

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF ARCHITECTURE AND PLANNING

DEPARTMENT OF BUILDING TECHNOLOGY

KNUST

**PROCUREMENT CHALLENGES IN THE IMPLEMENTATION OF FERTILIZER
SUBSIDY PROGRAM IN ASHANTI REGION.**

BY

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DECLARATION

This is to certify that this work or any part thereof has not been previously submitted in any form to the university or to any other body whether for the purpose of assessment, publication or for any other purpose. I confirm that except for any express acknowledgement, reference cited in the work, the original work is the result of my own efforts.

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ABSTRACT

In July 2008, the government of Ghana instituted a country-wide subsidy on 50Kg bags of four types of fertilizer in an effort to mitigate the effect of food prices. The fertilizer subsidy was a unique example of a public-private partnership in which the government consulted heavily with fertilizer importers in the design stage and relied exclusively on the existing private distribution system to deliver fertilizer to farmers. While this structure offers clear benefits, initial observations suggest scope for improvement in both the system design and implementation. Poor timing, shortage of fertilizer and a small network of fertilizer retailers participating in the program prevented fertilizer use from increasing as much as was possible within the program budget and may have disadvantaged smaller retailers. The success of Ghana's fertilizer subsidy program hinges on effective management of the program and the enthusiasm and confidence of the beneficiaries. Management, in this context, relates to the availability of fertilizer at the right time and place and in the right quantity; easy access to fertilizer at a low transaction cost; and ensuring the actual use of the right quantities of the fertilizer. This translates into a low transaction cost; and ensuring the actual use of the right quantities of the fertilizer. A stable policy environment on fertilizer subsidy program implementation in Ashanti region is conducive to change, absolutely critical for promoting growth in fertilizer use in the region. Such growth is especially important if small-scale farmers are to increase production, ensure food security, and protect the environment. The report presents findings of the study on The Implementation of Fertilizer Subsidy Program in Ashanti region from fertilizer suppliers, distributors, retailers, farmers and agricultural extension officers in the region. A combination of quantitative and qualitative approach was used to assess the distribution and availability of subsidized fertilizer, price of fertilizer during the subsidy year, farmer's education on the subsidy program, use of subsidized fertilizer by small-holder farmers and constraints in the fertilizer business in the region. The findings show that there is considerable scope for improvement in the distribution of fertilizers to ensure higher effectiveness of fertilizer implementation program and to render farmers' participation in the program more sustainable. Based on the research findings it can be concluded that; Prices are rather too high as most farmers can still not afford at the subsidized price.

- Education of farmers, distributors, retailers and extension agents should be intensified as most actors did not understand the program.
- Few farmers have actually benefited from the subsidy program.
- Diversion of fertilizer from targeted beneficiaries and smuggling to neighboring countries must be checked through effective monitoring.

Government must follow the Procurement Structure in the Public Procurement Law, Act 663 of 2003 to ensure proper selection and award of contract and the phases of contract management.

The respondents, though were generally dissatisfied, conceded that the program is essential and needs to be continued. The report signals the need for adjustments in the implementation of the subsidy program in the region which will have better implications for the sustainable management of the subsidy program.



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DEDICATION

This project work is dedicated to all small holder farmers in Ashanti Region.

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ACRONYMS AND ABBREVIATIONS



ADBAgricultural Development Bank
AEAAgricultural Extension Agent
AGRA	.....Alliance for Green Revolution in Africa
AU	.....African Union
DAES	.....Directorate of Agricultural Extension Services
ERP	.....Economic Recovery Programme
EPA	.....Environmental Protection Agency
FAO	.....Food for Agricultural Organization of the UN
IFDC	.....International Fertilizer Development Centre
IFPRI	.....International Food Policy Research Institute
METASIP	.....Medium Term Agricultural Sector Investment Program
MoFA	.....Ministry of Food and Agriculture
NEPAD	.....New Partnership for Africa's Development
PPRSD	.....Plant Protection and Regulatory Services
RGD	.....Register General Department
SAPs	.....Structural Adjustment Program
SoA	.....Sulphate of Ammonia
SSA	.....Sub - Saharan Africa
UN	.....United Nations
UNDP	.....United Nations Development Programme
VCR	.....Value Cost Ratio

CHAPTER ONE

1.1 BACKGROUND OF STUDY

Ghana's agricultural crop sector is dominated by small scale farmers who hold fragmented lands scattered across rural communities in Ghana. The sector is challenged with numerous problems attributed to unfavorable agricultural policies. During the nation's economic recovery programs in the 1980s, the implementation of trade liberalization, encouragement of the private sector, deregulation of the fertilizer market, state's withdrawal from the input market and above all removal of agricultural subsidies have had significant impact on farmers' access to agricultural inputs. Consequently, the open market policy has attracted a number of economic actors resulting not only in a complex market chain for inputs particularly fertilizer but unaffordable price.

In 2006, the average use of inorganic fertilizer in Africa was 8 kg/ha compared to 73 kg/ha in Latin America and 135 kg/ha in Asia (MoFA, 2008). In response to the need for higher fertilizer use in Africa, the Africa Fertilizer Summit was held in Abuja (Nigeria), in 2006, under the auspices of the African Union (AU), New Partnership for African Development (NEPAD) and the Government of Nigeria.

One of the important outputs of that summit was the Abuja Declaration on Fertilizer for African Green Revolution, in which AU Member States resolved to increase timely access to fertilizer by farmers and to raise fertilizer use to an average of 50 kg/ha by 2015 (AU, 2006). As an immediate measure, the declaration proposed, among others, the elimination of taxes and tariffs on fertilizer and raw materials for fertilizer. The introduction of fertilizer subsidy was one of the five main action points agreed upon to actuate the declaration. The purpose of the fertilizer subsidy was to make fertilizer increasingly available to small-holder farmers in AU Member States. Significantly, the AU Member States pledged to invest 10% of their national budget in agriculture by the year 2008 (AU, 2006). Many governments around the world have implemented fertilizer subsidy program to raise the level of fertilizer use by small-holder farmers.

(Crawford, Jayne & Kell, 2006; Gladwin, Randall, Schmitz & Schuh, 2002; Morris, Kelly, Kopicki & Byerlee, 2007; Abdoulaye & Sanders, 2005; Dorward, Kydd, Morrison & Urey, 2004).

Agriculture has been known to play a central role in the lives of the majority of the world's poorest people, as it presents a means of sustaining their livelihood. Though the cornerstone of most developing countries, agriculture is faced with various constraints, predominant among them is the high cost of agricultural inputs (MoFA, 2008). For cases of small-scale production, which

characterizes Ghana's agriculture sector, the timely access and low intensity use of agricultural inputs poses soil fertility problems thus making food security very difficult to anticipate. This is seen particularly in price fluctuations of inputs for crop production. Although the high use of these inputs directly affects production, thus affecting the livelihood of rural farmers, low intensity of use of these inputs particularly fertilizer has over the years led to the country's reliance on food imports to boost food security.

Fertilizers are considered important agricultural inputs for crop production alongside improved seeds and planting materials. According to Saweda Liverpool-Tasie (2010), low fertilizer use is professed to be among the many reasons for low agricultural productivity in Nigeria. The situation is similar to that of Ghana as recent estimates by the International Fertilizer Development Centre-IFDC (2008) revealed that although fertilizer consumption in Ghana rose up to 6kg/ha in 2000-2002, this consumption level is just half of the average consumption of Sub-Saharan Africa (SSA). Pinstrup-Andersen et al. (1999) also emphasize that fertilizer use in Ghana is generally very low as in the rest of SSA.

Further studies however, show that the use of chemical fertilizers in African countries such as Ethiopia have made a contribution to crop yield growth to date, although there is potential for further improvement (Asnakew et al., (1991) and Tekalign et al., (2001)). Although an increase in fertilizer use is partly a solution to the problem of food insecurity, countries that have increased their agricultural productivity have also considerably increased their use of fertilizer (Morris et al., 2007). Over the years in Ghana, MoFA has acted as the primary importer and distributor of fertilizers.

The Government of Ghana is committed to improving agricultural production and productivity in significant ways. The strategy has strong focus on catalyzing the production of smallholder farmers who make over 60% of the farming community in the country. In 2008, however, the government re-introduced fertilizer subsidies through a voucher-based system to promote fertilizer use and improve crop productivity of smallholder farmers. Implemented by the Directorate of Agricultural Extension Services (DAES) of the Ministry of Food and Agriculture (MoFA), the vouchers were worth 50% of the price of fertilizers. Farmers were encouraged to use the fertilizers on mainly the key food crops – maize and rice.

There are concerns about the sustainability of the scheme, not least the cost but also limited opportunity for private sector lead rural fertilizer market development. Additionally, the current

program is perceived by some stakeholders as top down, crowding out other players in the input market space. Another hindrance to the success of the program is the diversion of fertilizers from targeted smallholder farmers and smuggling to neighbouring countries by farmers and even the fertilizer agents. With the changes that have been introduced, most MoFA extension staff seems not skilled enough to implement successfully the subsidy program. For the scheme to be successful there need to be adequate involvement and commitment of all stakeholders who also take complete ownership of the process. A continuous review of the program is important to show farmers, private sector and government the success or failure of this policy to ensure that fertilizer usage in the Ghanaian agriculture is increased beyond the government target of 20kg/ha by 2015.(AU, 2006).

The coupon system created high overhead and administrative costs, diversion from intended beneficiaries, and time spent by the ministry staff distributing the coupons. As a result, this was discontinued in 2010 in favour of the government directly paying for the 50% of the fertilizer and absorbing all transportation cost so that all beneficiary farmers pay the same price.

1.2 STATEMENT OF THE PROBLEM

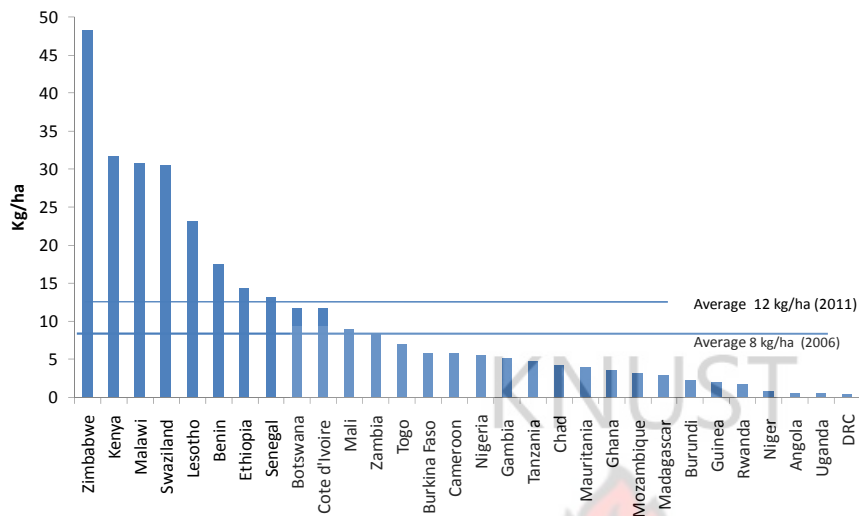
One of the key responses of government to the food situation was removal of import taxes on rice and oil and the introduction of a nation-wide fertilizer subsidy program in June 2008.

Unit fertilizer use in Ghana has declined from 21.9 kg/ha in 1978 to 8 kg/ha in 2006 (MoFA, 2008). The level of fertilizer use again increased to 12kg /ha in 2011, due to the introduction of the program.

The objective of the subsidy program was to prevent further decrease in fertilizer use (and, consequently, staple food production) by restoring fertilizer prices to the 2007 levels and ensuring uniformity in prices across the country. Reducing food insecurity, hunger and malnutrition, and rural poverty, which are consistent with the Millennium Development Goal, are among the goals of the subsidy program.

Considering the declining level of soil fertility associated with low fertilizer use resulting in low production as characterized by the Agricultural Sector, there is the need to increase timely access and use of fertilizers to boost food production by identifying procurement challenges in the implementation of fertilizer subsidy program in Ashanti region, Ghana.

Fig. 1: Intensity of fertilizer use in selected countries in Africa



Source: FAOSTAT (2003)

1.3 AIM OF THE STUDY

The study analyzes procurement challenges in the implementation of fertilizer subsidy program in Ashanti region of Ghana.

1.4 OBJECTIVES OF THE STUDY

The specific objectives of this study are to;

- Identify fertilizer distribution mechanism in Ashanti region
- Analyze the level of fertilizer use in the region.
- Investigate the price of fertilizer during the subsidy year.
- Examine farmer's education on the subsidy program.
- Identify constraints in the fertilizer market.

1.5 RESEARCH QUESTION

The study is guided by the following research question.

- What are the procurement challenges in the implementation of fertilizer subsidy program in Ashanti region?

1.6 SIGNIFICANCE OF THE STUDY

Government of Ghana has for the past five years been implementing the Ghana fertilizer subsidy program. The overall objective therefore is to increase fertilizer usage in Ghana to at least 50kg/ha as recommended in the Medium Term Agricultural Sector Investment Program (METASIP). It is also to increase crop production to enhance food security in the country by making fertilizer accessible and affordable to small holder farmers. Fertilizer application rates in Ghana has been considered to be one of the lowest rates 8Kg/ha in the sub – region as compared to 20kg/ha in, sub-Saharan Africa, 99kg/ha in Latin America 109kg/ha in South Asia and 149kg/ha in East and South East Asia. (Batiano, 2011) The low application rates are due to the high cost of fertilizers and their unavailability, technical knowledge and traditional beliefs. For the past six years (2008 to 2013) government has subsidized about 733,493MT of fertilizers amounting to GH¢ 280,402 million. The government plans to subsidize about 17300MT of fertilizers which is costing an amount of GH¢118,080,000.00. However the program has not achieved its intended results due to some challenges facing the implementation of the program. These challenges are what this study seeks to find.

This study will also indicate challenges and recommendations in the fertilizer subsidy program to contribute to knowledge / existing literature on the implementation of fertilizer subsidy program in Ghana's agricultural sector.

1.7 LIMITATIONS OF THE STUDY

The main limitations of this research which must be acknowledged have to do with

- i. Some dealer's reluctance to reveal certain information that they considered confidential.

- ii. Financing the research work by means of printing, photocopying and transportation for data collection is a major problem.

1.8 ORGANIZATION OF CHAPTERS

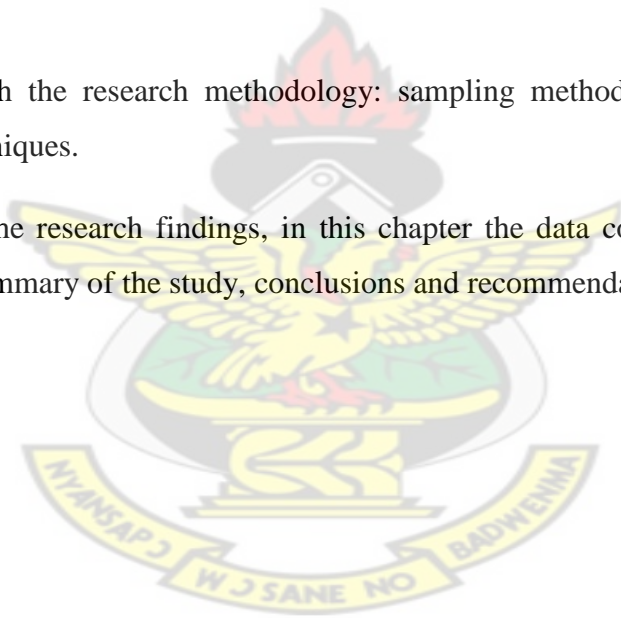
The study is divided into five chapters.

Chapter one deals with the background of the study, study objectives, statement of the problem, the purpose of the study, scope of the study, and limitation of the study, and the organization of the study.

Chapter two reviews related literature by taking a closer look at what other writers have done in relation to the topic.

Chapter three deals with the research methodology: sampling method, data collection and the analytical tools and techniques.

Chapter four, explains the research findings, in this chapter the data collected is analyzed while chapter five gives the summary of the study, conclusions and recommendations.



CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

It is argued that for green revolution to take place in Africa, fertilizer use must be increased from the current average of 8 kg ha⁻¹ to around 50 kg ha⁻¹ by 2015. One route to attain this goal is to engender regional joint fertilizer procurement to reduce farm gate price and increase fertilizer demand and use. (Chianu et al., 2006).

2.2 FERTILIZER PROCUREMENT, DISTRIBUTION AND MARKETING

Ghana's mineral fertilizer requirement is met through importation. Before the liberalization, the MoFA was responsible for the procurement, distribution and sale of fertilizer to farmers. In 1990, the fertilizer sector was privatized and fertilizers imported by private importers with prior approval of MoFA and the Environmental Protection Agency (EPA). The bulk of fertilizer imported into the country has been supported by fertilizer aid donors. Fertilizer importation through aid could lead to inefficient procurement and marketing systems because of conditions which may be imposed on origin and types of fertilizer. The fertilizer aid may not be sustainable and there might be the need to consider alternative procurement arrangements. One of the objectives of liberalizing the fertilizer industry was to introduce competition into the industry and hence create a more efficient and cost effective fertilizer industry. Unfortunately, government monopoly has virtually been replaced with a private sector monopoly. Several reasons have been assigned for the emergence of the private sector monopolist. Most of the other private sector entrepreneurs could not meet the requirements of the banks for credit facilities for the importation of fertilizer. The monopoly situation may limit the types of quantity of fertilizers available to the farmers. High interest rates and bank charges make it very costly to finance fertilizer stocks. It has been suggested by Gerner et al. (1995) that Ghana should adopt the practice in the banking sector in Cameroun where the Government has designated a bank to manage a credit and subsidy fund on his behalf. A similar scheme including a foreign exchange fund for fertilizer importation will aid the fertilizer industry in Ghana.

2.3 CURRENT ARRANGEMENTS IN THE FERTILIZER MARKET

As a global market, the fertilizer industry has high levels of concentration and increasing trade evident from the higher dependence of several regions on imported fertilizer. International fertilizer prices have also shown an upward trend in recent years regardless of their different consumption levels. Thus, while South Asia is both a major fertilizer producer and consumer, SSA is by far the smallest producer and consumer in the world (Hernandez and Torero, 2011). It appears that despite the high levels of concentration in the industry, prices are even higher in further concentrated markets due to the apparent greater market power enjoyed by a couple of firms (ibid). In Ghana, the agricultural input market is confronted with deregulation and liberalization dominated by private sector procurement and distribution. The fertilizer industry in particular, is in the hands of few companies who operate under regional distributors however, the market is very much influenced by seasonal cropping patterns. In 2005 the program was reformed from distributing fertilizer to distributing vouchers that could be used toward the purchase of packs of seed and fertilizer for maize and tobacco.

The historical performance of fertilizer subsidies in the pre reform periods in SSA was largely disappointing (Morris et al. 2007). The programs had some success in boosting fertilizer use and food production while they were in place, but improvements in yields were always limited (Holmén 2005). Moreover, evidence from empirical studies on the cost effectiveness of the subsidy programs overwhelmingly suggest that the high costs associated with them exceeded their benefits (Morris et al. 2007). Administrative weaknesses resulted in pervasive problems of late delivery of fertilizer, delivery of inappropriate fertilizer, and delivery of incorrect amounts of fertilizer. Rent-seeking activities and political manipulation led to rampant leakages and diversion of fertilizer from intended beneficiaries. The inefficient programs also put unsustainably high fiscal burdens on governments. By diverting resources from complementary investments in education, road infrastructure, and agricultural research and extension, the subsidy programs may have exacerbated the issues of profitability and access that kept fertilizer use low to begin with (Donovan 2004).

2.4 THE FERTILIZER SUBSIDY PROGRAM

The new fertilizer subsidy paradigm eschews the old methods of universal subsidies through parastatal monopolies and calls for temporary interventions targeted to poor smallholders and implemented with a consciousness for supporting the private fertilizer market. The use of

agricultural input vouchers has emerged as a mechanism for simultaneously targeting subsidies and developing demand in private fertilizer markets as well as encouraging relationships between agricultural input dealers and financial institutions (Gregory 2006; Minot and Benson 2009). Public–private partnerships have also been promoted to encourage government programs to both exploit private-sector efficiencies and avoid distorting the private markets.

All the countries that have returned to subsidizing fertilizer on a large scale have attempted to incorporate one or more of these innovations for improving the efficiency of subsidies. However, the tendency of governments has been to adopt only some of the recommendations (e.g., the Malawi program uses vouchers but the government typically sidelines the private sector in the procurement and distribution of fertilizer).

Fertilizer subsidies are prone to inefficiencies arising from high costs typically associated with their administration. However, even in the lowest administrative cost scenarios, fertilizer subsidies, unless they are accurately correcting for severe information and credit market failures, are prone to significant deadweight loss. Holmén (2005, 90) argues that, state agricultural interventions in SSA prior to the structural adjustment period were partly “aimed at development and partly at nation-building, i.e. the consolidation of power.” Government monopolies, subsidies, and high-default credit programs were a way for states to ingratiate themselves with their largely agrarian populations. As such, “malpractices, nepotism and diversion of resources from their intended use were often tolerated” (Holmén 2005, 91). However, direct price subsidies are only one of many alternatives that can be employed to reduce prices and improve farmers’ access to fertilizer. For instance, investing in road infrastructure, implementing policies that improve the efficiency of ports, eliminating bureaucratic hurdles, and augmenting the performance of the financial system would likely lead to significant fertilizer price reductions in countries in SSA (Donovan 2004). There is evidence from across SSA that product costs only constitute about 50 percent of the total retail price of fertilizer with the bulk of fertilizer prices being constituted by distribution and transportation costs, taxes and other regulatory charges, and finance charges (Chemonics/IFDC 2007). In comparison, the product cost constitutes about 80 percent of the retail price of fertilizer in Thailand where fertilizer use intensity is currently about 96 kilograms per hectare (Chemonics/IFDC 2007; Morris et al, 2007). Nevertheless, fertilizer subsidies are often viewed as alternative strategies to increase farmers’ access to fertilizer.

With the international food, energy, and fertilizer price hikes that year there was a sense that a government intervention was warranted. The program, as it was designed, incorporated several of the best practices for a fertilizer subsidy: there was the prospect for targeting specific beneficiaries as the subsidy was administered through vouchers; and a public–private partnership was arranged in which the sourcing of fertilizer was handled solely by existing fertilizer importers and distribution was by private retail outlets. However, during the actual implementation of the program, there was limited targeting of vouchers. The program was not as market friendly as assumed as over 60 percent of fertilizer retailers were precluded from accepting vouchers because of the rules requiring vouchers to be redeemed from fertilizer importers (IFPRI/ IFDC 2009). Due in part to the late commencement of the subsidy program and intermittent fertilizer shortages, national average redemption rate of vouchers was only 45 percent. Furthermore, though intended to be temporary, the program mushroomed and continued in 2009 even after the food, energy, and fertilizer price crises had subsided.

2.5 FERTILIZER SUBSIDIES IN SSA

The re-emergence of fertilizer subsidies after widespread liberalization and government exit from the sector in SSA has been precipitated by rising food security concerns in recent years. However, there is a general renewed enthusiasm for governments to once more play an active role in providing agricultural inputs in Africa. At the Africa Fertilizer Summit held in 2006 in Abuja, Nigeria, several participants expressed the sentiment that fertilizer subsidies were necessary to increase agricultural productivity in SSA (Morris et al. 2007). Proponents of fertilizer subsidies include such important donors and development partners as the Millennium Villages program and the Alliance for a Green Revolution in Africa (Minot and Benson 2009). There is some belief that with a new subsidy approach that includes innovations in both program implementation and design, the problems that plagued the programs of the past can be avoided.

From the late 1960s to the 1980s, many governments in SSA actively intervened in the agricultural sector in an effort to increase agricultural productivity and boost food production. Strategies employed were varied and included state farms and irrigation programs (Ghana and Nigeria), collectivization (Nigeria, Ethiopia, and Tanzania), government-subsidized agricultural input credit programs (Zambia, Ethiopia, Ghana, Nigeria, and Kenya), and output market price controls (Malawi, Ghana, and Uganda) (Holmén 2005). However, one strategy that was ubiquitous in SSA

in this period was high universal subsidies for fertilizers. These typically took the form of direct price subsidies through centralized state monopolies for procuring and distributing fertilizer, as well as price controls, and pan-territorial fertilizer pricing. A common objective of such agricultural programs was national food self-sufficiency partly in an effort to ensure food security, but also as a source of national pride (Holmén 2005). In many countries, smallholder farmers were therefore the implicit intended beneficiaries of the fertilizer subsidy programs. Nevertheless, there is widespread evidence that subsidized fertilizer was typically captured by wealthy local elites and politicians. By the nature of the implementation and the lack of recordkeeping of the activities under the subsidy programs, much of that evidence is, however, regions received only a fragment of their requirement and the fertilizer that did make its way to farmers often ended up being captured by wealthy farmers who least needed assistance, rather than reaching the smallholders who were supposed to benefit” (Morris et al. 2007, 32).

In SSA, despite the exacerbating effects of agricultural input subsidies on the already precarious fiscal position of many countries, widespread reforms were largely the result of outside donor pressure (Morris et al. 2007). It was not until the structural adjustment period starting in the 1980s that many governments relinquished their monopolies and pursued reforms to privatize the fertilizer sector.

2.6 FERTILIZER USE AND PROFITABILITY IN SUB-SAHARAN AFRICA

Fertilizer application rates in SSA are far below any other region in the world. Minot and Benson (2009) found that the average fertilizer application rate was only 13 kg/ha in 2008, compared with an average 94 kg/ha in other developing countries. While operating and biophysical environments are considerably different between places, this statistic has prompted a considerable discussion about low fertilizer use in SSA. Researchers provide a long list of reasons why this might be the case. Several articles divide potential reasons for low fertilizer use into demand and supply side factors (Crawford et al. 2003; Morris et al. 2007). On the demand side, both perceived profitability and ability to pay are thought to contribute to low use.

Profitability could be hindered by variability in prices (of fertilizer and output) and yield, agro ecological conditions (i.e., soil characteristics and weather patterns), and lack of knowledge about how properly to use fertilizer. Ability to pay reflects both low income levels and lack of access to credit in many rural areas. On the supply side, having fertilizer available in appropriately sized packages at the necessary time of year often prohibits access at the farm level (Larson and

Frisvold 1996). Kherallah et al. (2002) added that fertilizer costs are higher in Africa than other regions due mostly to high transport costs making it more difficult for poor farmers to obtain. Similarly, they state that Africa does not have the irrigation infrastructure of many other regions which hinders the ability for plants to uptake nutrients in a timely manner. Also, population density is much lower than other places requiring less need for land-saving technologies. Most of these reasons, both on the demand and supply sides, have underlying structural determinants and often can be overcome with appropriate public sector interventions. In their review, Morris et al. (2007) find fertilizer use to be unprofitable in many parts of Africa due to high prices and transportation costs. Heisey and Mwangi (1997) showed that profitability of fertilizer application to maize, calculated as a ratio of fertilizer price to maize market price, had increased over time in many major maize producing countries in Africa. Meertens (2005) calculated profitability using another metric, value cost ratios (VCR), and found a similar downward trend in profitability, reaching critically low levels particularly in SSA. Yanggen et al. (1998) find that while overall agronomic response to fertilizer in many parts of Africa is similar to other places in the world; the ratio of fertilizer price to output price is much higher, making it one of the least profitable places to purchase the input. Clearly, then, the price at which fertilizer can be procured is an essential component to its profitability and likely use. In a review of four countries in SSA from 1971 to 2001, Heisey and Norton (2007) find that the price of nitrogen was below the world average price at the beginning part of the period but much higher towards the end. This finding is consistent with other claims of falling profitability over time.

2.7 EFFECTIVE DEMAND FOR MINERAL FERTILIZER AND FERTILIZER SUPPLY

Fertilizer subsidy programs have engendered significant increases in food production in some parts of the world, while in Africa results are mixed. There is still an ongoing debate on the utility of the role of government in raising fertilizer use by small-holder farmers (Crawford et al., 2006; Gladwin et al., 2002; Morris et al., 2007; Dorward et al., 2004; Minot, 2002). The success of Ghana's fertilizer subsidy program hinges on effective management of the program and the enthusiasm and confidence of the beneficiaries. Management, in this context, relates to the availability of fertilizer at the right time and place and in the right quantity; easy access to fertilizer at a low transaction cost; and ensuring the actual use of the right quantities of the fertilizer. This translates into a low transaction cost; and ensuring the actual use of the right quantities of the fertilizer. This translates

into streamlining institutional structures for the program, and ensuring transparency and accountability in the program. Ultimately, these measures are central to the sustainability of the program. Agriculture is the mainstay of the Ghanaian economy. Stagnation in agricultural production implies stagnation in economic growth in addition to hunger and malnutrition.

Productivity of agriculture has gone down within the past several years. Factors which have contributed to decrease in agricultural productivity include population pressure, economic stagnation and the application of low input technology. The population pressure in some areas has resulted in the reduction of fallow periods, which have been essential in the regeneration of fertility of the soils. Economic stagnation and other policy measures have reduced the farmer's ability to purchase improved inputs especially mineral fertilizers required to replace plant nutrients which are continuously mined by crops grown on the soils (MoFA, 1998).

In a study by Obeng et al. (1990), it was estimated at the time that fertilizer requirements in 1989, 1990 and 1995 would be 49,315, 54,750 and 67,100 mt respectively. The data on fertilizer imports trends presented by Gerner et al. (1995) show that the fertilizer market shrank greatly in the 1990s. Total fertilizer imports had dropped from about 45,000 tonnes in 1990 to 11,600 tonnes in 1994. Thus the evidence on the ground is that the national fertilizer requirements projected by Obeng et al. (1990) could not be achieved. Several factors have contributed to the shrink in the fertilizer market. These factors include technical, economic, governmental policies and institutional ones which have affected the effective demand of fertilizers.

2.7.1 TECHNICAL FACTORS

The use of mineral fertilizer is important because it is a faster way of adding nutrients to soils that has been mined. The use of technologies available to the farmer for restoring and maintaining soil fertility depends on many factors. The farmers are aware of the rapid degradation of their soils which manifested in low yields. One would have expected that under this circumstance, Ghanaian farmers would use mineral fertilizers to replenish nutrients that are continuously mined through crop harvesting. The technique available to most farmers may not be applicable to their particular circumstances and farming systems. Farmers who use fertility enhancing technologies not suitable to their soils or farming systems may have negative attitudes towards adoption of soil fertility enhancing technologies in the future. It is therefore important that location specific technologies are developed and in addition technologies should be adapted to the farm household circumstances. A

household with small labor force may not adopt a technology with a long pay – off period or one that is very expensive.

2.7.2 POLICY FACTORS

The decline in the use of mineral fertilizer has partly been attributed to the policies implemented by the Government of Ghana especially since 1998. Value –cost ratio computation by Gerner et al. (1995) have shown that farmers have borne the cost of policy reforms through higher fertilizer prices. In a survey carried out in connection with this assignment, it was found that the price increase of fertilizer over the 1991 to 1996 period when compared with the price increase recorded for maize over the same period indicate that while in 1991 the value of a bag of maize (about 110kg) could more than pay for the cost of one bag of fertilizer (50kg) in Bawku, the same could not be said for 1996. High cost of fertilizer was given as the second most important reason for the inadequate use of fertilizer. Fertilizer use has declined partly as a result of the high cost. Among the reasons for the high cost of fertilizer are the removal of subsidies, the devaluation of the cedi and the low level of fertilizer usage in Ghana which does not allow importers to enjoy economies of scale. If the demand of fertilizer is to register significant increase, it is imperative that the government revisits the subsidy issue. Most farmers interviewed want the government to act on the fertilizer subsidy issue. If fertilizer consumption stays at the current levels, the degradation of the soils of Ghana will accelerate and it may become more expensive to restore and maintain soil fertility in the future.

2.8 AVAILABILITY OF FERTILIZER

Although the factors affecting fertilizer availability are often referred to as non price factors, they can be accommodated within a pricing framework by noting that in effect they raise the shadow price of fertilizers to farmers. A major constraint to technology adoption in much of Africa is the physical unavailability or untimeliness of inputs. On whether fertilizer use is limited more by supply or demand, Pinstrup- Andersen (1993) notes that in most cases farmers' limited access to the right kind of fertilizer at the right time was probably just as important a constraint as price. One study of farmers' reasons for not following the extension recommendations developed through adaptive on-farm research in Zambia found that in 44% of the cases inputs simply were not available (Lownd Waddington 1991).

2.9 PRICE POLICIES AND CREDIT

Many countries in SSA have promoted fertilizer use through price and or credit subsidies.

The high cost of fertilizer in SSA is the main justification for maintaining subsidies. Other reasons include compensating for low output prices, uncertainty about the profitability of fertilizer, promoting adoption, making fertilizer more readily available to small farmers (thus fulfilling an equity goal), and the high cost of capital in informal markets (Byerlee et al. 1994;Pinstrup-Andersen 1994;Vlek1990) Shalit and Binswanger (1985) have outlined three theoretical cases for fertilizer subsidies. The best theoretical case is to promote the learning of a new technology that will in time be socially profitable. Compensation for an export tax (more likely to apply to cash crops) is another theoretical argument. Yet another is that if there is a policy goal of food self sufficiency, fertilizer subsidies may be more effective than output price subsidies; given other policy goals, fertilizer subsidies might seem somewhat less attractive. Some policy analysts would contend that other arguments, such as compensating for the high cost of capital, are best addressed by improving financial intermediation, not by subsidizing fertilizer. It is also debatable whether high prices are best countered by subsidies or by trying to address the underlying causes of the high prices. Perhaps a middle ground would be to look at both alternatives as important, with their relative roles changing over time. Other arguments might also be geographically specific. For example, temporary fertilizer subsidies would seem more justifiable for Malawi than for Nigeria. In recent years, governments in SSA have been pressured by the World Bank IMF, and other donors through Structural Adjustment. Programs (SAPs) to remove fertilizer subsidies. In countries where such actions have been taken, overall national demand for fertilizers has been substantially weakened, at least in the short run (Vlek 1990). Waddington and Ransom (1995) indicate that for most countries in the region, SAPs have eliminated price subsidies and reduced the availability of credit for inorganic fertilizer inputs and seed. This creates a great deal of uncertainty for farmers and for the research and extension services that support them. However, it also creates new opportunities (such as potential availability of a wider range of micronutrient fertilizers). Nevertheless, the short- to medium-term consequences of SAPs are that smallholder farmers will apply even less nitrogen(N) and phosphorus (P) fertilizers and will use less hybrid maize seed because of real price increases at the farm gate. In Nigeria, Smith et al. (1994) indicate that removing the fertilizer subsidy is expected to reduce the profitability of maize, while reduced fertilizer use levels will necessitate major changes in soil maintenance practices in a production system that relies heavily on fertilizer for maintaining soil fertility. In Senegal the reduction in

fertilizer subsidies has led to declining demand for fertilizer (Shepherd 1989). In Malawi and Cameroon, some contend that removing the subsidy will reduce fertilizer use by farmers, whose use of fertilizers is already low (Gladwin 1992). In Ghana, removing fertilizer subsidies in the absence of credit and remunerative output prices has resulted in falling demand for the input (Kwadwo Asenso-Okyere 1994). A study from Nigeria, where fertilizer is subsidized heavily, showed that chaotic and untimely supply was one of the most salient reasons for non-adoption (Daramola 1989).

2.10 THE STATE OF FERTILIZER DISTRIBUTION IN GHANA

The country mainly imports inorganic fertilizer, the bulk of it is straight application; value addition is in the form of packaging though blending is undertaken by few companies. Currently about 100 percent of the fertilizers on the market are imported by three active private companies. The companies except Chemico Ltd, collaborate with international partners and in terms of volumes, Yara Ghana Ltd (subsidiary of Yara International ASA) and its partner cocoa fertilizer company Wienco Ghana Ltd; Golden Stork (subsidiary of SCPA Sivex International). Though the industry operates under government policies the market is not stable. This was confirmed from the field as information gathered indicated that the food crop fertilizer market is not as vibrant and profitable as perceived due partly to economic changes but also to the nation's dependence on rain fed agriculture and the ecological differences of the country.

Economically, the fluctuations in fertilizer consumption have been attributed to the nation's economic changes in the 1970s. For example a study by FAO in 2005 attributes the high fertilizer use in the 1970s and early 80s, to government support in the form of subsidies (FAO, 2005). Similarly, the low consumption in the late 1980s and 1990s is linked to the economic shocks in which the Cedi depreciated leading to the withdrawal of the subsidies in early part of 1987. According to a 2009 IFPRI report, "fertilizer consumption began to increase again in the late 1990s as the national economic situation improved but fell again due to depreciation of the cedi. It began to recover once more with improvement in the national economy and by 2002 fertilizer consumption was again at 1980 levels" (IFPRI, 2009; 4).

The economic transformations coupled with the farming practices have significant influence on fertilizer consumption. Since 1995 companies such as Wienco, Chemico, Dizengoff Ghana Ltd

(subsidiary of Balton CP Ltd) the Jasmedi group, Reiss and Co. and Primark Ghana Ltd (IFDC, 2000) that dominated in fertilizer imports have concentrated on certain areas based on the market dynamics. While names of some companies such as Dizengoff, Jasmedi group, Reiss and Co are less active in the industry others have had to divert investments. The situation is much better in the cash crop industry, for instance, the increased market share of Chemico and Primark for example is attributed to their supply of oil palm fertilizer to the Bunsu and Twifo plantations. Additionally, Wienco and new names such as Yara have carved a niche in the cocoa sector with less concentration in the food crop sector. However, among the variety of food crops across the regions, fertilizer use for maize alone accounts for about 40 percent (IFPRI, 2009).

PROCUREMENT STRUCTURES

Part II of the Public Procurement Act, 663 of 2003 indicates the scope of application. Section 14 (1a) states, this Act applies to the procurement of goods, works and services, financed in whole or in part from public funds except where the minister decides that it is in the national interest to use a different procedure.

(1b) Functions that pertain to procurement of goods, works and services including the description of requirements and invitation of sources, preparation, selection and award of contract and the phases of contract administration.

This Procurement Structure was not considered rather government decides to buy from private fertilizer importers by paying part of the price for farmers. Government subsidizes what amount it can afford on the market. Without proper Procurement Structure in place, fertilizers don't get to the beneficiary targets (small scale farmers) but rather the commercial farmers who could buy fertilizer at a given price for their plantations because fertilizer importers are more into profit making than to see to achieving the aim of fertilizer subsidy program in Ghana. This therefore makes the aim of the fertilizer subsidy program not achievable as most small scale farmers will still not realize the importance of fertilizer use to boost food production in the country.

As a result of the poor structure in procurement by not applying the ACT 663 of 2003, selection and award of contract and the phase of contract administration has given rise to the objectives of this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION

This chapter discusses the research method with the view of finding the best approach to achieve the research aim and objectives. The chapter describes the research strategy and research design. The methods and techniques which were used in the data collection and analysis are also presented. This research took a form of review using interviews, to analyze the procurement challenges in the implementation of the fertilizer subsidy program in Ashanti Region.

3.1 RESEARCH DESIGN

The study adopted a descriptive case study design since its main concern is to describe records, analyze and report on conditions that exist so as to make generalization of the presentation. The study employed a combination of quantitative and qualitative approach (but largely qualitative methods) to generate data about the perspectives of the farmers on the availability, accessibility, and use of subsidized fertilizer. Qualitative analysis according to (Borrego et al., 2009) is characterized by the collection and analysis, of textual data which are surveys, interviews, focus groups, conversational analysis, observation on the context within which the study occurs. It allows the researcher to make connection between the study and her situation.

3.2 POPULATION

Ashanti Region was selected during the process of data collection. This is because the bulk of fertilizer is sent down to the region, being a market center and market centers play important role in the market structure of agro-inputs.

3.3 SAMPLING TECHNIQUE

The sampling plan comprises the sampling unit, sampling size and the sampling procedure adopted.

3.3.1 SAMPLING UNIT

This study covered fertilizer suppliers, distributors, retailers, farmers and extension agents in the Ashanti Region.

3.3.2 SAMPLE SIZE

The sample size of fifty (50) actors in the fertilizer supply chain were selected these include Suppliers, Distributors, Retailers, Farmers and Extension Agents.

- Distributors (10)
- Retailers (10)
- Farmers (20)
- Extension Agents (10)

3.3.3 SAMPLING PROCEDURE

The study employed purposive sampling to obtain the responses within the sampling frame from willing respondents. Purposive sampling was adopted because it deals with specific targets considered appropriate for the study, and in this case only agro input dealers (fertilizer dealers), farmers and extension agents will be needed for the study.

3.4 SOURCE OF DATA

The sources of data for the research included secondary and primary sources. The secondary data for this study was mainly from textbooks, journals articles, newspapers, research reports and other existing literature on this study. These laid the foundation for the study. The primary data provided reliable and accurate first-hand information relevant to this study about the proper implementation of fertilizer subsidy program in Ashanti Region; data was obtained directly from respondents through structured interviews.

3.5 DATA COLLECTION INSTRUMENT

Interviews were used as the main data collection instrument to gather information for the study. Fertilizer dealers; suppliers, distributors, retailers, farmers and extension agents in the region were interviewed on some findings in existing literature.

3.6 METHOD OF DATA ANALYSIS

Data gathered was analyzed using the descriptive statistical analysis. When we collect data, we have either population or a sample from the population. Numerical measures calculated from the data are known as either statistics or parameters. A statistic is a numerical descriptor that is calculated from sample data and is used to describe the sample. Looking at the numerical measures that can be used to describe the same features of the data, the following material was the numerical measures of center: the mean, the median and the mode.

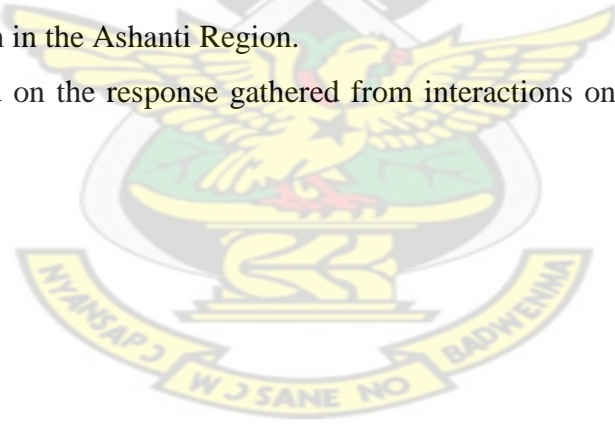
The sample mean is the center of balance of the set of data. It is found by adding all the data values and dividing by the number of observations.

The sample median is the value of the middle observation in an ordered set of data.

The sample mode is the data value that has the highest frequency of occurrence in the sample.

The data gathered from the study was analyzed using the above variance to interpret and describe the effect on response from the selected respondents. (Distributors, Retailers, Farmers and Extension Agents) as indicated in the findings in chapter four. This was also rated in percentage from the number of response received to give a fair knowledge of the impact and effect of the fertilizer subsidy program in the Ashanti Region.

Data was analyzed based on the response gathered from interactions on the specific objectives of the research conducted.



CHAPTER FOUR

PRESENTATION OF FINDINGS AND DISCUSSIONS

4.0. INTRODUCTION

This chapter presents findings of the study with results presented and discussed under specific headings; the empirical analysis uses data relating to the subsidy program from a primary data collection by the researcher.

- Fertilizer distribution mechanism in the region
- Level of fertilizer use in the region
- Price of fertilizer during the subsidy year
- Farmers education on subsidy program
- Constraints in the fertilizer business

4.1 FINDINGS

Interviews were granted to **fifty (50)** respondents; suppliers, distributors, retailers, farmers, regional director and extension agents giving **100 %** response rate. The interviews were conducted in September 2013 (after the major farming season). The interview mainly elicited responses on the respondents' perspectives on the availability, accessibility, and use of subsidized fertilizers, as well as recommendations for improving the program in the district.

4.2 PROGRAM DESIGN AND ACTUAL IMPLEMENTATION OF GHANA'S 2008 FERTILIZER SUBSIDY

The following description of the program design and implementation is based on an interview with the regional director of agriculture in Ashanti region Mr. Emmanuel Eledi.

On July 2, 2008, the minister for food and agriculture held a press briefing at which he announced a temporary countrywide subsidy on NPK 15:15:15, NPK 23:10:05, sulphate of ammonia, and urea from July 4 to December 31, 2008. Farmers were to receive the subsidy in the form of fertilizer-specific and region-specific vouchers distributed by agricultural extension agents (AEAs). Ordinarily fertilizer prices are set by fertilizer retailers, but as part of the subsidy program, the government and the private fertilizer importers negotiated the price per 50 kg bag in each district

capital. The vouchers had face values of approximately 50 percent of the negotiated prices. A voucher could be used toward the purchase of the relevant fertilizer from any retailer in the region of issue that was willing to accept it. The retailer then passed on the redeemed vouchers to an importer (in practice, one with whom it was contracted). The importer in turn was to transmit an invoice for the value of vouchers to the Ministry of Food and Agriculture and receive payment within a week. The subsidy level was chosen with two objectives: first to return the price farmers paid for fertilizer to the levels prevailing in July 2007, and second to create pan-territorial pricing for fertilizer. There were no specifically articulated goals of the subsidy program, and it did not call for targeting of the vouchers to farmers based on their income or the crop they cultivated. However, the types of fertilizers subsidized were generally not for use on cocoa, the main cash crop in the country. NPK 15:15:15 was already widely used in the country as a basal dressing fertilizer; urea and sulphate of ammonia were the typical top dressing fertilizers. NPK 23:10:05, a special maize formulation and a product of Yara, was largely unknown to farmers before the subsidy program. The regional agricultural directors convened meetings with their district agricultural directors to inform them about the details of the subsidy program at about the same time that the program was announced to the public. The district agricultural directors in turn convened meetings with the AEAs either just before to inform them about their roles in the subsidy scheme. AEAs were to distribute vouchers to farmers within their operational areas. After July 2, the supplemental cash amount to be used, which is the price per 50 kg bag for fertilizer is purchased with voucher, was announced widely on radio and television. It was mainly through those announcements that farmers learned that a subsidy program had begun and the details of the program. During the peak fertilizer application periods of April, May, and June, subsidized fertilizer was not available. It was on June 30, 2008, that the first batch of vouchers was delivered to the headquarters of the Ministry of Food and Agriculture (MoFA) in Accra from the contracted printer.

4.3 FERTILIZER DISTRIBUTION IN ASHANTI REGION

Kumasi in Ashanti region receives the bulk of the imports. This is distributed to the **southern, transitional and northern sectors of the country**. Key distributors who were interviewed are **Enapa agrochemicals; Sefa&Jane; K. Badu Agro-chemicals; Bentronics Agro-Chemicals and Badu Kaakyire Agro-Chemicals**. The above agrochemical dealers are distributors as well as

wholesalers and retailers of agro-inputs. They have for many years been the major distributors receiving suppliers from Yara Ghana, Chemico, Golden Stork, AfCott, Golden Stork and Dizengov. Usually, the consignment is given on credit to the distributors to be paid within 30-40 days. Due to their long standing collaboration with MoFA and experience in fertilizer distribution, it was easy for government to work in partnership with them on the subsidized program except **K. Badu Agro-chemicals** who was of the view that the fertilizer trade is unprofitable especially at the retail level for food crop fertilizers. The reason given was that the profit margin on fertilizers (both subsidized and unsubsidized) is low as the commission per 50kg bag is less than GH¢5.00. The region is one of the major food production areas and therefore very important in the food security agenda of the nation. Among other food crops, it is one of the highest producers of maize consumed in almost all the ten regions of the country. Distributors also credit fertilizer to other retailers in districts within the region to be paid within 2 weeks due to long standing trust within the customers.

At Sekyere South district, formerly the Afigya-Sekyere District, the population of about 130,000 has over seventy-five communities and hamlets in the district. Interacting with retail agents and dry season vegetable farmers, an interview with a registered retail agent in Agona (WofaAttah Agro-Chemical), narrated the registration process; one needs to register with Registrar General Department (RGD) as an input dealer. The next level of registration is with EPA for a permit for operation. All the registration documents from RGD and EPA are inspected by MoFA at the district level for certification and training on the handling of farm inputs. Wcfa Atta takes his supplies from Enapa Agro-Chemicals Co. Ltd., Sefa and Jane Co. Ltd, Kaakyire Badu Co. Ltd, and Kyeiwa Agro-chemicals all in Kumasi. According to him he receive about 100-300 bags of fertilizer for sale per farming season and payment made every fortnight. He supplies smaller retailers in the community and operates 6 other retail outlets in different communities namely: Mampong, Gyamnase, Kofiase, Nsutah, Amorman and Atonsu. The retailers buy between 8-10 bags and gets a commission of about GH¢1 or GH¢0.50 on each bag of fertilizer they sell. The types sold include: NPK (15-15-15 and 23-10-5), Sulphate of Ammonia (SoA), Urea and Sulphate..

He also re-bags in smaller quantities to sell which is very important in such communities where farming activities is dominated by small scale farmers who can rarely afford to buy in large quantities as compared to wealthy farmers. These are usually in quantities such as 3, 1, 0.5 or 0.2kgs (paint containers, cups and tins). With such arrangements, farmers can buy quantities they need at prices as low as GH¢2.00.

In Tano-Odumase in the same district, it was realized that only one unregistered retailer operate on a small scale in the area which has high numbers of vegetable farmers. According to him, his suppliers include Kaakyire Badu in Kumasi. Due to financial constraints he buys in small quantities such as 6 bags per trip. He also buys the subsidized fertilizers and sells at his own price during the season which is an indication of poor monitoring. According to him the demand for fertilizer reduces drastically in the dry season when the program is over as the price increases so it is important to dole out for peasant farmers to afford and use fertilizer.

4.4 LEVEL OF FERTILIZER USE IN ASHANTI REGION

Most of the farmers interviewed confessed that prior to the implementation of the program they never applied fertilizers to their crops. Some of the farmers however still complain that they cannot even afford the fertilizers at the subsidized prices and urged a further reduction of the prices. About **12** farmers out of the **20** interviewed representing **(52%)** of the farmers talked to confirm that they have increased their fertilizer consumption. On the availability of fertilizer, all **20** farmer respondents indicated that the fertilizer was not available during the planting season when it was most needed. About **95%** of the respondents made up of **(20)** farmers and **(9)** extension agents indicated that there were no subsidized fertilizer during the planting time, and that was the most critical time for fertilizer application. Interestingly, the prospects of subsidized fertilizer did not give them the incentive to buy fertilizer from the open market and, when the subsidized fertilizer was available, they did not receive related information on time. Later, some of those who got the subsidized fertilizer applied it, but did not observe any significant effects on the plants on the yield. **(16)** Farmers representing **(62%)** of the respondents indicated that they have adequate knowledge about the fertilizer requirements of the crops they grow. However, some did not have sufficient money to purchase enough fertilizer (even at the subsidized rate) for their entire crop fields. Consequently, they purchased the quantity they can afford and applied it on a portion of the field. Eighteen percent **(18%)** representing **(4)** farmers said they did not know the fertilizer requirement of their crops, while the rest said they knew the requirements of some of the crops they grow. With reference to experience with fertilizer use before the subsidy program, About **(6)** farmers representing **(22%)** of the respondents had used fertilizer regularly on their food crops (incidentally, most of these are also cocoa farmers), **52%** representing **12** farmers never used fertilizer (because they could not afford it), while the rest of **(8)** farmers used fertilizer sparingly (as

and when they could afford it). Most of the respondents indicated that the extension officers explained to them how they should apply the fertilizer. However, since there are few extension officers in the district, the farmers usually rely on their instincts, experience, or their colleagues for assistance in the field.

Only **40%** representing **(8)** farmers of the respondents benefited from the program in 2012 and **46%** thus **(9)** farmers benefited from it in 2013 and have witness significant improvement in yield. Interestingly, few farmers had to team up to purchase and share the fertilizer. Overall, majority of the respondents **(86%)** representing **(18)** farmers indicated dissatisfaction with the program so far. Almost all the respondents thought the program is very good and should be continued with some refinement. Most of the suggestions for improving the program related to timely availability of the right type and quantity of fertilizer, increase in the subsidy amount to further lower fertilizer price. Farmers who needed fertilizer off the subsidy period will have to by at a higher price of adding the government subsidized price to the farmer's price e.g. NPK is **GHC 51.00** during the subsidy period but will be bought at **GHC 71.50** during the off period season so farmer decides not to buy but with the vegetable farmers who use more fertilizer, have no choice but to buy at that expensive price. That reduces the use of fertilizer by farmers when fertilizer gets to the market at off subsidy periods.

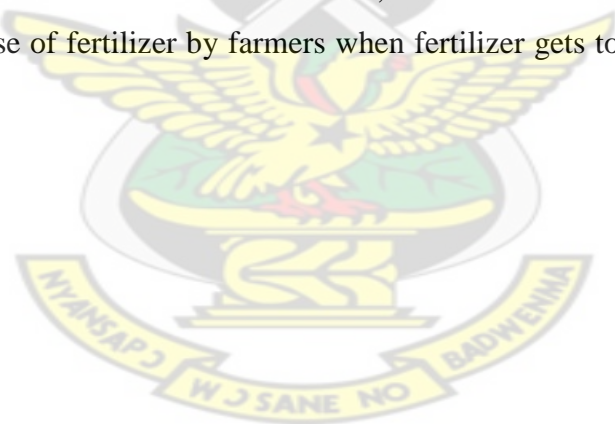


TABLE 1

**4.5 TOTAL FERTILIZER SUBSIDIZED AND TOTAL COST TO GOVERNMENT
2008 - 2013**

Year	Total Fertilizer Subsidized (MT)	Total subsidy paid by government (GHC X 1000)
2008	43,176	20,654
2009	72,795	34,400
2010	91,244	30,002
2011	176,278	78,746
2012	170,000	56,600
2013	180,000	60,000
TOTAL	733,493	280,402

SOURCE; MOFA, PPRSD, 2013

TABLE 2

4.6 PRICE OF FERTILIZER DURING THE SUBSIDY YEAR

The Government approved selling prices of subsidized fertilizer for the 2013-farming season was as follows after government subsidized GHC 20.50 / 50kg. (Source; **market interview**)

TYPE	2013	2012	2011
Compound fertilizer (All types)	GHC51.00	GHC39.00	GHC30.00
Urea	GHC50.00	GHC38.00	GHC39.00
Sulphate of Ammonia	GHC44.00	GHC35.00	GHC25.00

During the time of interview fertilizer was selling at the subsidized prices. However subsidized fertilizer was not in the system because it was off subsidy period and fertilizer was selling at marker price of **GHC71.50**, there were few fertilizers in the market as dealers complained of decline in sales during the off period.**80%** of the distributors and retailers representing **(18)** respondents. However, **60%** of the farmers and extension agents thus **(25)** respondents interviewed complained

the price of fertilizer was too high and will appreciate if the government will take even **60%** of the cost and farmers take **40%** to see more farmers buy fertilizer to increase food production in the region as well as the country. Other **(5)** farmers being **40%** shared the view that they did not care which way the government goes because they will only buy what they can afford provided they could feed their families with what ever they produced as yield. Actors in the supply chain also advised the government to intensify monitoring system to avoid smuggling as an abuse of the opportunity.

4.7 FARMERS EDUCATION ON THE SUBSIDY PROGRAM

Results indicate that there was little public education about the fertilizer subsidy program. Many farmers interviewed **52%** representing **(12)** farmers knew little about the 2013 subsidy program; when it started and when it ended, the cost of fertilizers during the subsidy year etc. Only **30%** of the farmers contacted were aware that they were part of the 2013 subsidy year. Due to little public awareness of the program a significant section of the stakeholder community did not understand the procedures of the program especially when it came to the purchasing aspect. Stakeholders in the fertilizer market suggested there should be awareness creation on the fertilizer subsidy program on radio and television stations, also the directorate of agriculture in the region through to the districts to communicate information to farmers through extension agents of various operational areas at the beginning of every subsidy period.

The stakeholder community should be involved in the planning sessions of such policy planning so as to have the program run a successful implementation because programs planned from top to down have more challenges during implementation compared to programs planned from down to top involving direct beneficiaries. This is because challenges of the beneficiaries identified can be addressed during the planning session.

FIGURE 2



Interaction with an input dealer in Ashanti Region, 2013.

4.8 RECORD KEEPING BY FERTILIZER DEALERS

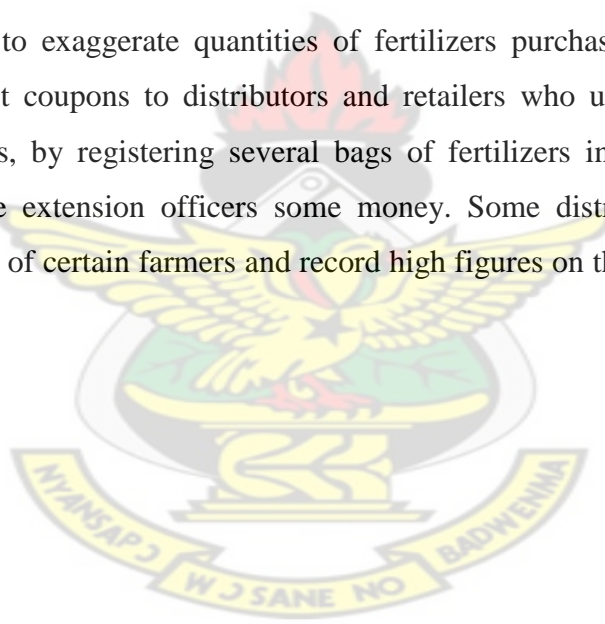
Record keeping is very vital to the success of the implementation of every program for the sake of effective monitoring and evaluation. 50% representing (5) retailers did not keep records and The 2013 subsidy program has introduced several record keeping mechanisms to ensure accountability of all the transactions involving the fertilizer dealers however these measures are not very effective because of high illiteracy among the fertilizer dealers. Other retailers complained that it was expensive to employ the services of a secretary for record keeping. They advised that the cumbersome nature of record keeping for the subsidy program should be made straightforward and simple. Regular photocopying of the several forms adds extra expenses to the cost of operation of the subsidy program.

4.9 CONSTRAINTS IN THE FERTILIZER BUSINESS.

Some fertilizer distributors revealed the commercial farms in the region buy most of the subsidized fertilizer for use on their plantations as a result most of the small scale farmers being the target beneficiaries for the subsidy program do not get subsidized fertilizer to buy. This has also been the reason for constant shortage of subsidized fertilizer in the region. This dealing is normally done with the assistance of some distributors and extension agents. **20%** representing **(2)** distributors and **(3)** retailers revealed these dealings.

Late arrival of vehicles loaded with subsidized fertilizers in the night, to prevent extension officers from supervising the offloading of the fertilizers, few bags of fertilizers are offloaded and the rest sent to their border town depots which will later be smuggled to neighboring countries.

Using farmers' coupons to exaggerate quantities of fertilizers purchased by the farmers: Some extension agents give out coupons to distributors and retailers who use them as though it was purchased by the farmers, by registering several bags of fertilizers in their names. After these transactions they pay the extension officers some money. Some distributors and retailers also capitalize on the illiteracy of certain farmers and record high figures on their coupons leading to the bloating of figures.



CHAPTER FIVE

CHALLENGES AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter concludes the research, presenting the challenges, recommendations and the conclusion.

5.1 CHALLENGES

While suppliers attributed the less concentration on the food crop sector unattractive markets due to low consumption of fertilizer, farmers were of the view that the prices are high and therefore unaffordable. Following structural adjustments, programs that involved reduction of subsidies and promotion of the private sector among others, the private entrepreneur controls market prices. Since Ghana does not manufacture fertilizer, importers have no choice but to transfer costs incurred in the procurement process to the final consumer.

- Considering the costs and other constraints associated with the current fertilizer procurement and distribution system in Ghana, efforts to identify ways in which the public sector can stimulate private sector investments to achieve these goals are needed. The structure of the current fertilizer distribution system in Ghana contains some rigidity in price determination that does not augur well for private sector investments particularly in targeting remote areas where traders lack the flexibility to adjust prices to cover costs incurred.
- Distributors are not motivated to open more outlets because of the small profit margin involved in the fertilizer trade.
- The cost of transporting fertilizers from sales point to farms is high which makes the overall price high therefore limiting the number of bags farmers buy.
- Shortages associated with subsidized fertilizer leads to struggle for fertilizer, which can be very frustrating and time consuming.
- There are cases where only one retailer of fertilizer serves a whole community, which also leads to selling at any price suitable to retailer.

- All stakeholders commend the subsidy program for helping increase crop production in the country by increasing fertilizer use. However, many of them were not happy with the habitual late commencement of the program.
- An observation was distributor's dissatisfaction in the government's on-going subsidy program. According to them the program has led to astronomical price increase in the fertilizer market and almost put them out of business because the demand for fertilizer is almost zero after the subsidy period. Farmers will always wait and buy fertilizer when the program begins in the farming season. Some of them advised that government should involve them in price negotiation. Some retailers also complained about low remuneration for their services, which prevents them from making profits at the end of the program every year
- There was no spelt out criteria in registering fertilizer agents.
- Too many fertilizer dealers especially in some border districts and Municipalities pose problems for effective coordination of the program.
- Inadequate logistics (fuel & means of transport) for Desk Officers to effectively monitor and supervise the program.
- Poor record keeping of some fertilizer agents because of illiteracy. .
- Incidence of diversion of subsidized fertilizer from target small holder farmers to plantation farmers and to boarder depots for smuggling to neighboring countries.

5.2 CONCLUSION

Malawi, Ghana, Nigeria, Kenya, Tanzania, and Uganda are just some of the countries in SSA that have returned to large-scale government interventions to promote fertilizer use following a period of liberalization and government exit from the fertilizer sector, despite experience from the recent past in which fertilizer subsidy programs were inefficient and placed unsustainably high fiscal burdens on governments. Many of the past programs also suffered compounding inefficiencies caused by distribution of subsidy benefits based on ineffective implementation of the program in the region.

The new paradigm of fertilizer subsidies emphasizes the need for benefits to be targeted to poor smallholders through the use of such mechanisms as coupons and for subsidy programs to bolster private markets through public-private partnerships in their implementation. These innovations

have emboldened the increasing acceptance of fertilizer subsidies as a necessary tool to increase agricultural productivity in SSA. Although such innovations address some of the sources of inefficiency of past subsidy programs, they do not address the effectiveness of the implementation, of the past subsidy programs.

The study had an in-depth knowledge on how the subsidy program is being implemented in the Ashanti region such as; the distribution mechanisms use, availability of subsidized fertilizer, price of fertilizer during the subsidy year, beneficiary group's awareness and education on the program and constraint in the fertilizer business. The findings of the study showed enough evidence that, subsidy program in Ashanti region had some setbacks in implementing the study's objectives.

This evidence suggests that despite innovations in the design and implementation of fertilizer subsidy program, inefficiency and poor monitoring of subsidy programs of the past, remains unresolved. Until viable innovations emerges that is effective, efficient and timely monitoring is done, the new subsidy programs have the potential to experience at least some of the significant pitfalls of subsidy programs from the past.

The government should consider going through the procurement structure process recommended in the Public Procurement Act, 663 of 2003 to have a better contract award and phase of contract administration.

5.3 RECOMMENDATIONS

- The quota given fertilizer companies should be monitored very well to check the quantity of fertilizers supplied to each region as well as district.
- Fertilizer companies should have major distributors in all regions in the country. This will reduce the cost involved in transporting fertilizers from one distributor in one region to other agents in the region.
- Logistics should be made available for effective monitoring and supervision of the program.
- Task forces should be put in place to check diversion of fertilizer from targeted farmers (small holders) and smuggling particularly in districts sharing borders with our neighboring

Countries.

- Resources should be made available for radio talk shows in the local dialects to sensitize farmers on the program and the disservice they will be doing to the nation if they encourage cheating in the fertilizer business.
- The officers at the various security check points should be sensitized on the program to put in place measures to address the issue of smuggling by being committed citizens.
- For farmers to use fertilizers and other relevant inputs, they must have access to sustainable output markets for their surplus production. Development of these markets must receive equal attention, as these markets provide the demand that makes possible the adoption of improved technologies at the farm level. The adoption of improved technologies (seed, fertilizers etc).
- The Agricultural Development Bank (ADB) and the rural banks may have to be strengthened and resourced to enable these institutions channel more loanable funds to the farmers. Without changes in government policy in the financial sector it may be difficult for the farmers to compete with commercial entrepreneurs. Access to credit by the farmers may enable them to increase their use of fertilizer.
- To strengthen the privatization of the fertilizer sector, the government should consider easing the restrictive fertilizer specifications and rather allow the private sector fertilizer importers to operate under the guidance of the Crop Services Department of the MoFA and the Environmental Protection Agency.

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