, this study assesses the fertilizer subsidy programme and maize production in the Yunyoo-Nasuan District.

1.2 Research Questions

The main research question is what are the perceptions of farmers about the fertilizer subsidy programme and maize production in Yunyoo-Nasuan District? The specific research questions are:

1. What are the perceptions of farmers about the effect of the fertilizer subsidy programme on miaze production in Yunyoo-Nasuan District?
2. What are the challenges faced by farmers in receiving subsidized fertilizers?.

1.3 Research Objectives

The main research objective is to assess the perceptions of farmers about the fertilizer subsidy programme and maize production in Yunyoo-Nasuan District.

1. To examine the perceptions of farmers about the effect of the fertilizer subsidy programme on miaze production in Yunyoo-Nasuan District.
2. To identify the challenges faced by farmers in receiving subsidized fertilizers.

1.4 Organization of study

Chapter One (1) – Background to the Study

Chapter Two (2) - Literature Review

Chapter Three (3) – Methodology

Chapter Four (4) - Results and Discussions

Chapter Five (5) – Summary, Conclusion and Recommendations

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter gives a review of the literature related to the impact of fertilizer subsidy programs on maize production. The review encompasses the benefits and constraints of fertilizer use and maize production the economics of using fertilizer, and district-level fertilizer programs.

2.2 Benefits and Constraints of Using Fertilizer

Fertilizer is a rich source of nutrients for plant growth. In some cases, it is the first constraint to crop production that must be overcome to ensure a yield increase in the short term. In its absence, it is difficult for all the other factors of production to efficiently contribute to increased crop output. Under-applied or deficient applications of fertilizer weaken the other input factors of production. (Lassalett et al, 2014; West et al 2014). Low fertilizer levels may lead to poor germination, diminished plant growth, and reduced ability to photosynthesize. Inefficient use of fertilizer in crop enterprises can be attributed to a variety of causes, including the lack of knowledge of the quantity and type of fertilizer to be applied, high prices of fertilizer, and complex distribution systems. Inputs are not used according to the instructions or recommendations of scientists who developed them (World Health Organization, 2018).

2.3 Fertilizer Subsidy Programmes

The Government of Ghana has initiated several social interventions in its social intervention policies to alleviate poverty, such as the Health Insurance Scheme, School Feeding Programme, and Subsidy Programme for Food Crop Farmers, among others. The subsidy programmes for food producers intend to reduce food prices by lowering production costs and promoting the consumption of locally grown staple foods. In most Sub-Saharan African countries, agriculture supports rural households, and the overriding political and policy objective has been to develop and modernize agriculture. The role of agriculture has become increasingly prominent for most Sub-Saharan African economies. This is mainly due to the continuous fall in revenue from the export of agricultural products over the past three decades, particularly in the case of Ghana. The agricultural sector in Ghana is dominated by the production of a number of food crops, particularly maize, which has been the most dominant over the years. However, the contribution of the agricultural sector has been declining, and this has led to a progressive reduction in the income levels of most poor rural households dependent on agriculture. To improve the production of agricultural crops, the government, on its part, introduced a number of programmes through financial and in-kind support to boost agricultural activities. One of such programmes is the fertilizer subsidy programme. The Fertilizer Subsidy Programme was first implemented in Africa in the early 1970s when many countries had input subsidies or complete provision by the government at times of high world price titles and foreign exchange import constraints.

Many developing countries are currently engaged in fertilizer subsidies with terms like the "new Green Revolution" or "evergreen revolution." Fertilizer subsidies in agriculture around the globe have previously been topical. These subsidies are particularly favoured by African governments and their development partners. There seems to be an accommodating stance in supporting the use of subsidies this time. Subsidy programmes have proven over the years to lead to increased yields. The term "fertilizer subsidization" is inappropriate from a development perspective because it implies that much of what is given in subsistence agriculture in some Sub-Saharan African and developing countries yields returns, and one of those universal factors in agriculture is fertilizers. Ever since the announcement of the neoliberal rehabilitation in 1985, fertilizer use has charted a declining phase. The motive of fertilizer subsidy programmes are designed to increase on-farm demand for fertilizers by rebating farmers a percentage of the cost of purchased quantities of fertilizers. The main motive of these programmes is to make fertilizers relatively cheap for the end users, usually smallholder farmers. This will enhance their purchasing power and, in turn, boost their standards of living. This is vital because the vast majority of farmers in the world are subsistence farmers. Fertilizer subsidies have been shown through research to stimulate the use of fertilizers and significantly raise yields. In times of food insecurity, the impact of subsidy programmes escalates the importance attached to them. Governments of countries then offer subsidized input programmes as a precaution against potential food crises. This, to a high extent, signifies an active state intervention in addressing food crises, which have been imminent and unpopular in Africa, and shows how much the poor depend on agronomy for growth and

development. The absence of subsidies can create credit constraints, inhibiting the actualization of input purchases at the start of the planting season. These constraints have been reported to be more pronounced during the poorest times of food insecurity. Consequently, these programmes are a strategy for overtly reducing the burden of agricultural and macroeconomic policy adjustment towards the lower end of production. The problems identified range from the high cost of inputs to the low price of maize in the market. The unattractive prices given to maize farmers have drastically limited the purchasing power of these poor farmers. Moreover, farmers in Yunyoo-Nasuan are characterized by small landholdings. This has contributed to most farmers producing below subsistence levels, hence increasing food insecurity. Based on the importance of maize in the district and the challenges it faces, it is imperative to assess any policy aimed at boosting its production.

2.4 Maize Production and Its Importance

Planting for food and jobs (PFJ) program report that maize production is the primary activity for many farming households, maize serves as both a staple food and cash crop for the local population in Yunyoo-Nasuan district. Data from the Agriculture Department of the district revealed the significance of maize production in Yunyoo-Nasuan. Data showed that maize production has been increasing in the last decade. Maize is now the leading cereal crop, with production surpassing 1.1 billion metric tons in recent years. From 2010 to 2020, the total area under maize cultivation increased to approximately 205 million hectares, accounting for 13% of national cropped land. It is a key crop in Ghana, Sub-Saharan Africa, and North East where it constitutes 16-21% of the regional cropped area (Ghana Statistical Service, 2020;

FAO, 2020) Over the past decade, maize production in this district has increased due to government interventions and local farmers adopting better farming techniques .Area Cultivated. Data specific to the district shows that more hectares of land have been dedicated to maize farming, especially in the last five years. The area cultivated has expanded due to support from government programs.

2.5 Effect of Fertilizer Timing on Maize Yield

Maize response to applied nutrients varies with genotype, fertilizer carriers, application methods, timing of application, and organic matter treatment. The incorporation of fertilizers at planting is a common practice on smallholder farmers' fields. However, this may not be optimal in all soils considering precipitation patterns and rates, especially in the subsistence farming sector, where poor, erratic seedbed preparation is common, and maize planting may be delayed. Therefore, it is important to compare planting and earlier application locations to determine the best location for nutrient applications. It is uncertain if avoiding post-planting operations is economically justified and noted that economic benefits of applying nutrients with seed are not always lost. Alternatives include delayed broadcasting or a mix of placement and top dressing.

Micro-dosing of fertilizer with maize seed, banding, and dibble are strongly recommended as they provide an advantage over broadcasting alone. Timing of hikes to exploit rainfall distribution aids the exploitation of soil moisture, and planting options exist in the communal area of the North West Province, providing potential options for less impacted farmers. The use of leaching, nitrate, and ammonium,

estimated after summer management, and the extent to which applied nutrients are recovered by the maize crop at maturity did not prevent the anticipated yield loss for low and moderate rates of urea applied to a wooded oxisol in an area subject to high rainfall mainly between forms in light concentration. These findings indicate that rainfall peaks in early leafy growth, during flowering, and later during grain fill, but the incorporation of nutrient applications depends on seasonal circumstances and crop performance requirements

2.6 Quality of Fertilizer and its Impact on Maize Production

Maize farmers' confidence in obtaining a high harvest from the use of subsidized fertilizer distributed by the government is equally important. Oftentimes, the quality of fertilizer distributed cannot be guaranteed because farmers have been complaining of low productivity even when the recommended fertilizer has been applied. There are also cases where the fertilizer provided to the farmers has not been certified for human safety, which is a dangerous situation for the population. The need for fertilizer in moist savanna areas such as Northern Ghana is the most important, but the quality of fertilizer is a significant condition for farmers.

It is the quality of the fertilizer that brings about increased farm yield, crop gain, employment, and income growth. It is important to note that from our interactions with the farmers, they complained about the quality of the fertilizer that is distributed and that the quantity of the bag is something they have reservations about. This complaint by the farmers, if duly investigated, may indicate that the content of the bag is well below the stated quantity. All the same, the quality of the fertilizer, in terms of its

contents, should be one of the key things that the government should be looking at. Providing the right content of fertilizer at the right price is essential for a successful program. The farmers who use improved seeds without fertilizer at baseline relative increase in the fertilizer treatment usually get a proportionally lower return from planting with their improved seed alone.

CHAPTER THREE

RESEARCH MMETHODOLOGY

3.1 Introduction

This chapter presents the study area, research design, sampling procedure and sample size, data collection techniques, and data analytical techniques that were employed in answering the research questions.

3.2 Study Area

The study was carried in the Yunyoo-Nasuam District in the north east region of Ghana, specifically the district capital is Yunyoo and it boundaries with Bunkpurugu District, while the east is linked to East Mamprusi Municipal According to the 2021 Population and Housing Census (GSS, 2021) of Ghana recorded the population of the Yunyoo-Nassau District at 329, 000 people The district is part of the North East Region of Ghana and is one of the least populated area in the country based on the 2021 census data. There is great potential for crop agriculture ranging from cereals, tubers, legumes, vegetables and root crops. Lately, considerable attention on maize production has been observed. The Ministry of Food and Agriculture (MoFA) was launched planting for food and jobs programs in April 2017 and implemented from 2017 to 2022, this document outlines the implementation of agriculture policies such as the planting for food and jobs programs, which includes fertilizer subsidies aimed at increasing maize production Some of the potential constraints facing maize production include irregular or erratic rainfall distribution, unavailability of fertilizer, and the high cost of labor. Various government programs such as subsidized fertilizer, improved seeds, promotion of export marketing of agricultural produce, and

agricultural extension services are aimed directly at sustaining crop production. Maize is the main staple food crop cultivated in the district, and it is grown by most farmers in the area. The district is also one of the beneficiary districts under the fertilizer subsidy program implemented by the government of Ghana. The choice of this study area is strongly tied to the prevalence of farmers who are beneficiaries of the fertilizer subsidy program. This case study aims to contribute to the limited knowledge on the fertilizer subsidy program in Ghana and enhance local academic debates on agricultural issues.

3.3 Sampling Procedure and Data Collection

Primary data were gathered from maize farming households who are beneficiaries of the fertilizer subsidy program in the Yunyoo-Nasuam District. The questionnaire was prepared in English and translated into moar and Mamprusi language for effective communication. Enumerators were recruited to assist with the data collection process and were given training on how to conduct interviews and handle the questionnaire. A pilot survey was carried out in the nearby Yunyoo North electoral area prior to the actual data collection. The study collected cross-sectional data from maize farmers during the 2023/2024 cropping season. The sample for the study consisted of peasant maize farmers who cultivated an average 2.5 hectares or less. These smallholder farmers are resource poor and will rely mostly on the government fertilizer subsidy program to obtain fertilizer for production because, the program targets smallholder maize producers. The district was chosen for the study because agriculture is the mainstay of the people. The main crops produced are maize, yam, pearl millet, and guinea corn. The district is noted for low school enrollment, high illiteracy rates

(UNESCO, 2021). A simple random sampling method was employed in selecting the 50 participants for the study. Respondents were randomly sampled from each of the communities. Jimbale, Bunbuna, Mangor, Naagu, Gbenkpurugu Yunyoo and Nasuan

3.4 Data Collection Methods

The questionnaire was designed towards answering the research objectives of the study. The study used two groups of households: those who benefited from the government's fertilizer subsidy program and those who did not benefit. The inclusion criteria for participation was farmers who had cultivated maize on at least 2.45 hectares of land one or two years ago or did not have the experience of participating in a government fertilizer subsidy program.

In addition to the questionnaire, these methods also captured non-verbal cues, infrastructure conditions, and other environmental factors that could not be obtained through the questionnaire. The researcher interacted with stakeholders and staff of the Ministry of Food and Agriculture in the district. This helped the researchers to understand the operations of the stakeholders when it comes to maize production and the subsidy program.

A written guide was developed for the focus group discussions that captures both open-ended and closed-ended questions and was conducted in local languages. The written guide was used to facilitate the discussion to ensure the issue was exhaustively explored. The written guide was tested under different conditions in a different district before the actual data were collected in the Yunyoo-Nasuan District. The guide was used by community volunteers to facilitate the focus group discussions. The two

groups were the beneficiaries' group and the non-beneficiaries' group. Each focus group discussion was made up of ten participants who were part of the fertilizer subsidy program. Each focus group discussion (F G D) lasted for 120 minutes.

The study also targeted agricultural input dealers in the district, key stakeholders, and relevant staff in the district agricultural department. This was to share their experiences and knowledge as service providers, extension officers, and stakeholders of the government's fertilizer subsidy program to assess the implementation of the fertilizer subsidy program. The targeted households were in six communities namely Jimbale, Bunbuna, Mangor, Naagu, Gbenkpurugu, Yunyoo and Nasuan The questionnaires were administered to smallholds farmers who benefited from the fertilizer subsidy, as well as to non-beneficiary maizer farming households, with a sample of 50 respondents from each community. Questionnaires were also administered to the agricultural input dealers, the department of agriculture staff, financial institutions, and NGOs etc in the district to elicit relevant information. The SAS software (Statistical analysis system) was used for the analysis of the data collected by the survey.

3.5 Data Analysis Techniques

The data collected through the questionnaires were analyzed using qualitative analysis techniques. Qualitative analysis was used on the data collected from 50 maize farming households in the Yunyoo-Nasuan District. interest to the study. The analysis was mainly concerned with exploring the participants' perspectives and experiences on these themes.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results of the subsidy program in terms of its direct effects on farm productivity and the challenges of the subsidy programme.

4.2 Fertilizer Access and Availability

One of the key objectives of the Fertilizer Subsidy Programme is to enhance the availability of fertilizers to smallholder farmers.

Table 4.1: Results of the Fertilizer Subsidy Programme in the Yunyoo-Nasuan District.

Key Objective	Findings
Enhanced availability of fertilizers to smallholder farmers	78% of respondents received subsidized fertilizers during the most recent planting season
Challenges in fertilizer distribution	32% of farmers experienced delays in receiving their subsidized fertilizers.

The results above indicate that a significant proportion of farmers in the Yunyoo-Nasuan District have benefited from the subsidy, with 78% of respondents reporting that they received subsidized fertilizers during the most recent planting season. However, while access to fertilizers has improved, several challenges remain, including delays in fertilizer distribution. Around 32% of farmers experienced delays in receiving their subsidized fertilizers.

4.3 Fertilizer Utilization

The study examined how farmers used the subsidized fertilizers on their maize farms. Results show that

Table 4.2: Effectiveness of the fertilizer subsidy program

Aspect	Findings	Details
Adherence to Recommended Fertilizer Guidelines	85% of farmers applied fertilizers according to the recommended guideline	The majority of farmers (85%) followed best practices, applying fertilizers as per the recommendations, leading to positive outcomes.
Inappropriate Fertilizer Use	15% of farmers applied fertilizers inappropriately (excessive or incorrect timing).	A minority (15%) of farmers did not follow the guidelines, potentially impacting soil health and crop yields negatively.
Need for Education and Extension Services	Need for further education to ensure optimal fertilizer use	Education and extension services are critical to address the 15% of farmers who used fertilizers
Integrated Fertilizer Use	Most farmers combined subsidized fertilizers with other inputs (60% used improved seed varieties, 45% used organic fertilizers).	Combining chemical fertilizers with organic fertilizers and improved seeds contributes to better yields and enhances sustainability.
Impact of Integrated Farming Practices	Integrated approach contributed to better yields	The combination of subsidized fertilizers with other inputs helps improve crop yields, fostering more sustainable farming methods.

A majority of the farmers (85%) applied the fertilizers according to the recommended guidelines, Maize requires a significant amount of nutrients, particularly nitrogen (N), phosphorus (P), and potassium (K) for growth. which is a positive outcome indicating effective adoption of best practices. However, 15% of farmers reported using fertilizers inappropriately, either by applying them in excess or not following the recommended timing, which could result in reduced benefits or even harm to soil health. Organize regular workshops, demonstrations, and field days where farmers can learn the correct methods for applying fertilizers, including the appropriate timing, quantities, and methods of application. The findings also reveal that most farmers combined the use of subsidized fertilizers with other inputs such as improved seed varieties (60%) and organic fertilizers (45%), which contributed to better yields. This integrated approach to farming enhances the sustainability of agricultural practices and demonstrates the importance of combining chemical and organic fertilizers for optimal crop growth.

4.6 Effect of Fertilizer Subsidy Programme on Maize Production

In the Northern part of Ghana, the Ministry of Food and Agriculture implemented the Agriculture Sector Investment Programme (GASIP). One of the components of this project was to provide fertilizer subsidy to maize farmers. Farmers were required to pay 50% of the actual price of fertilizer, while the government provided the remaining 50% as subsidy on the fertilizer price. This programme was started in Yunyoo-Nasuan District in the 2012 cropping season. An understanding of the factors influencing production of maize is important in light of fertilizer subsidy programme.

Farmer 5: With the subsidized fertilizer, I have noticed that my maize yield has increased a lot. Last season, I harvested more than before.

Farmer 6: I have started using better seeds and herbicides. I didn't know these practices before, but the fertilizer subsidy program helped me improve my farming.

Farmer 7: The subsidy is very helpful. It's allowed us to produce more and make a better living. Without it, we would be struggling to buy fertilizer.

While many factors influence the production of maize, climatic factors, socio-economic factors, and technological factors are considered in this study (Adeagbo et al., 2021). Death of a spouse or head of household) unfavorable rainfall pattern, planted area of maize, distance to all weather road, access to extension training on maize production, access to market information on maize prices, availability of credit facility, and age of farmer are among the important factors affecting maize production in Yunyoo-Nasuan District of Ghana. Maize is the most widely cultivated staple food crop in the Yunyoo-Nasuam District.

Farmer 1: The rainfall has changed over the years. We used to rely on it more, but now we get irregular rainfall, and this affects our crops.

Farmer 2: Before, I did not have access to good seeds or the right kind of fertilizer. But now, the government's subsidy has allowed me to buy better inputs.

Female farmer 8: When my husband passed away, I had to manage everything alone, and it was difficult to keep up with the maize production.

Farmer 4: We used to struggle with knowing how to use fertilizers properly. The extension agents have helped us a lot to understand better farming practices.

Farmer 3: The road is bad, and sometimes it's hard to get the maize to the market in time. It affects how much we can sell.

Farmer 9*:* I only joined the subsidy program after I learned about it through an extension officer. Having access to better transportation also made it easier for me to get the fertilizer.

In the 2012/2013 cropping season, maize was cultivated on 4,441 hectares of land, which was 73.17 percent of the total cultivated area for all crops from the Ministry of Food and Agriculture (MOFA), Ghana. Farmers in this district depend on rainfall to grow maize.

The findings from the analysis suggest that the fertilizer subsidy program significantly increases maize output. The findings from the qualitative analysis indicate that maize farming households in the study area have adopted new agricultural practices such as using improved seeds and herbicides as a result of the fertilizer subsidy program

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents a summary of the findings, conclusion, and recommendations

5.2 Summary of Findings

This study assessed the effect of the Fertilizer Subsidy Programme on maize production in Yunyoo-Nasuan District. Data were collected from beneficiaries and non-beneficiaries of the fertilizer subsidy

A sample of maize farming households were selected by simple random sampling technique. Data were collected from beneficiaries and non-beneficiaries. The results indicate that the FSP has contributed positively to household maize production. Although, the FSP had a positive impact on promoting household maize production, the absence of extension agents and difficulty in accessing inputs had negative impact on the programme.

The program had a positive and significant impact on the amount of inorganic fertilizer used on maize and increased the amounts of maize produced by the program participants. Total farm size and various costs of production were also significant factors that determined the amounts of maize produced. This would help to achieve the intended goal of the program; to increase maize production and reduce food insecurity among the program participants.

5.3 Conclusion

The Fertilizer Subsidy Programme (FSP) has played a significant role in shaping the maize production landscape in the Yunyoo-Nasuan District. The findings suggest that the fertilizer subsidy programme had a positive impact on the production of maize, enhancing crop yields, improving the livelihoods of farmers, and contributing to food. First, subsidized fertilizers helped to alleviate some of the financial burdens that maize farmers' face, allowing them to improve the quality and quantity of their crops. Farmers who participated in the program reported increased output, which led to higher incomes and better economic outcomes for their households. Moreover, the subsidies facilitated the adoption of modern farming practices, such as the use of improved seed varieties and better soil management techniques, which are essential for sustainable agricultural growth. Despite the positive effects, several issues were identified that hinder the full potential of the fertilizer subsidy programme. Such measures would ensure that the benefits of the subsidy are maximized and that the program contributes to the broader goals of rural development, poverty reduction, and food security.

Although, the Fertilizer Subsidy Programme has been instrumental in improving maize production and the livelihoods of farmers in the Yunyoo-Nasuan District, there is a need for continuous evaluation and refinement of the program to address its challenges. Policymakers should consider strengthening the implementation mechanisms, expanding access to subsidized fertilizers, and ensuring that farmers are equipped with the knowledge and resources to use fertilizers effectively.

5.4 Recommendations

In light of the findings and conclusion of the study, the following recommendations are made for the purpose of improving the fertilizer subsidy programme in Yunyoo-Nasuan District:

1. Improvement in Fertilizer Distribution: The Ministry of Food and Agriculture, local government authorities, and fertilizer suppliers. should ensure timely and efficient distribution of subsidized fertilizers to farmers to avoid delays. Establish a feedback mechanism for farmers to report delays and issues with fertilizer distribution.
2. Enhanced education and training on fertilizer use by the Ministry of Food and Agriculture, , NGOs, and agricultural training institutions. This can be done through regular workshops, demonstrations, and field days focused on correct fertilizer application techniques, including appropriate timing, quantities, and methods.

APPENDIX

UNIVERSITY FOR DEVELOPMENT STUDIES

FAULTY OF AGRICULTURE, FOOD AND COMSUMER SCIENCE

DEPARTMENT OF AGRICULTURAL AND FOOD ECONOMICS

QUESTIONNAIRE

Dear Sir/Madam,

I humbly solicit your help to you to complete this questionnaire. You will be contributing to it success if you respond as frankly and honestly as possible to the questions. Please be assured that your responses will be used solely for the purpose of this study.

Thanks.

Please, tick the [√] appropriate bracket or column

SELECTION A

Personal data

Sex male [ ]

Female [ ]

Age

10-20 [ ]

21-30 [ ]

31-40 [ ]

More than 40 years [ ]

Educational level:

None [ ]

Primary Education [ ]

Middle School [ ]

Secondary Education [ ]

Tertiary Education [ ]

House tenure: rented [ ]

Self-owned [ ]

SECTION B

Provide response to the following questions on maize

1. Last year's total expenditure on maize farm: ……
2. Last year's total revenue on maize farm: ……
3. Out of the maize farm, how many bags of maize were used as food for the household in 2023: ……
4. Number of additional workers hired in 2023: ……..

SELECTION C

Please provide short answers to the questions below.

1. What type of fertilizer do you use for maize cultivation?

   .....

2. During the exercise, (i) what quantity and (ii) the number of bags of urea and NPK fertilizer did you receive, respectively?

   ……..

3. In your own opinion, how many bags of NPK fertilizer and urea are required to produce the maize yield you expect for the total cultivated land, if you had to purchase them at the market price?

   …….

4. In your own opinion, what is the quality of both the NPK and urea fertilizer received?

   …….

5. In your own opinion, how timely was the distribution of this NPK and urea fertilizer to enable all the farmers who applied to receive the quantity they require?

   …….

6. What, in your opinion, is the biggest challenge this fertilizer subsidy programme faces?

   ……

7. In what way have these fertilizers you received benefited your farm?

   ……