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IMPACT OF INTERNATIONAL TRADE ON THE QUALITY OF THE NATURAL ENVIRONMENT: A CASE STUDY OF GHANA FROM 1970 TO 2010

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ABSTRACT

While trade openness has existed in Ghana since independence in 1957, economic liberalization policies implemented in Ghana starting from April 1983 to present date have led to a significant increase in trade openness. However, the impact of increased trade liberalization on the natural environment still remains unclear. In this work, we estimate the scale, technique and composition effects of trade liberalization on Ghana's environment using carbon dioxide emissions as proxy for environmental degradation and data for the period 1970 to 2010. The results indicate that in the long-run period, international trade has had adverse effects through the increased emissions of carbon dioxide as a result of increasing urbanization. However, increasing per capita income over the period has also reduced emissions of carbon dioxide illustrating the technique effect that increasing wealth of the individual leads to improved demand for higher quality of the environment. Similar results were obtained for the short-run period with the negative scale effect of increasing carbon dioxide emissions from increasing urbanization, and the positive technique effect arising from reduction of emissions from increasing per capita income being observed.

Keywords: Environmental macroeconomics, Natural resource economics, Macroeconomics and the environment, Pollution, Trade liberalisation

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INTRODUCTION

Economic growth and environmental sustainability are two key societal goals that every country strives to achieve. However, there are difficulties in balancing the trade-off between economic growth and environmental sustainability especially for resource-rich countries. Increased production is essential for economic growth, but the production process ultimately leads to some environmental degradation. The so-called green growth strategies are considered to be a way of achieving the dual purpose of building resilient economies while meeting the social and economic goals of society due to their emphasis on minimizing environmental impacts from production and consumption processes. Proponents of trade liberalization, drawing mainly from David Ricardo's theory of comparative advantage, argue that liberalized trade increases incomes across countries. Thus, freer trade makes it possible for countries to specialize in the production of goods in which they have comparative advantage, leading to lower per unit cost of production and thereby making more goods available at relatively lower prices than would otherwise be the case. On the other hand, it is also argued that the negative environmental consequences of increased output from liberalized trade may outweigh the gains from income growth (Hanley *et al*., 2001).

The effect of liberalized trade on the environment has been studied by many scholars over time. According to Managi *et al.* (2008) the first attempt to develop a comprehensive theoretical framework to empirically explore the environmental effects of trade liberalization and to successfully decompose them into scale, technique and composition effects was made by Antweiler *et al*. (2001). In this ground-breaking work, the *scale effect* is defined as the effect of an increase in production (e.g., *Gross Domestic Product (*GDP)) on environmental degradation, or the tendency for trade liberalization to create additional output resulting in deterioration of environmental quality. The *technique effect* indicates the impact of trade-induced increase in income on emission intensity. It is the effect of more stringent environmental regulations and the adoption of more eco-friendly production techniques which are put in place as additional income increases the demand for a better environment. The *composition effect* relates to how emissions are affected by the composition of output (*i.e.*, the structure of the industry), which is determined by the degree of trade openness as well as by the comparative advantage of the country.

Since the implementation of the International Monetary Fund and the World Bank-sponsored structural adjustment programme starting in Ghana starting in April 1983, the country has implemented several trade liberalization policies which have led to an increase in export commodities. These export commodities are mainly primary products: cocoa, gold and timber. Specifically, mineral, cocoa and timber exports increased from about US$ 122 million, US$ 269 million and US$15 million respectively in 1983 to about US$ 4,965.7million, US$ 2,267.3 million and US$165.8 million in 2013. These increases were not only due to the effect of the structural adjustment programmes but also on the increases in world market prices of these commodities especially during the 2001 to 2010 commodity boom years (Anaman and Agyei-Sasu, 2014). Nevertheless, the volume increase in commodity exports has had some impact on the environment. For example, enhanced timber exports could increase deforestation which reduces carbon sequestration, while the increase in mineral exports could increase carbon emissions since the mining sector uses considerable amounts of fuel to produce, process and transport extracted minerals.

The research questions that arise are: what are the directions of the scale, technique and composition effects of trade liberalization on the quality of the natural environment in a resource-rich developing country like Ghana? What has been the overall effect of Ghana's economic liberalization policies on the quality of its environment for use by both human and non-human animal species? Is the current environmental regulation regime encouraging pollution? These are the questions that we seek to answer.

LITERATURE ON TRADE-ENVIRONMENT RELATIONSHIP

Several hypotheses have been developed to explain the international trade-natural environment nexus. These are the Pollution Haven Hypothesis, the Factor Endowment Hypothesis, the Environmental Kuznets Curve (EKC), and the Porter Hypothesis.

The Pollution Haven Hypothesis argues that developing countries with less stringent environmental regulations will attract pollution-intensive industries when they adopt trade liberalization policies. Specifically, low production costs and lenient environmental standards resulting from governments' quest to

boost the competiveness of local firms in the global market attract potential producers of pollution-intensive goods with liberalization. Copeland and Gulati (2004) argue that other factors such as capital abundance, technology differences, infrastructure and distance to major markets seem to be much more important than environmental policy in determining trade patterns. The Factor Endowment Hypothesis contends that with trade liberalization, individual countries will tend to produce and export goods for which they have large resource endowments. Countries that have endowments of natural and material resources are likely to specialize in resource-intensive industries and thus increase the extraction of natural resources when they open up to trade (Lopez and Islam, 2007). Evidently, the central point of these two hypotheses is that institutional and regulatory failures in a nation may lead to false comparative advantage, which results in further deterioration in environmental quality.

Grossman and Krueger (1995), in their analysis of the international trade-natural environment nexus, identified an inverted U-shape relationship between trade-induced income growth and environmental degradation which has been termed the Environmental Kuznets Curve (EKC) - as income increases, environmental degradation first increases until it reaches a turning point and then begins to decline thereafter. In this conceptual framework, trade plays a significant role by enhancing the process of economic growth through increased output and thus has both direct and indirect effects on the EKC.

The Porter hypothesis postulates that properly-designed environmental regulations can lead to "innovation offsets" that will not only improve environmental performance, but also partially - and sometimes more than fully - offset the additional cost of regulation (Ambeck *et al*., 2013). Reasons why properly-designed regulations may lead to these outcomes as argued by the authors include regulatory signals of companies about likely resource inefficiencies, potential technological improvements, focus on information gathering which can achieve significant benefits by raising corporate awareness, reduction in uncertainty, investments to address the environment and creation of pressure that motivates innovation and progress, which level the transitional playing field.

Empirical studies abound in the literature to explain the environmental effects of trade liberalization particularly in the developed world. Birdsall and Wheeler (1992), in their empirical study on Latin American countries, sought to establish whether greater openness, in terms of trade intensity and FDI inflows, are associated with the development of pollution-intensive sectors in Latin American Countries. The results of the study reveal that with trade liberalization, higher environmental standards of industrialized countries are often transferred to developing countries. Specifically, countries with more trade openness experience faster growth in clean industries than countries that have more regulated trade regimes. This suggests that on the average, trade may not systematically worsen environmental quality.

A cross-country study by Copeland and Taylor (1994) reveals that trade openness reduces the pollution level in industrialized countries but increases the pollution level in most developing countries and thereby increases worldwide pollution. The findings of this study support the pollution haven hypothesis. Doganer *et al*. (2010), applying a structural model on a sample of 34 Organization for Economic Co-operation and Development (OECD) countries, reports that trade liberalization leads to a significant reduction in air pollution in the study countries through an increase in the importation of environmental goods. Maccarney and Adamowicz (2005), seeking to deal with heterogeneous effects in individual countries, used panel data across selected industrialized countries, and applied econometric models to predict the effects of openness on organic water pollutant and carbon dioxide (CO_2) emissions. They dealt with the heterogeneity problem by controlling for different national characteristics in the study countries. This allowed them to make comparisons on how different national characteristics influenced the environmental impact of freer trade. The findings of the study indicated that trade liberalization significantly increased emissions of both pollutants, thus reducing environmental quality.

Mani *et al*. (2006), in a study of the environmental impacts of free trade in Vietnam, report that trade liberalization led to increasing manufacturing and export activity in 24 water and toxic pollution-intensive sectors compared to the less pollution-intensive sectors. The study further reports that free trade has resulted in a changing composition of Vietnamese production and exports away from traditional sectors and towards pollution-intensive manufacturing,

especially leather and textiles. Madrid-Aris (1998) analyzed the effects of trade liberalization under the North American Free Trade Agreement (NAFTA) on hazardous wastes for Mexico and concluded that freer trade led to a rise in the emissions of toxic by-products in Mexico. The findings of these two studies led to the conclusion that the relationship between trade liberalization and pollution was positive, thus making trade liberalization detrimental to the quality of the environment.

While the empirical studies discussed above provide insights into the international trade–natural environment relationship, they fail to properly measure the three types of effects - scale, composition and technique effects - of trade liberalization on the environment. Antweiler *et al*. (2001) examined the relative strength of the scale, composition, and technique effects of trade on SO_2 pollution in some selected major cities in the world using econometric analysis and concluded that free trade was good for the environment since a negative correlation was established between economic activity and concentration levels. They found the technique effect dominant over the scale effect. Specifically, a 0.25% increase in scale of production results in a 0.5% sulphur dioxide increase. However, for each 0.25% increase in activity the technique effect results in a 1.25% to 1.5% decrease in sulphur dioxide levels. Composition effect analysis revealed little significance regarding environmental consequences.

Dean (1999), using Chinese water pollution data, concludes that free trade benefits the environment. She finds a negative composition effect, a noticeable negative scale effect and a beneficial technique effect. A major variable in her analysis was the increased state ownership that she had to control for. State-owned firms were held to higher environmental standards and consequently reduced the environmental impacts of all the trade liberalizing effects. Controlling for this variable, Dean found the technique effect to outweigh the negative scale and composition effects, thereby affirming the notion that free trade leads to an overall improvement in environmental quality.

Beghin and Poitier (1995) analyzed the effects of free trade on the environment in Mexico with better terms of trade with the US, Canada and Mexico on various pollutants. The results of their research indicated a positive scale effect of trade

liberalization on pollution whereas the other effects (composition and technique) were found to be negative, thereby making the overall pollution effect from trade liberalization negative. In another study, Strutt and Anderson (1999) modeled the impact of trade reforms on various pollutants in Indonesia as a result of the application of the General Agreement on Trade and Tariffs Uruguay Round trade reforms and the Asia-Pacific Economic Cooperation Most Favored Nation trade provisions. They concluded that the scale effects of trade had a detrimental effect on the environment in both cases, although the composition effects of trade liberalization overrode the scale effects and made the total effect of liberalization on the environment positive.

In an empirical study of the impacts of trade reforms on the environment in Central and Eastern European countries, Vukina *et al*. (1999) examined the relationship between trade policy reforms and composition of pollution in output economies, using information on 13 pollutants and the energy intensity of output. The study reveals that policy reforms affecting trade liberalization and the foreign exchange system have a beneficial effect on the composition of manufacturing output, shifting it towards less-polluting sectors. The authors associate this improvement in composition with environmental policy reforms that accompany trade reforms and report a large and negative scale effect in most of the study countries.

A recent work by Tsurumi and Managi (2011) explores the effect of trade openness on deforestation for 142 OECD and non-OECD countries using a dynamic panel model. The findings reveal that an increase in trade openness increases deforestation for non-OECD countries while slowing down deforestation for OECD countries. This study gives credence to the possibility that the composition and technique effects of trade have adverse effects on deforestation in developing countries, whereas the opposite holds in industrialized countries.

Selden, Forest and Lockhart (1999) compare emissions of six air pollutants in the United States of America (USA) in 1970 and 1990 and compartmentalize the variations in pollution for the two periods into changes in scale, composition and technique effect. Notwithstanding the fact that this study is simply a measurement exercise based on aggregate data for a single country at two

points in time, it is important because it takes seriously the need to investigate the relative strength of the three effects. They find that technique effects are an important factor in explaining the fall in emissions. The study also reports that the composition and scale effects are not significant in explaining the differences in pollution levels in the United States of America during this period.

Chua (1999) asserts that the collection of empirical evidence on the relative impacts of the scale, composition and technique effects as well as the gross effects of trade liberalization on the environment are largely limited to developed countries. However, the few studies that have been undertaken in Sub-Saharan Africa on the relative impacts of these three effects obtain mixed results. Feridun *et al.* (2007), using time series data, investigates the impact of trade openness on pollution and forest resource depletion in Nigeria. GDP per square kilometer, capital-labour ratio and Gross National Product (GNP) per capita were used as measures of the scale, composition and technique effects respectively. Results of this study indicate that pollution is positively related to trade intensity and real GDP per square kilometer, while capital to labor ratio and GNP are negatively related to pollution. In addition, the study provides strong evidence to suggest that trade intensity, real GDP per square kilometer and GNP are positively related to environmental degradation, indicating that the technique, scale, and total effects of liberalization are detrimental to the environment. The composition effect of trade liberalization on natural resource utilization, on the other hand, is beneficial but is overshadowed by the adverse scale and technique effects, making the overall effect of trade liberalization on the environment in Nigeria negative.

López (1997) finds that trade liberalization has a negative effect on biomass in Ghana due to a large adverse scale effect of increased output and a negative composition effect of free trade. In contrast, López (2000) reports that trade liberalization has had a positive effect on biomass in La Côte d'Ivoire due to the positive composition effect resulting from trade liberalization which outweighs the negative scale effect.

From the above discussion, one can conclude that the international trade-natural environment nexus is divided into two schools of thought with conflicting views on the impact of trade liberalization on the environment.

Some authors suggest that trade liberalization generates more economic growth and higher income which increase demand for environmental quality particularly in developed countries. Others argue that higher growth without adequate environmental provisions and standards will increase environmental degradation even more, especially in developing countries where environmental regulations are usually lax. It is for this reason that assessing the impact of trade liberalization on the environment in a resource-rich country like Ghana is useful as it can assist the formulation and implementation of policies to improve the quality of the natural environment.

METHODOLOGY

Theoretical Framework

The study applies a model that enables the decomposition of the environmental impact of trade liberalization into scale, technique and composition effects. Details of the theoretical framework are provided by Antweiler *et al.* (2001). Below, we provide a brief summary of the framework. The model assumes a small open economy that produces two final goods *X* and *Y,* with two primary factors, Natural capital (*N*) and Human capital (*K*). It is assumed that the industry that produces *Y* is human capital intensive and does not pollute while the industry that produces *X* is natural capital intensive and generates pollution as a by-product of production. It is assumed that there are constant returns to scale and hence the production technology for *X* and *Y* can be described by unit cost functions. A simple emission function links environmental degradation to economic activity as follows:

$$E = eX = e\ S \quad \text{..... Equation 1}$$

where *e is the* pollution intensity of the dirty industry, is the share of *X* (pollution-intensive good) in total output, and S is the overall scale of the economy. Equation (1) therefore means that the overall level of environmental degradation (*E*) depends on the pollution intensity of the dirty industry *e*, the relative importance of the dirty industry in the economy , and the overall scale of the economy *S*. As illustrated by Antweiler *et al.* (2001), Equation (1) can be written in differential form as Equation (2) denoted below:

$$\hat{E} \quad \hat{S} \quad \hat{} \quad \hat{e} \quad \text{.....Equation 2}$$

where the hats indicate percentage change. The first term on the right hand side of Equation (2) is the *scale effect* which measures the change in environmental degradation resulting from an increase in the level of output. Thus, holding constant the mix of goods produced , and production techniques *e, an* increase in the scale of economic activity (output) is expected to increase environmental degradation. The second term is the composition effect which measures the effect of a change in the output mix of the economy on the environment. Thus, holding the scale of the economy and emission intensities constant, an economy that devotes more of its resources to producing the pollution intensive good *X,* will pollute the environment more. Finally, we have the technique effect, captured by the last term in Equation (2). Holding all else constant, a reduction in the intensity of emissions will reduce pollution.

Empirical Estimation

Based on Equation (2) ,we formulate Equation (3) as our empirical model:

$$E_t \quad 0 \quad {}_i X_t \quad {}_t \qquad \text{.....Equation 3}$$

Where E_t represents environmental degradation, X_t is a vector of independent variables - scale effect, composition effect and technique effect - ${}_i$ *are* the parameters to be estimated, ε_t is the stochastic error term which is initially assumed to be normally distributed with a zero mean.

Following the work of López, Galinato and Islam (2007) and Feridun *et al*. (2006) we use per capita gross domestic product (GDP) as a proxy for income level to measure the technique effect, capital-labour ratio as a measure of the composition effect of trade, and GDP per square kilometer as a proxy for the level of economic activity and hence the scale effect.

In addition to decomposing the trade effect on the environment into three components as elaborated by Antweiller *et al*. (2001), we introduce three more independent variables that can influence trade effect on the environment. Theoretical analysis pinpoints the tendency for government policy on environment to alter the effect of trade liberalization on the environment - the so-called 'pollution haven effect'. Deacon and Mueller (2004) argue that non-democratic governance may impede the technique effect by rendering

governments unresponsive to public demand for greater environmental quality. A dummy variable to assess the effect of governance is therefore included to specifically estimate the influence of democratic governance in determining the environmental impacts of openness to trade.

The work of Maccarney *et al*. (2005) asserts that increased urbanization leads to improvement in environmental quality. Contrary to this assertion, observational evidence seems to suggest that urbanization is rather increasing environmental degradation in many urban centers in Sub-Sahara Africa. An urban population variable- urban population share in total population - is therefore included to control for the possible influence of urbanization in explaining the effects of trade liberalization on the environment.

One environmental pollution variable is used for the analysis - carbon dioxide (CO_2) emissions. The model estimated is of the form specified in Equation 4.

$$CO_{2t} = A_0 + A_1\ TRADEOP_t + A_2\ KLRATIO_t + A_3\ RGDPPA_t + A_4\ RGDPPC_t + A_5\ URBPROP_t + A_6\ GOVERN_t + A_7\ HAVEN_t + U_t \qquad \textbf{Equation 4}$$

Where CO_{2t} is the annual production of CO_2 emissions in kilotonnes in year t;

$TRADEOP_t$ is the ratio of the total value of exports plus imports divided by the gross domestic product (GDP) in year t;

$KLRATIO_t$ is the capital-labour ratio which is measured in this study as the real investment per worker in year t;

$RGDPPA_t$ is the real GDP measured in U.S. dollars divided by the total land area of Ghana for year t;

$RGDPPC_t$ is the real GDP per capita in year t measured in U.S. dollars;

$URBPROP_t$ is the proportion of the population that lives in urban areas in year t;

$GOVERN_t$ is the dummy variable for democratic governance in Ghana with the value of 1 assigned for years when there was an elected democratic government and zero for military governments. The years, 1970, 1971, 1979,

1980, 1981, 1993 to 2010 are given values of 1. The years, 1972 to 1978 and 1982 to 1992 are given values of zero.

$HAVEN_t$ is the interaction term based on the product of $TRADEOP_t$ and $RGDPPC_t$ for year t;

and U_t is the error term assumed to be normally distributed with zero mean.

The short-run error correction function related to the long-run cointegration function of Equation 4 is also estimated. This short-run error correction function is specified below in Equation 5.

$$\Delta CO_{2t} = B_0 + B_{00}\, U_{t-1} + B_1 \Delta TRADEOP_t + B_2 \Delta KLRATIO_t + B_3 \Delta RGDPPA_t + B_4 \Delta RGDPPC_t + B_5 \Delta URBPROP_t + B_6 \Delta GOVERN_t + B_7 \Delta HAVEN_t + W_t \quad \text{Equation 5}$$

where Δ is the first difference operator; U_{t-1} is the lagged value of the estimated error term from the long-run cointegration function (Equation 4) and W_t is the equation error term assumed to have constant variance and zero mean.

Data for the estimation of the empirical models are derived from World Development Indicators Online database produced by the World Bank (2014) and the International Trade Statistics database produced by the World Trade Organisation (2014).

RESULTS AND DISCUSSION

The Augmented Dickey-Fuller (ADF) and the Philips-Perron (PP) tests for unit roots were used to test each variable at levels for the presence of unit roots. The results of the unit root tests are reported in Tables 1 and 2. All the variables are non-stationary based on the more accurate PP test. The unit root tests for the first differences of the variables reported in Table 2 using the PP test show that the variables, GOVERN, RGDPPA, KLRATIO, HAVEN and CO_2 are integrated of the order 1, I(1), suggesting that the first differences of these five variables are stationary. TRADEOP, RGDPPC and URBPROP are only stationary based on their second differences. With a mixture of variables which have different levels of integration, I(1) and I(2), the appropriate method for estimating a cointegration function among the variables is the autoregressive distributed lag (ARDL) method (Pesaran *et al*. 2001; Pesaran and Pesaran, 2009).

Table 1: Summary of the Results of the ADF and PP Tests of Stationarity for Variables at the Levels

Variable Name	ADF Test Statistic	PP Test Statistic
CO_2	-2.232 (0.472)	-12.271 (0.302)
TRADEOP	-2.626 (0.268)	-6.844 (0.677)
KLRATIO	-2.753 (0.215)	-8.402 (0.552)
RGDPPA	1.280 (1.000)	2.602 (0.999)
RGDPPC	-2.017 (0.592)	3.468 (1.000)
URBPROP	-3.465 (0.043)*	-2.468 (0.957)
GOVERN	-2.970 (0.141)	-15.213 (0.178)
HAVEN	1.776 (1.000)	6.245 (1.000)

Notes:
The p values are denoted in parentheses. The asterisk denotes statistical significance at the 5% level.

Source: Authors' Estimation

Table 2: Summary of the Results of the ADF and PP Tests of Stationarity for Variables using Their First Differences

Variable Name	ADF Test Statistic	PP Test Statistic
ΔCO_2	-2.134 (0.527)	-34.023 (0.004)*
ΔTRADEOP	-2.564 (0.297)	-17.886 (0.107)
ΔKLRATIO	-4.135 (0.006)*	-48.794 (0.000)*
ΔRGDPPA	-1.146 (0.921)	29.775 (0.009)*
ΔRGDPPC	-0.880 (0.958)	-12.461 (0.292)
ΔURBPROP	-1.031 (0.940)	-9.612 (0.463)
ΔGOVERN	-3.140 (0.097)	-34.442 (0.003)*
ΔHAVEN	-1.536 (0.817)	-34.512 (0.003)*

Notes:
The p values are denoted in parentheses. The asterisk denotes statistical significance at the 5% level.

Source: Authors' Estimation

Hence the ARDL method was used to estimate the long-run cointegration function stipulated in Equation 4 and the related parsimonious short-term error correction function indicated in Equation 5. The results of the estimated optimal ARDL function, using the Schwarz-Bayesian decision criterion, are reported in Table 3. The estimated ARDL function is deemed to be very strong with very high R^2 of 0.966 and adjusted R^2 of 0.957. The estimated function is correctly specified based on the Ramsey Reset test. Further, the error term is shown to be normally distributed based on the Jarque-Bera test of normality. There is also no significant autocorrelation as measured by the LM test of autocorrelation (refer to the detailed results provided in Table 3).

The results of the estimated long-run cointegration function derived from the optimal ARDL model are reported in Table 4. Only the variables, RGDPPC and URBPROP, have parameters that are statistically significantly different from zero at the 5% level. The standardised regression estimates are -0.486 and 0.834 respectively for RGDPPC and URBPROP respectively. These results indicate that URBPROP has a much bigger influence on the variation in the dependent variable, carbon dioxide emissions, than RGDPPC. The RGDPPC parameter reflects the technique effect and with its statistically significant negative sign indicates the positive effect on the quality of the natural environment arising from the trade liberalization. The technique effect is argued to be favorable as high incomes from trade make higher environmental quality possibility (Galinato and Islam, 2007). The direction of the technique effect is therefore consistent with theory. URBPROP deals with the role of increasing urbanization and its strong statistically significant parameter indicates that increasing urban population witnessed over the study period from 1970 to 2010 is the most important factor affecting the quality of the natural environment (negatively).

The variables, TRADEOP, KLRATIO and RGDPPA, have their parameter estimates statistically insignificant. However the absolute values of the Student t ratios are all greater than 1.0 and hence cannot be dropped from the model as that would cause a mis-specification bias. While the parameter estimates have the correct a priori signs based on the literature, they are statistically insignificant. We conclude that trade openness, the composition effect and scale effect from trade liberalization have not had any significant effect on the quality of the natural environment as measured by CO_2 emissions over the study period.

The parameters of GOVERN and HAVEN are not statistically significant and their very low Student t ratios suggest that they can be dropped from the model. Thus we conclude that the governance regime does not have any statistically significant effect on the quality of the natural environment. Further, the pollution haven effect is not proven in this study.

Table 3: Results of Estimated Optimal ARDL Equation with CO_2 Emissions as the Dependent Variable based on Data from 1970 to 2010

Explanatory variable	Parameter estimate	T-statistic	P value
INTERCEPT	-3460.3	-2.781	0.009*
$CO2_{t-1}$	0.329	1.820	0.079
$TRADEOP_t$	-20.849	-1.872	0.071
$KLRATIO_t$	3.625	1.352	0.186
$RGDPPA_t$	0.0707	1.402	0.171
$RGDPPC_t$	-3.266	-2.277	0.030*
$URBPROP_t$	174.334	3.240	0.003*
$GOVERN_t$	10.248	0.049	0.961
$HAVEN_t$	-0.0000035	-0.002	0.998
R^2			0.966*
Adjusted R^2			0.957*
Probability level of significance of model specification based on the Ramsey Reset test for the null hypothesis of correct model specification			0.168
Probability level of significance level for autocorrelation based on the Langrange Multiplier (LM) test for the null hypothesis of no significant autocorrelation			0.842
Probability level of significance of the normality of the error term based on the Jarque-Bera test for the null hypothesis of normally distributed error term			0.329

*Note**

denotes that parameter is statistically different from zero at 5% level.

The results of the estimated short-run error correction model are reported in Table 5. The error correction term is statistically significant confirming the existence of a valid long-run cointegration function. The estimate of the error correction parameter is -0.671. This value suggests that the long-run function returns to its optimal path after about one-and-half years after an initial disequilibrium. Similar to the results reported in Table 4 for the long-run cointegration function, only the parameters for URBPROP and RGDPPA are statistically significant. Thus in the short-term period, only the negative effect from increased urbanization and the positive technique effect are observed.

Table 4: Results of Estimated Long-run Regression Equation Derived from the Optimal ARDL Model with CO_2 Emissions as the Dependent Variable based on Data from 1970 to 2010.

Explanatory variable	Parameter estimate	T-statistic	P value
INTERCEPT	-5154.8	-3.058	0.005*
$TRADEOP_t$	-31.060	-1.632	0.113
$KLRATIO_t$	5.401	1.181	0.247
$RGDPPA_t$	0.105	1.579	0.125
$RGDPPC_t$	-4.866	-2.066	0.048*
$URBPROP_t$	259.715	3.297	0.003*
$GOVERN_t$	15.268	0.049	0.961
$HAVEN_t$	-0.000005	-0.002	0.998

Note

* denotes that parameter is statistically different from zero at 5% level.

Table 5: Results of Estimated Parsimonious Short-run Regression Equation with CO_2 Emissions as the Dependent Variable based on Data from 1970 to 2010.

Explanatory variable	Parameter estimate	T-statistic	P value
INTERCEPT	-3460.2	-2.781	0.009*
U_{t-1}	-0.671	-3.716	0.001*
$\Delta TRADEOP_t$	-20.849	-1.872	0.071
$\Delta KLRATIO_t$	3.625	1.352	0.186
$\Delta RGDPPA_t$	0.071	1.402	0.171
$\Delta RGDPPC_t$	-3.266	-2.277	0.030*
$\Delta URBPROP_t$	174.334	3.240	0.003*
$\Delta GOVERN_t$	10.248	0.049	0.961
$\Delta HAVEN_t$	-0.000004	-0.002	0.998

Note

* denotes that parameter is statistically different from zero at 5% level.

CONCLUSION AND RECOMMENDATIONS

We investigate the effect of trade liberalization on the environment using carbon dioxide emissions as the proxy for the quality of the natural environment. Our results indicate that increasing urbanization negatively affects the natural environment through increased carbon dioxide emissions. However, there is favourable impact on the natural environment through the technique effect arising from increasing per capita incomes coming from international trade. We also conclude that the negative urbanization effect overrides the positive technique effect. Trade openness, the scale effect and the composition effect are deemed not be statistically significant in influencing the level of pollution due to carbon dioxide emissions. The pollution haven effect is rejected in this study. Similarly, democratic governance is not proven to have any beneficial effect on the reduction of carbon dioxide emissions.

The magnitude of the urbanization effect which more than offsets the benefit of the favourable technique effect with regard to CO_2, emissions suggests that more should be done to enhance the technique effect by increasing the use of cleaner technology and equipment such as energy-efficient automobiles, machines and electronic gadgets, among others, to reduce energy consumption which is one of the main sources of carbon emissions in Ghana. Reducing the adverse effect of trade on carbon dioxide emissions through agro forestry, reforestation and the cultivation of permanent cash crops such as cocoa, oil palm, rubber, and cashew which enhances air quality through carbon sequestration, in addition to providing incomes for the rural people, is also recommended.

Further, given the rapid urbanization of the country greater emphasis should be given to the creation of natural parks in and close to urban areas to encourage the "greening" of the economy and the creation of more labour-intensive employment opportunities as recently suggested by Anaman and Agyei-Sasu (2014) through the establishment of an Environment Fund from the proceeds of the exports of crude oil. The Environment Fund is also necessary to repair natural environmental assets such as rivers which have partially destroyed by mining activities and poor environmental sanitation. Hence the current government project of establishing the Accra-Achimota Ecotourism Park should be speeded up. Further, new eco-tourism parks need to be established around

Accra especially around the Aburi Hills to help residents living within the central parts of the city of Accra to have recreational avenues to relax at weekends and holidays.

The adverse effect of urbanization on the environment, which could be caused by the ever increasing demand for urban housing, suggests that there is the need to change our building technology by using metal scaffolding rather than the current technology whereby wood is used. More so, focusing more on vertical expansion of cities will go a long way to preserve the forest cover around urban areas of Ghana.The main limitation of this study is the neglect of biodiversity depletion arising from international trade. This concern will be taken up in a future study dealing with Ghana.

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COST-PRICING OF FERTILIZER AND ITS CHALLENGES IN A SUBSIDISED MARKET: THE CASE OF GHANA

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ABSTRACT

This paper aims to examine the distribution of subsidized fertilizer in Ghana. In this regard, fertilizer cost, market price build-up and profit margins of five major fertilizer market centers in Ghana were analysed. The current challenges in the fertilizer industry identified by this study were also analysed. The objectives set out in this work were attained through desk reviews and in-depth interview with major actors in the fertilizer value chain in Ghana. The study found that in the supply chain of fertilizer handling, storage and transportation activities, costs increase from importers down to farmers. Also, the farther away a market center is from the Tema port, the more transportation adds on to the price build-up. In order to deal with bottlenecks regarding the fertilizer supply chain, this paper recommends tackling issues related to transportation lapses, as well as to timeliness of arrival and offloading of imported fertilizer.

Key words: Agriculture, Agricultural Policy, Fertilizer, Ghana, Input subsidies

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INTRODUCTION

The fertilizer subsidy programme is not new to many African countries. A conventional fertilizer policy whose key features included the sole importation and distribution of fertilizer by government, the sale of fertilizer at subsidized pan-territorial prices via state-owned enterprises, and universal availability of fertilizer to all categories of farmers, had been practised between the 1960s and early 1980s. The fertilizer subsidy programme was phased out when the Economic Reform Policy (ERP) was adopted by many countries in Sub-Saharan Africa (SSA) in partnership with the International Monetary Fund and the World Bank from the early 1980s to the 1990s (Dorward, 2009; Wanzala-Mlobela *et al*., 2013).

In 2006, African political leaders agreed to the *Abuja Declaration on Fertilizer for an African Green Revolution*. The soaring global food, fuel and fertilizer prices triggered a push for African leaders to make political commitments to tackle land degradation and low agricultural productivity by increasing fertilizer use to at least 50 kilograms per hectare (kg/ha) of arable land. In this regard, several Sub-Saharan Africa (SSA) governments implemented fertilizer subsidy programmes as one of the sure and quick ways of meeting these commitments (Wanzala-Mlobela *et al*., 2013). The re-introduced fertilizer subsidy programme in its modified form addresses a broader set of objectives than the conventional subsidy programme.

The new type of the so-called 'market-friendly subsidy' in its ideal implementation state has been termed “SMART”. “SMART” subsidies are those involving: (1) specific targeting of farmers who would not otherwise use purchased inputs (or targeting areas where added fertilizer can contribute most to yield improvement); (S) (2) measurable impacts (M); (3) achievable goals (A); (4) a results orientation (R); and (5) a timely duration of implementation (T),i.e., being time-bound or having a feasible exit strategy (Minde *et al*., 2008). Most African countries established the fertilizer subsidy program in a controlled import and distribution scheme. This was variously adopted by countries such as Kenya, Malawi, the United Republic of Tanzania, Zambia, and Zimbabwe, as well as Ghana and Nigeria in West Africa (Crawford *et al*., 2006). The policy aimed generally to increase crop yields by making fertilizer accessible to countless subsistence farmers (Minot and Todd, 2009).

Agriculture is an important component of the economy of most African countries, for not only does it provide the needed calories for citizens' productivity, but also it provides employment, especially for rural people. In Ghana, the sector is dominated by small scale farmers with fragmented lands across rural communities. The crops sub-sector, including cocoa, dominates the agricultural sector, contributing about 7.6% to agricultural GDP (Ghana Statistical Service, 2014). This makes the fertilizer subsidy programme critical for its very impact on the agricultural sector.

Until the ERP which started in April 1983 in Ghana, farmers in this sub-sector enjoyed considerable farm input subsidies. The implementation of the ERP saw the liberalisation of trade, a reduction of government activities in the market and the abolishment of Ghana's fertilizer subsidy programme (Nyanteng and Seini, 2000, Aryeetey and Tarp, 2006). Co-incidentally, the ERP policy attracted the needed private actors and also made the agriculture input market chain competitive and complex at the same time. More agro-input shops and dealerships have sprung up in the various markets scattered all over the country in the last three decades (Jebuni and Seini, 1992; FAO, 2005). The complexity and little involvement of government implied that prices of agricultural inputs including fertilizer were set at the going market prices, which in most cases affected accessibility and use of fertilizer by most of the rural farmers. Ghana's impetus for the re-adoption of the fertilizer subsidy programme was reinforced by the Abuja Declaration.

Fertilizer is reported to be as important as seed, contributing, for instance, as much as 50% of the yield growth during the Green Revolution in Asia (Tomich *et al.*, 1995; Hopper, 1993). Other studies have shown that one-third of the cereal production world-wide is due to the use of fertilizer and related factors of production (FAO, 2005). According to Morris *et al*. (2007) countries that have increased their agricultural productivity have also had to considerably increase fertilizer use. Further studies however show that the use of chemical fertilizers in African countries such as Ethiopia have made a contribution to crop yield (Tekalign *et al.*, 2001; Asnakew *et al.*, 1991). Cash crops response to fertilizer application has also shown positive results, and in combination with other intensification practices, had tripled average cotton yields in West Africa from 310 to 970 kg/ha (Pieri,1989). In Ghana, higher yields and associated positive

net incomes have been recorded with farmers under the subsidy programme. An overall positive future economic return of the programme has also been identified (Benin *et al*., 2013).

Despite the importance of the agricultural sector, weak and unfavourable agricultural policies and policy implementations in Ghana limit access to inputs by small scale farmers who dominate the sector. For instance, the policy on fertilizer subsidy through the waybill system made it difficult for many small scale farmers to have access to the needed fertilizer because it was made available on the open market. This made it possible for wealthy and influential farmers and non-farmers to buy the product in large quantities and store it. For non-farmers, the fertilizers were later sold at higher prices. Also, distribution networks to different rural areas are still underdeveloped (Benin *et al*., 2013). Consequently, government has always had to rely on imports to supplement the recurrent food deficits in the country.

The reintroduction of the fertilizer subsidy programme is expected to boost food crop production in the country, which marks an important step towards attaining the Medium Term Agriculture Sector Investment Plan (METASIP) (2011-2015) of six percent annual agricultural sector growth rate (Government of Ghana, 2010). Against this background the focus of this paper is to assess the fertilizer market structure in terms of price dynamics and the implementation of the government subsidy programme. More specifically, the objective is to analyse the price build-up, identify challenges and offer policy recommendations that can enhance efficient distribution and usage of fertilizer. It is possible that effective implementation of this programme will increase the economic outcomes of farmers and in the broader sense, champion the cause of a green revolution/economy for Africa. The remainder of this paper is structured as follows: the next section presents a review of literature on fertilizer. This is followed by a discussion of the method of data collection and analysis of the data. The results, conclusion and policy recommendation form the last section.

THE STATE OF FERTILIZER IMPORTATION AND USE IN GHANA

Organic fertilizers for direct farm application and use are largely imported into the country and controlled by private companies (such as Golden Stork,

Chemico Limited and Yara Ghana Limited and its partner Wienco Ghana Limited) which import almost 100 percent of the fertilizers on the Ghanaian market. These actors operate under the guiding principles of government policies. They were attracted to the Ghanaian market after the reforms in the 1980s with a major focus on fertilizer trade. However, time and challenges in the business environment have made companies such as Reiss and Company, Dizengoff and Jasmedi Group which were active in 1995 less so now. They have rather concentrated on other areas such as sale of farm machinery and equipment. Such business decisions can have a significant effect on fertilizer usage by small scale farmers. On the other hand, the level of fertilizer usage has been linked to policies which influence prices, availability and technical knowhow (Jebuni and Seini, 1992; Food and Agriculture Organisation (FAO), 2005).

The fertilizers imported into Ghana are from Europe, Asia and North and South America. Except for bagging or packaging, there is no significant value addition which importers could take advantage of since the fertilizers are imported into the country in their complete form. Fertilizer imports into the country have been actively embarked upon by private multinational private companies. The market chain is complex with actors engaged in importation, supplies/distribution, retailing and service provision (drivers' mates, loading boys, head porters and truck pushers). Importers have registered distributers located in the major cities and towns who also act as either wholesalers or retailers. The wholesalers or retailers, after taking delivery of the fertilizers, then operate with retailers in small towns and rural communities who make the goods available to farmers (the final consumers).

On arrival at the port, costs of fertilizer begin to build up. At the ports, importers engage the services of Clearing Agents or Customs Brokers (CA or CB). These agents have operated at the port over the years and have established strong networks which make it easier and faster to clear goods. After clearing, the goods are stored in a warehouse, at the cost of the importer, awaiting transportation arrangements. The bulk of the costs are incurred through transportation where importers have to rent trucks to convey the goods to regional capitals/depots. At each point of transportation, different rates are charged. For instance, in the cities and towns, the service providers, apart from drivers' mates and loading boys who seemingly have standard rates, sometimes

charge varying prices to convey the goods from the sales point to the lorry station. This, in addition to the transportation costs, results in a considerable increase in the final price by the time the input reaches the farmer in the rural community.

The amount of fertilizer usage varies according to geographic and ecological patterns that influence the suitability of a crop. Geographically, the country is divided into two ecological zones (North and South) with varying rainfall patterns ranging from major (March to July) to minor (August to November) in the South to one rainy season in the months of May to September in the North. Against this background, the peak of fertilizer use in the country is within the first two to three months of the rainy seasons. The soil and rainfall pattern in the northern ecological zone make it conducive for the cultivation of large tracks of cereal and cotton which require a high fertilizer application rate for an increased yield.

Fertilizer application rate in Ghana has been identified to be one of the lowest in the world, although the rate in the country has increased from 8kg/ha to 15 kg/ha since 2008 after the re-introduction of the fertilizer subsidy programme in that year. The impact of the fertilizer subsidy programme on fertilizer application rate was documented by FAO which asserted that the high fertilizer use in the 1970s and early 1980s was due to government support in the form of subsidies (FAO, 2005).

Unfavorable Ghanaian economic conditions have been linked to the fluctuations in fertilizer consumption. Low fertilizer use in the late 1980s and 1990s was linked to the economic shocks in which the Ghana Cedi (Ghana's currency) depreciated, coupled with the removal of subsidies. On the other hand, as the national economic situation began to improve, fertilizer consumption began to increase again in the late 1990s. It fell again in 2002 due, among other things, to the depreciation of the cedi, and began to recover once more when economic conditions were right. By 2007, fertilizer use was much above that of 1997 when the economic situation was far better (International Food Policy Research Institute ((IFPRI), 2009).

LITERATURE REVIEW

Historical Overview of Fertilizer Policy in Ghana

Changes that that shook up the fertilizer industry resonated clearly during the ERP period and the post-ERP era. The fixed prices of fertilizer which pertained in the face of growth in inflation, and which had continued into the 1970s, were stopped. In effect, market prices of fertilizer increased drastically between 1985 and 1989. The approach also affected the subsidized pricing policy in all sectors, thus encouraging private actors in the distribution of fertilizers in the country (Jebuni and Seini, 1992). Until the 1983 ERP reform, the Ministry of Food and Agriculture (MoFA) had acted as the major importer and distributor of fertilizers. However, for the promotion of increased use of fertilizer among farmers and for expedient distribution policies, institutions such as Farmers Services Company (FASCOM), the Ghana National Procurement Agency (GNPA) and Crown Agents (CA) were established. GNPA carried out the procurement function from 1976 until 1984; CA then took over from GNPA until the fertilizer industry was privatized as a result of continuous challenges the industry was experiencing.

The major aspect of the agricultural policies at the time was protectionist models. This included state monopoly, price controls, import tariffs, a subsidy programme for farmers and provision of flexible credit terms to enable them buy fertilizer (Jebuni and Seini, 1992). In Ghana the Fertilizer Subsidy Program (FSP) was reintroduced in 2008 to promote fertilizer use by farmers with the aim of increasing crop production to enhance food security. The programme strives for at least a 50kg/ha fertilizer application rate as suggested in MoFA's Medium Term Agricultural Sector Investment Programme (METASIP). In the initial implementation, the coupon system was introduced to avoid problems such as inefficiencies, bureaucracy and unnecessary delays in delivery.

With this system, MoFA was directly in charge of fertilizer distribution, and Agricultural Extension Agents (AEAs) distributed coupons to farmers and also ensured that fertilizers were allocated to those with coupons. However, three years into the coupon system the program was confronted with challenges such as the diversion of coupons from the intended target beneficiaries, which created an enabling environment for artificial shortages, high administrative and overhead costs and a concentration of MoFA activities on only fertilizer to

ensure efficient delivery; thus, too much time was spent on fertilizer distribution. Additionally, subsidizing fertilizer displaced private distributors who found it uneconomical to compete with government (Minot and Todd, 2009; MoFA, 2008).

This brought about the introduction of the 'way bill system' in 2010 that transferred importation and distribution to accredited private actors through bidding arrangements. With this system, the importing companies are given quotas, making the input available on the open market but to some extent regulated. In the new policy there is an agreed cost sharing between the importer and the government. Costs such as transportation, port handling charges, agents' commission and profit margins to the fertilizer marketing companies are absorbed by the government in order to arrive at standard prices for all types of fertilizer, making it affordable to farmers across regions (MoFA, 2008; Wanzala-Mlobela *et al*., 2013).

Government reimbursement of the recommended subsidy per 50 kilograms is made to the company after sales and submission of waybills approved by the Regional and District Directors of MoFA. With the subsidy, the approved price for a bag of 50 kilograms NPK stood at 27.00 Ghana cedis (GH¢) at 38.6 per cent government subsidy, while urea and sulphate of ammonia enjoyed a government subsidy of 36.6 per cent and 48.5 per cent and was sold at GH¢25 and GH¢18 respectively as at 2010.

From the introduction of the subsidy program in 2008 to 2011 (Table 1) MOFA had recorded total imports of 383,493 metric tons (MT) of fertilizer totaling a GH¢ 163.802 million subsidy paid by government (MoFA, 2008; Wanzala-Mlobela *et al*., 2013). The subsidy policy has yielded a positive result so far, as there has been an appreciable increase in fertilizer use by farmers from 8kg/ha to 15kg/ha. Similarly, importing companies admit an increase in demand by farmers, evident in an increase from 43,176 MT in 2008 to 176,278 MT in 2011 which indicates about 308 percent increase (MoFA, 2008;Wanzala-Mlobela *et al*., 2013).

Table 1: Total fertilizer subsidized and total cost to government, 2008-2011

Year	Total fertilizer subsidized (Metric tons)	Total subsidy paid by government (GH¢ million)
2008	43,176	20.654
2009	72,795	34.400
2010	91,244	30.002
2011	176,278	78.746
Total	383,493	163.802

Source: Directorate of Crop Services, Ministry of Food and Agriculture (MoFA), Accra

Empirical Observations of the Fertilizer Subsidy Programme

In Ghana, the fertilizer subsidy programme has been deemed quite effective in increasing accessibility to fertilizer by reducing the price by an average of 32.5 percent in 2008 and 40.5 percent in 2010, although these percentages were not the intended target reduction of 50 percent of the market price. Increased application of fertilizer has also been observed as well as increased volume of trade and number of private sector actors in the subsidy market (Bennin *et al*., 2011, Banful, 2008).

In terms of production, there has been a reported increase in maize production of between 0.72 and 1.22 million MT in Malawi as a result of the subsidy programme. The profitability of maize production by beneficiary households and rural income per household also recorded increases for farmers who used a full package of fertilizer subsidy and improved maize seed in Malawi (Doward *et al.*, 2010 and 2013). On a macro-economic level, the farm input subsidy programme in Malawi has proven to be profitable for both direct impact and wider indirect impact. Fiscal efficiency (the ratio of net economic benefits to government expenditure) of the programme has been estimated at 0.75 for direct impacts and at 1.04 including indirect impact. In effect, the package provides a better wider indirect positive impact. It was also observed that the farm input subsidy programme might have led to average annual savings of maize import of some 385, 000 MT, directly offsetting up to between 85 and 110% of programme costs (Doward *et al.*, 2013).

However, a disaggregated data analysis of households suggested that those at the bottom of distribution in Malawi obtained lower returns from subsidized fertilizer as compared to households at the top of distribution (Ricker-Gilbert and Jayne, 2010).In other studies on the Malawian market, it was revealed that the most vulnerable people in the community were not the main recipients of the coupons for subsidized fertilizer. Female headed households were less likely to benefit from the programme. Also, asset poor households were less likely to participate in a farm input subsidy programme as compared to non-poor households (Chirwa *et al*., 2010). Similar conclusions have been reached by Holden and Lundunka (2010) and Doward *et al.* (2008).

There are also observed occurrences in the subsidized market which may erode gains of the fertilizer subsidy programme. Distribution networks in rural areas are underdeveloped for most countries. Coupled with this, negotiations between government and fertilizer importers often delay, which affect timely supply and distribution of fertilizer to farmers (Bennin *et al*., 2011). Uncertainty and delays in the delivery of coupons to farmers lead to congestion at the market which provides incentives for fraud, waste of farmer's time, exclusion of poorer potential beneficiaries, and late or less effective use of fertilizer. In some cases, long queues and distances to market centres as well as a stock-out situation, have necessitated the payment of tips to get access to fertilizers, which works against poor farmers (Chirwa *et al.*, 2010; Doward *et al.*, 2013). The higher incidence of tips in order to redeem coupons, exacerbated by long queues, was also reported as a major issue by Chirwa *et al.* (2010).

Theoretical Foundation and Conceptual Formulation of Cost-price Build-up in a Subsidized Market

Costing-pricing in the fertilizer industry can best be explained by the transaction cost theory in economics. Transaction cost theory is concerned with the cost of exchange of goods and services between people in a given market rather than the actual cost of producing the goods and services. The subsidized fertilizer market structure in Ghana facilitates exchange of fertilizer and its associated services among actors in the supply chain as noted by Williamson (1972; 1981). The fertilizer market supply chain in this study is viewed to possess a mix of three main categories of the transactional cost: (1) search and information costs, (2) bargaining cost, and (3) policing and enforcement cost (Dahlman,

1979). These factors interact to arrive at the final cost paid by the farmer. With the fertilizer subsidy programme, the Government of Ghana absorbs some of the cost in the chain through taking care of some administrative and international costs which the importer would have passed on to the local fertilizer market supply chain.

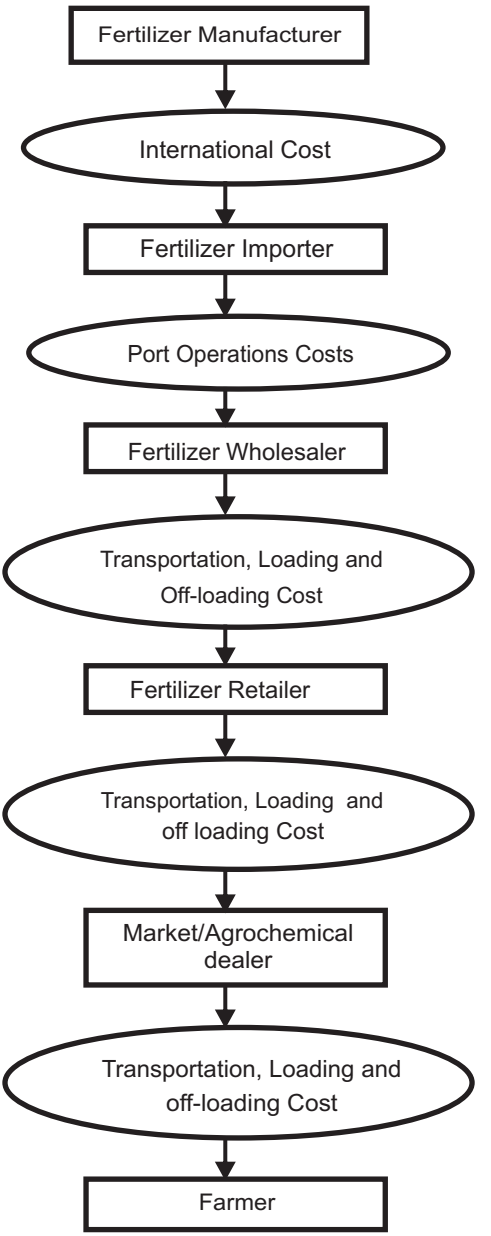
As already noted, fertilizer cost build-up occurs in the process of manufacture and transfer. Cost is borne internally by the manufacturer and externally by an initial actor (importer). This cost is then transferred to the immediate receiving actor (distributer/wholesaler) in the form of price paid to the importer to take delivery of the fertilizer. This system of cost add-on is transferred through the chain to the final consumer (farmer). The internal costs are related (but not exclusively) to personal day-to-day business decisions in relation to management of personnel, procurements and others. The external costs include levies and taxes and exchange rate costs. Figure 1 illustrates a conceptualized cost-price flow in the fertilizer market supply chain.

METHODOLOGY

In order to understand better the fertilizer market chain, the study tracked the distribution pathway from the entry point in the south (Tema port) to consumers in the Northern Region (Tamale). Major distribution centres in the Greater Accra, Ashanti, Brong Ahafo and Northern regions were visited.

Apart from Greater Accra region, the rest are regarded as the nation's breadbasket and among the high maize production areas. A multidimensional approach was used to gather information on fertilizer prices and to explain the market chain. Both primary and secondary data were collected. Collection of primary (qualitative) data commenced with a round table discussion among stakeholders from Customs, Excise and Preventive Service (CEPS), MoFA, the Crop Research Institute (CRI) of the Centre for Scientific and Industrial Research (CSIR), major fertilizer suppliers and representatives of farmers; development agencies such as AGRA and the Ghana Private Road Transport Union (GPRTU) of the Trade Unions Congress were present. A follow up interview was conducted among the stakeholders.

Figure 1: Conceptual flow of fertilizer costing and pricing in the fertilizer supply chain



Source: Authors conceptualization, 2015

Data on fertilizer prices were collected from a total of 30 small, medium and large-scale farmers drawn from a list of maize farmers provided by MoFA. From the fertilizer suppliers at Tema, it was possible to trace and randomly select ten distributers and retailers in the regional and local markets for interviewing. Secondary data was gathered from literature, reports of development agencies and government institutions. This was significant with regard to the government subsidised programme as well as price levels which could inform areas of price build-up.

Figure 2 below provides the geographical locations of market centres used for this study. The quantitative part of this study was based on a cost chain analysis of the four major market centers including Tema. Cost and price build-ups were calculated and reported as average fertilizer figures obtained from the fertilizer supply survey. The profit margins which measure how well the "market" pays its costs were derived as follows:

PM = ((1-(CP/SP))*100 **Equation 1**

where PM is Profit Margin, CP is cost price and SP is selling price

RESULTS

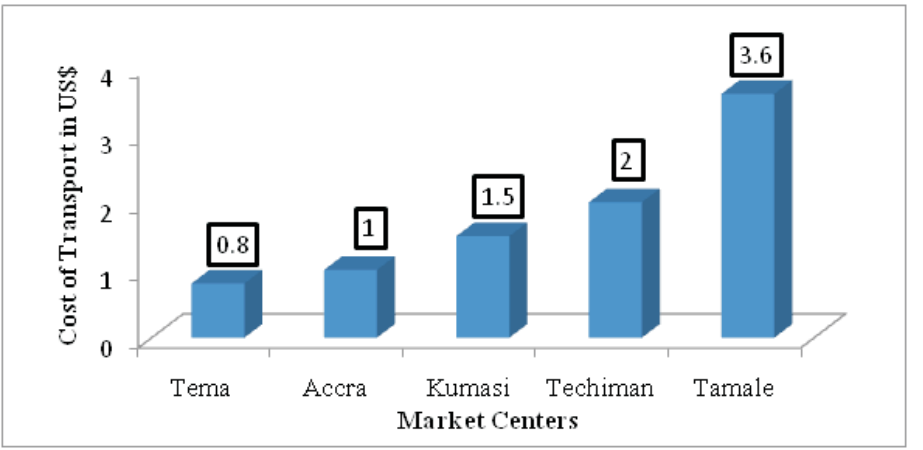
Cost Pricing of Fertilizer

Figure 3 and Table 2 are illustrations of how distance and transportation charges affect final market price. It is shown that the further the distance, the higher the cost of transportation. The cost of transporting 50 kg of fertilizer is 0.8 United States dollars to the Tema market away from the port and rises to 3.6 United States dollars (USD) at the Tamale market. Table 2 outlines the general cost build-up at market centers using the Tamale market as an example. The cost build-up illustrated provides a link to the theory of transactional cost where charges on the services of one actor are transferred to the other. Here, as fertilizer moves through the supply chain, there are additional costs accrued which are passed on to the next immediate actor. These costs eventually reflect in the price of fertilizer which the farmer pays at the local market.

Figure 2: Geographic location and dispersions of market centres.

Source: www.ghanaweb.com, accessed 15 August 2014.

Figure 3: Cost of transporting fertilizer from port to major centers per 50 kg bag in USD



Source: Field interviews, 2012

As already pointed out in the previous paragraph, the price charged by the main actors in the fertilizer supply chain depends on distance and transportation. In Figure 4, there is a general rise in price charged by all actors starting from the Accra market to the Tamale market. It is realized that farmers end up paying on average USD 57, USD 60 and USD 62 at the Accra, Kumasi and Tamale markets respectively for a 50 kg bag of fertilizer. Wholesalers at the selected market centers pay virtually the same amount of about USD 54 across the market centers. One could assume that the majority of the wholesalers in the market are either subsidiaries of importing companies or have special business arrangements with such companies.

For instance, it was realised from an in-depth interview that most suppliers (importers) have their own transportation arrangement with distributors. An interview with a representative of Wumpuni Agro-Chemicals (wholesalers) revealed that AfCott (an importing company which supplies to Wumpuni Agro-Chemicals) has its own transport system. In this case, Wumpuni Agro-Chemicals do not bear the cost of loading and off-loading, which stabilises their charges to retailers. But AfCott's trucks are not available at certain times, especially during the cocoa season when they are used to transport cocoa beans.

Table 2: Average cost build-up breakdown in Tamale market (USD)

Item	Cost
Import Price of 50 kg bag at port	52.00
Cost of local transportation/ 50 kg bag	3.60
Costs of loading	0. 20
Profit margin	-0.90*
Price to wholesaler	54.90
Cost of local transportation/ 50 kg bag	1.00
Costs of loading and offloading	0.50
Profit margin	1.00
Price to Retailer	*57.40*
Costs of offloading	0.40
Profit margin	1.60
Market Price	59.40
Cost of local transportation / 50 kg *to farming* community	2.40
Loading and offloading	0.15
Final consumer price (farmer)	61.95

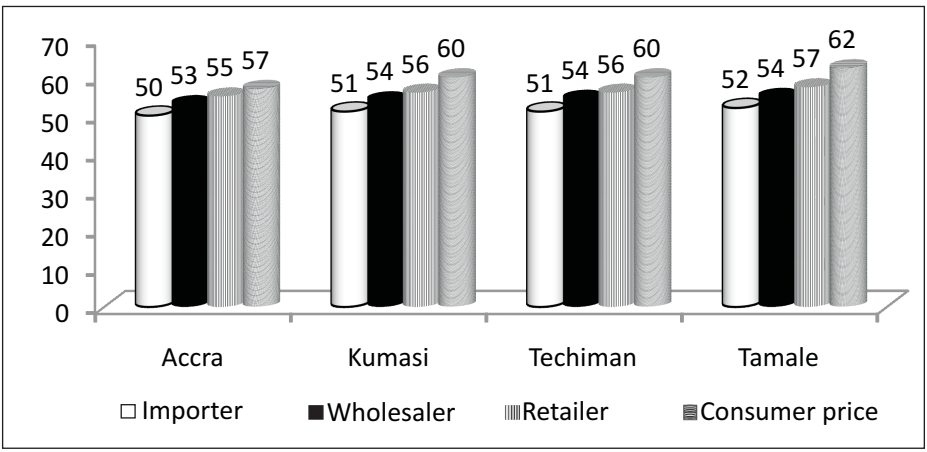
Note: The negative profit margin of -0.90 USD for the importer is due to the price subsidy offered by the importer to the wholesaler (refer to page 36 last section)

Source: Field data, 2012

At this time of the year Wumpuni Agro-Chemicals resort to the use of hired trucks. Obviously, costs incurred tend to be lower when transportation is taken up by importers than when distributors bear the cost. This is reflected in the difference in prices of the same type of fertilizer at the same market. Both external and internal factors contribute to price build up. Externally, exchange rates, taxes, exporting levies, production cost and others from manufacturing countries are passed on to the prices quoted for fertilizers on the market. There are internal factors such as transportation cost, loading and offloading fees and warehouse charges as well as hidden costs such as payments made at national police barriers or for the repair of broken down trucks in the course of transporting the goods (the owner of the consignment pays for the repair work

in order to prevent delays and possibly theft if a truck breaks down in an unsafe destination). These unexpected expenditures add to price build up and influence the final prices of fertilizer. Relatively, the price differentials across market centers for the various actors are minimal because of the fertilizer policy in which local transportation and loading cost are borne by the Government. This more or less evens out the price build-up across the market centers for actors.

Figure 4: Regional fertilizer price build-up per 50 kilogram of fertilizer (USD)

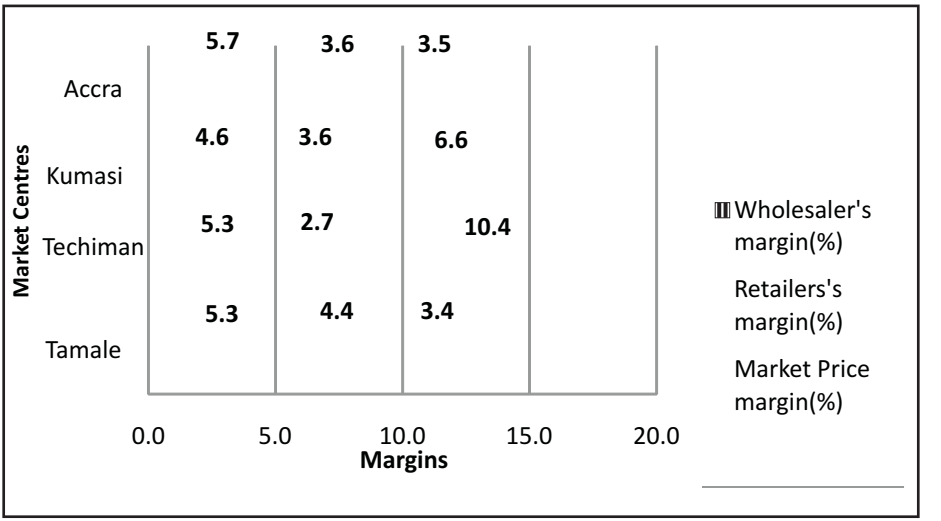


Source: Field Interviews, 2012

Profit Margin of Fertilizer Markets in Ghana

The market profit margin which measures the difference between the final market price of fertilizer and the sum of all costs incurred, usually in monetary value, by actors in the supply chain was estimated for the Accra, Kumasi, Techiman and Tamale markets. This was done to determine the relative profitability of the markets. The overall average profit margins were the Techiman (6.1%), Kumasi (4.9%), Tamale (4.3%) and Accra (4.2%) markets. The results suggest that in general terms, total sales revenue at the Techiman market cumulatively exceeds expenses made on fertilizer distribution by 6.1 percent (refer to Figure 5).

Figure 5: Profit margins of fertilizer marketers at selected markets (%)



*Note: Profit Margin = ((1-(cost price/selling price))*100*

Source: Calculated from field interview estimates, 2012

For that matter, there is an accrued net income of GH¢ 0.061 for each GH¢ 1.00 sales at the Techiman market. The Techiman market had a relatively higher margin than the other markets and this could be attributed to a higher and larger scale demand for fertilizer at that market than at the other markets. The Techiman market is in the Brong-Ahafo region and it is situated in an important food and cash crop farming zone where food crops such as maize are grown on a large scale by most farmers. The region has two distinct annual farming seasons: the major and minor seasons, during each of which fertilizer is used in various quantities. There is therefore high demand for fertilizers such as NPK, sulphate of ammonia and others.

Current Challenges of the Fertilizer Industry in Ghana

Notwithstanding the improved method of making fertilizer accessible to all farmers and MoFA's acknowledgement of an appreciable increase in fertilizer use by farmers, the industry is confronted with a number of challenges. While some of the distribution centers have unique problems, others are confronted with similar challenges. At the point of entry at the Tema port, for instance, importers' frustrations start with the delays on the part of fertilizer manufacturers. This is because at a particular point there are requests from many countries, and manufacturers tend to focus on clients whose requests are large. According to them, in Ghana the requests are so small that they are likely to be the last to be attended to.

On the arrival of the consignments, the importers have to go through complex bureaucratic processes to get all documents approved before they are able to start distribution. Other centers such as Kumasi, Techiman and Tamale are faced with extortion on the road at both approved and unapproved police barriers and stealing. There was a case with a distributor in Kumasi where after the fertilizer was offloaded it was realized that some of the bags were filled with materials other than fertilizer. In addition, field interaction with some actors in the fertilizer industry revealed the following challenges:

Poor road network

The road network in many farming communities is very poor and it gets worse in the rainy season when the fertilizer is most needed. Some roads become inaccessible to retailers in many farming communities in the rural areas. In such circumstances, retailers have to pay higher fares to motivate transport owners before their goods are delivered to their destinations. Farmers have to sometimes rely on family labour to transport fertilizer in smaller quantities by head portage to the farms. This reduces accessibility to fertilizer and delays the application of fertilizer.

The policy: Plant and Fertilizer Act 2010 Act 803

In order to guarantee strict adherence to fertilizer regulations, part three of the Plant and Fertilizer Act 2010 Act 803 policy document covers control mechanisms and almost all the processes, particularly the port clearance process. The processes spelt out are sometimes very demanding and time

consuming as a result of the bureaucracy involved. Given the mandate and power of some institutions, stakeholders lamented the deliberate sluggishness in service provision among some staff. Clients are therefore left with little options than to motivate staff of the service providers in cash or in kind to expedite action on requests made to avoid internal delays at the port which attract extra costs. The extra costs are transferred through the chain to the final consumer.

Subsidy policy programme: Way bill system

The way bill system was introduced due to the many problems encountered in the coupon program that were not anticipated. However, the way bill system which allowed fertilizer on the open market also emerged with new challenges that had not been thought of. Because there are no mechanisms to identify farmers it was difficult to differentiate them from non-farmers, hence people bought any quantity they could afford and sold it at higher prices at the end of the program. The quota system recommended for importers as part of the program already means import quantities are controlled; therefore, when non-farmers compete with farmers this puts pressure on the limited quantities on the market, causing artificial shortages.

Smuggling

The subsidized fertilizer in the open market created a business venture for new actors who buy the low priced input for export to neighbouring countries such as Burkina Faso, Cote d'Ivoire and Togo. Farmers in such countries also use the types of fertilizer imported into Ghana and since fertilizer in those countries is not subsidized the input is more expensive than the subsidized fertilizer from Ghana. The situation created increased movement of fertilizer across neighboring borders with Ghana. For example, Bawku in the Upper East Region is a business town and shares borders with Burkina Faso and Togo. The town is among the least producers in agricultural food crops, yet in 2010 it recorded the highest purchases of fertilizer in the country.

Limited outlets for farmers

Inefficiencies in distribution were noted by stakeholders due to limited sales outlets for farmers. As part of the program directives, only registered retailers are allowed to sell the subsidized fertilizer and they are expected to pay a

registration fee of GH¢ 1000 which many could not afford. Additionally, the cumbersome registration process has made the initiative unattractive. In this regard, some communities did not have adequate retail shops where fertilizer could be accessed, leading to scarcity of the input in those communities.

CONCLUSION AND POLICY RECOMMENDATIONS

The value system of the fertilizer supply chain is such that distance from the main supply point in Ghana (Tema Port) affects cost of transporting fertilizer and price build-up in the major market centers. Thus the price charged and the cost accrued by an actor usually becomes higher for locations farthermost from the port. The Tema market center is the main point of entry for imported fertilizer produce. Apart from distance, fertilizer prices were found to differ according to business arrangements between the actors. Other tangible factors such as availability of labour and its value, which may not be uniform across markets, also contribute to costs that are charged on fertilizer in the market centres.

Price hikes and cost build-ups were found to be a result of distance and transportation arrangements. A feasibility study and a long term plan for the establishment of a number of processing plants will enhance accessibility and use of fertilizer in Ghana. Specifically, such a project in Techiman, which falls within the major farming zone in the middle belt of Ghana, would reduce transaction cost.

Over the years, there has been some improvement in the road network in Ghana but this has been limited to trunk and urban roads. Other roads have generally remained bad and inaccessible in some places for some years now. One of the best ways to enhance productivity of food production is by putting the roads of agricultural communities in good shape. Finally, measures to tighten security at regional borders will discourage smuggling of subsidized fertilizer. This can be done by putting identification marks in the form of labels on bags of subsidized fertilizer so that security officials at the borders can easily identify them. Also, regional collaboration and surveillance should be strengthened.

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AN EXAMINATION OF ASSUMPTIONS UNDERLYING MULTI-STAKEHOLDER PLATFORMS IN TWO COMMUNITY WATER SUPPLY SYSTEMS IN GHANA

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ABSTRACT

The prospects that multi-stakeholder platforms present to development processes have been the main reason why such platforms have continued to be used. While concerns about the shortcomings of multi-stakeholder platforms have been raised in recent times, how these platforms actually function is barely explored. The paper seeks to examine two assumptions underlying the functioning of multi-stakeholder platforms. In-depth interviews that were conducted with members of multi-stakeholder platforms responsible for local water projects revealed that initial conditions, dispositions and preferences among the members of the platforms were amenable to change. Additionally, although the underlying assumptions are desirable, the analysis of data reveals that while there exists a basic assumption that members of multi-stakeholders platforms are equal, the members do not view themselves as equals. They are aware of their differences and exploit such differences. Again the findings show that the shared benefits to be derived from the synergies that result from the pooling of potentials of the stakeholders, although important, are not necessarily enough to keep the stakeholders supporting the goals and objectives of the platforms.

Keywords: Community Water Boards, Local development, Multi-stakeholder platforms, Potable water supply

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INTRODUCTION

The introduction of multi-stakeholder platforms into spatial development discourse emerged in recognition of the benefits inherent in pluralist governance. Pluralist governance systems allow multiple categories of members of a society to participate in decision-making. The current spread of democratic governance across the world through universal adult suffrage is one of the most common examples of pluralist decision-making. The appeal of multi-stakeholder involvement in decision-making to the local level stems from the benefits that it is anticipated to bring to development processes. The anticipated benefits include the following:

- the ordinary people/stakeholders will be represented and be a part of the decision-making processes; therefore decisions taken will be more relevant to all stakeholders; and
- they will have a keener interest in the functioning of the systems, processes and projects that result. They will therefore be able or likely to hold the implementers/actors accountable.

From the foregoing, it is evident that there is a link between multi-stakeholder decision-making and participation. Indeed, the concept of multi-stakeholder participation has strong links to the eighth rung of Arnstein's typology of participation – citizen control. With citizen control, citizens take full control of the management of the development process. This type of participation allows citizens who would otherwise be left out of the decision-making processes to contribute to the development process. Citizen control has the tendency to allow the deprived and voiceless in the society to improve their living conditions through their involvement in the planning, making and implementing of policy as well as the management of development processes, programs and projects (Arnstein, 1969). This conforms with Pretty's ideas on self-mobilisation and interactive participation (see Pretty 1995). Arnstein (1969) and Bass *et al.* (1995) also indicate that these more complete forms of participation do not necessarily alter the inequalities that exist between the 'haves' and 'have nots' in the communities where they are practised.

Decision-making processes across Africa and Western Europe entail several examples of participatory processes incorporated into varied forms of multi-

stakeholder decision-making platforms (MSPs). In Sub-Saharan African countries such as Zambia, Tanzania, Nigeria and Ghana, traditional rule is predominantly by consensus reached through deliberations. Thus even where there exist strong traditional rulers, as is found in Ghana, the rulers are advised by a team of elders (i.e., stakeholders) drawn from the various clans that constitute the community. While the use of consensus does not mean the total absence of disagreement, it means the reaching of compromises that are not abhorrent to any particular group but agreeable to all (Wiredu, 2007).

In more recent times, development programs and projects have sought to involve multi-stakeholders for improved project success. Typically, stakeholders are identified and efforts are made by program and project managers to involve them in various degrees at the different stages of the project cycle. In Nigeria, the sustainable development and conservation strategy for the forest estate in the Cross River State adopted a multi-sectoral and consultative approach in its coverage of stakeholder interests. This was to enable it achieve its aim of improving the annual timber revenues by about 3.5 times the existing level through sustainable forest management practices (Bass *et al*., 1995: 45). In Botswana, the preparation of the national conservation strategy involved the use of multi-stakeholder consultations that involved private and public sector stakeholders. "Through a process of representation, it was possible for the views of all communities to be canvassed and brought up to 'higher' levels …with the use of the traditional *`kgotla'* system of consultation and discussion" (Bass *et al*., 1995: 43).

Multi-stakeholder decision making was introduced into Ghana's water sector as part of efforts to decentralise the supply of potable water. The transfer of responsibility for rural water supply from the Ghana Water and Sewage Company to the Ghana Community Water and Sanitation Agency (CWSA) in the 1990s and the subsequent implementation of the National Community Water and Sanitation Program (NCWSP) facilitated multi-stakeholder involvement. The CWSA oversaw the re-alignment of key sector institutions and led to the formulation of the national rural water and small town water sub-sector policy guidelines which provided directions for achieving the participation of the different levels of stakeholders in the water sector (MWRWH, 2007: vi cf.Ocloo, 2012). With the mandate to facilitate the provision of safe drinking water to

rural communities and small towns (CWSA, undated: 2), the CWSA assumed responsibility for the NCWSP which emphasized multi-stakeholder involvement. The programme had clearly laid down guidelines to ensure that stakeholders at the local level (and lower levels) contributed to the planning, implementation, monitoring, operation and maintenance of water projects at the local level.

In furtherance of multi-stakeholder involvement, the sector guidelines envisaged Water and Sanitation Committees (WATSANCs) as operatives within communities and Water and Sanitation Development Boards (WSDBs) as operatives at the local level in areas where local water supply systems were established. The sector guidelines specified annual account rendering durbars, monthly WATSANC meetings, WSDB meetings, reporting systems that pooled information from community level operatives, system level operatives and the district water and sanitation teams for taking decisions on the water systems.

THE CONCEPT OF MULTI-STAKEHOLDER PLATFORMS

Here, the key terms used in the concept of multi-stakeholder platforms (MSPs) as applied in this article are clarified. Stakeholders are entities that have something to gain or lose as far as the issues at stake are concerned. These entities may be individual members of the society, groups and organizations. In the context of this study, stakeholders were those who influenced, affected or were affected by the water supply systems studied and are represented on the MSPs.

The interest that stakeholders have in a development issue informs their stake and participation. Therefore some segments of the society may have higher stake in a particular development issue than others, and yet lower stake in another development issue than others have. This variation exists because every development issue that arises is likely to concern some people more directly than others. Thus, in the MSP not only are there a multiplicity of stakeholders, but also there are a multiplicity of interests.

Multi-stakeholder decision-making is idealistically described as “a decision-making body (voluntary or statutory) comprising different stakeholders who perceive the same resource management problem, realize their

interdependence for solving it, and come together to agree on actions for solving the problem" (Steins and Edwards, 1998 cf. Evans *et al*., 2010: 356). Today, the concept of MSP is still quite new and lacks a clear and universal definition. MSP as an emerging social life form still requires proper determination. Warner notes that MSPs 'are not necessarily "things out there", institutions with offices, bye-laws and secretariats, but inferred patterns of behaviour and interaction, singled out of a complex reality and labelled "MSP" because having this class of constellations seems to add to our understanding of reality' (Warner, 2005: 2).

The contexts within which activities of the MSP occur are assumed to be fair. The platforms are expected to provide a level ground upon which the stakeholders interact as equals. Utopian as this seems, it is the 'contextual' basis for the MSP. The concept of MSP also assumes that the members will be willing to collaborate for the attainment of the goals and objectives, in which they all have a stake. It assumes that all participants, regardless of their differences, will be willing to set aside their differences for the sake of the common good, thereby participating in a process that derives synergic benefits for the good of all. It also assumes a process of perfect or near perfect communication, such that all members of the platform are adequately informed and therefore capable of taking part in the deliberations of the platform. But, do these situations really exist? We hasten to say no; not in the case of Ghana.

As its crux, this article examines the first two assumptions using Ghana's context while recognising that MSPs are not necessarily perfect institutions. Specifically, we answer the following questions:

1. Will participants on MSPs necessarily be willing to collaborate for the attainment of the goals and objectives, in which they all have a stake?
2. Is it expedient to assume that participants will be willing to ignore their differences for the sake of the common good, thereby participating in a process that derives synergic benefits for the good of all?

At the end, we point out how implausible it is to have a MSP that completely disregards the differences among the stakeholders, thereby assuming that they are all equal, and hence the need for the platform to make provision for the

differences. Secondly, the assumption that the prospects of synergic benefits that will accrue will get stakeholders to support the platform is challenged. We argue that even if this goal is achieved at some point in the life-span of the platform (or a development project), it will only be for a relatively short period. In order to advance our argument, two cases of endogenous-based development in the water sector in Ghana are examined.

The literature on endogenous development suggests that successful efforts at endogenous development require that relevant institutions, processes and structures are established to guide the endogenous development process, aiding the mobilization of local potentials and the harnessing of institutional relationships and linkages (see Ocloo, 2012; Diaw, 1994; Brugger, 1986; Friedmann, 1986 among others). Additionally a common understanding, perspective, agreement as well as commitment to the development direction and processes are essential (Ocloo, 2012). Implicitly, the processes of endogenous development would thrive in a decentralized system of governance where there are opportunities for stakeholders to participate in development interventions, right from the design and project formulation stages to the implementation, operation and maintenance stages. Indeed, the operation and maintenance stages often require clear and well elaborated institutional arrangements with stakeholders' input, and mechanisms to ensure accountability are incorporated (see Ocloo 2012; World Bank, 1996; see also Mastovak, 2000).

In a nutshell, the literature suggests that with the existence of local potentials that can be harnessed in support of the development effort, the appropriate institutions and the right facilitating conditions – such as a decentralized governance system, access to information and learning, linkages, well defined roles and responsibilities, and technical options relevant to the natural environment, policy (i.e., legal and institutional framework) (Ocloo, 2012) and the practice of stakeholder participation, an endogenous effort at development should be successful. With the efforts that have been made by the Government of Ghana and its development partners, such as DANIDA, the above mentioned conditions for rural and peri-urban areas have been put in place. It is against this background that this research focused on the functioning of MSPs in non-urban areas within the context of an endogenous development strategy.

METHODOLOGY

Data was collected from water projects in the most populous regions in Ghana where demand for water schemes is high – the Ashanti and the Greater Accra regions. Two relatively normal cases– the Oyibi Area Water System (OAWS) and the Juaben Water System (JWS) - were studied. The OAWS served as the case with the tendency to be successful. The JWS was selected because it had the tendency to be unsuccessful. Between both variants, the issues found to be common to both water systems are expected to be applicable to the large number of water systems (in similar spatial contexts) that fall between the range - likely to be successful and likely to be unsuccessful - in Ghana. They were selected because they had been in operation for a period of time (four years and more) that, according to sector experts interviewed, was long enough to enable them experience challenges that generally confront water supply systems in Ghana.

The sampling units comprised the entities on the platforms that had been created to manage the water systems: the district management and district water and sanitation teams of the two local governments concerned, two WSDBs, four WATSANCs, six community groups, five traditional authorities, two academic institutions that depended on the water systems, four opinion leaders, and the management of the two water projects. The Tema Metropolitan and the Ejisu-Juaben Municipal Assemblies were the two local government bodies involved in the study. They are responsible for the Tema metropolis and the Ejisu-Juaben municipality respectively, and the owners of the OAWS and JWS respectively. Within each study system, two types of platforms were investigated: the WSDB whose functions cover all communities served by the water scheme and the WATSANC which functions at the community level.

The study focused on the supply side of the affairs of the water scheme. In both water schemes the involvement of community members was mainly at the household level. Therefore the collection of data focused on the household level. While particular efforts had been made in both water schemes to ensure that women are represented on the WATSANCs, the focus of this research on supply made it appropriate to consider women and men as a single unit in a household. Data provided by female household heads (or female spouses of

household heads) did not reveal opinions and experiences that were different from data obtained from the male respondents.

The data was collected from primary and secondary sources. Policy documents, published research works, project reports and personal records were accessed and assessed. Primary data was collected through in-depth interviews and focus group discussions.

RESULTS

Emergence of natural lead entities: It is utopian to assume that stakeholders on MSPs are equal and necessarily of equal importance. The cases illustrated that members of such platforms did not consider themselves as equal in all contexts. They were conscious of the differences and exploited them. Indeed, Brugger *et al.* (1986) postulated that where the development process is left without clear leadership, natural leaders emerge as a result of the inequalities in their characteristics, qualities and thereby their perceived utility. The manifestation of the perceived utility of the different stakeholders was evident when two key ventures in the operations of the water schemes - revision of water rates and extension of the water schemes - were considered.

The accounts given by respondents on process events involved in both ventures were collated, triangulated and validated among the stakeholders to ensure that the account used for the analysis was an accurate reflection of key process events. Using averages (mode), the involvement of each stakeholder on the MSP was analysed. For each process event, how the actors involved related to each other - either as the main actor or the supporting actor - was examined.

In all, the local government (LG) was involved in 23 of the process events, being the entity which owns the facility and has the responsibility of ensuring the improvement and management of human settlements within its jurisdiction. For seven of the 42 process events originated by the management of the water scheme, the LG supported it to implement the event successfully. The LG was the main actor for 14 of the process events. In five of these events, the LG was supported by the management of the water scheme. Traditional authority and opinion leaders originated three process events and were supported in one of the events by the LG.

The management of the water schemes, the local governments (or LGs) and the traditional authorities and opinion leaders emerged leaders on the MSPs. While the foregoing accounts refer to the processes involved in revising the water rates and extending the water scheme, all respondents explained that these three stakeholders were also dominant - in other aspects of the systems' processes - because they had the interest and capacity to perform certain tasks well for the schemes. The respondents therefore considered it logical that they relied heavily on the three stakeholders.

The disaggregation of the field data into the two cases (i.e., the OAWS and JWS) corroborated the above observations. Tables 1 and 2, which focus only on activities for which inter-actor support was required, illustrate this. In each account, the LG, the management of the water scheme and the traditional authority were noticeable, although the traditional authority did not show strongly in the determination of the water rates, as shown in Tables 1 and 2.

There were 55 key process events that occurred on the MSPs. The management of the water scheme and the traditional authority were involved in 76% and 16% of the events respectively. The LG was involved in 42% of the process events either as the main actor or as the supporting actor.

Figure 1 provides a graphical summary of the level of involvement in the key process events by the stakeholders involved. In both water systems, the emergence of leaders was influenced by the perceived benefits that the emerged leaders could provide. The relationships of dependency that evolve on MSPs are hardly explored in the literature, but are highly relevant especially when coupled with issues of resource control. The relationships that resulted when leaders emerged naturally had the capacity to alter the platform. The platform by itself elevated some members over others through the dependencies that evolved, contrary to the underlying assumption that MSPs provide a level ground upon which the stakeholders interact as equals.

Table 1: Nature and frequency of stakeholders' involvement in projects for the Juaben Water System (JWS)

ACTOR	FREQUENCY					
	Determination of rates			Extension of scheme		
	Actor originated action	Actor played key supporting role	Sum	Actor originnated action	Actor played key supporting role	Sum
WSDB & Mgt. of water scheme	2	2	4	1	2	3
EJMA*	1	1	2	2	2	4
Traditional authority & community leaders in the Juaben area	0	0	0	1	0	1
Community members/ associations	0	0	0	0	0	0
Watsanc	0	0	0	0	0	0
Academic institutions	1	1	2	0	0	0

Note: EJMA* denotes Ejisu-Juaben Municipal Assembly.

Source: Authors' construct, 2013

Variability of stakeholder performance: It should not be assumed that the prospects of synergic benefits will necessarily ensure that stakeholders on MSPs work for the common good of the platform. Members' interests vary over time. Over time, they weigh the benefits that they would derive from their actions on the platform against their interests. Coupled with their perspectives of how much power they wield on the platform, these shaped members involvement in the platform. The two cases investigated revealed significant shifts in the positions of the stakeholders on the MSPs, which threatened significantly the sustainability of the schemes. The changes occurred subtly and became more pronounced and more evident over time. Table 3 illustrates some of the changes that occurred in the interests of the stakeholders.

Table 2: Nature and frequency of stakeholders' involvement in projects for the Oyibi Area Water System (OAWS)

ACTOR	FREQUENCY					
	Determination of rates			Extension of scheme		
	Actor origi-nated action	Actor played key supporting role	Sum	Actor origi-nated action	Actor played key supporting role	Sum
WSDB & Mgt. of water scheme	6	2	8	7	2	9
TMA*	1	2	3	1	3	4
Traditional authority & community leaders in the Oyibi area	0	3	3	1	3	4
Community members/associations	0	0	0	0	0	0
Academic institutions	0	0	0	0	0	0
Watsanc	1	1	2	0	1	1

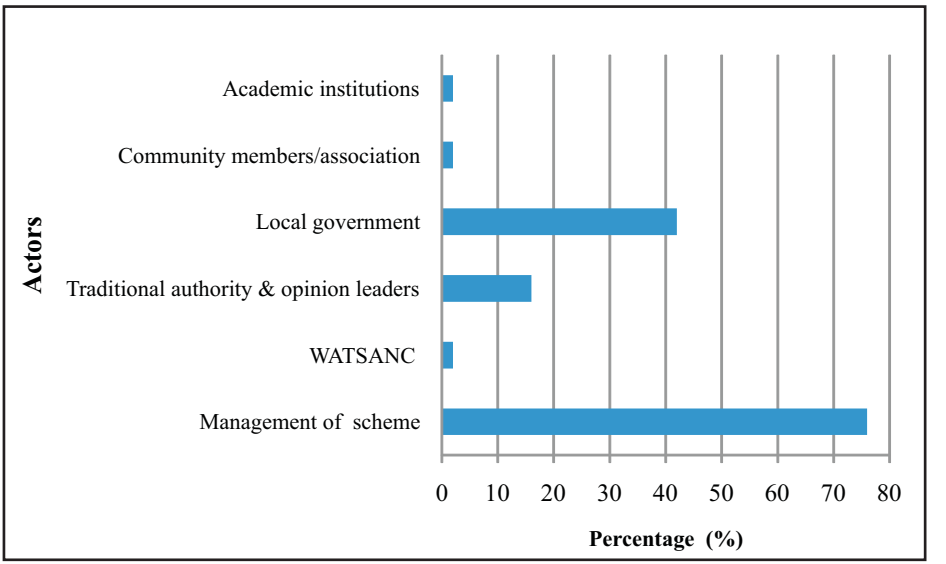
Note: TMA* denotes Tema Metropolitan Assembly

Source: Authors' construct, 2013

As shown in Table 3, all the stakeholders were interested in ensuring that the communities had access to potable water in 2004. When their interests in 2010 are compared to those of 2004, it is evident that after six years, changes occurred in what most of the stakeholders considered as their priority interests. The interest of community members remained having access to potable water. However, the WATSANCs' interests changed from ensuring that their communities had access to safe water to obtaining allowances for participating in the affairs of the water systems. The interests of the traditional leaders and opinion leaders evolved from ensuring that the communities had access to potable water and remained confident in their leadership, to receiving homage and special dispensations that allowed them to prevent the implementation of punitive measures for offences committed by community members.

The study revealed that over time the stakeholders weighed the newly acquired interest against the already existing interest and considered their motivations for participating on the platform. Where the 'newly' acquired/realized interest weighed more, the stakeholder devoted more resources to it. In the case of both platforms, this made sense because the problem of non-availability of potable water that spurred interest in the platform no longer existed. But as explained in the following paragraphs, there are more reasons for the changes.

Figure 1: Extent of involvement of actors in activities of the MSPs (%)



Source: Authors' construct, 2013

As with many community-based projects fashioned along the lines of an endogenous development strategy, both water projects were designed to be governed by local stakeholders through the MSPs. The governance process put in place considered the continued functioning of the MSPs as vital to the sustainable operation of the water schemes. For this reason, the platforms were designed to continue to function for as long as the water schemes operated. As with interests, with time the importance attached to issues and the commitment of the members of the platforms deviated from the expectation. The commitment or level of importance that the members

attached to the affairs of the MSPs was measured using the frequency of attendance at meetings as a proxy indicator. The commitment of the stakeholders was assumed to reflect their willingness to work towards the attainment of the goals and objectives of the platform.

On average, the proportion of total meetings attended by each stakeholder of the WSDB had reduced from 100% in 2004 to about 75% in 2010. At the WATSANC level regular attendance had dropped from 100% in 2004 to an average of below 13% in 2010. The most common reason for the members of the platform not attending meetings was the existence of other issues which they considered to be more important. For example, in the OAWS, the WATSANC was very active when the project was being implemented and this continued in the first two years of the operations of the water scheme.

Since by 2010 the need of the communities (including the WATSANC members themselves) to have safe water had been satisfied, the interests of the WATSAN members had shifted to the desire for allowances and other concerns. This new motivation had become stronger than the issue of getting water because there was no problem with the water system. The members therefore preferred engaging in other activities that fulfilled their interests to attending WATSAN meetings—a situation which arose because the allowances which they desired were not provided to them. Although the allowances were introduced in 2008, they still had a preference for attending to other personal issues – such as those related to farms and businesses - knowing this would not affect their access to safe water (Ocloo, 2012:253).

Attendance at meetings had not improved in either of the schemes. Table 4 illustrates the average deviations in attendance of the members of the platforms when performance in 2010 was compared with that of 2004. The members of the WSDB were expected to meet quarterly while those of the WATSANC were expected to meet monthly, as recommended by the National Small Town Water Sub-sector Policy. The deviation from expected performance was calculated as follows:

Deviation = Actual Performance - Expected Performance

Table 3: Interests indicated by respondents in 2004 and 2010

Respondents	Major interest at the start of operations in 2004	New interests as of 2010
OAWS Management (MA)	1. Ensure inhabitants have access to potable water 2. Ensure inhabitants are not exploited 3. Maintain good relations with the community 4. Support the WSDB	1. The politicians want to maintain power by ensuring that the people remain pleased with service levels during their tenure of office. 2. Ensure the OAWS is operational and communities have water. 3. Tap knowledge from the OAWS for other similar projects. 4. Monitor performance of the scheme to ensure sustainability.
WSDB	1. Make water available daily	1. Keep employees happy 2. Provide the water at affordable rates 3. Reduce consumer complaints 4. Ensure sustainable functioning of the water scheme.
WATSANC	1. Ensure that community members Have daily access to safe water	1. Get allowances or rewards for members' involvement in affairs of the scheme.
Traditional authority and opinion leaders	1. Ensure that community members have access to safe water	1. Receive homage from the OAWS
Community members	1. Have adequate supply of potable water	1. Have adequate supply of potable water at affordable rates
JWS Management (MA)	1. Fulfill political campaign promises 2. Ensure MA does not lose oversight control 3. Maintain a good name	1. That the facility does not collapse and re-introduce previously existing need 2.That the system is sustained 3. That the system runs efficiently
WSDB	1. Make safe water available to Juaben 2. Provide water at affordable rates	1. Improve operational efficiency and technology of the JWS 2. Obtain support for the JWS

Source: Field survey (2011)

Table 4: Deviations from expected performance on attendance on the WSDB platform in 2010

Respondent	Expected annual attendance	Deviations from annual expected attendance	
		OAWS	JWS
Local government	4	0	-1
Management of water scheme	4	0	-1
WATSANC representative	4	0	-4
Traditional and opinion leaders	4	0	-1
Community representatives	4	0	-1

Source: Field survey, 2011

Where the equation returned a positive figure, it meant that the stakeholder attended many more meetings than expected. The return of a negative figure meant that the stakeholder attended fewer meetings than expected. The return of zero meant that there was no deviation from the expected performance. At the implementation phase and upon the commencement of operations, these meetings were held as expected. However, as Tables 4 and 5 show, there were several deviations from expectations.

Table 5: Deviations from expected performance on attendance on the WATSANC platform in 2010

Respondent	Expected annual attendance	Deviations from annual expected attendance	
		OAWS	JWS
Chairman	12	-9	-12
Secretary	12	-9	-12
Treasurer	12	-11	-12
Other members	12	-11	-12

Source: Field survey, 2011

Holding the no deviation (0) position as the expected performance level, the JWS' WSDB generally performed below expectation by 2010. WSDB meetings were not held as often as expected and the WATSANCs were absent. On the OAWS' WSDB attendance at meetings generally conformed to expectation, although the WATSANCs missed one quarterly meeting. On the WATSANC platforms, the monthly meetings had virtually stopped. The WATSANCs in communities served by the JWS never met in 2008, 2009 and 2010. The OAWS' WATSANCs had a maximum of four meetings in 2010 instead of twelve.

The most frequent members in attendance were the chairmen and secretaries. The changes in the interests of the stakeholders (as illustrated in Table 3) and the deviations in the stakeholders' commitment to the affairs of the platform (as illustrated in Tables 4 and5) show that the interests and performance of stakeholders on the MSPs varied as the years went by. This finding makes it erroneous to assume that the interests of stakeholders and their commitment to the affairs of MSPs stay constant over time. As the examples of the WATSANCs and traditional leaders show (see Table 3), the changes in interests of stakeholders that occur over time do not necessarily support the platform or the issue/project at stake.

The importance of participants on the platform: We have established that stakeholder interests vary over time as their needs change and fuel differences. These affect their performance/collaboration/support on the MSP. The MSP concept also assumed that the platforms will function as though the participants were equal. However, this assumption was found to be unrealistic. Like Edmunds and Wollenburg (2002), Warner (2007) noted that the use of the platforms can empower participants to negotiate benefits and costs of participating in such platforms by taking advantage of their voices and using information if the participants are equipped to do so.

On both MSPs, the stakeholders could each identify their own strengths, those of other actors and how these strengths were different and important to the MSPs. For example, each of the stakeholders on the platform viewed the traditional authorities as important to the affairs of the water systems directly and indirectly. They perceived that traditional authorities could not be ignored because they had the power to generate support from community members for

the water systems just as they could generate dissent among community members. Also, because land is an important resource in the affairs of the water systems and the traditional authorities are the custodians of communal lands, the stakeholders considered it detrimental to ignore the traditional authorities.

Depending on the perceptions about the extent of the knowledge, skills and experience that a stakeholder had, the other stakeholders on the platform tended to expect the stakeholder to perform much of the key tasks or contribute immensely to the tasks. These key tasks included providing the pertinent information and guidance that the platform needed for making its decisions. This was found on both types of platforms.

As one of the community representatives on the platform explained, “we rely on them because they can help the system more”. Often, the specific tasks to be performed in order to address problematic situations were allocated based on the members' understanding of the strengths of the various institutions that the members on the platform represented.

Among the WATSANCs, the allotment was based on members' perceptions of each other's strengths. Among the WSDBs, the task of seeking information on the most appropriate approach to use in order to obtain assistance from the Ministry of Water Resources, Works and Housing (MWRWH) was given to the representative of the LG. The task of providing information that explains technical issues was given to the representatives of the tertiary institutions on the WSDBs or people with close relations to the tertiary institutions. The allotment of tasks in such a manner was justifiable because it allowed the tasks to be completed within shorter time periods.

The MSPs therefore relied more on some institutional representatives than others. As a result, the institutions that were heavily relied on seemed to be more prominent and pertinent to the MSPs. Underlying the repetitive reliance of the platform on an actor was the understanding of the actor of his or her importance to the MSPs. The notion that 'the platform needs me/my institution more than it needs the other actors because I/it can do more for the platform' then got formed. Within this notion lay the perceptions of the varying levels of importance that the stakeholders on the platform had of each other.

The play of relative importance on the MSPs: The dependence of the platforms on stakeholders who were more endowed with technical capacity was not the only source from which the stakeholders drew perceptions of their importance. Their mandates and resources controlled by the stakeholder influenced their relative importance on the platform. These two factors, coupled with their interests, influenced the performance and tendencies of the stakeholders on the platforms.

Mandates: The stakeholders on the platforms derived their mandates from two kinds of sources: - formal and informal. The informal sources concerned mandates related to the culture and traditions of the societies within which the water MSPs were situated. Traditional authorities derived their mandates from their people. The other source of mandate – the formal source – refers to those mandates that are linked to the formal sector or the formal systems of governance. The sources from which the stakeholders derived their mandates determined what they could or could not do. For example, the LGs, the WATSANCs and the management of the water schemes were formal entities and derived their mandates from the formal system of governance in Ghana under which decentralisation and the local government system have been implemented - i.e., the Local Government Act - Act 462 (Republic of Ghana: 1993).

However, the nature of their mandates influenced what each of these entities could do in terms of support for the MSPs. District Assemblymen (opinion leaders) and chiefs (traditional leaders) drew their mandates from the formal and informal systems of governance respectively. By virtue of their mandates they both had significant influence on the members of their communities. The Assemblymen were elected representatives of the communities at the metropolitan and municipal assembly while chiefs were community leaders who gained their mandate by virtue of the traditions and customs of the people. Traditionally, the chiefs are the highest governing entity in the communities. Their mandates are considered as sacred and their role is undisputed though it has been curtailed by modern governance practices derived from the Constitution of the Republic of Ghana.

Notwithstanding the differences in the sources of their mandates, they influenced the perceptions, choices and preferences in the communities and could sway community support for the projects. The LGs, the highest governing body at the metropolitan and municipal level, derived their mandates from the formal governance system with the authority to perform legislative, administrative and revenue generation functions.

Resource control: As a result of their mandates (formal or informal mandates), the stakeholders gained control over resources. For example, chiefs controlled communal lands on behalf of their communities. They allocated the lands that were used for the construction of the boreholes, offices and the laying of the pipelines. They also receive royalties on the sales of stool lands and from companies located on their lands.

The LGs in turn had enormous potential, relatively. They had at their disposal sizeable budgets and personnel, the power to impose taxes, and monopoly over coercion and legislation. The LGs therefore had financial resources at their disposal for the development of the entire district. They also received remittances from the national government through the District Assemblies' Common Fund (DACF) and various forms of grants. In addition, they received 55% of the revenue that accrued from the sale of stool lands (Ministry of Justice, 2005:148). The Assemblies also had a complement of skilled staff with the technical capacity to facilitate the performance of their roles (Ocloo, 2012). Access to these resources generally meant that the LGs had considerable power, in particular the power to define the strategic space of any other actor (see also Warner 2007:12).

The management of the water schemes controlled resources that related directly to the schemes: 'the staff of the water scheme, the technical equipment/facilities of the water scheme as well as the revenue that it generates through its operations' (Ocloo, 2012: 258).They therefore had relatively limited resources at their disposal. Their affairs were only concentrated in the communities that the scheme served (Ocloo, 2012).

Interests: All the stakeholders on both MSPs appreciated the importance of having access to potable water in the communities particularly due to the

health benefits. Beyond the health benefits, access to potable water in the communities reduced the time that school children spent fetching water for their homes and allowed them to get to school on time. It also allowed community members to engage in income-generating activities that required potable water. While there was a general convergence of interests on the MSPs, there were divergences too, especially when the interests of the stakeholders were revisited six years (2010) after the commencement of operations.

While some divergences in interest could be anticipated, others were more difficult to conceive. It could for example be anticipated that there could be divergences in interests when rate changes were due. Ideally, it could be expected that the differences among stakeholder interests would not threaten the water system because all the stakeholders derived benefits from it and should therefore not get distracted from seeking the common good of the system. The cases studied however showed that such expectations were unrealistic because differences evolved during the life of the scheme which threatened the entire water system.

A few examples from the platforms studied are presented here. The WSDB (a MSP) of the OAWS was established in 2004 at the inception stage of the water project. At the inception stage, the chiefs (like all other stakeholders on the platform) were keenly interested in having the lack of potable water in their communities addressed due to the many water-related health problems that the communities faced. Therefore, they supported the project fully and, by virtue of their position as custodians of land, used their power to allocate communal land for the boreholes and offices. Six years after the project was implemented, the problems associated with the absence of potable water no more existed. With the problem solved, the key interest of the chiefs was to receive homage for the land they had given, without which they threatened to prevent the operation of the water systems.

The decision reached by the platform in 2004 and upon which the land was donated by the chiefs was mutual. It was not anticipated that the chiefs would later take positions that could threaten the water system. However, the chiefs were mindful of the importance of their contribution to the platform. They therefore were aware that they could not be ignored. This gave them the power

to threaten the consensus reached on the platform in 2004 based upon which they donated the lands.

The actions of the MA also showed similar tendencies. The platform (WSDB) determined in 2008 that there was a need to increase the rates charged by the OAWS. As the highest formal governance body, the LG was the actor with the mandate to gazette the new rates. The general assembly (the parliament of the LG, comprising community representatives) approved the new water rates because it recognized that the existing rates did not enable the OAWS to recover its operation cost. However, the LG had other key interests for the year 2008 which was an election year.

The assembly men/women and the chief executive of the LG could lose their positions if they (and their parties) lost favour with the members of the communities. To help ensure that they maintained the favour of the communities, the LG delayed the gazetting of the new water rates until the national elections were completed in December 2008. Because the LG had the sole authority to gazette the new rates, it had power. It was therefore not possible for the other members of the platform to implement the decision of the MSP until January 2009.

For the Juaben Water System, the WSDB was required to render annual accounts of their stewardship to the communities that they serve through annual durbars. Currently, this activity has been banned by the traditional authority because the WSDB has failed to render audited accounts since 2007. The traditional authority's ban stays in place until the WSDB has audited accounts covering its years of operation. While the traditional authority's intention was to push the WSDB to play its role better, it also succeeded in obstructing the annual information sharing and accountability processes agreed upon by the entire MSP. The traditional authority in Juaben was able to implement such a measure by using its traditional powers. Thereby, it determined what could not be done in the community until its demands were met.

One of the key changes that had occurred concerned the interest of the traditional authorities in having special privileges that allowed them to waive

some of the rules of the Juaben Water System. The rules for addressing illegal connections to the water scheme and default in the settlement of water bills are useful examples. The operational rules (agreed upon by the WSDB) of the JWS required that community members who were illegally connected to the water scheme and those who defaulted in the payment of their water bills be prosecuted and/or fined.

The traditional authorities expected that they would have the right to prevent the implementation of punitive measures when they deemed it fit to do so. This challenged the laid-down processes and the scheme lost revenue as a result. By preventing the implementation of the rules and procedures, the traditional authorities served their interest and ignored the common interest of the platform.

From the process issues on the MSPs, it was evident that the stakeholders on the MSPs derived strength from their mandates and the volume and nature of the resources that they controlled. This made some stakeholders more potent than others. Those who, in addition to having important mandates, controlled much more resources appeared more capable of doing more to support the water system/ development efforts. These imbalances made the negotiating position of some stakeholders stronger than others, and could make these apparently more potent members of the platform less willing to collaborate on the MSPs.

As illustrated in the examples provided above, when these were coupled with their interests, such stakeholders had the capacity to thwart the smooth functioning of the MSPs if their interests were not in sync with those of the other members of the platform. How a stakeholder performed on the platform was a function of its interest and the power that a stakeholder perceived that it had over other stakeholders to influence, affect or tamper the processes, and this was in turn the result of their perceptions of the nature of their mandate, the volume of resources that they controlled and how important resources were to the scheme.

Edwards and Wollenberg (2001) and Warner (2007: 8) established that multi-stakeholder platforms empowered participants to negotiate. They also showed

that the less dominant or marginalized groups stood the risk of being co-opted in furtherance of the agenda of the more dominant groups. The functioning of the MSPs that were studied revealed more.

From the convergence of the technical capacities of the actors on the platforms, the mandates, the volume of resources that they controlled and the resultant clouts which informed how important they were perceived to be, the stakeholders derived power. In turn, the influence of power on the platforms made some actors more able than others to negotiate to their advantage. The interaction processes on the platform got complicated when the variations in the perceptions of strength/power of stakeholder encountered the variations in the actors' interest.

Over time, this resulted in a play of power. In the examples cited, the perceptions of the stakeholders of their power accounted for the actions which fed their interests and ignored the general interest on the platform. How far an actor went in wielding its power depended on how much power it perceived that it had. Thus, at some stages the local government appeared to wield the power while at other moments the traditional authority, for example, seemed to wield the power to determine what happened or did not happen. These occurred at the convenience of the actor wielding the power.

Regardless of the gender diversity among the membership of the WDSBs and the WATSANCs, the role of the women as empowered representatives of the institutions/communities that they represented made them as vocal as their male counterparts on the platforms. Thus, they also engaged in the power play on behalf of their institutions.

CONCLUSION

The preceding pages illustrated how the two assumptions underlying the functioning of MSPs are unrealistic. Three main points have been made: stakeholders are not equal or necessarily of equal importance; stakeholder interests vary over time, as their needs change and fuel differences on the MPSs; and anticipated synergic benefits will not necessarily ensure that stakeholders on MSPs work for the common good. While these conclusions are based on cases studied within a particular setting, they suggest that it is

necessary for further research to be conducted into the functioning of MSPs. In recognition of the shortcomings of MSPs, the use of MSPs within the water sector in Ghana ought to be improved through the creation of the rules and rule systems that govern the performance of actors on the MSPs and that reduce the vulnerability of the MSPs to the power play among the actors. Indeed, Ghana small town sector policy guidelines have to be designed to foster the development of the rules and engender the incentives to enable the functioning of the MSPs with reduced tendencies for the oscillations that occur over time and as interests vary.

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WHEN PROTECTORS BECOME SPECTATORS: A REVIEW OF SECURITY RESPONSE TO THE MARCH 2012 COMMUNAL VIOLENCE IN YENDI, NORTHERN REGION OF GHANA

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ABSTRACT

The Dagbon conflict has been the subject of many academic discussions in the literature. However, the literature has focused more on the historical evolution of the conflict, as well as the recurring political interference in the conflict. Little attention, if any, has been paid to the role of government security agencies in the conflict. Using a desk study review of data, the study examined the omissions and commissions of the security agencies during the March 2002 communal violence in Yendi. The study found that lack of logistics, failure to retrieve weapons from private hands before the conflict, as well as several other security lapses contributed to the outbreak of the conflict and its outcome. The study concludes that the Yendi crisis exposed serious lapses in Ghana's government security architecture.

Key words: Arms, Conflict, Dagombas, Factions, Intervention, Northern Ghana, Security reforms, Ya Na

INTRODUCTION

Ghana has remained, for the most part, a reasonably stable and viable political entity in the West African sub-region since its political independence from Britain on 6 March 1957. Indeed, unlike many of the states in West Africa, Ghana managed to survive large scale state disintegration which became common in the sub-region in the 1980s and 1990s (Reno, 1998). However, while Ghana has largely succeeded in escaping large scale conflict, "low-level violence is becoming endemic in Ghanaian society. There have been

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cases of village shoot-outs involving the use of automatic weapons …occasional but persistent outbreaks of ethnic violence among several communities" Hutchful (2003:97). In the view of Tsikata and Seini (2004), the Ghanaian paradox is that while it largely remains a stable state, its society has been characterized by various longstanding communal conflicts, some of which periodically flare into violent confrontations resulting in the loss of lives and property. These low-level communal conflicts have presented enormous security challenges and they continue to represent a clear danger to the consolidation of democracy and social peace in Ghana (Hutchful, 2003:97).

The relative peace and security of the country has over the years been threatened by ethnic and chieftaincy conflicts. The violent nature of some of the ethnic and chieftaincy disputes in the country has sometimes seriously undermined the peaceful image and reputation of the country. The recurrent and violent nature of these conflicts poses a serious challenge to the country's security forces. It also raises legitimate questions about security sector governance as well as the capacity of the country's security forces to manage and resolve such conflicts.

This paper looks at the response of the Ghanaian government security forces to the three-day communal violence in Yendi in March 2002. The three-day intra-ethnic chieftaincy war in Yendi between the Abudu royal family (Abudu gate) and the Andani royal family (Andani gate) is a case of how lapses in security resulted in avoidable and preventable violent conflict. The security agencies on the ground in Yendi, after missing the opportunity to prevent the conflict in the first place, failed to intervene to save lives and property. Factional fighting between the two gates from 25th to 27th March 2002 culminated in the assassination of the King of the Dagomba people, Ya-Na Yakubu Andani II in Yendi. The conflict also claimed the lives of several people, with many houses and other valuable property destroyed. Several survivors of the conflict suffered various degrees of injury (Republic of Ghana, 2002).

Yendi is the traditional capital of the Dagomba people. The Dagombas constitute the single largest ethnic group in the northern region of Ghana and account for about 4.4% of the population of Ghana.[1] They are the fifth largest sub-ethnic group in Ghana after the Asantes, Ewes, Fantes and Bonos based on

data from both the 2000 and 2010 Population and Housing Censuses produced by the Ghana Statistical Service.[2]

The King of the Dagombas normally resides in the Gbewaa Palace in Yendi. The Gbewaa Palace, therefore, serves as the nerve center of Dagbon traditional authority, with the Ya-Na endowed with near absolute power in the kingdom (Ladouceur, 1972; Tsikata and Seini, 2004; Albert, 2008). The Dagbon kingdom is one of the oldest in Ghana and also one of the oldest in Africa. With a landmass of approximately 9,611 square miles, the kingdom was established in the 15th Century (Mahama, 2009; MacGaffey, 2006).

The study focuses on the nature of the conflict, its effect on the peace and stability of the country, as well as the response of the government security forces in handling the conflict. Was the failure of the security forces to manage and control the violence for three days a question of sheer negligence of duty, lack of capacity to act, or incompetence? What measures, if any, were taken by the security agencies to prevent the outcome of the conflict? Answers to these and several other questions are discussed in this paper.

METHODOLOGY

A desk study review of secondary data on conflict management and security sector reforms in Ghana was conducted for the paper. The literature review focused on the security sector reforms in Ghana, particularly looking at the period under the Fourth Republic. I also reviewed published articles and books on the conflict, media reports, and published official government documents. Substantial data for this study was collected in 2010 and 2011 during the trial of fifteen (15) persons accused of murdering the Ya Na, Yakubu Andani II. The author observed court proceedings throughout the trial and conducted interviews with key informants. Information gathered from key informants (many of whom asked to remain anonymous) was particularly helpful in the analysis. The next section is devoted to literature review and theory. Section three examines security sector reforms in Ghana; this is followed by a discussion of the 2002 Yendi conflict in Section four. Section five looks at security lapses during the conflict; and the last section comprises a summary of findings and conclusion.

LITERATURE REVIEW

Hutchful (2003:3) provides a detailed theoretical account of how the quest for security and the quest for democracy have become interlinked in the present liberal world order. He makes the broad argument that "the policy choices made about the management and control of military and security forces ... are decisive for the consolidation of democracy, the prevention of conflict and the building of sustainable peace". Democracies all over the world, including Ghana, are faced with the difficulty of finding the right balance between democratic values and security.

Commenting on how Ghana pulled back from the brink of collapse, a situation that characterised most states especially in West Africa in the 1980s and 1990s, Hutchful argued that in the 1970s and 1980s Ghana had many of the attributes that suggested a potential for violent conflict: a collapsing state characterized by a crisis of legitimacy and a shrinking economic and institutional capacity; a severe economic crisis; massive out-migration; and the militarization of the state and politics along with increasing loss of control of the institutional instruments of violence (ibid, 78). He attributes the reversal of conflict trends in the 1980s and 1990s in Ghana largely to the implementation of comprehensive and relatively effective policy reform, the reconstruction of the state and governance, reforms of the security sector and public institutions and the restoration of economic growth and development in the country.

Indeed, for Ghana, Hutchful (2003) notes that the relatively successful restoration of economic and political order, the end to the debilitating cycle of military coups and the consolidation of a functioning new democracy tested through two peaceful elections [now six consecutive peaceful elections — 1992, 1996, 2000, 2004, 2008 and 2012] enabled Ghana to emerge from being the 'sick man' of West Africa to probably the most active man in West Africa. This transformation, he notes, allowed the Ghanaian state to once again claim credibility as a regional and international actor. And instead of being seen as a potential threat to regional security, Ghana had emerged as one of the more stable and viable regimes in the developing world including Africa, Asia and Latin America. It has served as a source of inspiration and championed the quest for peace in neighboring West African countries engulfed in civil wars.

Beyond these developments underlying Ghana's transformation, Hutchful also mentioned the strength and resilience of social and cultural networks in Ghana and the role of civil society. They contribute to the consolidation of an evolving articulation of security sector reform which underlies the stability of the Ghanaian state. Indeed, for Hutchful, Ghana's strong social network and vibrant civil society have not only challenged the State, but have also become necessary, both for conflict resolution and democratic accountability.

Commenting on the state of the Ghana Police Service, Prempeh (2003) bemoaned the neglect of the police by almost all governments in Ghana since independence, and attributes the lack of capacity on the part of the police to combat crime to this unfortunate neglect of the police service. In his opinion, the Ghana Police Service in terms of "resources, profile and prestige, looks like the poor second cousin of the military". This view by Prempeh on the neglect of the Ghana Police Service is supported by Andrea and Killingray (1991); Andrea and Killingray (1992); and Mathieu Deflem (1994).

There is substantial literature on the subject of the Dagbon chieftaincy dispute, otherwise known as the Yendi skin affairs or the Dagbon conflict. However, the regicide of March 2002 has not been subjected to serious academic discourse, especially from the angle of the role of the security forces during the conflict. Many academic writers and social commentators have focused more on the historical and political dimension of the conflict, with little, if any, discussion on the issues of security sector governance and how they impacted on the dynamics of the conflict. Ladouceur (1972), in his article "The Yendi Chieftaincy Dispute and Ghanaian Politics", focused his discussion on the partisan politicization of the conflict in the immediate post-independence era and how it culminated in the communal violence in Yendi in 1969. He examined the sources of the conflict by tracing events back to the colonial era, but putting much emphasis and blame on the post-independence political interference in the conflict. Ladouceur's work gives a fitting background to contemporary events in the kingdom and creates a perfect framework for understanding the current conflict.

In his book, "The Lions of Dagbon", Martin Staniland examined the political history of the Dagbon Kingdom from the pre-colonial period in the late

nineteenth century to the early 1970s. He focused his study on the conflict between two rival factions of the Dagbon royal family. He also analyzed the changes in Dagomba political traditions as a result of colonial rule, and subsequently of independence. While Staniland focused on the Yendi chieftaincy disputes and events leading up to the September 1969 violent conflict, he failed to analyze the role of the security and how it impacted the outcome of the conflict. This paper looks at the security architecture in Ghana and its implications in the three-day communal violence in Yendi in March 2002. The March 2002 violence was the biggest chieftaincy conflict in Yendi since 1969. These two events (September 1969 and March 2002) are considered as the bloodiest incidents of chieftaincy-related violence in Ghana's political history. This study draws from the rich historical narration by Staniland.

Writing on the events of March 2002 in his article, "Death of a King, Death of a Kingdom? Social Pluralism and Succession to High Office in Dagbon, Northern Ghana", Wyatt MacGaffey (2006) described how the complex interactions between tradition and politics left a deep scared mark on the face of the Dagbon Kingdom. According to MacGaffey, all post-independence governments of Ghana, with the exception of the Dr. Hilla Limann Administration (24 September 1979 to 31 December 1981) have intervened in the Yendi chieftaincy dispute in one way or the other. In his opinion, both Abudus and Andanis have been guilty since 1958 of using their political alliance with a government in power to their advantage in the Yendi chieftaincy dispute.

MacGaffey largely explained the March 2002 conflict in terms of partisan political contestation at the national level and the alignment of the two feuding royal families (gates) to the two largest political parties in the country, the then ruling party, the New Patriotic Party (NPP) and the then biggest opposition party, the National Democratic Congress (NDC). He gives a good account of how electioneering campaigns feed into the emotions of the people and transcend the chieftaincy divide in Yendi. MacGaffey concludes that the March 2002 conflict was a direct result of the political polarization of the disputants in the Yendi skin affairs. His work serves as a great source for understanding the political dynamics of the conflict. However, he devoted little attention to the security issues surrounding the events of March 2002 in Yendi. Drawing inspiration from the work of MacGaffey, this study goes beyond the complex

interplay of politics and tradition and looks at the security dynamics of the conflict.

In his article, the Politicization of a Chieftaincy Conflict: The Case of Dagbon, Northern Ghana, Steve Tonah (2012) examined the succession disputes in Dagbon by tracing the history of royal struggle between the two feuding Abudu and Andani clans. Tonah concludes that the March 2002 conflict was mainly a result of the politicization of the conflict and the quest by the two main political parties in Ghana to win electoral votes from the area at all cost. The work of Tonah has effectively discussed the political dynamics of the conflict, but as in the case of MacGaffey, he also failed to highlight the security angle of the March 2002 communal violence. This study would benefit from the political analysis of the conflict discussed in Tonah's work.

Discussing the general causes of conflicts in Ghana from 1990-2004, Tsikata and Seini (2004) identified inter-ethnic conflicts, religious disputes, political conflicts, industrial conflicts, as well as conflicts emanating from social gatherings, especially sports and entertainment. They used the Dagbon conflict as a case study of intra-ethnic conflict. Their work duels much on the historical process of the underlying conflict with little detail on the events and issues surrounding the particular March 2002 conflict. They, nonetheless, have contributed to the literature on the protracted chieftaincy dispute in Dagbon.

My study builds on the works of Tsikata and Seini (2004) as well as those of the other various authors mentioned above, by looking beyond the historical and political nature and causes of the conflict. The study examines the security dynamics of the conflict by interrogating the omissions and commissions of the various security agencies directly involved in managing the conflict. The security architecture that was in place at the time of the conflict, as well as the general security sector governance in Ghana are discussed in this paper.

The theoretical framework of this study is what is loosely described as the 'dynamic conflict theory'. It is a conflict management theory which basically argues that conflicts should not be looked at only from the micro perspective of the root causes of any particular conflict, but the macro dynamics of the conflict should also be integrated into the analysis. Particularly, the role of the

state/regime in deescalating or preventing the conflict should be integral to any understanding and analysis of conflicts. Various experts in conflict studies incorporate prevention and deterrence measures into their analysis of conflicts (Wallensteen, 2002, Crocker *et al*., 2001). It is argued that the state capacity to intervene is positively related to peace building and cessation of violence in conflict situations (Doyle and Sambanis, 2006).

The dynamic conflict theory is supported by the works of Collier (2003). In a World Bank study on conflict and development, Collier concluded that incidence of conflicts declines with increasing state capacity to maintain law and order. According to Collier, ethnic conflicts tend to escalate where the state has little capacity for conflict management. Conflicts in strong states are controlled and managed at a minimum level of violence. The same cannot be said of states with very weak security architecture.

This paper examines the escalation of communal dispute into a full-scale civil war in Yendi. I argue that the violent conflict was a result of the inability of the security agencies to prevent the conflict because they were overwhelmed and incapacitated to do so. It is clear that all previous works on the Dagbon conflict cited above focused on the micro perspective of the remote and immediate causes of the conflict. This study is different in the sense that it is centered more on the relationship between the high level of communal violence and the low capacity of the state security agencies to prevent or manage the conflict as argued by Collier and others.

REFORMS IN GHANA'S SECURITY SECTOR

Aning and Lartey (2009) observed that Ghana's security sector began to experience some serious reforms after the 2000 national elections which ushered the NPP into office on 7 January 2001. These reforms were both institutional and structural. Parliamentary sub-committees with oversight responsibilities on security matters were created and strengthened. There were significant changes in the structure and training of security personnel, both in the military and police service. Even though there was pressure for instilling reforms in the 1980s and 1990s, the military government headed by Flight-Lieutenant Jerry John Rawlings resisted the inclusion of the military under such reforms. The 11-year long period of the Rawlings military dictatorship (1982 to

1992) before the promulgation of the 1992 Constitution deeply undermined professionalism in the military in particular, and generally prevented civilian control of the wider security sector.

An innovative and effective security sector reform in Ghana under the Fourth Republic has been the role reserved for Parliament in its oversight responsibility over the Executive, under which the security sector falls directly. The Parliamentary Select Committee on Defense and Intelligence (PSCD&I) plays a crucial role in exercising oversight over the security sector. Their responsibility is "to examine all questions relating to defense and internal affairs".[3] In performing this all important function, the PSCD&I has investigative powers and can inquire into the activities of Ministries, Departments, and Agencies (MDAs). Their oversight role over the security sector is complemented by the Public Accounts and Finance Committees of Parliament (ibid).

In addition to their investigative powers, the Public Accounts and Finance Committees also have the power of control over the purse. This gives them additional responsibility over the security sector in terms of funding and acquisition of equipment for the sector. The Public Accounts Committee (PAC), for example, is mandated to scrutinize all appropriations to Ministries, Departments, and Agencies. This, therefore, gives the Committee direct oversight responsibility over the expenses of the military and other security agencies. It must be noted, however, that more often than not, the issue of excessive secrecy in national security matters has frustrated the effective exercise of parliamentary oversight over the security. It is common practice to see the security agencies invoke national security reasons to prevent or frustrate parliamentary oversight of what they term "sensitive issues".

Intelligence failure has been at the core of most conflicts in Africa and the inability of the security forces to prevent or manage conflicts before they escalate and degenerate into full-scale wars. Commenting on the inadequacies of intelligence and the absence of reforms in the area of intelligence in Africa, Hutchful observed that intelligence is one sector that has been excluded from both the democratization and security sector reforms that have taken place in many African countries. Intelligence organs in Africa continue to be seen as having limitless political power, lacking accountability and being infested with a

strong culture of impunity (Hutchful, 2003). In most African countries, the mandate of intelligence agencies is not properly spelled out in the laws of the country.

In the case of Ghana, intelligence agencies only assumed proper legal status after the promulgation of the Security and Intelligence Agencies Act (Act. 526) in 1996. The Act seeks to regulate the activities of the security and intelligence agencies and the establishment of regional and district security councils in Ghana. This was a significant improvement in the country's security sector reform. The Regional Security Councils (REGSEC) and the District Security Councils (DISEC) have proven to be key actors in managing security issues at the local level.

The Security and Intelligence Agencies Act incorporates, for the first time since Ghana's independence, some legislative and judicial oversight responsibility over intelligence agencies. It puts the various intelligence agencies under one umbrella, that is, National Security Council (NSC), which is made to be accountable to Parliament. The Council has to submit a budget to Parliament for appropriation every year. This allows Parliament to debate various items in the budget and also contribute its input into the budget. However, several observers in Ghana still believe that the intelligence agencies in the country, particularly the Bureau of National Investigation (BNI), are still fraught with impunity, arrogance and abuse of power.

Section 12(1) of the Act outlines the functions of intelligence agencies in Ghana as follows:

a. Collect, analyse, retain and disseminate as appropriate information and intelligence respecting activities that may constitute threats to the security of the state and the government of Ghana;
b. Safeguard the economic well-being of the state against threats posed by the acts or omissions of persons or organizations both inside and outside the country;
c. Protect the state against threats of espionage, sabotage, terrorism, hijacking, piracy, drug trafficking and similar offence; and
d. Perform such other functions as may be directed by the President or the Council.

One of the major positive transformations of intelligence under the 1996 Act 526 was in the area of decentralization. The Act provided for the decentralization of intelligence activity and accountability to local government structures. It allows for more direct focus of intelligence at the local level by agents stationed in these localities. This shift in attention of intelligence gathering from a more centralized structure to regional and district based structures contributed immensely to effective monitoring and generation of intelligence, and also goes a long way to complement local traditional police duties in the regions and districts.

The Act put in place an integrated mechanism at district, regional and national levels for detecting and managing potential conflicts. The regular forwarding of reports from districts to Regional and National Councils has ensured that there is advance warning to the NSC about areas of potential conflict nationwide (Kwadjo, 2009). At the district level, various intelligence agencies are gathering and analyzing information on a wide range of issues such as chieftaincy, land, ethnic and other related disputes, white collar crime, cross-border arms trafficking, drug trafficking, vehicle theft, money laundering and other criminal activities. Their findings are then made available to DISEC for appropriate action to be taken.

In many cases, DISEC may engage in conflict preventive measures such as arbitration or mediation to prevent conflict from occurring (ibid). This reform has contributed greatly to conflict-detection and management at the local level. It has, therefore, helped in minimizing the escalation of local problems into uncontrollable violence. As discussed below, the role played by the DISEC in intelligence gathering leading up to the communal violence in Yendi was crucial in determining the outcome of the conflict.

THE MARCH 2002 YENDI CONFLICT

The central issue in the Dagbon crisis (also referred to as the Yendi Skin Affairs) is the rotation of the kingship between the two royal families (Abudus and Andanis). The Dagbon chieftaincy dispute has been a protracted conflict which dates back to pre-colonial times. The conflict became a major national security concern after Ghana's independence when it assumed a more partisan political dimension, with the country's first President, Dr. Kwame Nkrumah, interfering

in the traditional matters of selection and enskinment (appointment) of a Ya-Na.[4] Dagombas have a strong allegiance to the Ya-Na; hence the position of the Ya-Na is of great interest to politicians who wish to win the support of his (Ya-Na's) subjects during elections. Dr. Nkrumah appreciated the political value of the Dagomba people, in terms of the electoral fortunes of his party - the Convention People's Party (CPP). His intervention in the contest for the position of a Ya-Na set a precedent for his successors to follow in using political power to influence a traditional matter of succession in the Dagbon Kingdom.

Dr. Nkrumah, for example, rejected the recommendation of a Committee (the Opoku Afari Committee) appointed by his government to investigate the matter of the deskinment of Ya Na Abudulai III in 1959. Notwithstanding the Committee's recommendation that Ya Na Abudulai III should be deskinned or destooled, Dr. Nkrumah issued Executive Instrument 122 (EI 122) recognizing Abudulai III as Ya Na. This action by Dr. Nkrumah was apparently motivated by both political expedience and a legitimate concern for maintaining peace in the area arising from the negative security consequences in actually destooling the existing Ya Na.

The Ya Na, who hitherto was a known supporter of the opposition, converted to Dr. Nkrumah's CPP, taking with him the whole Dagbon State Council. In a move to also appease the candidate from the Andani gate, Dr. Nkrumah issued LI 59, which formally institutionalized the rotation of the kingship between the two gates. This rotation principle between the two gates could have worked if the future governments that came after Dr. Nkrumah had abided by this principle as each gate could have inherited the kingship at some point in time. However, every government since Dr. Nkrumah has sided with one royal family (gate) or the other in the chieftaincy dispute (Ladouceur, 1972: 97-115; Staniland 1973: 373-389; Tsikata and Seini 2004; MacGaffey 2006).

The three-day war in March 2002 was the latest manifestation of intrusion of national politics into the chieftaincy dispute. In the current political dispensation under Ghana's Fourth Republic, the Abudu royal gate is sympathetic to, and is politically aligned with the NPP while their rival, the Andani royal gate, is sympathetic to, and aligned with the NDC (Fayemi, Jaye, and Yeebo, 2003: 64; Tsikata and Seini, 2004: 36). The NPP's election victory in

the 2000 general election was seen as a victory for the Abudu gate, and a cause for worry for the Andani gate. The Abudu gate saw the victory of the NPP as an opportunity to boost its political image in Dagbon. They started contesting the powers of the Ya-Na as the sole authority for the celebration of festivals and traditional ceremonies in Yendi. In the opinion of the Wuako Commission - set up to investigate the 2002 crisis - with the boost in the political stature of the Abudu gate "came also greater confidence in asserting their constitutional rights and fundamental freedoms: freedom of expression, freedom of religion, freedom of association, freedom of assembly — freedoms that apparently justify plurality of voices, ceremonies and events" (Republic of Ghana, 2002: 65).

The March 2002 conflict in Yendi was a direct result of issues surrounding that year's celebration of the Muslim Eid-ul-Adha and the Bugum (fire) festivals in Yendi. For the first time in more than two decades, the Abudu gate decided to celebrate the Eid-ul-Adha festival in 2002. This festival is an Islamic festival celebrated by Muslims all over Ghana and in other countries around the world. Every Muslim in Yendi township and its environs is expected to celebrate the festival under the auspices of the Ya-Na. However, because of the underlying conflict between the two gates, members of the Abudu gate abstained from celebrating the festival before 2002, as protest against the authority of the Ya-Na. In 2002, they were, therefore, seeking to celebrate the festival separately from the one organized by the Ya-Na.

The Abudus were given special police/military protection by the government to enable them celebrate the festival. The Ya-Na saw the official endorsement of the Abudus' celebration as an affront to his authority as the Overlord of Dagbon. He became increasingly suspicious and distrustful of the police in Yendi. The Ya-Na summoned and openly rebuked the Yendi Divisional Police Commander, Deputy Superintendent of Police (DSP) Mr. Kwaku Fokuo, for providing special security for the Abudus to celebrate the festival. He rejected the police offer for protection and embarked on building a private army for his own protection. The Abudu gate also started stockpiling weapons in readiness for a possible showdown.[5]

The next major traditional festival in the area, after the Eid-Ul-Adha festival, was the Fire (Bugum) festival. Following intelligence reports on the infiltration of arms and ammunition into Yendi and credible information about an imminent clash between the two feuding families (gates), the Regional Security Council (REGSEC), under the directive of the National Security Council, imposed a ban on the celebration of the fire festival in Yendi. A dusk-to-dawn curfew (6:00pm to 6:00 am) was announced to reinforce the ban. The curfew was to be in place from Sunday 24th March 2002 to Tuesday 26th March 2002. This was all at the request of the Yendi District Security Council (DISEC). The Abudus welcomed the move by government to put off the festival. The Andanis, on the other hand, vehemently opposed what they saw as a flagrant abuse of political power by the NPP government (Republic of Ghana, 2002).[6]

The Ya-Na saw the move by government as a deliberate attempt to diminish his authority. He invited the then Regional Minister, Prince Imoro Andani (a prince of the Andani gate), to Yendi and asked him to revoke the curfew and lift the ban on the celebration of the fire festival. Without recourse to REGSEC or the appropriate authority at the national level, the Regional Minister obliged and lifted the curfew as well as the ban on the celebration of the festival on the evening of 24th March, 2002 (Republic of Ghana, 2002: 67).[7] The Andanis rejoiced at the action of the Regional Minister, while the Abudus were unhappy and feared for their lives (ibid). The war started the following day, 25th March 2002.

SECURITY LAPSES IN MANAGING THE CRISIS

The Yendi crisis of March 2002 was a clear case of security failure on the part of government both before and during the crisis. The security forces on the ground were very slow in responding to the 'mushroom clouds' that were gathering into a fog of war in Yendi. Upon all the mounting evidence of imminent danger in the town after the celebration of Eid-ul-adha, the Yendi Divisional Police command and the Military detachment waited till events got out of hand before they started to react. It became obvious by the time fighting commenced on March 25th that the security on the ground was not prepared for the conflict. The exchange of gunfire between the factions continued for three days without the intervention of security forces. In the words of Mahama (2009: 285), "…between 25th and 27th March there was a stupendous collapse of law and

order caused by sabotage, unthinkable refusal of state security agencies to protect life and property, including the Ya-Na and the Gbewaa Palace".

As early as mid-February 2002 there were serious security concerns in relation to the protracted chieftaincy dispute in Yendi. This prompted DISEC to convene two separate meetings with the Abudus and the Andanis on the 15th and 19th of February 2002 respectively. However, there is no evidence that the security agencies, who are members of DISEC, took any concrete steps during this period to forestall the conflict. For example, there was credible intelligence on the ground about the existence of a training camp in Yendi where the Ya-Na was training warriors in weapon handling. One Ibrahim Adam (a.k.a. Saabu Noo) recounted how he and others were recruited and paid by Mahama Mole to be trained by one Bashiru Gyimah (an ex-military man) and Abdul-Salam Achana (a.k.a. Red) in Yendi.[8] The security agencies in Yendi failed to close down this training camp. The two, Bashiru Gyimah and Abdul-Salam Achana, were among those who were later recommended by the Wuaku Commission to be charged for committing various crimes in relation to the conflict.

In a letter addressed to the Northern Regional Minister on the 22nd of March 2002, DISEC stated that "infiltration of arms and ammunition into the Yendi township is still continuing and seen as a recipe for a possible clash between the two chieftaincy factions during the fire festival which is just at (sic) the corner" (DISEC letter Ref No: SCR/YD/002/2). It was on the basis of this fear that DISEC requested a banning of the fire festival and the imposition of a curfew in the area. However, between 22nd March 2002 and 25th March 2002, at the commencement of the communal violence, the National Security failed to proactively take measures to retrieve arms in the area or deploy sufficient men on the ground to manage the imminent threat to the security of the area. This inaction on the part of National Security left the security forces on the ground woefully inadequate and unprepared to intervene in the conflict for three days. Commenting on the role of the security agencies during the conflict, the Wuaku Commission observed as follows:

> "that arms had been imported into Yendi and parts of Dagbon area over a long period of time; this was known by the security agencies who however, did not mount any operation to retrieve them…that even though the Ya-Na made two frantic requests for security intervention on 27th March, these were not

> timeously honored…that certain coincidences and lapses on the part of the security agencies and Ghana Telecom, that impeded effective intervention in the crisis, are unacceptable to the Commission" (Republic of Ghana, 2002).

The Commission concluded that the functioning of the military detachment in Yendi was not at its optimum. On the part of the Ghana Police Service, the Commission observed that they were "reasonably effective in monitoring but not in arresting the crisis". It is a serious indictment on the country's security architecture that they were fully aware of the state of security in Yendi and yet events unraveled beyond their control and management. On the 26th of March 2002, a day before the fighting escalated and culminated in the falling of the Gbewaa Palace to the Abudus and the ultimate killing of the Ya-Na and his elders, DISEC sent a security update on the situation in Yendi to REGSEC. Incidentally, this update was personally delivered in Tamale by the then Yendi District Chief Executive (DCE), who also served as the chairman of DISEC. In the update, the following observations were made by DISEC:[9]

1. People are still holding guns in the open.
2. Occasional firing of gun-shots from both sides of the chieftaincy divide is continuing.
3. Military presence is not very much felt considering their number. They are only eleven (11).
4. Both factions in the conflict are armed to the teeth and ready to confront each other.
5. Police reinforcement from Tamale has raised their number to ninety (90).
6. There are not enough logistics for the security in terms of arms and ammunition as well as vehicles. Part of the problem is the fact that the police armoury cannot be opened.
7. The telephone system is broken down and as a result calls cannot be made, neither can they be received.

It is difficult to understand why, on the face of such a gloomy security situation s painted by DISEC, there was no sense of urgency on the part of the security to act. Even after receiving the update and personal briefing from the chairman of DISEC on the precarious state of security in the Yendi township, it took REGSEC the whole day of 26th March before they were able to send military reinforcement to Yendi.

The military contingent deployed from Tamale, a town only about sixty (60) kilometers away from Yendi, arrived in Yendi some few minutes before 10:00pm on the 26th of March 2002. Even though the newly arrived military reinforcement from Tamale (a contingent of about sixty (60) personnel) was only five hundred meters away from the Gbewaa palace, they failed to deploy to the area. They could hear sporadic gun shots coming from the palace area, but were ordered by their commander (Captain Abraham Akrofi) "not to go anywhere near the palace" (Mahama, 2009: 283).

There were not enough logistics for the security in terms of arms and ammunition, as well as vehicles. The only police vehicle at Yendi was not serviceable, so the police had to commandeer a pick-up truck from the Ghana Education Service for their operations.[10] The Police failed to intervene in the fighting because they had no protective gear and the combatants were using more sophisticated weapons than what the police had.[11]

The military detachment in Yendi during the crisis was a small unit of only eleven soldiers. Asked why the military did not position themselves close to the palace to ward off the fighters, the military commander, Lt. David Nagah Billah, observed that "he had only eleven men; one cook, one medical man, one radio operator and four crew men. He was therefore left with only four men who could not be deployed at the Ya-Na's Palace".

There was also an initial problem with the battery to the only armored car in Yendi at the time of the fighting; when that was fixed, a fault was detected with the firing pin of the car. The military failed to move quickly to rescue the Ya Na when he made a distress call through an emissary for his evacuation. By the time the armored car was able to move to the palace, the Ya Na was not found and the palace had been set ablaze. It is clear that both the police and the military on the ground did not have the capacity to intervene and prevent the outcome of the conflict.

SUMMARY OF MAJOR FINDINGS

The major findings that I draw from the discussion on the March 2002 Yendi crisis are as follows:

1. The lifting of the ban on the celebration of the Bugum (fire) festival as well as the revocation of the curfew by the Northern Regional Minister deeply compromised the security situation in Yendi, and exposed the vulnerability of the security on the ground.
2. Lack of logistics such as vehicles, equipment and manpower greatly undermined the capacity of the security forces to intervene in the conflict.
3. The slow response by government to send police/military reinforcement to the area did not help the situation.
4. The decision not to deploy the military reinforcement from Tamale to the vicinity of the Gbewaa Palace on March 26th 2002 was ill-advised.
5. The failure of security on the ground to retrieve weapons from private homes before the conflict was a major contributing factor. They failed to act on credible intelligence and proactively search for and remove weapons that were imported into Yendi in readiness for the war.
6. For three days (25th to 27th March, 2002) the State lost its monopoly over the use of and containment of violence in the area.

CONCLUSION

The security sector in Ghana has undergone a transformation since the coming into force of the 1992 Constitution. Notwithstanding this development, the three-day communal violence in Yendi in March 2002 discussed in this study paints a disturbing picture about Ghana's security services and their ability and capacity to respond to conflicts that threaten the stability of the state. The total breakdown of security in Yendi for three days was a serious indictment on the country's security service sector in general. What is more, the failure on the part of the security agencies to act appropriately on intelligence undermined the integrity of the country's security architecture. It is safe for one to conclude that much as the three-day war in Yendi was a direct result of the chieftaincy dispute in the area, the failure of the country's security agencies to intervene and prevent the conflict from escalating into a full-scale war largely contributed to the outcome of the conflict. The Wuaku Commission described the response of the security agencies during the crisis as “very lackadaisical”. The security agencies had several missed opportunities to prevent the violence from extending to the 27th day of March 2002. The study, therefore, supports Collier's theory that a low capacity on the part of the state to maintain law and order is positively related to a high level of violence in conflicts.

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ENDNOTES

1. Dagombas is an anglicized version of Dagbamba, the plural of Dagbana. The people call themselves Dagbamba.

2. Dagombas are part of the larger Mole-Dagbani ethnic group. The Mole-Dagbani ethnic group comprises of about 16.6% of the population of Ghana and is the second largest ethnic group in Ghana after the Akans. The 13 other sub-groups which form part of the Mole-Dagbani ethnic group are (1) Builsas, (2) Dagartis, (3) Gurenses (Frafras), (4) Kusasis, (5) Lobis, (6) Mamprusis, (7) Mosis, (8) Namnams, (9) Nankensis, (10) Nanumbas, (11) Talensis and (12) Walis and (13) All others classified as one group.

   The Asantes, Bonos and Fantes belong to the larger Akan ethnic group which comprises of about 47.5% of the population of Ghana. The 17 other Akan subgroups are (1) Agonas, (2) Ahafos, (3) Ahantas, (4) Akuapims, (5) Akwamus, (6) Akyems, (7) Aowins, (8) Assins, (9) Bawles, (10) Chokosis (Anufors), (11) Denkyiras, (12) Evalues, (13) Kwahus, (14) Nzemas, (15) Sefwis, (16) Wassas and (17) Twifos based on the classification of the Bureau of Ghanaian Languages.

   The other seven major ethnic groups in Ghana, outside the Akans and Mole-Dagbanis, are (1) Ewes, (2) Ga/Ga Adangbes, (3) Guans, (4) Grumas, (5) Grusis, (6) Mandes-Busangas and (7) All others combined originating from outside Ghana. The Guans are the first of the surviving settlers to arrive on the Land of Ghana. They arrived several centuries before the arrival of the members of the other eight ethnic groups.

   The 2010 census put the total population of Ghanaian citizens in the Northern Region of Ghana as 2,388,978. Out of this number, 816,728 people were classified as Dagombas. A further 234,395 Dagombas resided in Ghana outside the Northern region, with 15,663 and 5,500 residing in the Upper East and Upper West regions respectively.

3. See standing Orders of Parliament, Order 158 outlines the functions and powers of committees.

4. Even though the Dagbong kingdom experienced several major succession disputes between the two royal families in pre-independence era, it was during the post-colonial period that the dispute assumed a clear partisan political dimension. Post-independence leaders politicized the conflict for partisan political expedience. For a detailed historical discussion of the Dagbon Conflict see Ferguson (1970), Ladouceur (1972), Staniland (1975) and Tonah (2012).

5. See Report on Yendi Crisis by Police Special Investigation Team. This report was prepared by the first investigation team that went into the area immediately after the end of the conflict. Information from this Report was used largely by government to form the basis for the establishment of a Commission of Enquiry into the conflict (the Wuaku Commission).

6. A reviewer of this paper provided a note that another assessment of the Andanis was that the same NPP government could have provided similar special security arrangements that would have allowed the Ya Na, as the Overlord of the Dagbon Kingdom, to have peacefully celebrated the Bugim festival similar to the peaceful celebration of the earlier Eid-ul-Adha festival by the Abudus which was done under the special protection of the government security forces.

7. A senior government official at the time of the conflict told the author of this paper that he received a phone call from the Regional Minister on the 24th of March 2002 informing him that he, the Regional Minister, visited Yendi and lifted the ban on both the fire festival and the curfew. According to this senior government official, he told the Regional Minister that it was beyond his powers to do such a thing without approval from the National Security Council, and it was improper for him to leave Yendi after lifting the ban. In his opinion, as the Head of the Security in the region, the Minister should have stayed in Yendi to manage the effects of his action.

8. This informant, Ibrahim Adam, testified before the Wuaku Commission and was also listed as a defense witness at the trial of the fifteen (15) accused persons prosecuted for the murder of the Ya-Na by an Accra Fast-track High Court.

9. See security update, Yendi, Ref No: SCR/YD/002/2.

10. See testimony of PW12 in the 2011 Trial of the Murder of the Ya-Na. Police Inspector Charles Adaba (PW12) was stationed in Yendi during the conflict, and he was among the team of investigators who went into the area to gather evidence for the Ghana Police Service.

11. See Report by Police Special Investigation Team.

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