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Editorial Note

I welcome all our worldwide readers to the Volume 4 Issue 2 of the International Journal of African Development. I am pleased to report that IJAD continues to include important papers on various dimensions of Africa in global society and economy. As of December 2017, there have been a total of 25,000 downloads, and almost 10,000 just in the past year, according the ScholarWorks counter: [http://scholarworks.wmich.edu/ijad/](http://scholarworks.wmich.edu/ijad/)

This issue features seven papers that include various titles and topics from four countries that include Ethiopia, Kenya, Nigeria, and Sudan, and cover critical issues of sustainable development for Africa based on case studies of each country. The paper on Ethiopia demonstrates that empirical private productivity has not improved in spite claims of rapid growth by the ruling regime. The paper on Kenya discusses aid effectiveness challenges focusing on governing structure of the agricultural sector. The paper on Ghana provides policies for an appropriate framework for technology development and creation that can be sustainable. The Nigerian paper questions the sustainability of the Federal Government Amnesty Program as a peace strategy in the Nigeria Delta Region which has rich oil, and how to avoid conflict or rebellion by investing in a local community’s education, health and employment to avoid what economists call “resource curse” driven by defective governance. Another paper challenges the nature of Federalism in Nigeria, which the author calls “defective,” and explains its link to the Emergence of Domestic Terrorism such as Boka Haram. The final paper is on the economics of water poverty and its implication on income poverty and health in Sudan. This is based on data of a case study of Gezira State from 1993 to 2013.

With these brief remarks on the seven papers, I invite readers to read the full papers and draw their own conclusions and policy implications. This issue will be the last for the current year, and we will begin with two new issues for 2018. I wish readers happy holidays and New Year!

Sisay Asefa, PhD, Professor of Economics and Editor in Chief of the International Journal of African Development (IJAD) at Western Michigan University
[http://scholarworks.wmich.edu/ijad/](http://scholarworks.wmich.edu/ijad/)
Does Privatization Improve Productivity? Empirical Evidence from Ethiopia

Tadesse Wodajo, Catholic University of America
Dawit Senbet, University of Northern Colorado

Abstract
Theoretically, it is posited that privatization enables the private sector to play a dominant role in the economy by enhancing competition, productivity and efficiency. When evaluated using these criteria, privatization of the manufacturing industries has failed in Ethiopia. Our empirical results show that, at best, privatization did not result in improving productivity, and at worst, it led to a decline in productivity. We argue that the main reason for this outcome is the unique economic and business environment prevailing in Ethiopia, which does not allow the standard economic assumptions of market competition to hold. Ethiopia’s ‘private sector’ can be described as a ‘duopoly’ market where two powerful players dominate every sector of the economy: the ruling party’s parastatals and a family business conglomerate. The results of this paper should not be surprising as the majority of the firms in this study operate under such an unfavorable business environment. The paper employs 15 years of panel data constructed from the Large and Medium Scale Manufacturing Industries Surveys conducted by the Central Statistical Agency of Ethiopia between 1996 and 2010.

Keywords: privatization; productivity; party parastatals; median absolute deviation; MAD; generalized method of moments; GMM; Ethiopia; state owned enterprises.

JEL Classification: C23, L32, L33

Introduction
Between 1974 and 1991, Ethiopia was ruled by a socialist government operating under a strict centrally planned economy, with state owned and controlled manufacturing activities. It is argued that the socialist policies resulted in market rigidity and economic distortions leading to inefficiencies in every sector of the economy. The socialist economic policies, coupled with almost two decades of war, left the country in shambles. By the end of 1991, the country has a manufacturing industry dominated by inefficient state-owned enterprises, which were managed by loyalists instead of business minded professionals. Some of the enterprises owed their existence to their monopoly positions while others depended on the subsidies from the government (Asrat & Shiferaw, 2009).

Under this economic background and upon the fall of the socialist regime, the current government, which took power in 1991, started implementing the Structural Adjustment Program (led by the World Bank and the International Monetary Fund), whose core policy prescription was
privatization of state owned enterprises. From the World Bank’s standpoint, privatization was part of an efficient and equitable economic growth that focuses on poverty reduction and protection of the environment. More specifically, the three main reasons for privatization are improving the use of public resources, operating efficiency and dynamic efficiency (Shirley, 1992). The World Bank set the Structural Adjustment Program, and hence privatization, as a key condition for extending loans to third world countries (Noorbakhsh & Paloni, 1999).

Despite the World Bank’s conditions, different countries, however, were engaged in privatization for varying reasons. As stated in Proclamation No. 146/1998, the Ethiopian government identified the following three objectives of privatization: 1) generating revenue required for financing development activities to be undertaken by the government; 2) changing the role and participation of the government in the economy to enable it to exert more effort on activities requiring its attention; 3) promoting the country's economic development through encouraging the expansion of the private sector. Tadesse (1996) argues that the main motive for Ethiopia’s privatization seems to be generating revenue from the sale of the state enterprises, making the first objective the most important of the three.

However, the government also decided to keep the majority of state owned enterprises while privatizing others of them. According to Proclamation No. 37/1996, areas of investment exclusively reserved for the state-owned enterprises include production and supply of electrical energy with installed capacity of above 25 megawatts, air transport services using aircraft with a seating capacity of more than 20 passengers or with a cargo capacity of more than 2,700 kg, rail transport services, and telecommunication and postal services with the exception of courier services. Although the government allowed for foreign investment, it was with some exclusions, barring foreigners from 19 areas of investment that were reserved only for domestic investors. Examples include: construction, tanning, radio/television broadcasting services, and commercial road transportation.

The main objective of this paper is analyzing the level of productivity before and after privatization. This involves examining the impact of privatization on a firm’s level of employment, wages, resource utilization, and output using data from the Large and Medium Scale Manufacturing (LMSM) Industries Surveys conducted by the Central Statistical Agency (CSA) of Ethiopia from 1996 to 2010.

The Economic and Business Environment in Ethiopia

It is important to understand the economic and business environment under which privatized and state enterprises are operating in Ethiopia. The “private sector” in Ethiopia can be divided into three categories exhibiting complex relationships among each other. The first major category includes the business empires owned by the ruling party, the Tigrayan People’s Liberation Front (TPLF), through the Endowment Fund for the Rehabilitation of Tigrai (EFFORT). It is very difficult to find the exact asset or net worth of the TPLF owned companies. However, Abegaz (2013) compiled data from different sources and reported that EFFORT had a seed capital of about $500 million dollars by mid 1990s, and about $1.25 billion dollars in 2013. The second category
includes an equally compelling conglomerate belonging to the Mohamed International Development Research Organization Companies (MIDROC), owned by the billionaire Sheikh Mohammed Al Amoudi, an investor with Saudi Arabian and Ethiopian heritage. These two groups seem to be operating like a ‘duopoly’ dominating every sector of the country’s economy. Finally, those newly privatized enterprises not owned by MIDROC or not affiliated with EFFORT companies fall under a third category which we call “the rest.” This third category has remained small and marginalized, operating in areas left out by the two major economic powers (Milkias, 2003; Negash, 2008; Sutton & Kellow, 2010).

EFFORT was formed, as soon as the current government came to power, by its leading party - the TPLF, using a seed capital generated by dissolving the nonmilitary assets acquired during their war effort and from other undisclosed sources (Vaughan & Gebremichael, 2011; Milkias, 2013). This made the ruling party the richest political party in Africa (Abegaz, 2013). According to Vaughan and Gebremichael (2011), the main objectives behind establishing EFFORT were promoting industrialization in Tigray and advancing the standard of living of the ethnic Tigrayan people (which constitutes about 6 percent of the Ethiopian population as of 2016).

In addition, the TPLF allocated a portion of its funds to the other parties that constitute the ruling coalition to help them create their own endowment and party businesses. Under this arrangement, the Amhara National Democratic Movement’s (ANDM) endowment was named “Tirit” while the Oromo People’s Democratic Organization (OPDO) formed “Dinsho,” and the Southern Ethiopian People's Democratic Movement (SEPDM) set up “Wendo Trading” (Abegaz, 2013). These party businesses collectively operate on a smaller scale compared to EFFORT, which controls 70 percent of the current estimated net assets of $1.25 billion (Abegaz, 2013).

These party parastatals are run by a ‘board of governors’ that is not only high-ranking leaders of their respective political parties, but also high-ranking government officials (Negash, 2013; Vaughan & Gebremichael, 2011). The party owned businesses are involved in every sector of the economy. For example, the official EFFORT website lists companies operating under manufacturing, services, merchandise, construction, mining and agriculture (EFFORT, n.d.). It is also reported that these party parastatals receive preferential treatment (even more than those of state owned enterprises) when it comes to bank credits, access to foreign exchange, import/export licenses, government contracts or bids, tax treatments, and customs clearance to cite a few. The parastatals also work independently or jointly with other private domestic or foreign companies. In such instances, the preferential treatment extends to businesses operating as joint ventures with the party parastatals (Milkias, 2003; Plummer, 2012; U.S. Department of State, 2014).

From the economy-wide point of view, Plummer (2012) reports on the level of corruption existing in health, education, water, land management, justice, telecommunications, and the mining sectors. In addition, Schwab and Sala-i-Martin (2015) identify corruption to be the fourth most problematic factor for doing business in Ethiopia, next to inefficient government bureaucracy, foreign currency regulations, and access to financing, in that order. Both studies raise serious concerns regarding the business environment in Ethiopia. GAN (2016) also provides summary information on Ethiopia’s corruption profile by listing the level of corruption in the
various government entities, including judicial, police, public service, land, tax and customs administration, public procurement and legislation.

MIDROC Ethiopia Investment Group, founded in 1994, is the other powerful player in the Ethiopian economy. As of mid-2017, the Investment Group controlled about 80 groups and affiliate companies operating in agriculture and the agro-industry, construction, hotel and tourism, manufacturing, mining, oil and gas distribution, real estate development, transportation (including air transport), trade and commerce, healthcare, and education and training. All these companies are operating under two major groups, namely: MIDROC Ethiopia Investment Group and Affiliate Companies and MIDROC Ethiopia Technology Group Companies. In 2013, the total investment of all MIDROC companies was reported to be between $1 and $4 billion dollars (or between 2 and 11 percent of Ethiopia’s GDP in 2013) (Negash, 2013; Sutton & Kellow, 2010).

Data provided by the Ethiopian Privatization Agency (EPA) in the late 1990s revealed that the majority of the state-owned enterprises were sold to one buyer - the MIDROC Group. This information was later removed from the EPA website as the Ethiopian Privatization Agency (EPA) was recently merged with the Ministry of Public Enterprises to form the Privatization and Public Enterprises Supervising Agency (PPESA). As of the writing of this paper, no past data from the EPA about the privatized state-owned enterprises has been made available on PPESA’s website. By the turn of the century, the government had privatized 254 state owned enterprises. MIDROC alone purchased 21 of the 254 enterprises. Although these account for only 8.3 percent of the total number of privatized enterprises, they are comprised of enterprises with the most significant economic and strategic importance compared to all privatized enterprises since the start of the privatization process. In addition, they account for at least 60 percent of the market value of the enterprises privatized by the government up to that point. The trend of selling to a single buyer had not changed by the mid-2000s because a study conducted in 2005 confirms that out of 25 enterprises privatized to foreigners, 23 were sold to one buyer (Hailu, 2005). In this regard, the privatization process has turned out to be a mere transfer of enterprises from state ownership to a single private ownership (wikiLeaks, 2008).

The privatization process has also been rolling out very slowly in Ethiopia. After nearly a decade since the privatization process started, the state-owned enterprises were still the dominant forces of the economy. In 2004, state-owned enterprises accounted for 72% of the total manufacturing value added, 62 percent of the gross value of production, 57 percent of the manufacturing labor force, and 64 percent of wages and salaries (World Bank, 2004).

In addition, even from the start, the privatization process was riddled with issues of corruption, forcing the government to halt the privatization process in the early 2000s. This event led to re-nationalization of some of the privatized companies. Examples of re-nationalized enterprises include a soap factory, a printing press, and a flour mill (USITC, 2004). Subsequently, the government resumed the privatization process under a new director. This incident was captured during the 15 years Large and Medium Scale Manufacturing (LMSM) Industries Survey data was employed in this study. As shown in Figure 1, the Ethiopian privatization process can be
characterized by two waves: the first wave of privatization peaked in 1996 before it slowed down in late the 1990s and early 2000s, and the second wave of privatization peaked again in 2007.

Finally, the privatization process in Ethiopia seemed to suffer from a lack of transparency, as it was conducted clandestinely without involving stakeholders (Hailu, 2005). It was also not clear whether political decisions or economic conditions were dictating the privatization process that involved identifying the firms to be privatized, conducting market valuation of the firms, and determining the factors that govern the bidding processes.

Given the privatization process outlined above, this paper attempts to study the impacts of privatization on the productivity of firms by using 15 years of LMSM industries survey data collected by the Central Statistical Agency (CSA) between 1996 and 2010. In addition, the paper makes comparisons of productivity differentials before and after privatization to investigate to what extent privatization has impacted the level of employment, wages, and resource utilization.

Figure 1. Trend of privatization in LMSM industries (1994–2010)

Our findings show that privatized firms exhibit no notable productivity (measured as firm output per employee) gains in absolute terms. In terms of marginal productivity gains resulting from the use of various factor inputs, we observe that privatized firms tend to exhibit no or small productivity differentials. However, the magnitude and statistical significance of these marginal productivity gains depend on the type of estimation method employed. The marginal gain in productivity estimated using the median absolute deviation (MAD) method is higher after privatization for the use of raw materials per employee, indirect inputs per employee, or the rise
in wage rates. In contrast, the marginal productivity gains resulting from using more capital per employee or employing more workers tend to be not statistically significant after privatization.

It is also important to note that the level of employment, the use of indirect inputs, and wage rates are observed to decline after privatization. A small-scale study conducted by Wolde (2010) partly corroborates our findings. He surveyed six privatized firms and found mass layoffs after transfer of ownership. He also reported that the workers who became unemployed due to privatization did not receive any training for re-entry to the labor market or any other safety net services either from the government or the new owners.

In summary, the economic and business environment in Ethiopia has not improved during the last 25 years as hoped by either the advocates of the Structural Adjustment Program of the early 1990s or the IMF and World Bank recommendations in recent years. Instead, the economy remains dominated by the ruling party-owned business empires acting as private corporations and competing for financial and other resources with the other equally powerful family conglomerate - the MIDROC Group. Our data do not specifically indicate who the new owner(s) of the privatized firms are. The data do not provide information on the dollar values of the state-owned enterprises upon privatization either. Nonetheless, based on the pattern and conditions of privatization discussed above, we assume that only a small fraction of the LMSM firms (but with significant economic and strategic importance) in our data are privatized to the MIDROC Group. This implies that the majority of the LMSM firms covered by this study are those privatized to other owners who are forced to operate under the unfavorable business environment described above.

Model Specification and Estimation Methods

Model Specification

Firms are engaged in the process of transforming inputs into outputs via a certain production process (technology). This process is captured by the general functional form

**Equation 1:** \( Y_{it} = A_{it} f(Z_{it}) \)

where \( Y_{it} \) is level of output and \( Z_{it} \) is vector of inputs used in the production process. \( A_{it} \) denotes the total factor productivity (TFP) which captures all the factors other than the measurable inputs such as labor and capital (e.g., level of technology and externalities) which are designated in most studies as the major determinants of a firm’s productivity (Ozyurt, 2009; Soderbom & Teal, 2004) as well as a source of economic growth (Chen 2002; Krugman, 1994; Lucas, 2002).

Equation 1 can be estimated using the standard Cobb-Douglas production function. Hence, firm \( i \)’s production at time \( t \) is captured by:

**Equation 2:** \( Y_{it} = K_{it}^a (A_{it} L_{it})^B e^{u_{it}} \)

where \( Y_{it} \) and \( A_{it} \) are as defined above, \( K_{it} \) is the stock of physical capital, \( L_{it} \) is ‘undifferentiated’ labor, and \( u_{it} \) is the error term. The term ‘undifferentiated’ labor is used (in contrast to human capital augmented labor) to indicate labor with no education or experience (Hall & Jones, 1999). Since the Ethiopian LMSM industries surveys do not collect data on workers’ education and experience, we employ the standard production function expressed only by capital and labor inputs.
To calibrate the production function in Equation 2 for estimation purposes based on variables available in the Ethiopian LMSM industries data, we incorporate such factor inputs as raw materials, $M_{it}$, and indirect inputs, $I_{it}$ (e.g., fuel and lubricating oil, electricity, water, and rented structures and equipment).

**Equation 3:**  
\[ Y_{it} = K_{it}^\alpha M_{it}^\beta I_{it}^\phi (A_{it} L_{it})^\rho e^{u_{it}} \]

By linearizing, collecting constant terms and rearranging, we obtain the final estimation equation,

**Equation 4:**  
\[ \ln Y_{it} = \beta \ln A_{it} + \alpha \ln K_{it} + \gamma \ln M_{it} + \phi \ln I_{it} + \beta \ln L_{it} + u_{it} \]

where the constant term $C = \beta \ln A_{it}$. In Equation 4, TFP (i.e., $A_{it}$) is considered a constant term since it governs the shift of the production function. Equation 4 is used to estimate the productivity of the Ethiopian LMSM industries in this study. This estimation equation quantifies the marginal contribution of each of the factor inputs to the productivity of state-owned and private firms. In other words, the estimation shows the percentage change in productivity (i.e., firm output per employee) in response to a one percent increase in each factor input.

**Estimation Methods**

As documented in many studies, several biases arise when a production function such as Equation 4 is estimated using the simple ordinary least squares (OLS) method. The biases may result from omitted variables, simultaneity, measurement error, and autocorrelation. To overcome such endogeneity problems, multiple estimation techniques have been proposed in the literature. Examples include the fixed effects (FE) estimator (Mundlak, 1961), instrumental variables (IV) (Angrist & Krueger, 2001), the semiparametric proxy estimator (Levinsohn & Petrin, 2003), structural identification (Ackerberg, Caves & Frazer, 2006), median absolute deviation (MAD) estimation (Buchinsky, 1998), and the generalized method of moments (GMM) panel data estimator (Arellano & Bond, 1991).

Although there is no consensus in the literature regarding the successfulness of these methods in solving the endogeneity problems, we employ MAD and GMM estimations as the best alternatives for dynamic panel models. The MAD estimation (or median regression) has been proposed as an alternative to OLS estimation. While the OLS method minimizes the sum of squared deviations from the mean, the MAD method minimizes the sum of absolute deviations from the median. As a measure immune to outliers, the latter estimation is expected to provide a robust estimation compared to the former which is highly sensitive to outliers. In addition, given the fact that the Ethiopian LMSM industries data are considerably affected by extreme values, the MAD estimation can serve as a plausible alternative to OLS estimation.

On the other hand, GMM estimation is probably the most widely used method for dynamic panel models. However, the standard GMM (also known as difference GMM) estimators are found to suffer from weak instrument problem in dynamic panels with high autoregressive coefficient and small-time periods, T. Consequently, an extended version of the standard GMM (known as
system GMM) has been proposed to overcome the observed problems (Blundell & Bond, 1998; Griliches & Mairesse, 1995).

The system GMM has also been employed as the best alternative estimator in recent studies (Blundell et al., 2001; Griffith et al., 2006; Levinsohn & Petrin, 2003 Wooldridge, 2001) in providing more reasonable results for dynamic panels with small T and large N (i.e., fewer time periods and many firms as in our case). These studies show that the system GMM improves the estimation results by adding extra moment conditions on the standard first-differenced GMM estimator as it uses the lagged differences of the endogenous variables as instruments. We employ the system GMM to exploit the additional efficiency gains from the extended GMM model and use it as a robustness check for the MAD estimation results. For comparison purposes, we present estimation results from all three estimation techniques (i.e., OLS, MAD and system GMM).

Source of Data and Distribution of Firms in LMSM Industries

Source of Data and Definition of Variables

The data used in this study are drawn from the 1996–2010 Large and Medium Scale Manufacturing (LMSM) Industries Surveys conducted by the Central Statistical Agency (CSA) of Ethiopia. CSA (2011) defines LMSM industries as establishments, both state and private, which engage ten persons and above and use power-driven machinery. Each year, the surveys cover establishments operating in all regions of the country under licenses issued by the Ministry of Trade and Industry and corresponding bureaus of the Regional States. CSA’s annual surveys gather basic quantitative and qualitative information relating to the structure and performance of the country’s LMSM industries.

CSA surveyed a total of 4,303 manufacturing firms from 1996–2010 obtained after dropping those employing less than 10 workers (as per CSA’s definition of LMSM industries) as well as those reporting extremely small or no capital. These firms constitute an unbalanced panel data comprised of 160 firms that have been transferred from state to private ownership, 371 firms that have remained under state control, and 3,772 firms that have been privately owned since their commencement (Table 1).

The variables used in the description of the distribution of manufacturing firms in Ethiopia and in the estimation of the production function are defined in Appendix A1. To make variables expressed in monetary terms comparable across time within the country and to those of other countries, we deflated and then converted them to an international dollar. We first deflated all values using their respective deflators, which were taken from the World Bank Report and computed using 2000 as a base year, and then expressed them in 2005 local currency units (LCU). While output and capital are deflated by the GDP deflator, the private consumption deflator was used for material inputs, indirect inputs and wages.
Table 1  
**Distribution of Firms in LMSM Industries**

<table>
<thead>
<tr>
<th>Type of Manufacturing Industry</th>
<th>Privatized (1994 – 2010)</th>
<th>Not privatized</th>
<th>Private since commencement</th>
<th>Total</th>
<th>% Privatized†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food products, beverages and tobacco</td>
<td>71 44.4%</td>
<td>101 27.2%</td>
<td>916 24.3%</td>
<td>1,088</td>
<td>25.3%</td>
</tr>
<tr>
<td>Textile and wearing apparel, except fur</td>
<td>24 15.0%</td>
<td>30 8.1%</td>
<td>161 4.3%</td>
<td>215</td>
<td>5.0%</td>
</tr>
<tr>
<td>Tanning and dressing of leather and foot wear</td>
<td>10 6.3%</td>
<td>15 4.0%</td>
<td>215 5.7%</td>
<td>240</td>
<td>5.6%</td>
</tr>
<tr>
<td>Wood and paper, and wood and paper products</td>
<td>4 2.5%</td>
<td>34 9.2%</td>
<td>108 2.9%</td>
<td>146</td>
<td>3.4%</td>
</tr>
<tr>
<td>Publishing and printing services</td>
<td>3 1.9%</td>
<td>17 4.6%</td>
<td>146 3.9%</td>
<td>166</td>
<td>3.9%</td>
</tr>
<tr>
<td>Chemicals and chemical products</td>
<td>13 8.1%</td>
<td>24 6.5%</td>
<td>135 3.6%</td>
<td>172</td>
<td>4.0%</td>
</tr>
<tr>
<td>Rubber and plastics products</td>
<td>3 1.9%</td>
<td>17 4.6%</td>
<td>179 4.7%</td>
<td>199</td>
<td>4.6%</td>
</tr>
<tr>
<td>Other non-metallic mineral products</td>
<td>15 9.4%</td>
<td>60 16.2%</td>
<td>870 23.1%</td>
<td>945</td>
<td>22.0%</td>
</tr>
<tr>
<td>Basic metals and fabricated metal products, except machinery and equipment</td>
<td>5 3.1%</td>
<td>31 8.4%</td>
<td>316 8.4%</td>
<td>352</td>
<td>8.2%</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>0 0%</td>
<td>1 0.3%</td>
<td>40 1.1%</td>
<td>41</td>
<td>1.0%</td>
</tr>
<tr>
<td>Batteries, motor vehicle bodies, parts and accessories</td>
<td>1 0.6%</td>
<td>8 2.2%</td>
<td>55 1.5%</td>
<td>64</td>
<td>1.5%</td>
</tr>
<tr>
<td>Furniture</td>
<td>11 6.9%</td>
<td>33 8.9%</td>
<td>631 16.7%</td>
<td>675</td>
<td>15.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>160</strong> 100%</td>
<td><strong>371</strong> 100%</td>
<td><strong>3,772</strong> 100%</td>
<td><strong>4,303</strong> 100%</td>
<td><strong>30.1%</strong></td>
</tr>
</tbody>
</table>

**Source:** Authors’ estimations using panel data constructed from LMSM Industries Surveys: CSA 1996-2010. †Indicates the proportion of privatized firms out of the total firms which have been under state ownership. E.g., for the first industry: \( \frac{71}{71+101} \) *100% = 41.3%.

Finally, all variables expressed in 2005 LCU were converted to their equivalent 2005 international dollar values using the 2005 purchasing power parity (PPP) conversion factor for GDP, PPP conversion factor for private consumption, and market exchange rate ratio for wages. Appendix A2 shows the deflators and conversion factors used together with the list of variables on which they are applied. Note that henceforth all monetary values will be expressed in PPP adjusted 2005 international dollars (denoted as 2005 PPP $). An international dollar has the same purchasing power as the U.S. dollar has in the United States.
Distribution and Characteristics of Firms in LMSM Industries

Table 1 shows the distribution of firms in LMSM industries in Ethiopia. The LMSM firms have been categorized into three groups in this study: privatized (i.e., those transferred from state to private ownership); not privatized (i.e., those who remained under state control); and private since commencement. The CSA surveys reveal that there are over four thousand LMSM firms operating in the country, and out of 531 LMSM firms that were under state control, about 30% (160) have been privatized in the span of seventeen years (1994–2010). A review of the percent of privatized firms (out of the total number of firms under state ownership and captured by the CSA survey) in Table 1 reveals that privatization seems to have focused primarily on four industries: textile and wearing apparel (44.4%), food, beverage and tobacco (41.3%), tanning and dressing of leather and foot wear (40%), and chemicals and chemical products (35.1%). In the remaining industries, the government has privatized a relatively small number of firms compared to the total number of firms remaining under its control.

Table 2
Number of Privatized Firms by Year of Transfer

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Food products, beverages and tobacco</td>
<td>7</td>
<td>31</td>
<td>11</td>
<td>22</td>
<td>71</td>
<td>44.4</td>
</tr>
<tr>
<td>Textile and wearing apparel, except fur</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>17</td>
<td>24</td>
<td>15.0</td>
</tr>
<tr>
<td>Tanning and dressing of leather and foot wear</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>10</td>
<td>6.3</td>
</tr>
<tr>
<td>Wood and paper, and wood and paper products</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td>Publishing and printing services</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>1.9</td>
</tr>
<tr>
<td>Chemicals and chemical products</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>7</td>
<td>13</td>
<td>8.1</td>
</tr>
<tr>
<td>Rubber and plastics products</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1.9</td>
</tr>
<tr>
<td>Other non-metallic mineral products</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>11</td>
<td>15</td>
<td>9.4</td>
</tr>
<tr>
<td>Basic metals and fabricated metal products, except machinery and equipment</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>3.1</td>
</tr>
<tr>
<td>Batteries, motor vehicle bodies, parts and accessories</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Furniture</td>
<td>3</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>6.9</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>62</td>
<td>17</td>
<td>70</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td>%</td>
<td>6.9</td>
<td>38.8</td>
<td>10.6</td>
<td>43.8</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Authors’ estimations using panel data constructed from LMSM Industries Surveys: CSA 1996-2010.

† The surveys captured no privatized machinery and equipment industry, if any (see Table 1).

Table 2 exhibits the years in which privatization has taken place in various LMSM industries. The privatization episodes seem to have taken place in two waves. The first wave of privatization took place from 1996 to 2000 and the second from 2005 to 2009. In both waves, a
total of 130 (81.3%) firms were privatized, representing 62 (38.8%) and 68 (42.5%) firms in the first and second waves of privatization respectively. As indicated above, issues primarily related to corruption might have caused the slowdown in the privatization process in the early 2000s, which forced the government to assign a new director to the EPA and re-nationalize some of the privatized firms (WikiLeaks).

The CSA surveys do not provide information on the factors driving the privatization process, nor do they outline the criteria the government is using when privatizing firms in the LMSM industries. However, the surveys gather information on the performances of both state and privately-owned firms. The surveyed firms reported on their rates of production and possible reasons for underutilization of their resources. Table 3 summarizes this information.

Table 3

Mean Rates of Capacity Utilization and Reasons for Underutilization

<table>
<thead>
<tr>
<th>Type of firm</th>
<th>Output as % of production at full-capacity</th>
<th>Three top reasons for capacity underutilization (% of firms)</th>
<th>Number of firms</th>
<th>Number of observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shortage of raw materials, spare parts and working capital</td>
<td>Difficulty in market competition and lack of market demand</td>
<td>Government rules and regulations</td>
</tr>
<tr>
<td>Privatized</td>
<td>59.9</td>
<td>61.4</td>
<td>36.1</td>
<td>33.4</td>
</tr>
<tr>
<td></td>
<td>(28.5)</td>
<td>(48.7)</td>
<td>(48.1)</td>
<td>(47.2)</td>
</tr>
<tr>
<td>Not privatized (stay state owned)</td>
<td>62.1</td>
<td>64.5</td>
<td>35.3</td>
<td>27.3</td>
</tr>
<tr>
<td></td>
<td>(37.3)</td>
<td>(47.9)</td>
<td>(47.8)</td>
<td>(44.6)</td>
</tr>
<tr>
<td>Private since Commencement</td>
<td>58.1</td>
<td>64.2</td>
<td>42.5</td>
<td>43.0</td>
</tr>
<tr>
<td></td>
<td>(59.6)</td>
<td>(47.9)</td>
<td>(49.4)</td>
<td>(49.5)</td>
</tr>
<tr>
<td>Weighted mean</td>
<td>58.8</td>
<td>64.1</td>
<td>41.1</td>
<td>40.3</td>
</tr>
</tbody>
</table>

Sources: Authors’ estimations using panel data constructed from LMSM Industries surveys: CSA 1996-2010.

Notes: Numbers in parentheses are standard errors.
† The level of production and the three reasons are weighted by the number of observations.

Overall, the country’s LMSM firms were able to realize slightly higher than half (58.8%) of their full-capacity production. Nearly two-third of these firms reported a ‘shortage of raw materials, spare parts and working capital’ as the first major reason for their capacity underutilization. About 40 percent of the firms also identified ‘market related factors’ and ‘government rules and regulations,’ as the second and third top reasons for operating undercapacity. On the other hand, it is the private firms (both the newly privatized firms (33.4%) and firms that have been private since commencement (43.0%)) that were most dominantly affected by government rules and regulations compared to the state-owned enterprises. This is reflective of the double standard business environment prevailing in Ethiopia, which is described by Mikias
(2003) as an environment riddled with preferential treatment, favoritism, kickbacks and connections with the ruling party officials or their business conglomerates.

In addition, the problem of under-capacity production is relatively higher in the private than state owned manufacturing firms, as private firms are producing at rates 2 to 4 percentage points lower than state-owned firms. Comparisons among the privately-owned firms reveal that the newly privatized firms have had marginally better performance records than the firms that have been private since commencement.

Estimation of Productivity in LMSM Industries

To capture the impacts of privatization properly, we estimated and compared the productivities of the newly privatized firms before and after they had been privatized. For such analyses, we further subdivided the 160 privatized firms into two groups: those that had been surveyed both before and after privatization (68) and those surveyed only after they have been privatized (92) (Table 4). The firms in the first group provided additional information on how they were performing while under state control. In contrast, as the CSA surveys fail to capture the firms in the second group prior to being privatized, we only know their performance after they have been privatized. As a result, no separate analysis is conducted for firms in this group. Hence, emphasizing only on the 68 firms with before-and-after privatization data, we were able to estimate their productivity differentials and present the results. We believe that the number of privatized firms (with the combined panel data of 392 observations) is large enough to enable us to generate valid statistical estimates and make inferences on the impacts of privatization on the performances of Ethiopia’s LMSM industries.

Descriptive Statistics of Estimation Variables

Table 4 presents descriptive statistics of the variables used for estimation of productivity differentials. Comparisons of the means and medians of the variables in each group reveal that each variable is highly skewed to the right. Such skewed distribution in the data indicates that all the estimation variables exhibit very high extreme values that affect the mean values, confirming that the median values may be the best measures in such cases.

Comparing the changes in the use of factor inputs before and after privatization, we observe that despite employing more capital, raw material and indirect inputs per employee after privatization, the firms do not seem to register a significant increase in productivity. In particular, notice that the firms are investing substantially more amounts of money on capital, by a mean difference of 18,580 or a median difference of 14,800 (2005 PPP $) per employee per year, after they have been privatized. Nevertheless, output per employee either has remained nearly the same or showed a slight decline. On the other hand, the median wage has significantly declined after privatization by 220 (2005 PPP $) per employee per year. In addition, the most characteristic feature of the privatized firms is a substantial reduction observed in the level of employment after privatization.
Table 4

Descriptive Statistics - Privatized Firms Surveyed Before vs. After Privatization

<table>
<thead>
<tr>
<th>Variables</th>
<th>Before privatization</th>
<th>After privatization</th>
<th>Difference in mean†</th>
<th>Difference in median††</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Median</td>
<td>Mean</td>
<td>Median</td>
</tr>
<tr>
<td>Output per employee</td>
<td>56.27</td>
<td>39.76</td>
<td>57.60</td>
<td>35.81</td>
</tr>
<tr>
<td></td>
<td>(7.969)</td>
<td></td>
<td>(7.095)</td>
<td>(7.88)</td>
</tr>
<tr>
<td>Capital per employee</td>
<td>16.70</td>
<td>6.59</td>
<td>35.28</td>
<td>21.38</td>
</tr>
<tr>
<td></td>
<td>(3.572)</td>
<td></td>
<td>(5.322)</td>
<td>(6.10)</td>
</tr>
<tr>
<td>Raw materials per employee</td>
<td>24.23</td>
<td>11.13</td>
<td>25.56</td>
<td>12.57</td>
</tr>
<tr>
<td></td>
<td>(4.602)</td>
<td></td>
<td>(5.649)</td>
<td>(6.60)</td>
</tr>
<tr>
<td>Indirect inputs per employee</td>
<td>2.08</td>
<td>1.17</td>
<td>2.94</td>
<td>1.05</td>
</tr>
<tr>
<td></td>
<td>(0.332)</td>
<td></td>
<td>(0.551)</td>
<td>(0.48)</td>
</tr>
<tr>
<td>Wage per employee</td>
<td>2.05</td>
<td>1.96</td>
<td>1.98</td>
<td>1.73</td>
</tr>
<tr>
<td></td>
<td>(0.087)</td>
<td></td>
<td>(0.115)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>Employment</td>
<td>363.6</td>
<td>212</td>
<td>277.0</td>
<td>145</td>
</tr>
<tr>
<td></td>
<td>(49.74)</td>
<td></td>
<td>(39.68)</td>
<td>(38.37)</td>
</tr>
<tr>
<td>Number of firms†††</td>
<td>68</td>
<td></td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Number observations</td>
<td>501</td>
<td></td>
<td>392</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Authors’ estimations using panel data constructed from LMSM Industries Surveys: CSA 1996-2010.
†t-test for difference in means between privatized firms (after privatization minus before privatization).
††Non-parametric test for difference in medians between privatized firms (after privatization minus before privatization).
†††Out of the 160 privatized firms only 68 firms have been surveyed both before and after they were privatized.
Notes: Differences are significant at *** p<0.01, ** p<0.05, * p<0.10 The monetary values are in '000 of PPP adjusted 2005 international dollar. Numbers in parentheses are linearized standard errors.

Productivity Estimations

We have presented the productivity estimations for the privatized firms from the three estimation methods (i.e., OLS, MAD and system GMM). In all cases, the dependent variable has been log productivity (i.e., log of firm output per employee), and the independent variables are expressed in log, with the exception of the variable that captures the level of labor employment in these firms. As a result, the coefficients of the estimated variables (except for the level of employment) have been interpreted as percentage contributions to productivity.

Table 5 exhibits the productivity estimates of privatized firms when they were under state control and after they have become privatized. Despite the substantial increase observed in the use of capital per employee after privatization (Table 4), firms have not yet been able to attain significant marginal gains in productivity. This implies that privatized firms are still capital-starved.
and could significantly boost productivity by increasing the level of their use of capital per employee.

Before privatization, the level of employment contributed negatively to productivity. This may be due to the inherent tendency of state owned firms to over-employ. This inefficiency has been corrected after privatization probably by laying off redundant workers as described in Hailu (2005) and Wolde (2010) where mass layoffs are characteristic of privatized firms in Ethiopia. It should be noted that over-employment in state owned firms is not unique to Ethiopia, as most state-owned firms have a tendency to over-employ (Celasun, 2013; Oberhofer, Cuaresma & Vincelette, 2012; Forster & Briceno-Garmendia, 2010). For instance, Crespo et al. (2012) identify labor hoarding as one of the causes for inefficiencies and productivity differentials in state-owned firms compared to the corresponding private firms in the Belarusian machine building industries.

Raw materials and indirect inputs contribute positively and significantly to productivity both before and after privatization. For instance, privatized firms could boost productivity by approximately 0.5 percent and 0.2 percent, respectively, by increasing the level of use of raw materials and indirect inputs per employee just by one percentage point. This partly compares to Arnold et al. (2008) who find consistently positive and significant relationships between such service inputs as communication, electricity and financial services and firm productivity in over 1,000 firms in ten Sub-Saharan African countries.

For the case at hand, while the percentage contribution of raw materials per employee is lower after privatization, that of indirect inputs per employee is higher after privatization. The latter may have resulted from the slight reduction observed in the level of indirect input utilization (Table 4). In contrast, the decline in the marginal contribution of raw materials to productivity may have been caused by diminishing marginal productivity resulting from the increased use of raw materials after privatization compared to before privatization (Table 4).

The positive and significant economic contribution of wage per employee observed before the firms were privatized seems to have been neutralized when the firms became privatized, with the exception of the MAD estimation where it remains positive and highly significant. This is in line with the significantly lower wage paid to employees after the firms have become privatized, as captured by the significant difference in median wage in Table 4.

Overall, it can be concluded that over-employment was prevalent in the LMSM firms prior to privatization triggering the condition for the significant reduction observed in productivity. However, the reduction in the labor force (in search of efficiency) after privatization did not result in higher productivity.

In summary, the results from our descriptive statistics reveal that productivity did not improve (it rather slightly declined) after privatization. The significant changes resulting from privatization were increase in capital per employee, and decline in wage per employee and the level of employment. The results from our estimations show that productivity could be improved in privatized firms by increasing the level of raw materials, indirect inputs and wage per employee.
Table 5
Estimations of Production Functions – Performance of Privatized Firms Surveyed Before vs. After Privatization

<table>
<thead>
<tr>
<th>Variables in log</th>
<th>Before privatization</th>
<th>After privatization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS</td>
<td>MAD</td>
</tr>
<tr>
<td>Capital per employee</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.00958</td>
<td>-0.000525</td>
</tr>
<tr>
<td></td>
<td>(0.0321)</td>
<td>(0.0137)</td>
</tr>
<tr>
<td>Raw materials per employee</td>
<td>0.619***</td>
<td>0.631***</td>
</tr>
<tr>
<td></td>
<td>(0.0482)</td>
<td>(0.0162)</td>
</tr>
<tr>
<td>Indirect inputs per employee</td>
<td>0.215***</td>
<td>0.207***</td>
</tr>
<tr>
<td></td>
<td>(0.0354)</td>
<td>(0.0165)</td>
</tr>
<tr>
<td>Wage per employee</td>
<td>0.310***</td>
<td>0.271***</td>
</tr>
<tr>
<td></td>
<td>(0.0799)</td>
<td>(0.0441)</td>
</tr>
<tr>
<td>Employment</td>
<td>-0.0888**</td>
<td>-0.0974***</td>
</tr>
<tr>
<td></td>
<td>(0.0362)</td>
<td>(0.0195)</td>
</tr>
<tr>
<td>Constant</td>
<td>2.262***</td>
<td>2.315***</td>
</tr>
<tr>
<td></td>
<td>(0.265)</td>
<td>(0.124)</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.852</td>
<td>0.655</td>
</tr>
<tr>
<td>Number of observations</td>
<td>486</td>
<td>486</td>
</tr>
<tr>
<td>Number of firms</td>
<td>68</td>
<td>68</td>
</tr>
</tbody>
</table>

Dependent variable: Output (value of production) per employee (in log)
Sources: All estimations using the panel data from Ethiopian LMSM Industries Surveys: CSA 1996-2010.
Notes: Robust standard errors in parentheses, Significant at *** p<0.01, ** p<0.05, * p<0.1

Discussion of Results

Starting from the early 1990s, Ethiopia, like many African countries, embarked on economic reforms prescribed by the World Bank and the International Monetary Fund as conditions to continued economic assistance. One part of the reform prescription was privatization of state owned enterprises that were theoretically deemed inefficient and ineffective to bring about sustainable economic growth. The underlying assertion has been that when such firms are privatized, the economic incentives and profit motivation prevailing in the market economy can promote productivity and fuel the engine of economic growth. However, as shown above, privatization failed to produce substantial improvement in productivity in Ethiopia.

This goes contrary to most findings that document productivity improvements after privatization (Arnold et al., 2008; Brown et al., 2010; Chenm, 1997; Oberhofer et al., 2012; Noorbakhsh & Paloni, 1999). The above theoretical predictions of economic theory and empirical findings hold only under the core principles of competition governed by market forces and fair business environment (Hall & Jones, 1999; Megginson & Netter, 2001; Shirley, 1992). Therefore,
as a possible explanation for what went wrong in the case of Ethiopia, we looked at the prevailing market structure and business environment.

The business environment in Ethiopia does not seem to encompass the basic economic conditions postulated by economic theory as necessary for free market competition, which probably is the main factor impeding the success of privatized firms (Abegaz, 2013; Milkias, 2003; Negash, 2013; Schwab & Sala-i-Martin, 2015; Vaughan & Gebremichael, 2011). For example, Schwab and Sala-i-Martin (2015) rank Ethiopia as 130th of 144 countries on the overall Global Competitiveness Index (GCI). GCI is a comprehensive tool that measures the microeconomic and macroeconomic foundations of national competitiveness based on a weighted average of many different components grouped into 12 pillars of competitiveness, including, for instance, institutions, infrastructure, labor market efficiency, financial market development, market size, and business sophistication.

Ethiopia’s market distortions and lack of competition seem to mainly arise from intervention of the government in the market. Leaders of the Tigrayan People’s Liberation Front (TPLF)-led government, who has been ruling the country for the last 25 years, started directly engaging in the market by creating vast “private” business conglomerates under the name of EFFORT. These business conglomerates are owned by TPLF and run by the elites in the party. On the other hand, state owned enterprises with high monetary and economic significance (but small in number) have been selectively privatized to one private company - MIDROC Ethiopia Investment Group. Such transfer of firms with high monetary value and economic significance to a single company amounts to a change in hands from one owner (the government of Ethiopia) to another (the MIDROC Group) in the name of privatization.

The two groups (EFFORT and MIDROC) have become powerful market players blanketing every single economic activity in the country, and creating what looks like a “duopoly” market structure. This limits the market landscape on which the rest of private businesses, which are substantially smaller in size and larger in number but with insignificant market shares, would be operating. Under this environment, it would then be hard to expect the predictions of theoretical economic models, which are based on competitive market conditions, to hold. The business environment in Ethiopia is rather predestined to create a market distortion that encourages rent-seeking behavior, political connections and preferential treatment, instead of furnishing the incentives for innovation or maximization of efficiency. Under these conditions, it should not be a surprise that productivity has either declined or at best showed no improvement after privatization for the majority of Ethiopia’s LMSM firms.

Conclusion

In this paper, we analyzed the impacts of privatization on manufacturing firms’ productivity, level of employment, wages, and resource utilization using 15 years of survey data on Ethiopia’s Large and Medium Scale Manufacturing (LMSM) industries, that was gathered by the Central Statistical Agency (CSA) between 1996 and 2010. We identified 68 privatized firms
(constituting 392 total observations) with data capturing their performances before and after privatization.

Our findings show that privatization in Ethiopia seems to be ineffective as we were unable to find notable productivity (measured as firm output per employee) gains resulting from privatization. More specifically, while the mean difference in productivity shows a small and insignificant increase after privatization, the median difference in productivity shows slightly higher but insignificant decline after privatization. In terms of marginal analysis, we have observed that privatized firms tend to exhibit no or a small productivity differential (i.e., marginal gains in productivity) with respect to the majority of estimation variables.

As the estimation results show, the marginal gains in productivity resulting from additional units of raw materials and wages have been lower after privatization. In addition, employing more workers does not have significant impact on productivity after privatization. Based on these results, it may be possible to conclude that privatization does not seem to help the country expand the use of its local resources to enhance productivity, or generate job opportunities for the workforce, in the manufacturing sector. Neither can the workforce in the manufacturing sector be able to receive higher wages because a rise in wage rates provides less marginal return to the owners of the privatized firms.

Finally, we conclude with the following remarks regarding the economic and business environment in Ethiopia. First, the privatization process in Ethiopia seems to suffer from a lack of transparency, and is very slow and riddled with corruption. It is difficult to tell whether political decisions or economic factors are dictating which firms to privatize, how and by whom their market values are evaluated, and what factors govern the bidding processes, and when and to whom to privatize. Second, privatization does not seem to have achieved at least two of the objectives stated in Proclamation No. 146/1998: reducing government involvement in the economy and expanding the private sector. The creation of political party parastatals under EFFORT (and to some extent under Tirit, Dinsho and Wendo Trading), which are led by their respective party and government officials, has created an entirely new kind of participation and intervention of the government in the economy. The party parastatals and MIDROC Group are reported to have heavily dominated the various sectors of the economy leaving no or little space for the rest of the private sector to operate. State owned enterprises are still one of the major players in the manufacturing sector (besides EFFORT and MIDROC), further limiting the level of fair competition that enhances private sector development.

This study identifies the market structure and business environment prevailing in Ethiopia as the most probable factors for achieving no notable productivity gains from privatization. This conclusion is derived from the survey of literature on market structure and business environment in Ethiopia as well as the responses from a large number of surveyed firms (both private and state owned) that identified these factors as the dominant cause for their under-capacity utilization of resources.
References


World Bank. (2004). Project appraisal document on a proposed credit in the amount of SDR 12.7 million (US$19 million equivalent) and a proposed grant in the amount of SDR 3.4 million (US$5 million equivalent) to the Federal Democratic Republic of Ethiopia for a private sector development capacity building project. Report No: 30758-ET.
**Appendix A1: Definition of Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output (Y)</td>
<td>Total sales value + difference in inventory of semi and finished goods (end minus beginning period) + difference in inventory of raw materials (end minus beginning period).</td>
</tr>
<tr>
<td>Capital (K)</td>
<td>Total book value of fixed assets at the end of the year.</td>
</tr>
<tr>
<td>Employment (L)</td>
<td>Total number of permanent employees (administrative and production workers) in a year.</td>
</tr>
<tr>
<td>Indirect inputs (I)</td>
<td>Value of fuel and lubricating oil + value of electricity + value of water consumed + rental values for structures and equipment (in a year).</td>
</tr>
<tr>
<td>Raw materials (M)</td>
<td>Total value of raw materials consumed (local and imported) in a year.</td>
</tr>
<tr>
<td>Wages (W)</td>
<td>Total wages (annual)</td>
</tr>
<tr>
<td>Output per employee (Y/L)</td>
<td>Output divided by number of employees, gives the dollar value of output produced by a worker per year.</td>
</tr>
<tr>
<td>Capital per employee (K/L)</td>
<td>Capital divided by number of employees, captures the size of capital available per worker per year.</td>
</tr>
<tr>
<td>Indirect inputs per employee (I/L)</td>
<td>Indirect inputs divided by number of employees, captures the size of indirect inputs a worker can use per year.</td>
</tr>
<tr>
<td>Raw materials per employee (M/L)</td>
<td>Raw materials divided by number of employees, captures the size of raw materials at the disposal of a worker per year.</td>
</tr>
<tr>
<td>Wage per employee (W/L)</td>
<td>Wages divided by number of employees, captures the dollar amount a worker receives per year.</td>
</tr>
</tbody>
</table>
Appendix A2: Deflators and Conversion Factors

<table>
<thead>
<tr>
<th>Deflators/Conversion factors</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>Variables deflated or converted</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP deflator</td>
<td>102.43</td>
<td>106.44</td>
<td>116.95</td>
<td>Y, K</td>
</tr>
<tr>
<td>Private consumption deflator (or CPI)</td>
<td>101.18</td>
<td>109.90</td>
<td>117.42</td>
<td>M, I, W</td>
</tr>
<tr>
<td>Market exchange rate (Birr per US$, period average)</td>
<td>8.60</td>
<td>8.64</td>
<td>8.67</td>
<td>-</td>
</tr>
<tr>
<td>PPP conversion factor for GDP</td>
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<td>0.25</td>
<td>0.26</td>
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Notes: The PPP conversion factor is the number of LCU (Ethiopian Birr) required to buy the same amounts of goods and services in the domestic market as a U.S. dollar would buy in the United States.

The PPP conversion factor for private consumption (i.e., household final consumption expenditure) is the expenditure in LCU (Ethiopian Birr) per international $.

The market exchange rate ratio (or the national price level) is obtained by dividing the PPP conversion factor for GDP by the official market exchange rate.
The Aid Effectiveness Architecture in Africa: 
An Analysis of Aid Structures in Kenya’s Agriculture Sector

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Abstract

This study examines in detail the development aid architecture in Kenya’s agriculture sector. The focus is on the mechanisms in place within the Kenyan government (and ministry of agriculture in particular), mechanisms among and within donor agencies, and overall coordination mechanisms that bring together the donors and the government. Findings show that coordination and harmonization activities among donors are yet to yield the desired outcomes such as the division of labor protocol and joint programming. Weaknesses are also observed on the government side where it appears authorities are yet to internalize PD concepts and interpret them to suit the country’s needs. The author argues for the need to strengthen mechanisms of citizen participation and oversight over aid effectiveness architecture thereby ensure greater accountability from lead agencies involved in the development cooperation processes including government bureaucrats.

Keywords: aid effectiveness, agriculture sector, development policy

Introduction

Despite contradictory views on whether development aid is beneficial to recipient economies, the international community has been increasingly concerned about developing strategies and policies of making aid more effective (Howes, 2011). It is in this spirit that successive international high-level forums on aid effectiveness have been held since the Paris Declaration (PD) in 2005. The main objective has mainly been to take stock of what has already been achieved and to seek ways of accelerating progress. Consequently, forums such as Accra in 2008 and Busan in 2011 have since been held with a focus of reforming the aid architecture. In the more recent years, focus has shifted to “effective development cooperation” from “aid effectiveness” as demonstrated by the recent high-level meetings in Mexico City (2014) and Nairobi (2016).

In this paper, the authors highlight the steps that have been taken by various players in pursuit of the PD agenda within the agriculture sector in Kenya. In particular, the study examines in detail the development aid architecture through focusing on mechanisms in place within the Kenyan government, mechanisms among and within donor agencies, and overall coordination mechanisms that bring together the donors and the government.

Kenya’s agriculture sector typifies most other African countries where small-scale agricultural production is dominant. However, unlike many surrounding countries that have been
in political turmoil, Kenya has had a stable capitalist, pro-western orientation since independence in 1963. This has arguably made it possible for the country to maintain a long history of donor-recipient relationship with leading western powers that according to Hornsby (2013) has ensured a continued flow of foreign aid thereby sustaining the economy over the years. Kenya’s stability (as opposed to specific policy actions) is probably a major factor for continued aid flow and the relatively better performance of aid in the country when compared to neighboring countries. The core of the PD is however beyond generalities of aid performance with concerns shifting to the quality of policy making processes within foreign aid relationships (Whitfield & Fraser, 2008).

According to Howes (2011), efforts to improve aid effectiveness should focus on improving recipient government performance, productivity of donor agency performance and productivity of donor-recipient interaction. This three-tier conception of the structure of aid effectiveness strategies mirrors the specific mechanisms that have been instituted to implement PD in Kenya (herein referred to as aid effectiveness architecture). These mechanisms include: a) those that are meant to streamline actions within the Kenyan government, b) those that are intended for improving the quality of donor actions, and c) those that are meant to improve interactions between donors and Kenyan government. Some of the bodies that are currently in place include the aid effectiveness unit at the Treasury, the Kenya Joint Assistance Strategy, the sector working groups, the Aid Effectiveness Group (formerly the Harmonisation, Alignment and Coordination Group), the Development Partners Coordination Group, the Development Partnership Group, and the Sector Working Groups (SWGs). Although there have been a number of studies undertaken to measure the progress of the implementation of PD in Kenya, none hitherto has specifically analyzed structures established to help implementation. Examples of such studies include a 2011 report by OECD which highlighted the importance of cooperation between the government and her development partners stating that progress towards aid effectiveness relied on the level of input of both these entities. It nevertheless lacked analysis of the structures and the aid effectiveness architecture in place. Another report by New Partnership for African Development (Nepad, 2013) only discusses the status of implementation without going into the details of the success of each structure established.

Qualitative methods were used in this study; mainly semi-structured interviews with officials of the Kenyan Treasury (External Budget Directorate), Ministry of Agriculture and Livestock (MALF) and officials of donor agencies. Others included policy analysts, NGO officials and officials of donor funded projects/programs. Most of these interviews were undertaken in Nairobi. Further information was gained through focus group discussions (FGD) with farmers in three Kenyan counties, namely Nakuru, Makueni and Kwale as well as examination of official government, donor and NGO documents. The paper is organized as follows: section two discusses the overall aid coordination mechanisms, followed by the aid effectiveness architecture within the Kenyan government in section three. In section four, the coordination and harmonisation efforts among donors are analyzed, and section five looks at the fate of the joint efforts between the donors and the government. Section 6 examines the Kenyan government leadership in the aid effectiveness agenda. The last section is the conclusion.
Gaps: Overall Aid Coordination

Efforts to better coordinate aid in Kenya pre-date the 2005 Paris Declaration with the World Bank playing a critical role in convening the Kenya Consultative Meeting. Prior to 2003, these meetings were held in Paris (known as the “Paris Club”) and became a barometer for determining the relationship between Kenya and her donors. Most of that period was particularly tumultuous for the relationship between Kenya and her donors mainly because Kenya was deemed to have failed to comply with conditions for funding set by the World Bank and the IMF. The Consultative Group is particularly remembered for its ability to rally donors to force the Kenyan government to yield to reforms such as privatization and the introduction of multi-party politics.

Of that period, O’brien and Ryan (2001) state:

The influence of the donor community in Kenya was now so decisive that the Kenyan government not only succumbed and provided a detailed privatization plan at the November 1991 Donor Consultative Meeting held in Paris but most remarkably it grudgingly yielded to the establishment of the multi-party system.

(p. 374)

Although it became increasingly associated with the push for reforms, the Consultative Group was intended to provide the donors and the government an opportunity to consult on the country budget shortfalls and how the donors were to share this burden. Donors however took advantage of this to make it an opportunity to roundly assail the government on failures to implement prescriptive reforms and observance of human rights. In 1994 for example, the Group humiliated Kenya’s delegation led by a top Cabinet minister by refusing to give him audience, and rejected government request to resume aid. After 2003 however, changes have been noted. First, after a 7-year break, the Consultative Meetings were moved from Paris to Kenya’s capital city of Nairobi. This was in itself an indication that the donor attitude towards Kenya had changed because, by Kenya being the host, it was not unexpected that the visiting donor delegates would go soft in their desire to insist on stringent conditions in exchange for development resource support. The outcome was more than expected because in addition to this, Kenya’s status in the meeting improved so that at the 2003 Consultative Group meeting, the Kenyan government began to co-chair the meeting alongside the World Bank.

In the years that followed, the leading daily newspaper commentaries expressed these changes by noting that there was less complaisant rush within the government circles around the period of the Consultative Group meeting as compared with earlier years when officials would literally jostle to please the donors. The meeting’s structure was now designed in a way that portrayed some sense of dialogue between Kenya and the donors. It is in this environment that the donors pledged to rely more on government management and financing arrangements as well as increasing their aid efforts in the area of programme support that relies more on the country systems (World-Bank, 2005). This change was a reflection of the new policy adopted by OECD-DAC during their high level meeting in Rome in 2003 where they agreed that Consultative Meetings shall be held in the recipient country and that the recipient country shall assume chairmanship and the setting of the agenda (OECD-DAC, 2003). In Kenya, these changes
conveniently coincided with the exit of a regime led by President Moi which had years of strained relations with donors. A new government was taking over that was made of a coalition of former opposition parties. Happening at such a time, it worked well as a sign of approval for the incoming government. Overall though, it also succeeded in dramatizing the changes because of the sudden manner in which the changes were introduced – e.g. moving the venue to Kenya and granting Kenya the privilege of co-chairing the meetings.

More than ten years later, some remain doubtful and question the genuineness of donors giving the Kenyan government a freehand in deciding how to utilize development funds. Policy analysts interviewed argued that despite the rhetoric of change, donors remained imperious in the way they dealt with Kenya. Generally, it has been observed that donor statements tended to patronize the government, to focus on its shortcomings and in some cases to include underlying warnings of consequences if it (Kenya) did not take appropriate action on issues they (donors) raised. One media report for instance quoted donors threatening to withdraw aid in the 2005 Consultative Group meeting because of perceived corruption (Mulama, 2005). With such ability to forge solidarity, it is possible to see how consultative group meetings can easily work more to the advantage of donors than to the interests of the Kenyan government. Unanimity among donors is possible because the donor representatives meet regularly and have ample opportunity to work out what would be convenient to their individual interests collectively. This solidarity did not transcend all matters as it seemed to work well when donors had joint issues to discuss with the government, but showed signs of mistrust between themselves in other circumstances. In confidential discussions, donor representatives mocked other agencies’ policies on specific grounds e.g. that there was too much fragmentation in their approach or that their intentions were questionable (for example seeking to ‘outshine others’). Although this kind of discourse was between officials of different agencies, it is also not lost on observers that the way donor agencies structured their programs depended on the domestic policies of their countries of origin. Their representatives therefore had little if any central role in making important decisions. At certain critical times, each donor directly negotiated with the Kenyan government the details of what they intended to undertake in a forum that other donors may not be party to. This negates the officially stated function of the Consultative Group meeting of ‘providing overall coordination’ (McCormick & Schmitz, 2011) because specific donor programs and projects did not come up for discussion.

A consultative group meeting is therefore advantageous to donors; it gives them the solidarity and a common voice with which to face the Kenyan government (despite each of them having their own strategic interests). Meanwhile, the Kenyan government position (if any) can easily be drowned as a lone voice in the middle of a coherent voice of the donors at these meetings. The net effect of this is the weakening of the ability of the Kenyan government to whip donors to its desired agenda while also foregoing benefits of full coordination among the donors as these same donors continue the pursuit of their own programs and projects. In line with these findings, it can be argued that donor solidarity at the Consultative meetings was counterproductive to the strengthening of Kenya’s ownership of its own development agenda.
The Development Partnership Forum (DPF) is another high level outfit, just a notch below the Consultative Group that meets twice every year for policy dialogue involving Kenyan government ministers (now cabinet secretaries) and Ambassadors (for bilateral agencies) and Country Representatives (for Multilateral Agencies). This level of engagement is intended to handle high level coordination issues and especially political issues. According to AES-Kenya (2016), the Development Partnership Forum is credited with pushing for the formation of Harmonization, Alignment and the coordination group (HAC) which was later named the Aid Effectiveness Group (AEG). It is this HAC and later AEG that has been the major force behind the practical aid effectiveness initiatives in Kenya including development of the Kenya Joint Assistance Strategy (KJAS) of 2007-2012, while it was still named HAC, that was intended to replace the individual donor strategies in Kenya (McCormick & Schmitz, 2011). Even after its expiry in 2012, most of the government officials and donor representatives interviewed in this study still made reference to KJAS as a document that guided donor and government engagement in a manner that suggested diminishing traction to the agenda of the Aid Effectiveness Principles.

Operations at the DPF are not so different from the Consultative Group. Although the DPF brings together representatives of donors, the civil society and the government, the divide between donors on one end and the government on the other end remains visible. As is the case of the Consultative group meetings, donor representatives participate in the DPF having an already united position on issues they feel are important to their work in Kenya, and often point out issues for which the government should take steps to address but are not keen on confronting challenges in harmonization of their programs. For example, following the 6th Development Partnership Forum in 2013, a carefully worded joint statement was issued that, among other demands, called on the government to amend a proposed law viewed as limiting democratic space because this could restrict or even prevent the delivery of assistance in areas such as humanitarian aid, health, education, agriculture, implementation of the Constitution and other areas targeting marginalised groups (Development-Partners, 2013).

Thus, through a strategy of identifying shortcomings in government, it can be argued that donors use their solidarity in the DPF deliberations as an opportunity to shift attention away from their own deficits in the implementation of the PD. The Kenyan government on its part is either uninterested or incapable of making stronger demands in this respect – at least from analysis of the proceedings at the forum. Often, the objective of the speeches made from the government side appear to respond to the concerns raised by the donors, and lack clear demands on donors to fulfil their obligations to the PD. (For example, see a speech by the Deputy President at the 2013 DPF at http://www.deputypresident.go.ke).

Aid Effectiveness Architecture within the Kenyan government

The aid effectiveness secretariat was established in 2010 at Kenya’s National Treasury office within the External Resources Department. It is one of the most significant outfits within the government dealing directly with aid effectiveness issues. According to interviews with an official coordinating the unit, its existence came into being as a secretariat for the Harmonization,
Alignment and Coordination (HAC) group and continued to play this role when the HAC group changed its name to the Aid Effectiveness Group (AEG). Its role is indicated as that of coordinating implementation of Paris, Accra and Busan resolutions of the high level forum on aid effectiveness. Through interviews with this contact person, it was learned that the AES was a small unit within the External Resources Department run by two officers. As a secretariat for the AEG whose membership straddles the Kenyan government and the civil society and donors, the AES is expected to have strong links with these membership entities. Its establishment is described as “signalling a renewed partnership between the government of Kenya and her Development partners to make aid work better in Kenya” (AES-Kenya, 2016). It is therefore important in the planning and organization of various meetings on implementation of aid effectiveness principles that involve the government and its development partners.

As currently constituted however and being part of the National Treasury, it is difficult to see the AES as a unit that is duly representative of the various players in the aid relationship, including the government, the development partners and the civil society. Its positioning makes it more of an appendage of a Kenyan government department, and therefore, one can anticipate how difficult it is for it to meaningfully drive the AEG agenda including tasks such as those achieved through the KJAS. Even as a purely government unit, the AES remains considerably weak in terms of its ability to network through the various government ministries and departments. None of the officials interviewed from the Ministry of Agriculture, for example, had knowledge of either its role or existence. In the design of the AES, provision was not made for mechanisms to extend its presence to all ministries and departments that implement donor supported programs. This aspect appears either neglected or found unnecessary, yet it would be useful if there was a sound information flow between the implementing agencies and the organization tasked with coordinating implementation of the PD. Ideally for any unit to operate optimally, it should have representative units within the various government departments that oversee activities that have a close relation to its mandate.

During interviews, ministry officials were quick to point out other parallels of this nature that exist within government departments, and wondered why the same strategy had not been used in the design of the AES. Examples included the HIV/AIDS coordinating units and units in charge of gender established in most government ministries to help in mainstreaming these issues. One respondent particularly suggested that planning units existing in all ministries could have easily taken up the task of overseeing implementation of aid effectiveness principles as its additional role if it had been found necessary because the unit already oversees project planning and monitoring in various ministries. With the AES being unable to replicate itself at the level of ministries and departments, it was no surprise that government ministry officials hardly knew of its existence, let alone its supposed role.

While the AES major concern would be to reinforce coordination of project and program implementation, doubts were expressed on capacity of the various departments to adequately handle the ownership concept because of the numerous units that exist within departments that are in themselves in dire need of coordination. For example, the Chief Finance Officers who control
disbursement of funds and the Departmental planners and economists have different chains of command. To complicate matters further, Project Coordinators of the various donor funded programs had their own centers of power and were also likely to be independent of the civil service – depending on the requirements of the donor. Therefore, even before embarking on harmonization of various entities involved in agriculture sector projects and programmes, there already existed internal challenges within the Ministries and government departments that were also in dire need of internal restructuring in order to enhance harmonization.

Weaknesses in aid effectiveness infrastructure within the Kenyan government are further evident in the organization of the Government Coordination Group (GCG). This is an entity whose role has been identified as that of coordinating aid effectiveness across different government ministries. According to AES-Kenya (2016), the GCG is made up of Permanent Secretaries (now Cabinet/Principal Secretaries) from ministries that are implementing externally funded development projects, and its establishment is to strengthen ownership and participation of government officials in dialogue with donors. Although its structure was agreed upon and a draft cabinet memo prepared in 2010, enquiries showed that the entity remained dormant and was yet to conduct any meaningful activities relating to its objectives. It was revealed that the Cabinet had not formally approved the group and so the planned monthly meetings were yet to take place as envisaged.

Although some officials blamed transitional issues following the 2013 national elections and changes in constitution as reasons for the shortcomings observed in the aid effectiveness infrastructure within the government, this did not adequately explain the fact that there is not much enthusiasm in setting up the preliminary structures that would ensure that the GCG could run smoothly. Perhaps a more fundamental question was whether there existed any motivation for bureaucrats in government to put in place a working aid effective framework that cuts across ministries. For most government officials, attracting donor funding is an obvious priority. Since there is no connection between the ability to get donor funding and active participation in forums such as the GCG, it means that interest in the PD implementation is a lesser priority. Indeed, donor support to each Ministry depended on the donors’ priorities and ability of the ministry officials to make a convincing case for support. It is probable that the idea of the GCG would have worked much better if it had a role in sanctioning how donor funds were to be distributed among different ministries and government departments.

In summary, it is clear that support for an aid effectiveness infrastructure within the Kenyan government system has not received adequate enthusiasm and support. Establishment and the structuring of the AES, for example, does not appear to emanate from a strong internal drive to achieve particular policy objectives beyond its symbolic value of demonstrating the country’s commitment to the PD. Other initiatives such as the GCG have also failed to gain traction with ministry bureaucrats being more interested in attracting donor funded programs into their departments rather than seeking the PD compliance.
Coordination Efforts Among Donors

The Development Partners Coordination Group (DCG) is the organ that overall brings together donors within Kenya. Representatives of about 19 donor agencies are actively involved in the DCG which began regular monthly meetings in 2004. From their regular meetings and ability to rally donors together in addressing issues of their concern, it has also been able to mobilize its equivalents at the sector level to handle sector-related issues. Consequently, in the general Agriculture Sector, the donors formed the Agriculture and Rural Development (ARD) Donor Group that meets on a monthly basis to deliberate donor concerns and aid coordination issues at the sector level. Interviews with some of the donor representatives showed that the ARD had a membership of about 17. All of them are part of the OECD/DAC group, although only ten meet regularly. Interviews also showed that through these meetings, the donor representatives have been able to share information about their activities, but they could sometimes use them as avenues for discovering opportunities for cooperation.

In comparison to what goes on between government ministries and departments, donors certainly appeared better organized and keen to portray some level of commitment at harmonizing their activities as per the requirements of the Paris Declaration. Key informants credited the rotational three-member committee that runs the ARD as the key in providing leadership and driving its agenda. However, during an interview with the then Chairperson of the ARD, it was apparent that goodwill from the donors alone was insufficient to guarantee progress in the implementation of the PD even amongst donors themselves. That there were limits to the outcomes of donor deliberations and irrespective of how often they met, their actions were insufficient to replace the input of the Kenyan government and the true owners of the Agriculture Sector. Conceding that donors had their own preferences on programs and projects, the chairperson’s view was that the Kenyan government needed to weigh in strongly to provide guidance so that donor interests and other factors such as duplication and fragmentation of development efforts would not derail the country’s strategic objectives. Most ARD members were in agreement that the peer mechanisms within the ARD to self-regulate donor actions were insufficient because they lacked the legitimacy that was in the hands of the Kenyan government. In recognition of this challenge, the leadership of the ARD had been keen on establishing a forum that would brought together the donors and the government in which the government through the Ministry of Agriculture could assume the leadership role. Already, contact had been initiated with the Cabinet Secretary of the Ministry of Agriculture for this engagement to proceed. It however remained unclear how successful this initiative would be, given the dominant view that the initiation of the engagement processes should have begun with the “owners” (in this case the relevant ministry of the Kenyan government) and not the donors.

There were undertones even amongst the donor representatives and expatriate community that strong ‘donor-only’ forums created an exclusive “club of donors” that alienated other stakeholders and networks necessary for achieving development objectives. Most of the government officials approached on this matter were in agreement observing that expatriates
working for donor agencies had created their own comfort zones that hindered enhanced interaction with local players in the interest of the sector. One officer’s comment was instructive:

These donor experts are comfortable meeting on their own. I think that they consider themselves to have a superior view of the situation at hand or they just do not have value for discussions with us.

In addition to exclusivity among donor agents, officers also mentioned that exclusive relationships also occur between donor agents and specific government or NGO officials who may act as ‘gate-keepers’ as per their privileged positions. This was thought to limit healthy interaction that could be helpful in achieving comprehensive solutions to issues at hand. Others saw this as emanating from the premium value that has become associated with the ability to develop a working relations with donor agents, where those who make it become protectionist. Nevertheless, it must also be appreciated that the level of interaction is sometimes dictated on a needs basis, and that donor agencies may often choose to reach out to specific senior officials because of their power and ability to make things “happen”.

In summary however, other signals emanating from donor representatives (e.g. the U.S.) suggest that some donor agencies remain suspicious of the government systems which they see as not meeting their threshold on matters such as legitimacy, competency and corruption. Meanwhile, regular meetings between donor agents are likely to remain intact but with little benefit to improvement in coordination and harmonization of donor activities. In the absence of strong oversight, donors appear content that their regular meetings and sharing of information is adequate in meeting their PD requirements.

**Donors and Government: The Fate of Joint Efforts in Sector Coordination**

Joint effort at coordination between donors and government should remain a key ingredient for progress. The Kenya Joint Assistance Strategy (KJAS) was a significant milestone in this process because through it donors agreed to support Kenya’s Vision 2030 development strategy on the basis of the three pillars of encouraging economic growth, investing in people, and strengthening institutions while improving governance (HAC, 2007). Unfortunately, the original KJAS was revised in 2009 and was meant to expire by 2012, and traction towards revision appears to have lost steam. For example, although a post Busan report on Kenya makes mention of the KJAS indicating that efforts were underway to revise it, nothing substantive has since come out. At the sector level, efforts by the government ministries and donors at developing a coordination framework to ease design and implementation of development programs are yet to make any substantive progress.

Formation of the Agriculture Sector Coordinating Unit (ASCU) in 2005 was one of the most significant efforts towards sector coordination in agriculture. Its establishment was part of the resolutions contained in the Strategy for the Revitalization of Agriculture (SRA) which sought for a coordinated approach between the government, donors and the private sector in the running of the Agriculture Sector (Poulton & Kanyinga, 2014). Although the idea of the ASCU was loaded with the greatest of intentions, by 2014, the unit was simply not as active and as strong an
organization as had been purposed, and by 2015 it no longer existed. In an interview, one expert who was privy to the ASCU activities observed that the convening of the ICC had become difficult because the Permanent Secretaries were all too busy carrying out their individual mandates, and there was generally little time to convene as a group. Although a revolving chairmanship had been proposed initially, this was not implemented and therefore ownership issues of the ASCU processes cropped up as a challenge. Interviews, especially with officials of the Ministry affirmed that the ASCU itself was not well grounded within the government system and its existence relied greatly on the goodwill of a few top ministry officials and the generosity and pressure from development partners. Within the top ministry hierarchy, it was widely accepted that the ASCU was a donor driven organization that lacked legitimacy within the government and that its functions were in competition with other legitimately established organs of the Ministry. Contrariwise, the DAC sector aligned donors remained the greatest supporters of the ASCU, and this support extended even by donors known not to be enthusiastic of government led processes.

Being reliant on donors, the ASCU on its part seemed unable to push donors to comply with the commitments they made on the aid effectiveness front. Similarly, since it did not have a strong grounding within government, it would have been ambitious to have great expectations on the ASCU’s ability to steer the government into good outcomes on the Paris Declaration. Apart from the murmurs within the Ministry of Agriculture, the actions of the central government also demonstrated the ASCU’s shaky position. In one example, the central government ignored a planning framework known as the Medium Term Investment Plan (MTIP) that had been developed jointly between the Ministry and donors through the ASCU. Instead, it went ahead and commissioned its own framework. The Medium Term Expenditure Framework (MTEF) was officially utilized by the government as a planning framework for the agriculture sector strategy. The outcome of this was a level of confusion and dismay particularly amongst the donors in the Agriculture Sector who agonized on whether it was worthwhile for them to continue using the MTIP as a guide for their support for the sector after the government had pulled out of it.

Apart from the challenge of competing sector definitions, another issue that came up during field work for this study was what was observed as the formation of multiple donor groups with sector related objectives. The original Agriculture and Rural Development Group (ARD) driven through the KJAS considered itself the donor group in charge of the Productive Sector and pursued issues on agricultural value chain development while working closely with the Ministry of Agriculture, Livestock and Fisheries, and the Ministry of Cooperative Development. However, another donor group had recently been established and known as the “Private Sector and Trade” group mobilized through the Ministry of Industrialization. Participation in the new donor group was similar in terms of agencies represented (each agency possibly sending a different person to represent them). At the time of this research, the new donor group had identified seven (7) value chains to work on, all closely mirroring the ARD’s activities and amounting to possible duplication of efforts. Another loose group of donors (led by the Swedish) focused on implementation of the Agriculture Sector Development Strategy (ASDS), a sector-wide program based at the Ministry of Agriculture and initiated through the Agriculture Sector Coordinating Unit (ASCU).
In retrospect, the ASCU’s legitimacy problems can be traced to the occasions when the government is seen as undermining some of the ASCU-led processes. The dilemma being that the ASCU is supposedly an established government agency yet the reality has been that its legitimacy is not immune to intrigues within the government, formal or informal. Sector experts I interviewed pointed out that the ASCU also suffered from the inability of its constituent organs to function fully and provide the expected direction for the sector. Some of the failures related to the practicability of the said organs – for example, some argued that it was difficult to expect Permanent Secretaries in charge of the different ministries to meet frequently as an ICC when each of them had a full plate in terms of individual responsibilities for their ministries. Another argument was that not all ministries had equal interest in all the issues in the domain of the ASCU and therefore it was unrealistic to expect consistent participation and a general sense of being in the core of the ASCU agenda. Consequently, it was said that only the three ministries of Agriculture, Livestock and Cooperatives found the need to meet more often. Other issues bordered on supremacy wars between personalities in the different ministries exacerbated by the fact that the ASCU was hosted by one of the ministries and therefore seen as an appendage of that ministry. Matters were made no less difficult by a perception that the ASCU’s existence seemed to rely on specific personalities’ incumbency in top government offices. The 2013 change in government was, for example, said to have been particularly unfavorable to the ASCU’s promoters in the civil service. What followed was an open hostility between the ASCU and the Ministry of Agriculture leading to the arrest of top ASCU officials who subsequently sought a court intervention and a judicial review (Kenya-Law, 2014; Musa, 2014). By 2016, the only vestiges of the ASCU that are still visible are their former offices and a modern boardroom bearing its name at the Ministry of Agriculture’s Kilimo House in Nairobi.

In light of these findings, it is pertinent that some level of uncertainty still bedevils the joint efforts between the government and donors. The demise of the ASCU is quite informative in this case as it was originally intended to facilitate coordination of the various players in the sector including donors and the government. With the agriculture functions now devolved, coordination of sector activities will be further complicated as there may be need for each of the counties to have their own frameworks through which they can deal with donors operating in their respective counties. Given the difficulties observed with the ASCU and national level coordination, it is safe to predict that it will take a while before any semblance of a workable framework is achieved at the county level.

**Effectiveness Structures: A Focus on the Kenyan Government Leadership Role**

From observations, the Kenyan government-led aid effectiveness institutions and forums are much weaker and less active when compared to those established by donors. These weaknesses are laid bare through failures to convene frequently, lack of clear agenda and the fact that most of them do not exist beyond the Ministry of Finance as reported by Nepad (2013). For example, although the Ministry of Agriculture implements numerous donor-funded programs, the aid effectiveness unit at the Treasury is yet to extend its presence to the Ministry. Without a strong
link, it is hard for the unit to influence decisions at the Ministry where officials often engage
directly with donors for possible collaboration. Farmers and other beneficiaries are further
removed for them to have any sort of awareness of their existence and implementation.

With the concept of ownership vesting greater power on recipients on matters of
prioritizing donor fund utilization, it would be expected that recipient governments seize the
opportunity and lead the processes of establishing the necessary structures for rapid
implementation – especially so considering that aid in the past was based on donors dictating
conditions. In this case however, the weak arrangements in place signal a lack of a strong internal
drive from top officials to make PD implementation a priority. The inability for action to
seamlessly permeate into every government department implementing donor funded programs or
projects implies that the structures put in place retain their mechanistic nature as derived from the
international system that drives the aid effectiveness policies. This is problematic as success in
diffusion of international policies have often been associated with processes of interpretation and
gradual adjustment to suit the local context (Stone, 2012). Consequently, the structures in place
lack reflective learning or normative mimicry, a situation that has been associated with
dysfunctional policy transfer (Sharman, 2010). Hence, Kenyan authorities within the Agriculture
Sector do not exhibit the assertiveness that is expected of a country in a middle income bracket.
Analysis of Kenya government officials’ speeches during the PD related functions led to similar
conclusions – Kenya was not providing strong leadership on its development agenda during her
engagement with development partners. This view was consistent with what has been expressed
elsewhere (ROA, 2014, p. 63). This state of affairs is in contrast with some other African countries
including Botswana, Ethiopia and Rwanda that have been said to exhibit greater control over aid
negotiations (Whitfield & Fraser, 2008).

In this particular case, it may be necessary to consider the impact of the historical factors
associated with the agriculture sector in relation to Kenya’s development partners. Unlike other
sectors that are attracting newer donors, the Agriculture Sector remains dominated by traditional
OECD-DAC donors. The significance of this is that the baggage of the previous donor
conditionality relationship may be a cause for continued unequal relationship in aid negotiations.
Second, the whole idea of the PD in itself presents a dilemma of sorts for those who have
experience in “negotiating” for projects with donors. Generally, there is a perception among
government officials that they (government officials) and the donor agents naturally hold opposing
views, and that success in aid negotiation is only possible if one is able to tune their ideas to fit in
with what the donors require. This is a perception that recognized the primacy of donors and the
need to approach them carefully and skillfully as being the necessary bear minimum. By being at
the forefront of the PD which champions recipient ownership (‘recipient-like’ views as opposed
to ‘donor-like views), the donors ‘steal the show’ and complicate the available options for
government officials in terms of what body of ideas they are entitled to as agents for the recipient
of aid at the negotiating table.
Conclusion

Analysis of the performance of the various organs established to implement PD in Kenya’s agriculture sector reveals a major weakness in the aid effectiveness infrastructure. Donors seem enthusiastic to show that they are “walking the talk” through the establishment of active donor forums. However, as demonstrated in this paper, these forums have been more successful as opportunities for donors to “talk at each other” rather than to dialogue and develop a unified working relationship with the government officials. In other words, the forums have become an “exclusive club” where the members retreat into the comfort of other expatriates. Consequently, regular interaction between donors is yet to yield such things as a division of labor protocol, joint programming or resolutions to compel all donors to channel their aid through the country system. There is therefore some level of inaction that is inconsistent with the public image that the donor agencies project. For this reason, I argue that donors who are themselves responsible for the establishment of the PD are under pressure to show their commitment to it for political reasons. In doing this however, they are confronted by other competing interests and factors. One is the strategic interests that have previously been described as motivating donors to give aid (Gounder, 1994; Maizels & Nissanke, 1984; Schraeder, Hook, & Taylor, 1998; Younas, 2008; Youngs, 2004). Although donors in this particular study did not admit openly that their aid had strategic objectives, these could be gleaned from some of their policies and actions. For example, most donors chose to fund specific sub-sectors and not others. They were also more concerned about success being attributed to their actions rather than the overall output of aid. For this reason, joint programming has been resisted with donors shying off from e.g. the ASDSP, which was seen as being dominated by Sweden.

In addition to strategic interests, a number of donors in the agriculture sector in Kenya are wary of channeling their aid through the established government system, and instead choose their own ways of implementing projects and programs. Although again the reasons for these were not explicit, some of the donor representatives mentioned corruption among other system failures as deterrents to fully trusting the government system. For donors to adopt “conditionality-like” policies in an era of the PD appears as a contradiction of sorts because the cardinal principle of the PD is recognition of the self-determination of recipient countries led by democratic regimes. However, with the increasing importance that donors are attaching to the political economy analysis of recipient countries (OECD-DAC, 2005; Scott, 2007), these analytical reports seem to gain ground as instruments to validate donors’ disinterest to fully implement aid effectiveness principles.

On the Kenyan government side, the aid effectiveness mechanisms in place have a different kind of weakness. They have failed to permeate through the various departments involved with donor programs, and as a result, knowledge about them is not widespread. Their presence is limited to the Ministry of Finance (Treasury) and their operations are less visible in comparison to related activities among donor agents within the country. This researcher suggests that this failure has come to be because of a lack of interest and motivation within Kenyan authorities to internalize the PD concepts and domesticate them through a process of interpretation. Internally, this cascades
to either insufficient demand to push these processes forward or existence of other competing interests.

Another perspective to this is external where analysis points to the weakness as emerging from the fact that the PD processes rely on domineering strategic ideas proposed by its originators, that is, the donors who are also known to be the drivers of modern hegemonic ideas. Although the concepts themselves are shaped to present the government as an equal partner, i.e. the recipient and “owner” of the funded development initiative, donors are able to utilize soft forms of coercion among other covert strategies (Dobbin, Simmons, & Garrett, 2007) to limit independent initiatives that could enrich a government’s own PD initiatives.

Lastly, challenges to diffusion of aid effectiveness principles into Kenya’s agriculture sector can also be analyzed on the basis of the incentives/sanctions or normative pressure that many authors have argued as driving compliance (Checkel, 2014; Kelley & Simmons, 2013). Incentives for the PD implementation have mainly relied on the international forums that drive the aid effectiveness/effective development cooperation agenda. This form of incentive that is externally driven is insufficient to generate adequate action especially from the Kenyan government. The researcher therefore argues for the need to strengthen mechanisms of citizen participation and oversight over aid effectiveness architecture thereby ensuring greater accountability from lead agencies involved in the development cooperation processes including government bureaucrats. Relying on the engagement forums between Kenyan government and sector donors on their own is not adequate to induce compliance. With the ongoing devolution of agriculture functions in Kenya, it is expected that important development cooperation relationships will now be situated at the county level unlike in the past where these were highly centralized. The new aid architecture structures will be better placed if they adopt better accountability mechanisms.
References

Devolution of Power and Woreda\(^1\) or District Development in Benshangul Gumuz Regional State: The Case of Metkel Zone (North West Ethiopia)

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Abstract

Decentralized governance offers opportunities for achieving development through good governance and community participation at the grass root level (Ayenew, 2007). Ethiopia has adopted two phases of decentralization, namely decentralizing of power from the federal government to the regional level and from the regional to the woreda level (Gebre-Egziabher & Berhanu, 2007). Thus, this study has aimed at assessing the effect of the woreda level decentralization on the development of the Metekel zone. In particular, it examines the nature of political, administrative and fiscal decentralization in woredas. The study was conducted in two selected woreda, Bulen and Mandura. Data were collected from primary sources with the help of questionnaires, interviews and observations. The primary data were also supported by secondary documents such as federal and regional constitutions, proclamations, regulations, local development plans, official performance reports, and magazines. The study revealed that woreda level decentralization actually has influenced development at the grass root level in the Metekel zone in general. Better infrastructural provisions (education and health) were witnessed in the woredas. This is due to better community participation in the decision-making process and availability of opportunities to express their interest. Though, more is expected, the financial capacity of woredas has also registered progress. The shortage of qualified manpower and weak community participation in development activities were other factors that have impacted the further performance of woredas.

Keywords: devolution, woreda, development.

Introduction

Various authors commonly classify decentralization into three categories; namely, administrative, political and fiscal decentralization. Administrative decentralization comprises the set of policies that transfers the administration and delivery of social services such as education, health, social welfare, or housing to sub-national governments (Falleti, 2006). The political decentralization normally refers to situations where political power and authority have been partially transferred to elect and empower sub-national levels of government ranging from village councils to state level bodies. It is a top-down process, which aims to give citizens or their elected

\(^1\) Woredas are third-level administrative divisions in Ethiopia.

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representatives more power in public decision-making (Binder et al., 2007). The third category is fiscal decentralization. It entails the authority raising revenues or accessing transfers and making decisions on current investment expenditures (Gebre-Egziabher & Berhanu, 2007).

Financial decentralization is expected to facilitate access to resources by the local governments. It involves devolving budgetary and spending powers to districts (Muriisa, 2008). The process of decentralization in Ethiopia to the lower levels of government has so far passed through two stages: the first stage is the devolution of power to the regional states with substantial legislative, executive and judicial powers while the second stage is the decentralization of substantial authority to the woreda administration, which is the lower level of government (Tucho, 2006). In light of the above argument, Gebre-Egziabher and Berhanu (2007) noted that the motivational force for this was zonal and regional authorities had a controlling, checking and monitoring power over the activities of woreda governments. These circumstances prompted the central government to take an initiative to further devolve powers and responsibilities to the woredas in 2001 (Gebre-Egziabher & Berhanu, 2007). This implies that at the second phase of decentralization, woredas have been given the opportunity and responsibility for self-administration.

According to Ayenew, (2007), the major initiative for the devolution of power to the woreda was to delegate decision making authority to the woreda and transform them into stronger institutions of local democratic governance and creating an efficient means for delivering public services. Accordingly, devolution of power offers opportunities for achieving development through good governance and community participation at the grass root level. It can support development by encouraging transparency and accountability, building local participation in public decision-making processes, empowering communities, and increasing their sense of belongingness. In spite of this opportunity, the nature of the practice of political, administrative and fiscal decentralization and its impact on development of woredas is under investigation.

**The Specific Objectives**

In short, the specific objectives of this research is:

- To identify the nature of political power devolution to the woreda in the Metekel Zone;
- To assess the environment of administrative and fiscal autonomy of power devolution in the Zone; and
- To examine the effect of the devolution of power on the woreda development.

**Methodology**

The selection of woredas was based on socio-economic performance. Consequently, two towns namely Mandura and Bulen had been selected purposely as the sample for the study. Mandura Woreda, with the capital of GilgelBeles, is serving as the capital of the Metekel Zone. Because of this status (the zone and the woreda capital), there is special attention to the woreda which enables it to offer better administrative functions. In comparison to the rest of woredas, Bulen Woreda is in the zone and has demonstrated better performance.
The studied population from the sample woredas included the woreda’s administrative office heads, the zonal work and urban development office head, municipals, public sector office heads (education, health, water, financial and economic office, and woreda capacity building). In addition, low administrative units (kebele administrators) were also the part of the sample. Add to these employees from the education, health, water and municipal sector, and knowledgeable local elders from each kebele that had been included because they are principal bodies practicing the devolved power. Therefore, these are believed to be representative because they have been taken from different segments of the population.

Both primary and secondary data were employed for the purpose of this study. The primary data was obtained through interviewing local elders, service experts, kebele administrators and woreda political appointees. The local elders that had been selected for interview were those who usually participated in local affairs and were recognized by community members. Of these, 14 elders from the two sample woredas were interviewed. The selection was made using key informants. From experts, group 6 samples were taken into consideration. In regard to the political appointees, the Metekel Zone Ministry of Work and Urban Development head, woreda administrators, heads of woreda education and capacity building, health and finance and economy, water board and town municipal were interviewed. From the two woredas, 13 informants were taken into account. Furthermore, the woreda kebeles’ administrators were also interviewed, which numbered four.

In addition to the interviews, self-administered questionnaires were completed by education, health, water board, finance and economy, and municipal sector office employees to support other sources. From this part of sample population, 30 respondents were selected. The secondary data was obtained from published and unpublished materials such as the federal and regional constitutions, proclamations, regulations, local development plans, official performance reports, and magazines.

**Major Finding**

**Political Representation**

Based on power given by the Federal Democratic Republic of Ethiopia, the Benshangul Gumuz Regional State has devolved power to woredas. Consequently, woredas are being led by woreda councils. As confirmed in the revised regional constitution article 86, the representatives are appointed through periodic elections. It states that “…They shall be elected directly by the people residing in kebeles within the woredas and are accountable to the people who elected them.” Thus, it is possible to say that there is written legal foundation for self-governance of woredas in the region.

The Metekel Zone is among the three zones of the region that has obtained this right. From the interview of officials (woreda political representatives), it has been found that one indication of political decentralization in the zone is the representation of different ethnic groups. This is supported by the argument of Muriisa (2008) that decentralization allows for greater representation for ethnic groups in development policy, decision making, and implementation. In the case of the
Bulen woreda, the existing ethnic groups can be categorized into three: namely Shinasha, Gumuz and others (Amhara, Oromo and Agew). Of these, the first two groups are indigenous. As a result, the political power is shared between the Shinasha and Gumuz people. The Shinasha possess the woreda administration council whereas the woreda council (legislative body) is constituted by the Gumuz. But in the case of the Mandura Woreda, the situation is a little bit different. The ethnic constituency is similar with that of the Bulen Woreda, but here Gumuz are the largest in number. Unlike the Bulen, all the woreda seats (executive and legislative) are occupied by the Gumuz people.

Even though the existence of self-governance is reflected, a defect is being observed on the other side. The defect is the uni-ethnic group representation in the case of the Mandura Woreda, and the total absence of other non-indigenous groups from the woreda administrations in both cases. The political representation is therefore not in line with that of the ethnic composition of the region.

At the regional level, all ethnic groups residing in the region are fairly represented. Of the 99 regional council seats, 39.6% are occupied by Berta (25.90% of the total population of the region), 34.56% by Gumz (21.11% of the total population), 10.89% by Shinash (7.59% of total population), 3.96% by Mao-Komo people (2.86% of the total population), and 10.89% by other non-indigenous groups (42% of the total population). So at the regional level, power sharing reflects ethnic diversity, whereas in the study area, the absence of the other ethnic groups as political appointees is one of the weak side that needs improvement.

In addition to what has been pointed out earlier, limited educational background of some appointees is another challenge. According to many respondent views from the two woredas, weak educational background has created a lack of understanding among each other. Moreover, the woredas’ ability to prepare detailed directives is in general at a low level though power is legally vested to the woredas. However, according to woreda political appointees, there are some beginnings towards formulating detailed regulations and directives.

**Administrative Aspect**

Administrative decentralization has influence on the service delivery system. The organizational structure of certain communities has a great influence on the way service is being delivered to citizens in any nation. So, it is crucial to see the organizational structure first.

The decentralized organizational sector structure in Figure 1 reflects the existence of the decentralized administration within woredas in comparison to the period before decentralization. The administrative structure before decentralization was not detailed as is revealed in Figure 2.

The decentralized administration could be one of the reasons for the expansion service delivery in the woredas. The following illustrates the provision of services before and after the ushering of decentralization to the woredas.
Table 1 reveals that community participation in the construction of schools in the woreda increased after woreda decentralization (2002). One of the interesting outcomes of decentralization is the expansion of Alternative Basic Education (ABE) schools that considers the socio-economic and cultural settings of the local community. The source of construction materials and man power is from the local community. Teachers are also from the community and they can speak local languages. Generally, Figures 1, 2, and Table 1 could imply that decentralization has enabled the expansion of educational services. As responded by woreda executives, this is due to the fact that the contribution of decentralization has created awareness and consciousness among communities through local governors.

**Figure 1:** The institutional structure of woredas after woreda decentralization

**Figure 2:** The institutional structure of woredas before decentralization

*Source: Interview with Bulen woreda administrator*
Table 1

Number of Schools Constructed Before and After Decentralization in Bulen Woreda

<table>
<thead>
<tr>
<th>Level of class</th>
<th>location kebele</th>
<th>Year of its establishment</th>
<th>Built by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Primary (1-8)</td>
<td>Bulen 01 1958/1966</td>
<td>Government</td>
</tr>
<tr>
<td>2</td>
<td>Primary (1-6)</td>
<td>Baruda 1970/1978</td>
<td>Government</td>
</tr>
<tr>
<td>3</td>
<td>Primary (1-6)</td>
<td>Mora 1973/1981</td>
<td>Government</td>
</tr>
<tr>
<td>4</td>
<td>Primary (1-7)</td>
<td>Amange 1976/1984</td>
<td>Government</td>
</tr>
<tr>
<td>5</td>
<td>Primary (1-4)</td>
<td>Gongo 1977/1985</td>
<td>Government</td>
</tr>
<tr>
<td>6</td>
<td>High school (1-10)</td>
<td>Dobi 1978/1986</td>
<td>Government</td>
</tr>
<tr>
<td>7</td>
<td>Preparatory</td>
<td>Bulen 02 1987/1995</td>
<td>Government</td>
</tr>
<tr>
<td>8</td>
<td>Primary (1-6)</td>
<td>Apar 1998/1997</td>
<td>Government</td>
</tr>
<tr>
<td>10</td>
<td>Primary (1-6)</td>
<td>chelanko 1992/2000</td>
<td>Government</td>
</tr>
<tr>
<td>12</td>
<td>ABE</td>
<td>Mojinb 1998/2006</td>
<td>Government</td>
</tr>
<tr>
<td>13</td>
<td>ABE</td>
<td>Sega 1998/2006</td>
<td>Community</td>
</tr>
<tr>
<td>14</td>
<td>ABE</td>
<td>Goja 1998/2006</td>
<td>Community</td>
</tr>
<tr>
<td>15</td>
<td>ABE</td>
<td>Dorejela 1998/2006</td>
<td>Community</td>
</tr>
<tr>
<td>16</td>
<td>ABE</td>
<td>Godararie 1998/2006</td>
<td>Community</td>
</tr>
<tr>
<td>17</td>
<td>ABE</td>
<td>Motish 1999/2007</td>
<td>Community</td>
</tr>
<tr>
<td>18</td>
<td>ABE</td>
<td>Gushagonj 1999/2007</td>
<td>Community</td>
</tr>
<tr>
<td>19</td>
<td>ABE</td>
<td>Dukis 1999/2007</td>
<td>Community</td>
</tr>
<tr>
<td>20</td>
<td>ABE</td>
<td>Azem 1999/2007</td>
<td>Community</td>
</tr>
<tr>
<td>21</td>
<td>ABE</td>
<td>Tachmeti 1999/2007</td>
<td>Community</td>
</tr>
<tr>
<td>22</td>
<td>ABE</td>
<td>Atoki 1999/2007</td>
<td>Community</td>
</tr>
<tr>
<td>23</td>
<td>ABE</td>
<td>Adisalem 1999/2007</td>
<td>Community</td>
</tr>
</tbody>
</table>

ABE: Alternative Basic Education

Note: Many schools were upgraded after decentralization (2002) by the community

Source: Bulen Woreda educational and capacity building

The health service delivery situation shows similar changes due to the enactment of decentralization in the woredas. Based on discussions with community elders, there was only one clinic for the whole populations of woredas before decentralization. After decentralization, however, the service situation improved in both woredas studied. In the case of the Mandura Woreda, at present there are eight health service centers. This has increased the health coverage of the woreda to 75% and vaccinations coverage to 59% in 2008 (BGPDPGLP report, 2009). Similarly, the clean water supply has grown from zero (before decentralization) to 58% in terms of coverage for the Mandura Woreda, and it is planned to increase the coverage to 98% in 2014 (BGPDPGLP report, 2009). It should however be noted that though clean water projects have increased, river water is the principal source of water in the woreda. Therefore, a caution is needed in understanding the water coverage data.
The participation of community in decentralized service delivery is the most important aspect of development. But, most of the time community interests are not directly assessed and identified in the sample woredas. Many officials and service experts have responded that the residents’ ideas are usually reflected in the woreda plans via kebele administrators. It is kebele councils that gather information from communities and pass it to the woredas. It is in very rare cases that woreda sector offices consult or discuss with the communities directly on the quality and quantity of service being delivered. In principle, the woreda civil service offices have been established to hear the communities’ interests and requests. Even though a legally established mechanism exists, the performance remains poor.

Consequently, communities indirectly use different occasions to express their dissatisfaction. These occasions are weekly kebele development dates when the woreda consults the kebeles for its own purpose and informally informs the concerned sectors. But, responses for informal ideas are weak.

Despite the existence of such hindrances, there is a strong side of the woreda in community participation. The kebele’s ability to plan and include it in the woreda’s plan is one strong side of participation. The kebele council prepares an annual plan in line with woreda sector offices (education, health, municipals, water, etc). The woreda sector offices then incorporate the plans in their respective plans before the woreda plan gets ratified by the woreda cabinet.

In connection to community involvement, it is very essential to recognize female, youth and elder contribution in the woreda development plan and its implementation. The data from field interviews revealed that significant change has been observed regarding females’ participation. They play a role in the woreda plan through the office of female affairs. Formerly, this office had existed, but it is only recently that positive changes are noted. For example, the head of the female affairs office became a member of the woreda council after decentralization. This enabled the woreda to promote female participation in the preparation and implementation of plan. This in turn has influenced other service sectors such as education to give emphasis to female students. As a result, tutorial classes, guidance and counselling services, and financial support have been offered to females by education and capacity building offices and different NGOs.

Contrary to this, the interviews showed that youth participation is minimal. The woreda youth and sport office exists only nominally with unclear roles and responsibilities. It seems that the weakness has emerged from limited skills and capacity of the woreda to communicate with and mobilize youths.

From the discussions of infrastructural provisions and community participation, one can claim that the administrative decentralization in the Metekel Zone is a devolution type. There is authority and power to make decisions on local development issues with moderate community participation. However, there are still problems that need solutions. As stated by political representatives and civil service experts, these problems in the woredas can be summarized as follows:

1. Unnecessary interference from zone or regional government. This involves enforcing woredas to accept new employees without the interest of the woreda. Mostly, the
enforcements are in informal ways through phone calls or orally. The interferences also are manifested in the delaying of the rights (benefits) of employees which is the main cause for staff turnover of experienced personals in the woredas;

2. Limited capacity in understanding and interpreting rules and regulations. As a result, there is a mixing of activities between the woreda councils and woreda administration councils; and

3. Failure of some executives (heads) to participate on weekly or monthly meetings (particularly in the Mandura Woreda).

**Nature of Fiscal Autonomy**

Political and administrative decentralization without fiscal autonomy is nominal. This is stated by Falleti (2005) as “There is no decentralization without fiscal decentralization. This is because one cannot use administrative and political authority or power unless one is fiscally empowered.” So, it is important to understand the nature of financial authority in the zone. Information from interviews with woreda executives shows that within the realm of fiscal decentralization, significant changes have been observed, and it can be summarized as: increments of the woreda’s ability to identify resource sources and use them, freedom of woredas to run finance for the purposes they intend, and the enhancement of woreda capacity to contact Non-governmental organizations (NGOs) to get significant support.

The interviews revealed that the source and the extent of financial collection have been improved. Most of the sources are block budgets, agricultural taxes, income taxes, penalties, taxes from natural resources such as marble and gold (in Bulen), taxes on the exporting of cereal and cash crops, and taxes on importing of manufactured goods. In addition, the private investors’ role is also significant. The direct tax from land being used by investors and income tax from their employees are principal sources of the woredas’ income. However, beyond taxes, the advantage of natural resource exploitation by investors within a town is not visible. A woreda’s autonomy to communicate with NGOs has enabled them to gain multi-side support. The support of NGOs is mostly in the form of social services such as building schools, health centers, clinics, and clean water supply, which indirectly save the expenditures of woredas. However, the support focuses on the respective interests of the NGOs.

The manifestation of authority over block grant budgets can be expressed as being like the federal government where the regional government allocates a budget among the woredas that is based on the woreda’s capacity to generate revenue and on the population. In turn, the woredas have started to allocate a budget to their respective sub-sectors related to education, health and the clean water supply. The respective sectors again subdivide the budget among themselves.

The most remarkable freedom in a woreda’s fiscal autonomy is the use of excess revenue within respective areas of administration. There is a standard for each budget year that specifies what woredas are expected to collect. In case woredas are able to collect revenues beyond what is expected from them (excess revenue), they can use the revenue under the approval of the woreda council. But this must be acknowledged by the regional government.
Despite the autonomy and the financial increment, the financial operation system of the Bulen and Mandura Woredas is not free from problems. In most cases, the constraints are not caused by decentralization. Rather, they are due to implemental issues. According to service sector heads responses, the major problems in relation to finance in both woredas involve:

1. A high gap created between what is proposed and what is allocated: The gap is due to a low-income base and small population, which are the main criteria in budget allocation. The consequence of this problem has been that the woreda sector offices were forced to revise their plans. Usually the revised plans involve reducing the number of employees from what is intended to hire for the fiscal year;

2. The selfish desire among sectors. This includes top executive bodies of woredas. All sector heads prioritize their sector to get a greater budget proportion. Such conflicting interest is usually solved by the cabinet. However, the cabinet is not free from the problem. For example, under the guise of vehicle maintenance, higher budgets are allotted to the woreda and administration councils. This has influenced the performance of governmental development activities like education and health service directly or indirectly. For example, the financial shortage in the health sector may result in an expansion of disease which can influence the members of education (teachers, students, experts, etc);

3. There is also a tendency of using sections of the budget for other purposes regardless of for what it has been proposed (budget wastage). Through excessive field works, officials waste much of the budget. This has a direct repercussion on budget availability. Moreover, in some sectors, usage of the allocated budget is unplanned, which is always followed by a deficit of finances at the middle of the budget year; and

4. Another finance related problem is a minimum or absence of direct participation of community members in budget planning and processing. It is mostly only sector office heads who prepare plans. A community’s opportunity to know about the woreda budget is when it is posted on the board after being ratified by the council. The absence of community participation may become a factor for loss of trust by the community.

**Recommendations**

One of the major problems identified regarding to the capacity of the woredas during the implementation of the decentralization program is the shortage of experienced and qualified manpower. This is the root cause for other problems in political, infrastructural, and financial administration in the zone. To reduce such problems, the existing system should be strengthened in terms of manpower that can understand and interpret rules and directives so that each woreda is able to mobilize the community for local development of activities.
References
A Framework towards Technology Creation in Africa: Focusing on Ghana

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Abstract
Underdevelopment in Africa has been historical and a global concern coupled with the quest for good governance. Several efforts have been made in academia, national governments, the international community, and other institutional arrangements to reverse the trend. These efforts however are yet to produce a lasting result as Africa is still characterized by low productivity output, poverty and a widening technology gap when compared to other developing regions of the world. Conventional approaches used to address the African problem have consistently been devoid of indigenous technology development. Technology is here seen as paramount to every form of production on which an economy is based. This study is therefore aimed at developing a sustainable technology development framework for the production industry in Africa that focuses on Ghana for socio-techno-economic development. The study confirmed the absence of a framework for technology development in Ghana and therefore, proposed one for Africa. Using data from Ghana, the focus therefore is on manufacturing of production technologies for local industry.

Keywords: Africa, Ghana, socio-techno-economic development, technology creation.

Introduction
This paper is part of an extensive work of a recently concluded PhD study that examined developing the African economy through the manufacturing of production technologies. Good governance is however the underlying factor when creating the required environment. Governance is indeed of utmost necessity to the development of any nation. As expressed by a one-time president of the World Bank, “Governance is linked to economic development” (Conable, 1991, p. 12). It provides the platform for dialogue, where development in commerce, science and technology can take place. Good governance is however extremely difficult in the face of poverty, deprivation and unemployment, especially among the youth (Barclay, 2010). This is however not to say that good governance is only possible in a prosperous economy, but rather, they augment each other.

Enhancing productivity for economic growth requires the application of technology at every stage. It is therefore the single most pronounced tool, cutting across all industries for the production of goods and services for wealth creation in any economy (AMT, 2013). However, the issue of technology is not treated with much significance in African countries’ policies (Lall &
Kraemer-Mbula, 2005). Indeed, historians have shown how Africa is historically known to eschew all forms of rotary mechanisms and is selective in adopting prevailing technologies for technical change (Austin & Headrick, 1983). On that note therefore, this paper seeks to contribute to the topic through the development of production technology in Africa for local industries. This is to create jobs for sustainable socio-techno-economic development of the continent.

Owing to the chronic and complex nature of the problem, this paper approaches the topic by developing a three-step methodological approach as a framework for implementing the development projects in Africa. This framework was derived from the concept of rhythm by Clemens and Dalrymple (2005). It allows the project to be culturally integrated with African society. To identify the three-step approach, a mixed-research methodology was employed (Johnson et al., 2007; Mackenzie & Knipe, 2006) consisting of ethnography (Wolcott, 1990), grounded theory (Corbin & Strauss, 2008, 1990) and case-study (Yin, 1984; Zainal, 2007).

The result of the study, among other things, confirmed the absence of a framework for technology development in Ghana, and the issue of technology creation for local industry was not given any priority attention. Government policies were rather geared toward obtaining loans from International Agencies to develop high-level technology to catch up with the technologically advanced countries. On the other hand, local producers and enterprises have craved the use of technology to enhance their production methods, but are unable to afford the cost of existing technology.

A technology development model was therefore proposed drawing on the work of Sagasti, (1992) as the framework for its construction. The model is to operate as a business entity to see to the manufacturing and to supply of production technologies to the local industry. It will adopt the operations of the Ghana Cocoa Board (Cocobod) as its model. This is to stimulate a drive towards the technology development in Ghana for economic growth. The model has the potential for application in other African countries and beyond.

**Study Rationale and Literature Review**

The relevance of good governance is undisputable for any society. Africa, for centuries, has been engulfed by historical and modern encumbrances. The historical burdens, as in migration, adaptation, invasion, slavery and colonization (Charles & Mamattah, 1978; Davidson, 1992; Davidson et al., 1965), have been coupled with modern challenges inherent in efforts at maintaining good governance of a statehood (Davidson, 1991; Herbst, 2000) in the face of high competition driven by technological advancements and innovations (Lall & Pitroballi, 2002).

The work of Levine (2013) to come to terms with these challenges from the perspective of Ethiopia proposes a structural opening, which “requires disinterested analysis to identify the options available in a situation, in order to enable actors to transcend the inertia and passions of the moment…” (Levine, 2013, p. 5).

This is understood to imply taking on a neutral objectivity towards analyzing the African problem for its resolution to attain a realist outcome. It could be confirmed that such an approach is laudable by analyzing a specific situation like the African problem, and soliciting various
opinions, as such: it may begin with the concept of identification as a point of departure, as deduced from Levine (2013). However, for the chronic and complex nature of the state of African technological narratives (Austin & Headrick, 1983), some authors suggest it requires a combination of factors in addition to “identifying” to have a well laid out list of recommendations (Moges, 2013). This is in view of the highly diversified multicultural and ethnic backgrounds of African society (Lewis, 2009) coupled with its historical seeming avoidance of technological advancement or technical change (Austin & Headrick, 1983; Edgerton, 2008). Indeed, it is technical change that accounts for the revolutions in human civilization (Khalil, 2000), yet, it is underplayed in the African context. Austin and Headrick (1983) have blamed it on the African culture itself, a stance contested in this study.

What may be referred to as culture is probably what Levine alludes to as “rationalizing personal conduct in everyday life” (Levine, 2013, p. 16). This personal rationalization of conduct could be fundamental to achieving any set of desired output, but culture, though not cast in stone, hence, not immutable (Beall & Ngonyama, 2009), determines the flow as in acceptance or rejection of a new idea (Adam & Cohen, 2009). Except, there can be a change in mindset. The collection of “programmed mindframe,” or behaviors that define a culture, (Hofstede, 1984) is not displaceable overnight. It is highly engrained in the structure of a society and defines its unique identity and dimensional traits (Hofstede, 1984, 2011). Thus, how to imprint a set of recommendations as the ideal response to a situation bordered within a rooted culture may be faced with the challenge of its practicability. It may be argued that the action (behavior, attitude, mindset) of a person is influenced by surrounding circumstances that invariably define the culture of the locality. This notion of culture, to a very large extent, elaborates on the technology stance in Africa as a means of discussion and analysis, but not as suggested by Austin and Headrick (1983) who portray African culture as the cause of its technological drawback.

The political atmosphere under which such aspiration could be achieved has however been very daunting. This can be seen from African history, where since the 1960s, the majority of sub-Saharan African nations gained independence (Davidson, 1992; Herbst, 1997, 2000). The indicators of good governance seen in the political atmosphere have been very unstable, impacting negatively on the economy. For example, Conable (1991) established that the development of many African countries has been unnecessarily constrained by their political instability, stating; “the political uncertainty and arbitrariness evident in so many parts of Sub-Saharan Africa are major constraints on the region's development” (Conable, 1991, p. 12).

Governance, undoubtedly, forms the defining mark in a nation’s development and poverty alleviation (Moges, 2013). The case of Ghana, as an example, demonstrates the direct relationship between political stability and economic growth.

Ghana’s Political History and the Economy

The political history of Ghana serves as an example of the relationship between governance and performance of a national economy. Historians like Warner (1960), Davidson (1972), July (1968) and many more have praised Ghana’s pre- and post-colonial political and economic
After independence (6 March 1957) and under the rule of the first president, Dr. Kwame Nkrumah, the economy of Ghana was described as impressive as earlier indicated. It was registering a positive growth rate of about 4% until the country was declared a one-party Socialist State. The declaration coincided with an immediate economic decline (Figure 1) as the growth rate began to fall from 1964 to 1966. Dr. Nkrumah was overthrown in a coup d'état by the police and military joint forces (Botwe-Asamoah, 2005). A National Liberation Council was formed by the then leaders, Lt. Gen. Joseph Ankrah and Lt. Gen. A. A. Afrifa.

Figure 1: Annual growth rate in Ghana (Source of data: World Bank, 2012)

After the coup, the economy began to register growth again, as can be seen from the graph in Figure 1, until the elections in 1969, which saw a return to civilian rule with Dr. Kofi Abrefa Busia elected as Prime Minister. From there came another decline. The military was dissatisfied with the performance of the civilian administration and staged yet another coup d'état on 13 January 1972 during which Lt. Col. Acheampong seized power. This period of military rule saw a brief rise in growth that reached its peak in about 1978. However, the Ghana Bar Association and Ghana Medical Association spearheaded demands for a return to civilian administration. Again, this interference in governance affected the economy, as it began another decline. At this stage,
Lt. Col. Acheampong was forced to resign in a palace coup in 1978, which brought another military regime into power led by Lt. Gen. F. Akuffo. The negative growth rate however continued, and in May 1979 there was another coup led by Flt. Lt. Jerry John Rawlings who seized power from the military and handed the power over to a civilian administration that same year. As such, the elections of 1979 saw a return to civilian rule when Dr. Hilla Limann came to power in June 1979. As can be seen in Figure 1, the economy registered a slight growth. The military, still not satisfied, ousted the new civilian government in 1981 making a comeback by Flt. Lt. Jerry John Rawlings to return the country to another military government, still with the economy in decline.

In 1983, the World Bank’s supported economic reforms were implemented, thus, reversing the negative growth trend. This regime survived several failed coup d'états (Agyeman-Duah, 1987). The resilience of the regime was the start of a stable political atmosphere for the country. The political stability was also reflected in a much more stable economy as can be seen in Figure 1. Subsequent changes in government were no longer through coup d'état, and these changes did not lead to adverse economic downturns.

In 1990, however, there were calls for a return to democratic rule. The incumbent president, Flt. Lt. J. J. Rawlings, won the election in 1992 to retain power, but this time as a civilian president under the National Democratic Congress (NDC) party. He served two terms of four years each, but in the 2000 election, his party lost power to the main opposition, the New Patriotic Party (NPP) led by Mr. J. A. Kufuor. Kufuor also served two terms after which, in the 2008 election, his party lost power back to the NDC led by Professor Evans Atta Mills who ruled until his demise in 2012. The then Vice President, Mr. John Dramani Mahama, was sworn in as president to complete the term of office. The presidential election in that same year saw Mahama retain the presidency, and he is the incumbent at the time of writing this paper.

The political unrest of the first three decades of independence can be clearly seen reflected in the economic performance of the country. The Ghana economy, further boosted by the discovery of oil and gas, is again seen as impressive (CIA-WorldFactbook, 2013). The question that comes up however is: How can this new growth rate be sustained, especially as Ghana still imports almost all its technologies for its local production industries? This means that importation will have to increase to maintain the growth, thus, eroding the gains made. The growth is therefore seen as superficial. Indeed, observation of such growth as this has been described by economists as fragile (Aryeetey & Fosu, 2008) because it depends mainly on primary production (Juma, 2011) and diversification (Teal, 1998). Also, the industrialization incentives and strategies put forward by various Ghana government regimes failed to yield a corresponding growth in the economy (Lall & Pitroballi, 2002). This therefore calls for a new approach to establish a foothold in an industrialization agenda. The following section presents a prospective methodology for the implementation of technology focused projects for culturally diversified societies.

**Overarching Methodological Approach**

The narrative of technology development drawback in Africa, coupled with the history of unsuccessful industrialization attempts in Ghana, requires caution in its discussion and search for
a remedy. In this regard therefore, this study has sought to establish an in-depth understanding of the Ghanaian society using the work of Clemens and Dalrymple (2005) as the framework to map out the cultural rhythm of the society to synchronize it with the development intent for cultural assimilation and subsequent growth before proposing a remedy.

This methodological approach has been seen as generic with potential suitability for a developing society like Ghana which has a mixed cultural background. The approach was indeed inspired by examining the development trajectories of selected countries like Germany, the US, China and Japan, who have been able to assimilate into their cultures the various technologies transferred from England and further developed by them, which has led to the current expanse of innovation. Comparing these countries to Ghana however revealed one major feature differentiating them; this being, monoculturalism and multiculturalism (Davidson, 1991; Davidson et al., 1965) when using language (Lewis et al., 2013) as the basis for cultural differentiation.

The overarching methodological approach was derived from the work of Clemens and Dalrymple (2005). The authors, coming from a business management background, demonstrated that rhythm is the beat in everything. They opine that “every individual has a rhythm, a customer has a rhythm, a client has a rhythm, an organization has a rhythm, this whole world has a rhythm” (Clemens & Dalrymple, 2005, p. 93-94). They continue by stating that everyone, every nation and individual, has its own peculiar rhythm and that is what accounts for the uniqueness one possesses. Indeed, the authors demonstrated that it is when different rhythms are brought together in the right note that an objective can be met. The question is how to synchronize different rhythms into a beat to achieve the set objective.

In their work, ‘the process by which different rhythms fall into synchronization with each other and then work in a parallel manner’ is called entrainment (Clemens & Dalrymple 2005, p. 99). When, for example, everyone on a team operates at a pace that fits a situation and the tempo of everyone’s rhythm is synchronized towards an objective, tempo-entrainment is said to occur. This to a very large extent accounts for the seemingly “effortless” input leading to the success of a winning team. In the business world, it underlies the force that defines a leading business that sets it on edge over its competitors.

In summary, applying the power of entrainment in this study, therefore the rhythm of the development intent (i.e. the manufacturing of production technologies), is entrained with the rhythm of the Ghanaian society. This has been done by studying its culture in relation to the subject matter to map out the pattern of its natural rhythm. A three-step approach was therefore developed in this study to serve as the initial procedure for the application of the overarching methodology. Further work may be required to develop a business model for the framework. The work of Clemens and Dalrymple (2005) may however be inundated with inherent drawbacks in association with the topic under discussion. It may therefore be helpful to critically examine the rhythm concept as the framework for the overarching methodology of this study.
Critical Perspective of the Rhythm Concept

The application of the rhythm concept as a sine qua non to success in business leadership as shown by Clemens and Dalrymple (2005) may be intriguing, but the authors themselves admit that ‘setting an effective rhythm can be tricky’ (Clemens and Dalrymple 2005, p. 97). The difficulty is in, like in a musical note, an event where any contributing factor (actor or player) introduces a wrong key, and the rhythm of the beat could be put into disarray. Just as in an orchestra, this could mean a fatal blow to an organization, or, in the worst scenario, a total collapse of a business entity or a system of operation.

The concept will require close coordination, like a conductor of the orchestra, with the full concentration of participating members. Achieving such in a real-life situation could be described as utopian when considered for application in the context of a developing country like Ghana, where issues of bureaucratic processes are deemed to be highly problematic when coupled with weak institutional framework (Price, 1975).

Moreover, the anticipation of the rhythmic concept as a total solution or an easy-to-implement philosophy could be misleading in the sense that the probable outcomes cannot be determined from the onset. This is partly because there may not be agreed upon rules or guidelines regarding its mode of application as every situation differs from the others. The non-standardization feature inherent in the concept leaves its implementation almost entirely to the discretion of the leading actors, or decision makers. The outcome of a possible failure or backlash cannot be overruled in relation to its subjectivity, hence, the need for support mechanisms. But the difficulty here is how to establish an efficient support mechanism without artificially changing the cultural setting.

The Three-Step Approach

The three-step methodological approach of this study was developed as an alternative to the non-consultative conventional approaches used by both the International Community and National Governments for development projects in Africa. Indeed, authors have shown how the conventional approaches of sporadic injection of capital into the African economy (Aryeetey & Fosu, 2008) and importation of state-of-the-art high-technological solutions (Akubue, 2000) have persistently yielded disappointing results (Barclay, 2010; Sachs, 1992; Sagasti, 1992) to resolving the economic or technological needs of developing countries (Schumacher, 1974). The economies, for example of Ghana, have not responded with a corresponding growth (Lall & Pitroballi, 2002).

Though the application of this new three-step approach relies solely on data obtained from Ghana, it has the potential for applicability in other developing regions and projects other than the subject of discussion. The approach, in simple terms, consists of a three-step procedure designed to map out the rhythm of the society and to synchronize the development intent with the said rhythm through entrainment. The procedure may therefore be summarized as follows:

1. Study the culture of the society in question and any other aspects that may be of useful interest to the development intent. That is, study to map out the cultural rhythm of the society.
2. Identify a relevant “success project” of that society. This should be a project which is socially integrated and culturally assimilated for a sense of ownership and participation. It is also necessary to observe the difficulties associated with this identified “successful project.”

3. Model that project as a template for the development intended. In the case of this study, the project of intent is the manufacturing of production technology. This could simply be referred to as the SIM Approach.

To apply this methodology to the project, the Ghanaian society was studied to map out (understand) its cultural inclination towards technology creation and development. The study identified the Ghana Cocoa Board (Cocobod) as the most suitable culturally assimilated success story in Ghana’s history. Cocobod was therefore used as the template to model the project intent, here being the manufacturing of technology for local industry.

An appropriate methodology would need to be sought depending on the project and society concerned. In this discussion, however, the methodology employed to carry out the three-step approach was a mixed research briefly discussed below.

**Research Methodology for the Three-Step Approach**

In research, a strategy, or methodology, needs to be devised by the researcher (Bryman, 2012). A methodology search to carry out the three-step approach led to the application of the mix-research approach. Mix-research emerged as a distinct research approach to merge qualitative and quantitative approaches (Greene, 2008), though predominantly this approach belongs to the social sciences. This seemingly new approach indeed has a relatively long history of application. For example, in the work of Marcus and Cushman (1982) as shown by Bryman (2012), the interpretivist paradigm was combined with the positivist paradigm in the reporting of the emerging aspect of epistemological ethnography. This makes the argument for the phenomenon of mix research even stronger.

As a relatively new approach, it suffers with inconsistencies in the use of its terminologies. Time and space will not allow distinguishing between the terminologies in this paper. Research scholars have produced extensive work in this regard (Bryman, 2012; Glogowska, 2011; Mackenzie & Knipe, 2006). The understanding espoused by Mackenzie and Knipe for such terminologies as research paradigms, methodology, method, philosophy, qualitative and quantitative research is adopted in this study.

**Choice of Methodology Mix and Procedure**

This highly inductive study from operations management background seeks to contribute a solution to the perennial difficulty that Ghana, and indeed Africa, faces in developing a domestic technological base because its local and national economy requires a deep understanding of the problem. The situation here may be termed an ill-structured problem, which, in research cannot be approached using methods of statistical or numerical values (Holmstrom & Korkeakoulu, 2006;
Munoz-Seca, 2008; Simon & Newell, 1958). They require soft methods like the mix research approach, which is mainly qualitative and sociological (Flynn et al., 1990). The methodology combination in the mix research strategy adopted for this study includes; **ethnography**, **grounded theory**, and **case study**. The approach involved collecting data in Ghana from both the rural and urban settings. The following is a brief anecdote of each methodology employed.

### Difference between Case Study and Ethnography

Case study, like ethnography, requires fieldwork and employs the same set of methods for data collection. As a result, it could sometimes be confusing as to what their difference may be that should warrant their individual consideration in mix methodology. To clarify such confusion, Table 1 was produced as an attempt to highlight the main differences between the two as distinct research methodologies having different features and serving different purposes.

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Ethnography</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observes data at micro level</td>
<td>Observes data at a macro level</td>
</tr>
<tr>
<td>Focuses on single or multiple events</td>
<td>Focuses on cultural interpretations</td>
</tr>
<tr>
<td>Research question and hypothesis are required to determine fieldwork</td>
<td>Requires fieldwork before research question and hypothesis are formed</td>
</tr>
<tr>
<td>Describes real-life situation, e.g. communication in workplace</td>
<td>Describes the specificity or generality of a cultural setting</td>
</tr>
<tr>
<td>Focuses on a particular issue (event) in an organization</td>
<td>Focuses on the whole society or organization</td>
</tr>
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### Findings and Recommendations

Significant findings were discovered from literature and fieldwork during this study. Some of the findings confirmed existing knowledge, thus, appearing as common information. Findings, nevertheless, lead to new interpretations and a broader understanding of the subject of discussion, i.e. technology drawbacks in Ghana (and Africa at large).

Inferences and deductions made from the narrative of findings, in summary, confirm that Ghana does not have a technology development framework for local industry. It was found, instead that Ghana was “locked” in an old framework of relying on importation of technological solutions. These technologies would soon become obsolete thereby creating a vicious cycle of constant replacement or upgrade.

This study attributes the observed failure mainly to the governance policy in Ghana, reflecting in the political and societal neglect to incorporate and develop indigenous technologies into mainstream modern technological solutions. As a recommendation, it could be done through the involvement of the academic and research institutions in indigenous technologies and production processes. The neglect has also led to a Ghanaian society unable to assimilate modern
technologies into its cultural structure for a sense of ownership and development, leaving the traditional technologies that are still as rudimentary as they have been through history. In addition, Ghana as a society has not been able to demonstrate the ability to generate and maintain a self-initiated approach to transform its traditional (indigenous) technology base. Indeed, it was found that there was a disconnection between education (i.e. educated Ghanaian elite) and the traditional indigenous sector.

Local industry was found to lack the technologies required for production. This is not to say the Ghanaian society lacks that ability or the technical prowess to manufacture technologies, but it simply has not proved its ability to retain the drive, as far as this study could find, and make these technologies available to local industry. For example, in Ghana and Nigeria, during the periods of economic hardship and the Biafra War, both Nations manufactured their technologies that sustained the societies throughout those periods (Edgerton, 2008; Price, 1975). But, when the incidences ended, the manufacturing activities ended. It can therefore be seen that the impetus to act as a springboard and the stimulation to sustain the drive are lacking. A fatalistic attitude towards technology creation was rather prominent as this study discovered.

It may therefore be concluded here that for Ghana to develop its technological capabilities in a consistent manner for growth, it requires a dedicated mechanism to maintain a consistent supply and creation of technology for local industry. This development should evolve from the cultural background of the society. In this way, it will become the product of the society, acting as a vehicle transcending all social barriers. Such a vehicle is one proposed in this paper as the model for the manufacturing of production technologies in Ghana. This is discussed in the following section.

The Model for Technology Manufacturing in Ghana

Recall how the three-step approach in this paper seeks to synchronize the development intent with the cultural rhythm of the society through entrainment. The concept is applied here using the work of Sagasti (1992) as a framework to construct the manufacturing model for Ghana. The work of Dr. Francisco R. Sagasti, a onetime Head of Strategic Planning and Director for Planning at the World Bank, proposed new approaches to development planning (Sagasti, 1992), as a set of criteria to address the challenges in planning theory. This set of criteria was extrapolated to the rhythm of the Ghanaian society and modified by juxtaposing each criterion with its identified equivalent component for the technology framework in a multicultural society like Ghana.

As espoused by Sagasti (1992), planning is a necessary futuristic determining factor in a development agenda. Every (minor or major) project is pre-proposed and eventually executed by the act of planning formally or informally, consciously or unconsciously. Indeed, the act of planning cuts across all fields of study. As such, it has a ‘lopsided application’ (Hudson et al., 1979) in a broad perspective. This may include analytical, conceptual, cultural, educational and others, thus, making planning an inevitable part of the process of development. Howbeit, it has rarely been applied from a sociological perspective (Portes, 1976), or in technology development discourse. Indeed, such discourse could not be found by this study as put by Portes (1976), nations
oriented toward development should explicitly abandon the models offered by already advanced societies and cut their own path.

The approach should however be capable of restructuring itself over time as suggested by Sagasti (1992). It would need to operate as an interactive and decentralized system, using cognition and compromise in decision making. He concludes that planning systems are designed and put into practice by people. It is therefore essential not to forget the role of humans. By this therefore, the system should consist of flexible, resourceful, resilient people who can tolerate a lot of surprises and ambiguity while continuing to work intellectually on complex issues (Trist, 1976).

**Constructing the Ghana Technology Model**

The Ghana Manufacturing of Technology Model (GMTM), otherwise called, the Model, is constructed from the work of Sagasti (1992), shown in Figure 2. The constituent elements in the Model are the Manufacturing Technology Board, called the Board (like the Board in Cocobod). The Board will consist of a highly experienced and multidisciplinary team with broad knowledge and will be at the helm of affairs providing leadership. There would be Manufacturing Centers located throughout the country for the users in Local Industry.

![Figure 2: The Ghana Manufacturing of Technology Model](image)

The Manufacturing Centers are to create the technologies to be manufactured. It is their magnitude that will determine the success of the Model. Others include: the Research and Academic Institutions, to focus on solving technical problems requiring research; Governmental Departments and Agencies, for the expanded market; the role of Government, to serve as the overlaying body responsible for setting up the Board and the regulations and other forms of control; the International Linkages, to keep up with best practices; and Traditional and Cultural Consciousness Unit, to be concerned with cultural interpretations and trade.

The Model is to be the transcending vehicle for technology development, cutting across cultural and social barriers. Amongst its elements is the vital component for cultural assimilation and interpretation, here called Traditions and Cultural Consciousness as shown in Figure 2. This
component provides the cultural rhythm of the society and is in conjunction with the Board and the Manufacturing Centers so a tempo-entrainment is obtained. Other elements within the Model go a long way to contribute their various functions for smooth operation of the whole system. In effect, the Model combines modern knowledge of science, technology and engineering in general, with indigenous knowledge to answer the technology quest of the society.

The Model works like Cocobod, which sources cocoa beans from the farmers onward for sale to the international market. Likewise, the Board will source technology from the manufacturers supply onward to local industries (or entrepreneurs). This is done by the Board coming to a decision, based on product viability, related to the specific technology to manufacture. It could receive input from the users or elsewhere. The Board then outsources the entire process, designs manufacturing, etc. to the appropriate setup or organization, which is referred to here as the Manufacturing Centers. The Board liaises with all the other components as may be required. There should be constant communication between the Manufacturing Centers and the users as well.

**Conclusion**

Technology is required in every stage and form of production. Ghana, like the rest of Sub-Saharan Africa, is noted to lack a strong domestic technology base. As a result, it is unable to add value to its vast natural resources. It was observed in this study, among other things, that the policy attitude in Ghana seems to avoid the issue of technology development, especially for local industry. This observation is confirmed in existing literature as a common feature in African Nations.

This paper, in view of such a lapse, proposes a technology development framework as a Model for manufacturing and supplying technologies to local industry in Ghana with the potential applicability in the rest of Africa and other developing societies or regions of the world. The Model is seen as a framework to local industrialization, which will strengthen the private sector of the economy to create wealth for local businesses and the nation at large. A base for socio-techno-economic development will therefore hopefully set in motion the drive towards national industrialization.

This study is not exhaustive on the topic. Future work may include a conceptualization of the development model for discussion and analysis.
References


In Search of Lasting Calmness: How Sustainable is the Federal Government’s Amnesty Program as a Peace Strategy in the Niger Delta Region of Nigeria?

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Abstract
The exploitation of natural resources and the associated marginalization of indigenous occupants of areas with such endowments continue to act as major driving forces for conflicts around the world, especially in Africa. In Nigeria’s Niger Delta Region, the major triggers of resource-based violent conflicts have been the subject matter of many academics and policy analysts. With the introduction of several peace strategies especially the Federal Government of Nigeria’s Amnesty Program notwithstanding, pockets of violent activities have generated questions as to the sustainability of the program. This study examines the sustainability of the Federal Government’s Amnesty Program in the Niger Delta Region. The main objective is to provide empirical evaluation of the program in the light of its strategy to deliver peace to the region, not only in the short-term but also in the long-term. Consequently, relying on the philosophy of the relative deprivation theory, descriptive and Chi-Square ($\chi^2$) statistical tools, the study has revealed that amnesty does not address the issues that have underpinned the genesis of violent agitations in the pre-amnesty era. As a result, this amnesty as a peace strategy is not sustainable. Hence, the inability to address issues such as adverse human development, inadequate infrastructure, environmental degradation and poverty among others strongly undermines the Amnesty program as a viable peace strategy. Given these findings, the study suggests a broad-based, multi-stakeholder approach that draws on private sector resources and competence in order to sustain the gains of the amnesty program if it is to bring about lasting peace in the region.

Keywords: violent agitation, federal government of Nigeria, amnesty program, sustainable peace strategy, Niger Delta Region.

Background
The exploitation of natural resources and the associated marginalization of indigenous occupants of areas with such endowments continue to act as incentives for conflicts around the world, especially in Africa. Revenues from the exploitation of natural resources are not only used for sustaining armies but also for personal enrichment and building political support. As a result, they have become obstacles to peace as leaders of armed groups involved in exploitation are unwilling to give up control over these resources. Even when conflict gives way to a fragile peace,
as has occurred with the Federal Government Amnesty Program in Nigeria’s Niger Delta Region, control over natural resources and their revenues often stay in the hands of a small elite group and are not used for broader development of the country (Kidani, 2015).

In the annual report of the International Center for Peace Initiatives (ICPI, 2009) on the causes of conflict and the promotion of durable peace and sustainable development in Africa, among the key economic factors identified as fuelling conflict was the illegal exploitation of natural resources especially by International Oil Corporations (IOCs). Similarly, the World Bank Continental Report for Africa also points out that natural resources, especially black gold, continues to be one of the contributory causes of conflict and of its recurrence. The report moved on to cite examples in Angola, the Democratic Republic of the Congo, Sierra Leone, Sudan and Nigeria’s Niger Delta Region as places where natural resources have provided major funding for the perpetuation of wars, civil unrest and other forms of violent conflict (World Bank, 2010).

From the point of view of the resource curse thesis and the rentier state hypothesis, it is easy to see that societies endowed with huge natural resources are often bedeviled by pressing social, economic and political instability. This is because rentier states depend largely on natural resource endowments for their revenue. The Nigerian State, for instance, has been described as a rentier one (Ross, 2001) that is over-dependent on rents accruing from oil and gas. Therefore, resource revenues are essential politically. However, being a rentier state or one that is dependent on natural resource exploitation for its revenue does not sufficiently explain the conflict dynamics in the Niger Delta Region. Natural resource conflict in the region has been viewed as a product of a long history of economic exploitation and marginalization of the people by the Nigeria State and IOCs.

The explanations as to the causes of resource conflicts in the Niger Delta have been well captured by eminent social scientists in the country (Ikelegbe, 2005; Ibeanu, 2008; Obi, 2009) and in most instances, issues questioning the foundation and existence of the Nigerian state have been posed. Some of these issues rest on Nigeria’s federalism, revenue redistribution and oil resource control. However, there are those who maintain that the continuous exploitation of the natural resources found in the Niger Delta Region provides the necessary foundation for prolonged shrinking of traditional livelihood systems thereby creating conditions for deprivation as well as frustration and aggression. While the causes and dynamics of resource conflicts in the Niger Delta have been well documented, it is important to note that there is insufficient empirical literature on peace-building strategies in the region.

Apparently, given the prevalence of conflict over resource control in the region, which mostly involves youth militia groups and the cycle of destruction imposed by this struggle on the state’s economy and infrastructure, the Nigeria State has launched several programs and institutions to initiate peace in the region. Amongst these are the Niger Delta Development Commissions (NDDC), Ministry of Niger Delta Affairs, 13% derivation, and the recent Federal Government Amnesty Project which have given unconditional pardon and rehabilitation to the militants who are willing to surrender their arms and embrace peace. However, despite the introduction of the Federal Government’s Amnesty Program about six years ago, there is still...
evidence of violence and militia activities in the region suggesting some critical shortcomings with regard to the sustainability of amnesty as a peace strategy in the Niger Delta Region. This study is a critical contribution to knowledge as it hopes to fill the gap in existing literature on strategies for peace in the Niger Delta Region by providing insights into the sustainability of the Presidential Amnesty Program.

**Aim and Objectives**

The aim of the study is to evaluate the Federal Government of Nigeria’s Amnesty Program to determine its sustainability as a peace strategy in the Niger Delta Region, and through this evaluation:

- Determine whether the Presidential Amnesty Project actually addresses the key issues that have led to conflict in the Niger Delta Region; and
- Determine the sustainability of the peace-building framework of the Amnesty Program in the Niger Delta.

**Research Hypotheses**

1. The more the Niger Delta people are marginalized from the gains derived from the exploitation of their natural resources, the more there will be agitation for resource control.
2. The more the Amnesty Program does not address the key issues leading to pre-amnesty agitations, the more its sustainability as a peace strategy will be undermined.

**Literature Review: Historicizing Resource Conflict and Amnesty in the Niger Delta**

Governance of oil wealth has always been related to the management of the resources of the Nigerian State. Resource-rich nations like Nigeria, and especially in the developing world, have always had the central government taking over the management of resource wealth. Poor management of resources as noted by Onigbinde (2008) has been responsible for the Niger Delta debacle. Thus, insurgency became inevitable which set the region on the international map of conflict hotspots with Ikelegbe (2005) correctly referring to it as an “economy of conflict.”

Scholars have focused on oil production, the poor state of development in the Niger Delta, and the resultant militancy for some time now. The literature blames this on federalism and the politics of revenue sharing in Nigeria (Igba, 2005), environmental injustices and human rights violations (Adeyemi, 2010), the failure of corporate social responsibility on the part of multinational oil companies as well as accountability and transparency failures in governance (Ikelegbe, 2008), hegemonic politics (Ogujiuba & Adeniyi, 2005), and weak sustainable development initiatives (Raimi, Onaolapo, Ige & Alfred, 2015; Raimi, 2015). It is these prevailing realities in the Niger Delta that has given birth to an environment of perpetual agitations, youth restiveness, insurgency and general insecurity.

From the dialectics of violent oil agitations in the Niger Delta, two major arguments appear discernable. One, that violent oil agitation is a result of the Nigerian government’s application of force in quelling non-violent agitation/protests of Niger Deltans against the state of gross
underdevelopment of the area that has arisen from neglect by both Federal Government and Multinational oil companies operating in the area. We must reiterate the fact that the tremendous amount of oil revenue derived from the Niger Delta costs the people their farm lands, fishing the rivers, and a host of other health hazards (like acid rain) due to the enormous environmental degradation caused by oil production activities related to the petrol businesses. References are usually made to government violent actions such as the incarceration and execution of Ken Saro-wiwa and eight other activists in 1995, the Aleibiri Demonstration Crisis of 1997, the Kaiama Declaration Crisis of 1998, the Opia/Ikiyan Invasion of 1999, the Odi Invasion of 1999, the arrest and detention of Asari Dokubo, Diepreye Alamieuysiegha, and Henry Okah, among others (Azaiki, 2007). The second side of the argument asserts that militancy in the Niger Delta Region in the form of hostage taking, kidnapping, pipeline vandalism, hijacking and so on, is a result of frustration due to a lack of education, poverty, unemployment and idleness of the youth.

Reactions to these problems of neglect, marginalization and environmental degradation started even before Nigeria’s independence in 1960. According to Oloya and Ugbeiyavwighren (2009), the struggle for resource control in the Niger Delta dates back to the Precolonial Era when the Royal Niger Company (RNC) tried to deprive the people of their legitimate trade and industry. As a result, when the then British merchants were challenged by King William Dappa Pepple of Bonny in 1854, he was deposed and exiled to Fernando Po. In the same vein, King Jaja of Opobo was deposed and exiled to the West Indies when he opposed the British merchants’ direct dealings with his subjects to forestall their exploitation. Similarly, for moving to prevent British exploitation of his subjects, Prince Nana of Itsekiri was deported to Accra in 1894. In about 1897, the Oba of Benin, who also challenged British authority, was dethroned and exiled to Calabar where he died in 1913. When the Royal Niger Company stopped the people of Nembe (Akassa) from trading their palm oil and other palm produce, there was mass protest, which resulted in the attack on the Royal Niger Company depot in Akassa in 1895.

In addition, Isaac Adaka Boro’s declaration of the Niger Delta Republic on February 23, 1966 was engendered by oppression by the dominant ethnic groups in Nigeria. Mr. Boro, who headed an organization known as the Niger Delta Volunteer Force (NDVF), decided to take a revolutionary path that would bourgeon a long history of insurgency in the Niger Delta Region. The group eventually set up a military training camp at Taylor Creek, former Eastern Region but in present day Bayelsa State, with about 150 men. The aim of the insurgents was to force the Nigerian government to create a separate country for the Niger Delta. The charged-up force attacked a police station at Yenagoa, raided the armory and kidnapped some officers including the police officer in command of the station. They also blew up oil pipelines, engaged the police in a gunfight, and declared the Niger Delta an independent republic. Boro and his men failed in the rebellion, and the three men were put on trial for treason at the Port Harcourt Assizes. In the end, Boro was found guilty and sentenced to death by hanging. However, he was eventually granted amnesty by the then head of state, General Yakubu Gowon. It then became the first amnesty granted militants in the Niger Delta. It is worthy to note that his agitation for resource control was a genuine campaign for greater Niger Delta autonomy.
The persistence of marginalization and adverse human development reality in the region post-Boro, created the conditions for an equally new dimension to the Niger Delta struggle. In this regard, as the Nigerian Government unleashed its state terror through its violent repression, the social movement became more violent in its approach as the number of militant groups increased making it very difficult to explore and exploit oil in the region (Tuodolo, 2008). Faced with the reality of such a drastic drop in oil production and its implications on a country whose economy is heavily dependent on oil, President Yar’Adua took a non-violent path in resolving the crisis in the region as a bid to patch the bleeding economy. Thus, on the 24th of June 2009, he announced the 60-day amnesty policy. Announcing the policy, the president said, “I hereby grant amnesty and unconditional pardon to all persons who have directly or indirectly participated in the commission of offenses associated with militant activities in the Niger Delta” (Akinola, 2011, p. 66).

With the lunch of the Amnesty Project, thousands of rounds of ammunition, machine guns and grenade launchers were handed over to the Federal Government by repentant militants. Many of these militants submitted themselves to the ideals of the Amnesty Project though major militant groups like the Movement for the Emancipation of the Niger Delta (MEND), which viewed the policy with suspicion, promised cease fire but not disarmament of the group because according to them, the policy had no room for dialogue and it did not address the root issues that gave birth to the struggle (Ogege, 2011). However, the Amnesty project brought relative peace to the long-troubled region for the first time. The issue however is whether the Amnesty Program of the government has addressed the root cause of the conflicts, and whether it is sustainable in terms of maintaining peace in the region. Following the ‘success’ of the Amnesty Program, the post-amnesty phase saw the Federal Government releasing the sum of 50 billion naira to the Presidential Committee on Amnesty (PAC) to begin implementing the post-amnesty programs for the repentant militants (Akpan & Ering, 2010).

**Theoretical Framework: Relative Deprivation and the Niger Delta Region**

A body of literature has emerged that provides empirical relevance concerning the theory referred as Relative Deprivation drawing inspiration from the work of scholars who support the initial tenets of the frustration-aggression hypothesis. The fundamental assumption of the theory rests on the experience of being deprived of something to which one thinks they are entitled (Walker & Smith, 2002). Relative deprivation is therefore a theoretical position in the social sciences that describes the feelings or measures of economic, political, or social deprivation that are relative rather than absolute. Relative deprivation refers to the discontent people feel when they compare their positions to those of others similarly situated, and find that they have less than they deserve. It is a condition that is measured by comparing one group’s situation to the situations of those who are more advantaged. Similarly, Gurr (1968) defined relative deprivation as the perception of discrepancy between valued expectations and valued capabilities. He went further to conceptualize value expectations as the goods and conditions of life to which people believe they are rightfully entitled, and the value capabilities as the goods they think they are capable of getting and keeping. Deriving his logic from Gurr, Eriksen (1993) noted that relative deprivation reflects
a perception by people that the circumstances of their lives are not providing benefits to which they are justly entitled.

The Niger Delta Region of Nigeria is richly endowed with abundant petroleum found in almost all the creeks and oceans in the area. This has enabled the Federal Government to generate over 90% of its revenue from petroleum exploration, exploitation and marketing by foreign oil companies. The strong contention has been that the government does not use part of the revenue generated to provide the oil-bearing communities necessary infrastructure and other social needs. For the indigenous people, resources mean primarily land for agriculture, water for fishing, forests for harvesting, and air for breathing, as well as physical and spiritual bio-data. They explained that resource control is the term used to describe decision-making power over a people’s source of livelihood. In the case of the Niger Delta, these sources of survival have been taken away violently, undemocratically, and unjustly. For them, resource control denotes the need to regain ownership, control, use and management of resources primarily for the benefit of the communities and people on whose land the resources originate, and secondarily for the good governance and development of the entire country.

Methodology

The design adopted for this research is the descriptive method. The study was carried out in two states of the Niger Delta, namely Bayelsa and Rivers. Two sampling techniques were adopted, namely the purposive and simple random sampling methods. A sampling frame of the repentant militants in the two states was developed by assigning a number to each of them. A sample was drawn from the frame one at a time using the ballot method without replacement to avoid bias. A sample of 400 respondents (200 from each state) was drawn from the two states. The key instrument, or tool, used for this study was a self-designed questionnaire. The instrument was divided into two parts. The first part dealt with socio-demographic characteristics of respondents, while the second part elicited information on the sustainability of the Federal Government Amnesty Program as a peace strategy. Two types of data analysis techniques were adopted. The simple percentage/descriptive method was used to analyze the socio-demographic data, while the Chi-Square statistical tool was used to analyze and test the research hypotheses. The analysis of data is based on 320 completed questionnaires.

Results

As stated above, the socio-demographic information and research questions were analyzed using the simple percentage/descriptive technique. As a result, the information is presented in simple frequency tables as well as charts. On the other hand, the hypotheses test uses the Chi-Square statistical technique.
Table 1
Socio-Demographic information of Respondents

<table>
<thead>
<tr>
<th>Variables</th>
<th>Answer Alternative</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Below 19 Years</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>20-29</td>
<td>99</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>30-39</td>
<td>188</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>40 years and above</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>320</td>
<td>100</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>301</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>320</td>
<td>100</td>
</tr>
<tr>
<td>Education</td>
<td>No Formal Education</td>
<td>100</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Primary Education</td>
<td>80</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Secondary Education</td>
<td>72</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Tertiary Education</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Vocational Training</td>
<td>51</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>320</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2015

The personal information of respondents as highlighted in Table 1 shows a concentration of respondents (99/31%) in the 20-39-year age bracket and most of these (188/59%) in the 30-39-year age brackets. This shows that more able-bodied youth were key players in the militant behaviors that characterized the pre-amnesty struggle for resource control in the Niger Delta Region. Also, a significant number of the respondents (301/94%) were males. Similarly, many of the respondents (100/31%) have no formal education. Although, a few of them have primary (80/25%) and secondary (72/23%) education. The high number of respondents without formal education or a minimal educational background, such as a primary school education, indicates the level of illiteracy among able-bodied youth in the region.

Figure 1. The amnesty programme addresses the core issues that led to violent agitations in the Niger Delta. Source: Field Survey, 2015
Figure 1 shows the respondents’ opinions on whether the Federal Government’s Amnesty Program addresses the core issues that led to the violent agitation in the Niger Delta Region. 17 (5%) of the respondents in the survey strongly agree to this, 20 (6%) of them agree, 83 (26%) of them disagree, while 200 (63%) of them strongly disagree. This goes a long way to show that the basic drivers of conflict and insecurity in the Niger Delta, notably low human development reality such as youth unemployment and poverty, environmental degradation, and a sense of marginalization among others, have not been holistically dealt with under the amnesty program. While some other apologetic scholars can argue that amnesty is not a development program but a peace-building strategy, it is safe to submit here that the conditions for peace have not been clearly addressed under the framework of amnesty. This result strongly indicates a challenging future for the Amnesty Program since the root causes of the Niger Delta agitation were not properly addressed under the Amnesty Program.

Figure 2 highlights data on whether the Amnesty Program as a peace-building strategy is likely to be sustainable. The data shows that 13 (4%) of the respondents strongly agree, 18 (6%) of them agree, 91 (28%) of them disagree, while 198 (62%) of the respondents strongly disagree. It is important to note that this result rests on the salient fact that a strategy that does not deal with the cause of a problem would certainly be unsustainable given that even when there are short term promises for peace, there is every tendency that a reversal of gains could happen as a result of not sufficiently addressing the root cause of the problem. Scholars have reported several challenges to the amnesty program over time when sustainable peace is taken into consideration. For instance, Unabia (2011) argues that the program is fragile in providing cash incentives to armed youth as a model for peace-building. Similarly, Ogege (2011) contends that the sectional concentration of the program to ex-militants alone without taking into account the general wellbeing of the entire Niger Delta Region with regard to resource depletion and underdevelopment is fatalistic for the program. This last submission by Ogege (2011) provides analytical support for our findings in Figure 2.
Test of Hypotheses

H1: The more the Niger Delta people are marginalized from the gains derived from exploitation of their natural resources, the more there will be agitation for resource control.

Table 2
Chi-square Computation for Research Hypothesis 1

<table>
<thead>
<tr>
<th>O</th>
<th>E</th>
<th>O-e</th>
<th>(o-e)²</th>
<th>(o-e/e)²</th>
</tr>
</thead>
<tbody>
<tr>
<td>58</td>
<td>69.52</td>
<td>-11.52</td>
<td>132.71</td>
<td>1.91</td>
</tr>
<tr>
<td>75</td>
<td>63.47</td>
<td>11.53</td>
<td>132.94</td>
<td>2.09</td>
</tr>
<tr>
<td>37</td>
<td>31.36</td>
<td>5.64</td>
<td>31.81</td>
<td>1.01</td>
</tr>
<tr>
<td>23</td>
<td>28.64</td>
<td>-5.64</td>
<td>31.81</td>
<td>1.11</td>
</tr>
<tr>
<td>20</td>
<td>14.11</td>
<td>5.89</td>
<td>34.69</td>
<td>2.46</td>
</tr>
<tr>
<td>7</td>
<td>12.89</td>
<td>-5.89</td>
<td>34.69</td>
<td>2.69</td>
</tr>
</tbody>
</table>

*°χ²=11.28

*Degree of freedom =2; Chi-Square Table value =5.99; Chi-Square Calculated Value=11.28

Source: Field Survey, 2015

Decision Rule: Accept the null hypothesis if the calculated value is less than the table value and reject the hypothesis if the calculated value is greater than the table value. Consequently, since the calculated value of χ² is 11.28 and table value is 5.99, the hypothesis which states that the more the Niger Delta people are marginalized from the gains derived from exploitation of their natural resources, the more there will be agitation for resource control is upheld. This result leads to the submission that there is a significant relationship between perceived marginalization by the people and violent agitation in the region. This findings corroborate that of Ogege (2011) who concluded that age-long agitation in a region is related to the struggle for resource control.

H2: The more the amnesty program does not address the key issues leading to pre-amnesty agitations, the more its sustainability as a peace strategy will be undermined.

Table 3
Chi-square Computation for Research Hypothesis 2

<table>
<thead>
<tr>
<th>Observed</th>
<th>Expected</th>
<th>O-e</th>
<th>(o-e)²</th>
<th>(o-e/e)²</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>55.93</td>
<td>-10.93</td>
<td>119.46</td>
<td>2.14</td>
</tr>
<tr>
<td>62</td>
<td>51.07</td>
<td>10.93</td>
<td>119.46</td>
<td>2.34</td>
</tr>
<tr>
<td>50</td>
<td>44.43</td>
<td>5.57</td>
<td>31.02</td>
<td>0.70</td>
</tr>
<tr>
<td>35</td>
<td>40.57</td>
<td>-5.57</td>
<td>31.02</td>
<td>0.76</td>
</tr>
<tr>
<td>20</td>
<td>14.64</td>
<td>5.36</td>
<td>28.73</td>
<td>1.96</td>
</tr>
<tr>
<td>8</td>
<td>13.36</td>
<td>-5.36</td>
<td>28.73</td>
<td>2.15</td>
</tr>
</tbody>
</table>

*°χ²=10.05

*Degree of freedom =2; Chi-Square Table value =5.99; Chi-Square Calculated Value=11.28

Source: Field Survey, 2015
**Decision Rule**: Accept the null hypothesis if the calculated value is less than the table value and reject the hypothesis if the calculated value is greater than the table value. Since the calculated value of $\chi^2$ is 10.05 and table value is 5.99, the hypothesis which states that the more the amnesty program does not address the key issues leading to pre-amnesty agitation, the more its sustainability as a peace strategy will be undermined is upheld. This result leads to the affirmation that there is a relationship between the inability to address the root causes of violent agitation and the lack of sustainability of the amnesty program in the Niger Delta. This finding supports those of previous researchers such as Tuodolo (2008), Akinola (2011), and Ogege (2011) who all point to the weak sustainability character of the amnesty program as a peace building strategy in the region.

<table>
<thead>
<tr>
<th>S/n</th>
<th>Sector</th>
<th>Number Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agriculture</td>
<td>169</td>
</tr>
<tr>
<td>2</td>
<td>Automobile Mechanic</td>
<td>331</td>
</tr>
<tr>
<td>3</td>
<td>Welding &amp; Fabrication</td>
<td>4,095</td>
</tr>
<tr>
<td>4</td>
<td>Entrepreneurship</td>
<td>2028</td>
</tr>
<tr>
<td>5</td>
<td>Carpentry, Plumbing &amp; Pipefitting</td>
<td>287</td>
</tr>
<tr>
<td>6</td>
<td>Electrical Installation/Maintenance</td>
<td>442</td>
</tr>
<tr>
<td>7</td>
<td>ICT</td>
<td>249</td>
</tr>
<tr>
<td>8</td>
<td>Crane/Heavy Duty Operations</td>
<td>1269</td>
</tr>
<tr>
<td>9</td>
<td>Health Safety and Environment</td>
<td>80</td>
</tr>
<tr>
<td>10</td>
<td>Music/Fashion/Entertainment/Catering</td>
<td>838</td>
</tr>
<tr>
<td>11</td>
<td>Oil &amp; Gas/Maritime</td>
<td>1768</td>
</tr>
<tr>
<td>12</td>
<td>Aviation</td>
<td>127</td>
</tr>
<tr>
<td>13</td>
<td>Others</td>
<td>310</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>11,993</strong></td>
</tr>
</tbody>
</table>

**Ongoing**

<table>
<thead>
<tr>
<th>S/n</th>
<th>Skill Acquisition &amp; Formal Education</th>
<th>Number Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Total</td>
<td>4,698</td>
</tr>
<tr>
<td></td>
<td>Grand Total</td>
<td><strong>16,691</strong></td>
</tr>
</tbody>
</table>

*Source: Compiled by Author from THISDAY Live, 23 May, 2015*

Although several of the Niger Delta ex-militants have received commendable capacity building and skills acquisition as well as formal education under the second phase of the Amnesty Program of Rehabilitation, it is particularly worrisome to point out that there is no strategic plan to engage this number of youth in meaningful commercial or economic activities. Table 4 presents data on the number of youth trained under the Amnesty Program between 2009 and 2015.
From Table 4, it is easy to see that, 11,993 youth have been trained in various areas of skill and formal education with about 4,698 youth still undergoing similar training in elite universities across the world. However, there is the obvious challenge of how to integrate the youth into meaningful economic life given the vulnerable labor market in the country. This immediately calls to question the sustainability of the Amnesty Program in terms of the integration phase which is supposed to create the enabling environment for jobs for youth so that they do not fall back in the cracks again.

**Discussion**

The first objective of this study focused on determining whether the Presidential Amnesty Program actually addresses the key issues leading to youth militancy in the Niger Delta Region. The data generated in this regard was presented in Figure 1. Findings suggest that the Amnesty Program as a peace building strategy has not addressed the cause of the conflict in the study area but rather has focused on the effect. In other words, the problems that triggered widespread discontent and aggression in the region have still been left unattended. This approach is not a holistic one in this sense since 89% of the respondents see it as not fundamentally addressing the core reasons for the emergence of armed conflict. The dominant opinion is that the Federal Government is more interested in unhindered access to the oil and gas resources rather than resolving the root causes of the Niger Delta crises. This supports the argument posed by Whyte (2009) that “this so-called amnesty is the latest in a series of ‘Greek gifts’ awarded to the people of the Niger Delta to enable smooth access to the oil in our communities.”

The second objective focused on determining if the amnesty program is likely to be sustainable. Data regarding this objective was presented in Figure 2, and the associated hypothesis was tested using the Chi-Square statistical tool as reflected in Table 3. The theoretical position of the relative deprivation philosophy is quite helpful analytically here. This is because, as findings suggest, 88% of respondents see the program as unsustainable since the issue of deprivation and marginalization remain unresolved under the Federal Government Amnesty Project. Following the submission that amnesty does not address the core problems that have led to the upsurge of militancy and all forms of violence in the Niger Delta, it is easy to see that the program is simply a strategy to maintain a hold on the economic gains in the region while pretending to foster or engender sustainable peace. In this regard, there is every pointer to the fact that we will witness a reversal of gains associated with amnesty in such a manner that more violence will erupt as other youth get frustrated and aggressive. This finding supports that of Akinola (2011) who agreed with the fact that amnesty might be short-lived as a result of the fact that it misses the real cause of the Niger Delta crisis. It is believed that, although the amnesty initiative is purported to have brought relative peace in the region, pockets of insurgencies continue to happen with the same old outcomes of kidnapping, and vandalization of oil pipelines and other installations in addition to other elicit economic activities that amount to sabotage. In regard to the outcome of the amnesty program in terms of conflict management in the Niger Delta Region, there are divided perspectives.
However, quite a number of the respondents gravitate towards the opinion that the amnesty program is a half-baked approach and cannot lead to sustainable peace in the region.

**Conclusion and Recommendations**

The study investigated the relationship between the Nigerian Government’s Amnesty Program and sustainable peace in the Niger Delta Region. Based on the findings of the study, it can be concluded that as beautiful as the amnesty gesture seems, it is infested with internal contradictions that have negative implications for sustainable peace-building in the region. The approach of mitigating conflict through the use of cash incentives and skills training for only repentant militants further creates the necessary condition for more violence by encouraging other peaceful youth to see violence as a means to an end. In addition, it is also the conclusion of this study that the Niger Delta agitation was anchored on the issues of marginalization, environmental despoliation, infrastructural decay, and poverty amidst others. As long as these conditions still persist, there can never be sustainable peace in the Niger Delta Region.

Addressing the negative human development realities in the Niger Delta Region will bring about genuine and sustainable peace. Therefore, based on the findings and conclusion arrived at in this study, the following recommendations are made to ensure sustainable peace in the Niger Delta.

1. **Institutional Restructuring of Amnesty:** There should be within the amnesty structure a broad-based institutional arrangement with an operational strategy for the implementation of widespread projects and programs such as employment generation, food security, road development, poverty reduction, environmental management, security of life and property, electoral reform and democratization, and conflict detection, prevention and resolution. These can be achieved by incorporating the programs into the amnesty program to cover the whole of the region and not only repentant militants.

2. **Deemphasizing Cash Incentives:** There is also the need to deemphasize cash incentive as a way of deterring youth from violence. The current framework only serves to reinforce the economy of violence in the region. Instead of cash incentives, economic empowerment training, which is already going on in the form of vocational skill acquisition, should be broadened and reinforced with a focus to get such youth employed in public and private companies.

3. **Public Private Partnerships:** Lastly, the current post amnesty gains should be sustained through new partnerships between the government and MNOCs operating in the region. This can be done by enacting laws that compel oil corporations to employ trained ex-militants in order to ensure that they do not fall back into violence.
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Defective Federalism and the Emergence of Domestic Terrorism in Nigeria

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Abstract
The extremist Islamic sect Boko Haram is now feared for its ability to mount both low-scale and audacious attacks in Nigeria. This study attempts a consensual explanation of the defects of Nigerian federalism to facilitate the emergence of Boko Haram terrorism. The study is descriptive and data was obtained from secondary sources. It was found that the insurgency is a manifestation of frustration on account of the national political, religious and economic systems. The paper concludes that Boko Haram insurgency is part of the cycles and trends of unrest in Nigeria; responding to the same broad families of national fixations as other forms of national-level conflict. The study proposes a restructuring of Nigeria’s federalism to surmount the inevitable agitations.

Keywords: federalism, terrorism, Boko Haram, Sharia law, violence, Northern Nigeria, peace.

Introduction
The legitimacy of the modern nation state is linked to its capacity to present itself as a provider of necessary public goods, and more importantly, a neutral arbiter that guarantees the security of all sections of society. When the state is generally perceived as serving the particularistic interests of one group, it starts losing its legitimacy, and indeed, its authority. As state capacity declines, fear of ‘the other’ rises and becomes an objective factor of survival, and people are forced to resort to other levels of solidarity – religious, ethnic, regional, etc. - in search of security (Ibrahim, 1999).

The failings of Nigeria over the years have conspired to create the conditions for the transformation of Boko Haram from just one of several fundamentalist sects in Northern Nigeria into the irredeemably violent organization it is today; one that now appears to lie well beyond the capacity of the country to confront and defeat. The turning point in the drawn-out evolution of Boko Haram was the July 2009 killing of the sect’s co-founder, Yusuf Muhammad (Al Jazeera, 2009) when he was under police custody, and just hours after soldiers arrested and handed him over. His capture followed five days of clashes between members of the sect and the military, who received their orders from the then President Umaru Musa Yar’Adua when it became clear that the police could not contain the uprising. Prior to the sect’s attack, the authorities got warnings, but they did nothing pre-emptive until the sect struck.

Conceptual Issues
The two concepts that are central to this paper are federalism and terrorism. It is therefore necessary from the outset to define the perspectives in which these terms will be used for the
purpose of this piece. With reference to the concept of federalism, quite a voluminous body of literature exists that expounds a diversity of perspectives on the pre-conditions for, as well as aggregates of, factors that, taken together, constitute a federal system. It is not within the scope of this piece to contribute to the welter of existing definitions of federalism, but to extract that which will be analytically useful for this endeavor.

Because of its broad scope, the definition provided by Kenneth Wheare will be adopted. He defines federalism as “the method of dividing powers so that central and regional governments are each, within a sphere, coordinate and independent” (Wheare, 1963). One thing that is clear in a federal system of government is that the tiers of government ought to share political power as expressly spelled out in the constitution. In a federal structure, vertical separation of powers is necessary for preservation of liberty and the prevention of tyranny. According to James Madison, the primary control of the government is its dependence on the people. The Declaration of American Independence contains the facts,

… That whenever any Form of Government becomes destructive of these ends, it is the Right of the People to alter or to abolish it, and to institute new Government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to affect their Safety and Happiness. (US Declaration of Independence, 1776)

Federalism presupposes limits to the federal government’s power and authority. This allows for checks and judiciary review of both state and federal encroachment. But Nigeria lacks inter-institutional oversight. Except for the rather vague statement in Section 2 of the 1999 Constitution (as amended), there are no definite, enumerated powers of the federal government in the Nigerian Constitution. The thirty-six states are merely administrative units of the central government. A federation is no doubt a political entity characterized by a union of partially self-governing states or regions under a central (federal) government. In a federation, the self-governing status of the component states, as well as the division of power between them and the central government are typically constitutionally entrenched and may not be altered by a unilateral decision of either party, or the states of the federal political body.

If these critical features provide the necessary underpinnings of a federation, then a federal state can be one move away from replacing a non-federating system with a federal one. It is a process that seeks unity, without resorting to uniformity; hence, federalism is conceived as the antithesis of a unitary system, which would ensure the prevalence of harmony across sundry groups and interests. According to Baron de Montesquieu, federalism is a society of societies (de Montesquieu, 1748). As would be expected, the structure or composition of the federation units involved and the practices of those units could vary from one state to another. Thus, dependence on the structure or composition is capable of affecting virtually every facet of life of a country’s citizenry.

Unlike federalism, the concept of terrorism does not have a voluminous body of explicatory literature to fall back upon. However, the perspective expounded by Dokun Oyeshola will be used. He states that:
Terrorism may be defined as the systematic use of threat of murder, injury and destruction to create a climate of terror, to publicize a cause, and to coerce a wider target into submitting to the terrorist’s aims. (Oyeshola, 2005)

This definition of terrorism is useful for two reasons. First, it looks at terrorism in relation to tactics. It is only against the background of tactics used by terrorists that terrorism can best be understood. Second, the definition provides the advantage of being able to look at terrorism from two levels, namely, the level of the individual and the level of the nation-state.

The elucidation of the concept of terrorism that Oyeshola (2005) presents goes a little further in that it identifies three levels at which terrorism can be analyzed. These are the individual level, the national level and the international level. By his definition, Oyeshola implicitly concedes that at the level of the individual, it is difficult to provide an all-encompassing definition of terrorism. Nevertheless, the values of the individuals who terrorism attack tend to be the same as life, health, status, freedom and wealth. At the level of the nation-state, terrorism assumes a slightly different perspective. It is at this level that reference is made to the destruction of national stability and security, which involve essentially, the inability of a nation to protect values from terrorist attacks. These internal values include the ideas and conceptions of the state that are held by its citizens, the political, economic, and social institutions within the state, and the geographical and territorial base of the state with all its endowment.

At the international level, terrorism is derived from the perceived needs and requirements of the nation-states to defend their core national values against the pursuit of terrorists. The perception of a terrorist’s threat from the international environment compels states to increase their level of security vis-à-vis terrorist organizations. Therefore, terrorism not only threatens the rights and values that are cherished at the level of the individual and state, but it also depending on its intensity. It may also constitute a threat to the corporate existence of the international system (Singer, 1969).

**Nigeria’s Defective Federalism: A Recipe for Extremism**

To understand how defective Nigeria’s federalism is, consider the contribution of the most consummate student of federalism Nigeria has ever known, Chief Obafemi Awolowo. He wrote;

> From our study of the constitutional evolution of all the countries of the world, two things stand out clearly and prominently. First, in any country where there are divergences of language and of nationality—particularly of language - a unitary constitution is always a source of bitterness and hostility on the part of linguistic or national minority groups. On the other hand, as soon as federal constitution is introduced in which each linguistic or national group is recognized and accorded regional autonomy, any bitterness and hostility against the constitutional arrangement must disappear. Secondly, a federal constitution is usually a more or less dead letter in any country which lacks any of the factors conducive to federalism. (Awolowo, 1966, p. 199)

It could be recalled that federalism was adopted for Nigeria (Akinyemi, 1978) as a convenient means of administering a fractious multi-ethnic conglomerate. Though rickety in
practice since inception (Osuntokun, 1999; Tamuwo, 1998), federalism no doubt offered some hope that the multinational leviathan might not implode because of the substantial autonomy guaranteed the federating units (Awolowo, 1960). By the time the military action (civil war) ended in January 1970, Nigeria was no longer a conglomeration of three regions with separate constitutions that were attached as a schedule to the Federal Constitution and hinged upon the three major ethnic groups – Hausa, Igbo and Yoruba, but was a unitary-federation composed of twelve state surrogates of the central government.

With the onset of the oil boom (Mayall, 1976) in the early 1970s and the Nigeria state as the primary vortex of revenue collection and disbursements, the states became subservient to the federal center. This is because, according to the then military head of state General Yakubu Gowon, “To keep Nigeria one is a task that must be done” (Clarke, 1987, p. 65). By introducing a unitary command structure, Gowon truncated Nigeria’s federalism. This is because, according to Supreme Court Justice Hugo Black of the United States, federalism is a proper system for state functions with recognition of the fact that the entire country is made up of a union of separate state.

From the outset therefore, the structural reform and abrogation of regionalism, which Gowon did with messianic fixation, stifled the population. It opened Pandora’s Box for instability, ethnic rivalry, abuse of human rights and societal mistrust between the government and the people. While Nigeria had in a way survived the Biafran secession, the same cannot be said of the ills of its brand of federalism. This practice of federalism seems an enduring phenomenon which remains destructive to the very essence of the Nigerian nation. To start with, Nigeria’s federalism fundamentally violated B. J. Dureley’s conceptualization of federalism as a division of powers between a central government and several regions of state governments, each acting directly with the people, each with a limited share of judicial competence, and each self-sufficient (Odisu, 2015).

Due to this contradistinction, Nigeria became an exclusive oil of gladness for a privileged few, and the water of affliction for the rest of the stock. Thus, the first line of threat to human security (Imobighe, 1998) in Nigeria was the agents of the anti-people policy. This threatened the ability of the ordinary citizen to realize self-actualization, that is, the ability to be liberated from poverty, ignorance and disease. These were the people who looted the public treasury, mismanaged the nation’s economy, scuttled the efforts towards the just sharing of the rewards and burden of citizenship, as well as those who undermined the solidarity of the people by manipulating ethnic, religious and sectional sentiments. How anyone could imagine that this cauldron of negative and antagonistic factors would lead to a brew of national unity and stability must be evidence of man’s incurable predisposition to delusion.

The direct result was that the centralization of political and economic power reinforced, above all, corruption, pillage and predation as well as the marginalization of several ethnic communities from any access to state resources. Under the circumstance, politics became a zero-sum enterprise where winners take all and losers lose everything. In this, there is no room for magnanimity in victory or gallantry in defeat. It is a dog-eat-dog game where only the violent survive and thrive. With the appropriation of national wealth for private use, good governance has become an alien philosophy since the government is never accountable to the people.
The second means by which Nigeria’s federalism brought about terrorism is in respect to the distribution of political power. It is expected that, in a federal state, the constituent units have equal power and are thus able to develop at their own pace. But Nigeria’s federalism has given the ‘federal’ center enormous powers at the expense of the states, and these powers are unknown in any other federal state (Awe, 1998). This reckless appropriation of extreme power has totally subverted the very essence of federalism. The implication of this is that Nigeria has been only federate in name but unitary in reality and operation. It is taken for granted that federalism is an acknowledgement that the government will be greatest if the states and their institutions are left to perform their separate functions in their separate ways. Instead, whoever occupies the presidency in Nigeria becomes an indisputable colossus among the plethora of governors of the thirty-six states. Needless to say, this system does not permit independent thinking, nor allow the states to develop at their own pace. The unwillingness of the ‘federal’ authority to relinquish power to the ‘federating’ units fuels the spiral of violence, and the existence of religious, ethnic, and regional cleavages that political violence easily feeds upon.

The Nigerian governmental structure is an ‘imperial presidency’ and the federation a ‘unitary system.’ The country retains the title ‘federation’ in its name, but in reality, it is a very strong, powerful and overbearing central government that appropriates all of the nation’s power and wealth and distributes it to the ‘federating units’ at its whim. In accordance with the constitution, the system exercises absolute control over the nation’s economy by appropriating all mineral resources to itself. The importance of this centralization is clearer when it is realized that Nigeria is a mineral dependent state that currently derives about 80% of its external revenue earnings from petroleum alone. In the same vein, the entire coercive apparatus of the state, i.e. the armed forces, the police and other security and intelligence apparatus, are firmly under the control of the central government. The enormous powers of the central government make it a money-grubbing but unproductive behemoth. The federal system of government has become a monster that the people are incapable of taming through peaceful means. While state governors are, technically speaking, the chief security officers at the state level, in practice, they have no control over the police commissioners appointed and deployed from Abuja, the capital.

The third way in which Nigeria’s federalism constitutes a source of terrorism is in relation to the country’s inability to meet the aspiration of its citizens (Burton & Dukes, 1990). It had been assumed that federalism would result in a more rational and efficient management of the economic system as a whole, which, in turn, would result in greater equity in the distribution of goods and services. The success of a federal system depends on an acceptable distribution of resources and functions among the three levels of government so that efficiency in the use of scarce resources is encouraged while reducing inequality in the treatment of individuals (Ekeh, 1972) among different states.

Given the structure of the Nigerian economy, the state and local governments have had to be heavily dependent on the federally collected revenues. But revenue allocated statutorily to the state governments has not fostered any sense of financial responsibility on the part of state and local governments as they increasingly become inefficient in the use of the meager funds they
receive. These governments are tempted to spend money on questionable projects. In addition, the revenue allocation formula has not given sufficient incentives to these governments to establish their own sources or revenue. In fact, state and local governments have found it more rewarding to concentrate their energies on attempting to obtain a larger transfer from federally collected revenues than attempting to generate more revenue internally. Because of these problems, the expenditures to which the state and the local governments are committed far exceeds their revenue. While state and local government statutory allocation has shown little growth potential, their expenditures have shown high growth potential. Not only is there a large excess of their expenditures over revenue, but the extent of imbalance is progressively rising.

Thus, with a non-hegemonic and profligate ruling elite that is always concerned with spoliation, predation and de-legitimation of the state, the Nigerian state, in the words of Ihonvbere (1995), has become irrelevant in terms of the consciousness of existential conditions of the populace which it is supposed to serve, unite and nourish through the provision of basic social services as well as security of life and properties. This has resulted in the creation of Boko Haram as an alternative ethnic, communal and religious network and structure for providing social welfare needs (Ake, 1997).

Looked at from another perspective, modern federal countries have three levels of government with each distinguished by the scope of the geographical areas over which their respective jurisdiction extend. The jurisdiction of the federal government covers the entire country in some subject matters. Regional (state) government’s jurisdictions cover sub-sections of the country, while local governments exercise responsibility in non-overlapping areas within a state. Federalism is a standard concept of a government unit based on an area to govern. Ideally, a system of multi-level government should be structured from the point of view of ensuring an efficient supply of public services. In line with this, each level of government ought to have adequate resources to perform its functions without appealing to the other levels of government for financial assistance. Revenue allocation under a federal system of government creates complex problems. The complexity stems from the distinctive nature of federalism as a form of government in which the legislative, executive and judicial functions, or powers, of the states are shared amongst the three tiers of government.

Rather than address this complexity, Nigeria is a manifestation of an over-centralized federation of weak units in which the politics of distribution of public goods triumph over that of production. This manifestation can be evidenced at all levels of the federal arrangement as a culture of venality, a fractured and largely insensitive political elite, decaying basic infrastructure, and a neglected or lacking system incorporated into the national life of ethnic minorities, rural areas, women and the youth, among others, as well as an economy overburdened by debt, exogenous tastes and consumption habits with cross-regional internal markets suffering from bureaucratic bottlenecks (official and unofficial), and over-dependence on oil for national income. Nigerians cannot therefore be blame for believing that their leaders have driven the country to an ignominious, ominous, and perilous precipice. Nigeria is viewed by Nigerians as an affliction, a sickening of bad breath that will make you disgorge, a belch from the gastro-intestines of hell, and
a country furbelowed with deliberate disapprobation and depravity (Solarin, 1965). Many around the world believe that Nigeria is like the axis of tragedy, horror, infamy, and a messy amalgam of degeneracy and turpitude. There is no doubting the fact that the Nigerian federal structure is inherently conducive to the development of rebel movements.

Fourth, the peace and stability of Nigeria is further threatened by the federal character principle. The federal character (Ekeh, 1989) principle has been manipulated by and channeled to serve the overall interest of the petty bourgeois ruling class. It is the members of this class who have formulated and operated the principle under the guise of the federal character principles. The members of the bourgeois class also get themselves entrenched in power and exercise control over the machinery of state through the application of this principle. They strive to reconcile their class differences through the operation of an acceptable formula for the allocation, distribution and sharing of national resources, while receiving benefits among themselves. While they do this, they capitalize on and fan the members with ethnic differences among the various Nigerian peoples to win the support of the masses in their areas.

The federal character principles have satisfied the quest for representativeness and appointment among various groups (Ekeh, 1989). However, in the application of the formula, choices are often made based on a criterion other than merit. For example, the quota system as applied in education leads to lowering standards against national interests. In the army, it leads to the production of sub-grade soldiers and officers. In the civil and public services of the federation, standards and professionalism are compromised by eschewing meritocracy without recourse to standards. Thus, the quota system becomes morally reprehensible and an act of injustice. Viewed from this perspective, the quota factors in the federal character principle have become not only counter-productive but counter to the peaceful and orderly progress and development of Nigeria.

One of the major and most problematic features of the federal character principle (Adebisi, 1989) is the complexity of the interest and units as represented by some states and local governments, and ethnic and religious group affiliations. For example, the creation of more states and local governments and the establishment of federal educational institutions in every state to enhance greater representational opportunities has led to the multiplication of governmental and administrative units and facilities which become disturbingly expensive to the nation. This is often done against the evidence of the inability of the new states and local governments to discharge their statutory duties because of their unavailability. As a result, the federal character principle has deepened the problem it was devised to tackle.

The factors that cause a population to defer to terrorism are a sense of grievance, oppression, frustration and depravation, including poverty and other adverse effects of globalization and rank disequilibrium including class and tribal alteration, and changes in attainments or expectations. In addition, there is the feeling of grievance from being exploited by narcissistic leaders with borderline personalities, and by groups who are opposed to them. The sense of injustice is also making individuals turn to terrorism in order for the population at large to hear of their suffering and sense of injustice. This has created mass psychosis that turns citizens against innocent people which is manifested in mass killings during religious, communal, inter-
communal, ethnic and related face-offs in different parts of Nigeria: North, East, Middle Belt, West, South-South, and so on. In addition, since the Nigerian state seems to have lost its *raison d’etre* and legitimacy in the eyes of most of the populace, the violent resurgence of the national question has been manifested in the Boko Haram’s successes.

Finally, a proper federal system with considerable devolution of powers to the constituent regions/states and local governments, with attendant separation of powers between the different arms of government, would not only ensure unity in diversity but also would ameliorate pronounced ethnic antagonism. Expectedly, the arrival of democracy, which will allow people to express their pent-up frustration without the fear of military reprisals, can open the floodgates of agitation. Unfortunately, the federal arrangement that Nigeria operates is structurally defective. The inability of this structural asymmetry to effectively manage the mirage of interests is responsible for the instability of the Nigerian state. With this in mind, the National Conference in 2014 proposed far-reaching changes to correct the structural defects of Nigeria, and the calculations for the 2015 general elections were paramount in the mind of the political cabal.

This picture of Nigeria indicates that within the last century of amalgamation and fifty-five years of independence, the country’s leaders have not been able to forge an agenda of national coherence, integration, or the ability to address the urgent issues of poverty, inequality, identity conflicts and popular democracy. Nigeria’s internal organization is rigidly stratified and disperses too many rewards to too few of its members while the allegiance of it citizenry has dwindled. Throughout its history, Nigeria has been held together in artificial unity more by coercion than by the consent of the people.

It is indeed disheartening that Nigeria only operates the federal system on paper. Real federalism has never existed in Nigeria (Ajasin, 1992; Odisu, 2015). The reasons are not far fetch; the federal government, ever since the intervention of the military in government, has always assumed superiority over the state governments while the states do the same to the local governments. Because military federalism had been more common than civilian federalism, this model made the federal government the master in relation to the dependent state governments. Therefore, the future of Nigeria lies in only one direction - true federalism, together with fiscal federalism and resource control by the owners of the resources. For there to be an atmosphere of peace, harmony and progress in Nigeria, there should be a clear division of power between the federal government and the state governments. The states must be given the economic power to carry out their increased political, social and economic responsibilities. Until that is done, there will always be the search for alternatives like Boko Haram to the Nigerian state.

**Boko Haram’s Terrorism**

When Britain amalgamated Nigeria in 1914, it sealed off the North from the South (Osuntoku, 1979). What was united were fundamentally the administrations of the North and South and not the people of the North and South (Perham, 1960). The British allowed minimum contact between the North and the South because it was not in British interest that the North be allowed to be polluted by the educated South (Akinjide, 2002).
While it is true that northern Nigeria is not a religious monolith, Northern Nigeria houses a majority of the country’s Moslem population, most of whom are Sunnis. With their majority, the Moslem population sought the introduction of Sharia as the foundation of all legislation in the region. It should be noted that Northern Nigeria has always shared the sentiments of the Moslems of the Arab world for Islamic solidarity (Minorities Commission, 1958). Thus, Boko Haram, whose official name is Jama’atul Alhul Sunnah Lidda’wati wal Jihad which means Group of the Sunni People for the Calling and Jihad (NCTC, 2013), has been connected to the fanatical Palestinian movement that has been frustrated and desperate to avenge the Arab defeat in the Six Day War of June 1967 by using weapons of new terrorism that started September 11, 2001. In addition, Al Qaeda and aligned organizations have taken advantage of the situation in Nigeria to promote their own causes (Nossiter & Murray, 2011), including engaging in a war with the West. While not universally successful, these groups have benefitted from the misapplication of Nigeria’s federalism, and they have been able to recruit from militant groups in Northern Nigeria.

The mission of the Palestinian movements has been complemented in Nigeria by the Sharia debate which has been lingering in Nigeria since the Constituent Assembly controversy of 1977-78 (Aguda, 2002). When the debate resurfaced under the presidency of Olusegun Obasanjo, it was described as a political Sharia that would burn out. Though the National Council of States directed all Northern states to desist from implementing the Islamic legal system, the Northern states continue to insist that the Sharia system should be implemented. Former President Shehu Shagari and retired General Muhammadu Buhari immediately aligned themselves with the Sharia proponents by saying that Moslems have the right to insist on it because it is their way of life (Adebajo, 2000). They were not alone, because the then Vice President Atiku Abubakar stated at the Sultanate Council of Sokoto that State governors implementing Sharia were responding to the wishes of their people. In his words, “This is a democratic setting, they have the right to do the wishes of their land, and I don’t think that should bother anybody” (This Day, 2000).

As a result, as many as twelve of the states, Bauchi, Borno, Gombe, Jigawa, Kaduna, Kano, Katsina, Kebbi, Niger, Sokoto, Yobe and Zamfara in Northern Nigeria, have relied on Sharia Law as the basis of their legislative, executive and judicial arrangements. While there remains a lot of tension in the states where many Christians live, Mohammed Yusuf deemed the introduction of Sharia in these states as insufficient (Pham, 2012). The Federal Government, as it characteristically does, adopted the do-nothing approach while the Sharia controversies led to the legitimate existence of many ethnic militias and ethno-terrorism of which Boko Haram is the strongest (Wellington, 2008). Meanwhile, the domestic and international condemnation of the judgement of the Sharia courts has snowballed into the decision of its proponents to the point that they would not continue to accept and tolerate Western culture in their domains.

To compound the situation, at about this time, there was the proliferation of small arms and light weapons (SALW) coming from the conflicts in Liberia and Sierra Leone and smuggled across Nigeria’s porous 4,000-mile-stretch borders with Benin, Niger, Chad and Cameroon. In response in 2005, Obasanjo set up a Presidential Action Committee on Control of Violent Crimes
and Illegal Weapons that reportedly raised fears that extremist sects were gaining roots in the country.

Funds also flowed into Northern Nigeria from abroad to support the array of Moslem sects. In 2002, a Nigerian associate of Osama bin Laden reportedly received N300m ($3m at that time) from bin Laden to donate to several Islamist sects across Northern Nigeria, including Boko Haram (Walker, 2012). In February 2003, Bin Laden broadcast a message in which he said, “the areas most in need of liberation are Jordan, Morocco, Nigeria, Pakistan, Saudi Arabia and Yemen” (Lawrence, 2005, p. 183). Writing in 2011, Mai Yamani, author of Cradle of Islam noted,

Despite the decade of the West’s war on terror, and Saudi Arabia’s longer-term alliance with the US, the Kingdom’s Wahhabi religious establishment has continued to bankroll Islamic extremist ideologies around the world.

There were also reports of Libyan President Mohammed Qhaddafi of Libya sending financial resources to the group (Thomson, 2012). Another international source of financing has been from Muslim charity organizations in Europe. In 2012, the British House of Lords led an investigation against the charity Al-Muntada Trust Fund for transferring funds to Boko Haram (Kalu, 2012).

This funding should not be surprising because it seems that violence has been associated with religion since the beginning. In this way, the crisis of the foundation of Islam, which is paradigmatically recorded in Muhammad’s Hijra to Medina and the abiding claim to the Ka’ba in Mecca, readily comes to mind. Despite the original tolerance towards the Jews and Christians (the ‘people of the book’), a final alternative that can no longer be overcome by human beings presents itself. An indispensable claim arises out of the inclusion of Jews and Christians. “If they accept your faith, they shall be rightly guided; if they reject it, they shall surely be in schism. Against them God is your all-sufficient defender” (Muhammed, 656). An unbridgeable opposition arises here, as soon as others think that they can reject a conviction recognized as God’s truth. Also, despite the often-conciliatory tone to be found in the Qur’an, everything in Islam seems to be attuned to conquest and fighting. In the shaping of a just world, as conceived by Islam, the missionary goals of conversion and dissemination of the faith are legitimate and even called for under certain conditions. The conception of a common life shaped in accordance with the Qur’an and the Sharia seems to require at least violence and the resolute implementation of Allah’s will.

Connected to religion, the records of the destructive activities of Boko Haram are sufficiently within the public domain to demand documentation here. Suffice it therefore to say that the first violent uprising associated with the sect took place in December 2003. About 200 armed youths who styled themselves Al Summa Wal Jamma (Followers of the Prophet) attacked the police stations of two border towns in the state of Yobe, near Nigeria’s border with Chad. The attack was said to be in retaliation for what the sect termed maltreatment of its members by the police. By June 2009, the members of the sect encountered a team of Operation Flush, which is a special security unit under the control of the then Borno state governor Ali Modu Sherrif. The sect’s members sustained gunshot injuries from this encounter. In response, Yusuf Muhammad reportedly wrote and circulated an open letter to President Yar’Adua threatening violence. By July,
the sect fulfilled its threats through a series of brazen, coordinated attacks on police stations and government buildings in four states. This led to the capture of Yusuf. Yusuf’s father-in-law and two alleged financiers of the sect. Alhaji Buji Foi (Former Borno State Commissioner for Religious Affairs), and Alhaji Buni Wakil (local contractor) were also killed (Shenu, 2001).

The subsequent notorious activities of Boko Haram could be understood in the context of the questioning of the raison d’etre of the modern nation-state as climaxed in the reconstruction of Yugoslavia and Czechoslovakia in southern Europe (Huntington, 1991) as well as Somalia and Ethiopia in Africa. It should also be noted that the relevance of the Nigerian nation-state has been contested by the Igbo ethnic community who declared the short-lived Republic of Biafra. The crises in the Niger Delta that escalated following the execution of Kenule Saro Wiwa in 1995 by the Abacha junta are all in this clime (Nyiam, 1999). Thus, no matter what we may think of Boko Haram and its tactics, the truth that must be admitted is that this conflict is based on issues that are real and concrete (Laski, 1968). That is, we must admit that the best antidote to domestic terrorism is good governance. This would mean an explicit admission that bad governance leads to domestic restiveness. History will show whether we are right in seeking to construct a linkage between good governance and national peace and stability. But for now, it is as good a linkage as any to work on.

As human rights groups document accounts of abuses by the Nigerian security forces, local communities are alienated and Boko Haram’s sympathizers are further radicalized. Due to the sect’s attack on Western culture and Nigeria’s decadent political system whose legacy is corruption and poverty, the sect has a large and deeply devoted youth population galvanize to it because its socio-economic grievances resonate with theirs (Abraham, 1997). Meanwhile, the objective of Boko Haram is to weaken the government and governance, divert its security forces from other tasks, attract sympathizers, and ultimately force government into overreaction that would throw the population into the arms of the terrorists. This would be because citizens would not have the faith that their government can act swiftly and fairly since the government itself is understood to be inherently corrupt, and the feeling of injustice is prevalent.

Therefore, as of August 2014, Boko Haram is said to have about fifty thousand comrades (Stephen, 2014) comprising of Islamic students, clerics and professionals from the north, and these comrades are committed to its mission of murders throughout Northern Nigeria. Boko Haram hopes to introduce its own true version of Islam and liquidate Western culture starting with Northeast Nigeria by constituting itself into an irresistible agent of change. But, the present Boko Haram is a product of the weakness of Nigeria in not responding credibly to terrorism. Meanwhile, with this army of youth, the sect has held an attraction for Nigerian politicians who are on a desperate quest to gain or retain political office. It is a pattern across Nigeria that politicians cultivate, for the purpose of winning elections, armies of youths whose job it is to intimidate opponents, and create the kind of chaos that makes election rigging easy. This also explains the insouciance and dilatory response, and ever present reluctance and inability, to decisively resolve the issue (Abraham, 1997). It is an undeniable fact that Nigeria’s main political parties are using the sect to gain their own ends; a basis for trading accusations aimed at undermining opponents.
However, the sect’s demand for and declaration of Islamic caliphate (NCTC, 2013) could also be an attempt by the sect to undo the subordination of the old Kanem-Borno Empire under the politico-military power of the British colonial state that later became Nigeria. Boko Haram wishes to reverse this, and re-install and continue with the long existence of the Seifawa Dynasty in Kanem-Borno. This is because, unlike in the present circumstance where the North is bereaved of power, even under the colonial state, the dynasty has power. For instance, under Indirect Rule, “the tendency was to define the customary powers of the Emir” (Akinjide, 2002, p. 27) in a way so embracing as to fortify him from any external threat. If the native authority was akin to a colonial fortress in a hostile wilderness, the Emir (Chief) was its knight whose armor must not be allowed to be breached at any point (Mamdani, 1996). In sum, since the establishment of the Kanem-Borno Empire, the people have become accustomed to the idea of an Islamic state under the seemingly unquestionable authority of the Emirs. And, the colonial administration through the framework of Indirect Rule has acknowledged and reinforced the Caliphate notion of the ownership of the emirate by its rulers (NAI, 1958). Even the incursion of the military to power after independence allows the North to enjoy the largest concentration of power at the center.

Therefore, the dynamite that would eventually explode the peace of Northern Nigeria was laid by the re-introduction of democracy in 1999. In this democratic dispensation, characteristically insensitive to the wounded pride of the North whose son Umaru Musa Yar’Adua could not complete his tenure due to death and from whom political power had slipped, Goodluck Ebele Azikiwe Jonathan contested and won the presidency in 2007. Even granted that he had the right to contest, his election nonetheless showed poor political judgement on his part. Jonathan fatalistically failed to grasp the adverse relationship between the interests of the North and the rhetoric of liberal democracy. In this way, he mistook popular complacency in the face of power of incumbency for acquiescence. Therefore, the centralization of power at the center coupled with the fact that the South had been ruling since 1999, except for the interregnum of Yar’Adua, created a monstrosity that continues to bedevil the nation today. The virtual loss of power by the Northern elite who had practiced democracy since 1999 (Soyinka, 2011) represented an idea that was alien to Northern Nigeria. The result has led to the perception that the minorities are trying to take over the country. Boko Haram, with a powerful network of remote and immediate sponsors, is therefore a continuation of the struggle for power between the North and the South (For more on how the struggle by regional elites to control how central power has made the Nigerian state crisis-ridden, see for example, “Nigerian Politics: The Ordeal of Chief Awolowo,” and “Contradictions in the Nigerian Political System” in Sklar and Whitaker’s African Politics and Problems in Development.)

The sect Boco Haram has therefore been using terrorism in conjunction with rural and urban guerrilla warfare in an all-out bid to topple government interests in Northern Nigeria. The actions are systematic, premeditated and calculated. They have continued to use systematic murder, suicide bombings, mass adoption, injuries, and wanton destruction of lives and properties to create a climate of terror, to publicize its disdain for Western culture all in the bid to coerce a wider population of Moslems in the north and to submit to its aim of an Islamic caliphate. The
resulting toll in deaths, injuries and destruction are not the primary objectives. The carnage is a means to an end, part of the atmosphere of shock and fear that the sect wishes to create in order to undermine government authority and gain a hearing for its cause; which is a change of the idea that there is no future outside Western culture, change of the idea of the Saturday-Sunday weekend, change from the penal code to Sharia code in the executive, legislative and judicial administration, to abolish of Christianity, at least in Northeast Nigeria, and to ultimately establish an Islamic state.

Since the terrorists’ activities in Algeria and Cyprus against French and British colonial powers succeeded in ending colonialism in those places, it is possible to end everything Western in Northern Nigeria. This can be ensured by the short-term gains of publicity, cash ransoms and release of terrorist prisoners. It is no wonder that the Boko Haram issue has now dominated the attention of Nigerians, Africans, and the World to the exclusion of related crimes, and the identification of the forces and individuals that were created and have sustained those policies (Haruna, 2001).

**Conclusion**

An attempt has been made in this paper to highlight how Nigeria’s federalism created the platform for the emergence of Boko Haram’s domestic terrorism. Nigerians’ mistrust of their political leaders is historically documentable. Regardless of whether its cause is the British amalgamation of 1914, long military rule or something else, it is a part of the Nigerian character. At least in part, because of government excess which is the consequence of the defects of Nigeria’s federalism, Islamic insurrection has grown throughout Northeast Nigeria. The implication of this study is therefore that there is an avoidable causal effect to the Boko Haram terrorism. In retrospect, when there is unity in diversity, when each unit is coordinated and independent to a reasonable extent, when power with the accompanying responsibilities is devolved of coordinated units to ensure their growth and development, when injustice of whatever kind is not condoned, when equality of all is guaranteed, when domination of one nationality or a group of nationalities by another is not allowed, when no unit is alienated under whatever guise but each has a sense of belonging, and when transparency, honesty, accountability and selflessness characterize leadership, only then will Nigeria experience peace (Olukoshi & Agbu, 1996).

Rendering a final or an authoritative judgement on Boko Haram’s terrorism against Nigeria is not only required at this point in time, because it is actually not the objective of this piece. That would be a task for a later date and much fuller work. Here, we have restricted our analysis to describing and explaining the connection of Nigeria’s brand of federalism with the emergence of the militant group Boko Haram. If this piece eventually serves as a platform from which deeper studies and in-depth analyses of the interconnectedness between Nigeria’s brand of federalism and how the emergence domestic terrorism would take off, then it would have achieved its modest expectation.
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Water Poverty and its Impact on Income Poverty and Health Status in Sudan: The Case of Gezira State (1993-2013)

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Abstract

Water resource development can address poverty, improve well-being, and enhance people's opportunities in different fields of life. Even though water resources are available in Sudan, some parts of the country still continue to face significant water provision challenges. This research is aimed at measuring water poverty in Gezira State, Sudan over the period of 1993-2013 using the methodology of Sullivan et al. (2003). The research employed data collected from the Central Bureau of Statistics, Khartoum, Sudan. Both descriptive and empirical approaches are used to analyze the data. The average incidence of the water poverty index (WPI) over the period under consideration is estimated at 41.8 %, which is quite high given the fact that Gezira State is endowed with huge water resources and capacities. Environmental problems are found to be the main contributor to water poverty in the state. The results also assert that water poverty significantly increases income poverty. In this case, a 1% increase in water poverty is found to increase income poverty by 2.3%. It is worth noting that agriculture is the dominant economic activity in Gezira State because water is of paramount importance for production, grazing, and agro-industries. Furthermore, the results reveal that water poverty significantly reduces life expectancy at birth. The elasticity of life expectancy at birth with respect to changes in the WPI is estimated at -0.11. The study recommends the adoption of better water use in various fields of development besides solving the water supply problems, particularly in rural areas of the state, solving the environmental challenges that face water resources, enhancing institutional capacities for the water sector, improving the level of water management by the adoption of effective water regularity systems, and encouraging water awareness programs through the different types of media. Investing in water and sanitation is highly recommended to generate rapid returns.

Introduction

There's no doubt that water is essential for life. It covers 70% of the Earth. Water also is considered a key factor for development since a good water supply will increase productivity in agriculture, livestock, and industry, and help eradicate extreme poverty and hunger. The Millennium Development Goals (MDGs) as well as the Sustainable Development Goals (SDGs) were put forward by the United Nations in 2000 and 2015, respectively, to improve the quality of life for people around the world. It is worth noting that the MDGs and the SDGs are directly or indirectly water dependent.

Water contributes to rural and urban livelihood in many ways. Adequate access to water is a prerequisite for realizing development. Water resource development can address poverty,
improve well-being, and enhance people's freedom and opportunities to accumulate assets that give them dignified lives. Currently for many rural poor, water security is necessary for livelihood security. Even with diversification of rural livelihood and with increasing urbanization, it is estimated that 50% of the poor people will remain in rural areas by 2035; a significant number of them are small producers (IFAD, 2001).

It is a well-known fact that water is essential for life, and an adequate water supply is a prerequisite for human and economic development. Global water resources are limited, and only through a more sustainable approach to water management and more equitable and ecologically sensitive strategies of water allocation and use can we hope to achieve the set international development targets for poverty reduction by 2015 (Sullivan, 2002).

Although water may be abundant globally, water scarcity may be a problem regionally or locally, especially if quality and sustainability considerations are included in the assessment of the resources. Even though water resources are available in Sudan, some parts of the country still continue to face significant water provision challenges. Some parts of Gezira State, Sudan still lack water supplies, particularly in rural areas of the state. The situation becomes worse in summer every year.

The main objective of this paper is to highlight the issue of water poverty in Sudan with special reference to Gezira State. The paper also aims at computing the water poverty index (WPI) in the Gezira State during the period of 1993 to 2013. Furthermore, the paper investigates the impact of the WPI on income poverty and health status in Gezira State.

The importance of this research stems from the fact that water is essential for life and development. Water, both for production and consumption, plays a critical role in any population’s development. Furthermore, improvement in the water supply and sanitation sector would also increase the likelihood of achieving the rest of the MDGs and SDGs.

This paper uses both descriptive and analytical approaches. After computing the water poverty index, some descriptive statistics namely, the mean, standard deviation, and coefficient of variation, will be extracted and analyzed. The Ordinary Least Squares (OLS) technique will also be used to investigate the impact of the WPI on income poverty and health status in Gezira State.

The rest of this paper is organized as follows: Section 2 deals with the literature review, while Section 3 illustrates the methodology and data used in the study. Section 4 discusses the empirical results and policy implications and the findings. Finally, section 5 finishes the paper with some concluding remarks.

**Literature Review**

Water poverty is a catchall term used to refer to a lack of access to clean water for drinking, washing, and bathing, and it includes a lack of access to proper sanitation. According to Tobin (2014), water poverty means that your nearest source of water is far away, unclean or unaffordable. Around the world, 783 million people suffer from water poverty. Water is so fundamental to every aspect of life that water poverty affects people in many other ways – children fetch water instead of going to school, women are trapped in endless hours of back-breaking work fetching water, and
people suffer from fatal and debilitating water-borne diseases. Water poverty also includes sanitation (toilets) and the promotion of hygiene. Sanitation is an even bigger problem than lack of water with 2.5 billion people worldwide suffering from a lack of good enough toilets or latrines. Getting hold of clean water isn’t good enough if the water is being made dirty because there are no toilets, and toilets aren’t good enough if there is no hygiene promotion to get whole communities to change the habits of generations so they use the latrines.

According to the World Wide Fund for Nature (2012), water poverty was measured as a combination of resource availability and people’s ability to access the resource. For instance, people were considered water poor if sufficient water for their basic needs was not available. Similarly, they were water poor if they had to walk long distances to collect water. Overall, only the availability of natural water sources at the village level has been considered in calculating water poverty. Subsequently, it was realized that many other factors apart from availability and accessibility can be responsible for water poverty. Today, it is accepted that people can be water poor because, among other reasons, they do not earn an adequate income. People can also be water poor if they do not have the means to ensure purification of drinking water. The Water Poverty Index (WPI) was developed to express the complex relationship between sustainable, water resource management and poverty at all levels, whether community, village, district, region or nation. In recent times, the WPI has been used as a policy tool to assess the degree to which water scarcity impacts human populations.

The WPI is an integrated assessment of water stress and scarcity, linking physical estimates of water availability and the socio-economic factors which impact the access and use of this resource. The purpose of the index should thus be to identify the ability of countries or regions to address their water supply needs. In other words, it is hoped that the development of such an index will enable decision makers to target (at various levels) crosscutting issues in an integrated way, by identifying and tracking the physical, economic and social drivers that link water and poverty. The WPI indicates that there is a clear link between poverty, social deprivation, environmental integrity, water availability and health (Giné & Foguet, 2009).

Yahaya et al. (2009) evaluated the WPI as an integrated tool available to all local government areas in the Ondo State of Nigeria to address their water sector. Simple time analysis and composite index approaches were employed to compute WPI values in all the sampled areas. Variables such as water resources, access to safe water, use of water, and environmental impacts were considered. The study evaluated the water poverty index using two approaches and also some other indexes such as human development, and combined their finding together to determine the degree of water stress in each of the local government areas in the state then recommended realistic measures to address the pathetic situation. The results obtained from the two approaches indicated that the Ese-Odo, Ilaje and Irele local government areas are the most water-stressed regions. These findings were coupled with a low Human Development Index in the state, while areas such as Ose, Owo, Ondo-West, and Ondo-East local government areas had far better access to portable water and a better Human Development Index. Heuristic application of the composite index approach to test the generated dataset provided flexible and strong decision-making strategies in such a way as
to construct a holistic water management tool that addressed the problems of poverty and its relationship to water access and use. The results also asserted that many state and local government areas were moving towards a point where water resources are insufficient for agriculture, drinking and other domestic uses.

Using household data from the 2009 General Household Survey, Matshe et al. (2010) investigated the role of natural resource scarcity in rural development in South Africa, with a particular focus on water scarcity. The study examined whether there was a direct link between household water and economic poverty of rural households, with household total monthly income used as an indicator of economic poverty. An adaptation of a comprehensive water poverty index, which considers water access, quality, use, and water-related environmental aspects, could be used to measure household-level water poverty. The empirical analysis used an instrumental variable estimation framework in order to deal with the potential endogeneity between water and economic poverty. The results supported the existence of a direct link between water and economic poverty, with water-poor households likely to be economically poor. More precisely, the results suggest that access to good quality water from a reliable source significantly enhances a rural household’s economic status. Also, access to water determines the realized impact of overall water poverty on household’s economic status. The paper thus cautions that the development of policy not treat water and economic poverty in isolation; there is need for the development of policy in South Africa to streamline water use in rural development. In addition, development of policy needs to take into account the role of household heterogeneity as conditions of both household water and economic poverty levels.

The WPI is based on five components: resources, access, capacity, use and environment as argued by Lawrence et al. (2002). The WPI can be used then through its individual figures or in the form of its components as an interdisciplinary and monitoring tool that expresses precisely the water situation in various areas. The WPI must be based on equally weighted averages to produce single component index scores.

Manandhar et al. (2012) used the WPI to evaluate the state of water resources in the context of the Nepalese river basins with a case study of the Kali Gandaki River Basin (KGRB) located in western Nepal. They selected suitable indicators with due care of local context and data availability to apply the WPI that was felt to be a holistic tool for water resource planning and management. The study suggested and described a set of ten WPI indicators and twelve variables suitable for the Nepalese context. The selected set of indicators and variables were used to discuss the water poverty situation in the study basin, spatial variation within the basin, and variation at different spatial scales in the basin, that is, basin, sub-unit of the basin (district) and sub-unit of the district (the Village Development Committee (VDC)). The study results show that the WPI varies widely (from 37.1 to 56.5) within the study basin suggesting the need of location-specific policy interventions. On different spatial scales, there is no clear trend. However, analysis of the WPI components show higher resources and access at the basin level, i.e. higher use, environment and capacity at the sub-sub-unit of the basin level. Such variations suggest the need of scale-specific policy interventions and management plans to improve the overall water poverty situation in the
study basin. Overall, the WPI can help to examine the water poverty situation and recommend priority areas for policy interventions for the improvement of the water-poverty situation in the basin.

In an examination of other parts of the world, Fenwick (2010) argued that Mexico has had an astounding array of water challenges where even areas with a natural abundance of water face difficulties in the provision of an adequate water supply. Particularly compelling is the region of Los Altos. Situated within Mexico's most water-rich state, Los Altos' access to water is exceptionally constrained. This contrast of scale was the incentive for selecting the rural communities of Pozuelos and El Mash to examine water poverty in detail. A careful examination of water poverty was first undertaken at the state level. Next, water poverty was assessed in the community through an extensive field study comprising of a thorough assessment of infrastructure, water quality analyses, researcher observations, informal interviews and participatory focus groups. These data provided the basis for calculating the WPI at the community level. Analyses were then undertaken focusing on statistical correlations using Pearson's product moment correlation coefficient informed by researcher observations, regression analyses and community perceptions. As the only indicator to assess the multiple dimensions of water poverty, the WPI, by definition, is the best tool available. However, the issue of scale continues to be challenging whilst predictions of water poverty are complex and marred by subjectivity. A lack of consensus surrounding appropriate variables is problematic and inhibits comparisons across localities. Perceptions of water poverty at the community level differ from results obtained using the WPI which further questions reliability. Notwithstanding, the WPI highlights the need for a multidimensional approach to the determination of water poverty by demonstrating the lack of relationship between water resource availability and overall water poverty across scales. However, this research has demonstrated the complex nature of the WPI rendering its application in practice as being quite difficult.

**Gezira State**

Gezira State is located in the middle of Sudan. It is delimited on the North by Khartoum State, Sinner State on the South, Gadarif State on the East, and White Nile State on the West (Latitude 14-25 North, Longitude 33-30 East, and 407 meters above sea level). Gezira State has an area of 25,549.2 km² and an estimated population of approximately 3.6 million. The average household size is estimated to be 6 persons. Gezira is divided into seven localities from North-East to South-West namely Alkamlin, Eastern Zone, Alhasahisa, Um Al Guar, Greater Wad Medani, Almanagil and Southern Gezira. The normal annual rainfall ranges from 120 to 200 mm in the northern part of the state and between 200 to 300 mm in the southern part. The population of Gezira state was about 3.8 million in 2011 according to the 2008 census. Gezira State ranks second after Khartoum State in terms of human development. The adult literacy rate is high (about 80%). The incidence of poverty is about 38% compared to 26% in Khartoum and above 55% in eight other states in Sudan. The unemployment rate (10+) is 17%, while unemployed people seeking work for first time (10+) is 68%. The economic activity rate is 34%. Regarding agricultural
production, sorghum is a main crop, which is planted under rain fed irrigation (Gezira State Environmental and Natural Resources Council, 2012).

Gezira State enjoys water resources from the Blue Nile, Rahad and Dinder Rivers. Groundwater quality is generally good, except in some locations such as Abu Guta and Managil where Hafir and filtered water from irrigation canals are the sources of drinking water. In the last few years, great efforts have been made to dig very deep artesian wells to improve the water supply in these areas.

The Gezira Agricultural Scheme (GAS) was founded in 1913 to cover an area of 153,415 hectares, making it one of the largest irrigation schemes in the world as it comprises 35-50% of the total cultivated area in the country (about 32% of the state). The scheme is divided into 18 sections. The main agricultural products in all the sections are cotton, sorghum, wheat, groundnuts and vegetables. The canalization network consists of 5,649 km with a depth ranging from 0.50 to 0.75 meter. In this scheme, more than 85% of the pesticides imported into Sudan are used for the control of cotton pests (Thorton, 1972.). Every year, the scheme receives intensive aerial spraying of pesticides from different classes that is directed toward cotton, wheat and vegetable pests. Cotton spraying starts in August and ends in November, while wheat spraying starts in February and continues through March, and vegetable spraying is performed all year round according to the pests and the cultivated vegetables.

Methodology and Data

This section focuses on the research methodology that was used in the analysis of the findings, and the sources of data employed in the study. As mentioned earlier, the purpose of this paper has been to compute the WPI for Gezira State, Sudan during the period of 1993 to 2013, and to investigate the impact of the WPI on income poverty and the health status in the state.

The researcher used the methodology developed by Sullivan et al. (2003) for computing the WPI. The WPI stems from a realization that assessing a household’s access to water requires a holistic approach that takes into consideration, not only whether or not a household has access to water, but also issues related to water quality and variability, multiple uses of water, a household’s capacity to manage water, as well as environmental and spatial scale aspects related to water. In proposing a WPI that considers these aspects, Sullivan et al. (2003) identified, via a community participatory approach, the following five components as key to a holistic WPI:

1. Resources: This captures physical availability of both surface and groundwater,
2. Access: This considers access to water for human use (drinking and nondrinking),
3. Capacity: This relates to the ability of people to manage water,
4. Use: This considers the multiple uses of water, and
5. Environment: This seeks to factor in environmental integrity related to water resources.

These five components are used to construct a WPI. Sullivan et al. (2003) argued that the construction of the WPI should follow a structure similar to that of the Human Development Index (HDI). Specifically, each component is constructed via the following general formula:
\[
WPI = \frac{\sum_{i=1}^{N} w_i X_i}{\sum_{i=1}^{N} w_i}
\]

Where:
- WPI = Water Poverty Index;
- \(X_i\) = Component \(i\) of the household’s WPI, with \(i = \) Resources (R), Access (A), Capacity (C), Use (U), and Environment (E).
- \(w_i\) = The weight applied to the WPI.

The formula can be re-written as:

\[
WPI = w_R R + w_A A + w_C C + w_U U + w_E E
\]

The above formula gives the weighted average of the five components. Each of the five components is first standardized so that it falls in the range 0 to 100, thus the resulting WPI value is also between 0 and 100.

The data on the variables of interest are collected from the publications of the Central Bureau of Statistics (CBS), Sudan. It is worth mentioning that except for the average annual rainfall, annual time series data on the variables of interest are not available. Thus, using data from the years 1993 and 2008 (as shown in Table 1), and adopting the growth rate methodology between two end periods, annual time series data on the research variables was produced for the period under consideration.

Table 1

\(WPI\) Components and Indicators for Gezira State, Sudan (1993, 2008)

<table>
<thead>
<tr>
<th>Components</th>
<th>Data Used (Variable)</th>
<th>1993</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources</td>
<td>Annual average rainfall (mm)</td>
<td>247.6</td>
<td>250.7</td>
</tr>
<tr>
<td></td>
<td>Coefficient of variation of rainfall</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Population</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Iliteracy rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Education enrollment rate</td>
<td>2,715,605</td>
<td>3,549,026</td>
</tr>
<tr>
<td></td>
<td>Percentage of population</td>
<td>44.4%</td>
<td>26.6%</td>
</tr>
<tr>
<td></td>
<td>Number of beds in hospitals for 100000 population</td>
<td>2.6</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>Percentage of population with access to safe water</td>
<td>54%</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>Per capita domestic water use (in litre per day)</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Access</td>
<td>Percentage of population with access to sanitation services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Central Bureau of Statistics (CBS), Khartoum, Sudan.
It is worth mentioning that the WPI according to the Sullivan et al. (2003) formula examined the index as a water management index in the sense that the high value of the index means a low water poverty rate. This research directly computes the water poverty rate by converting the variables of interest to deprivation indicators (school dropout, percentage of population without access to safe water, percentage of population without access to sanitation services, etc.).

After computing the WPI for the period of 1993 to 2013, this paper has investigated the impact of the WPI on income poverty (head count index; H) and health status proxied by life expectancy at birth (L). Time series data on these two variables are also computed using the growth rate for two end points. In the last two population censuses, namely in 1993 and 2008, life expectancy at birth in Gezira State was estimated at 58.4 years and 61.3 years, respectively. The head count index for the poverty rate in Gezira State in the years 1993, 1996, and 2009 was computed at 86%, 92%, and 37.8%, respectively. These objectives of impact analysis were realized by adopting the Ordinary Least Squares (OLS) technique. It was hypothesized that the WPI impacts positively on income poverty, while it impacts negatively on health status.

The Empirical Results

To carry out the research objectives, it was useful to provide some descriptive statistics for the study variables as given in Table 2.

Table 2
Descriptive Statistics for the Study Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>average</th>
<th>Standard Deviation (SD)</th>
<th>Coefficient of Variation (C.V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPI</td>
<td>41.8</td>
<td>6.4</td>
<td>0.153</td>
</tr>
<tr>
<td>H</td>
<td>59.1</td>
<td>21.8</td>
<td>0.370</td>
</tr>
<tr>
<td>L</td>
<td>60.2</td>
<td>1.2</td>
<td>0.020</td>
</tr>
</tbody>
</table>

Source: Researcher’s own calculations based on data of the appendix.

It is clear from Table 2 that the average incidence of the WPI is estimated at 42%. Environmental problems constitute the main cause of water poverty in the State. Although water poverty was reduced from 50.9% in 1993 to 42% in 2003 and further to 31.2% in 2013 (Table 3), the average WPI of 42% is quite high given the fact that Gezira State is endowed with huge water resources and capacities. It is also clear from Table 2 that on average, 59% of the population of Gezira State is classified as poor. The head count index is found to be highly volatile compared to the other two indicators, with a coefficient of variation of 37%. The average life expectancy at birth is estimated at 60 years.
Table 3

Water Poverty Index (WPI), Life Expectancy at Birth (L), and Head Count Index (H) for Gezira State, Sudan (1993 – 2013)

<table>
<thead>
<tr>
<th>Years</th>
<th>WPI (%)</th>
<th>L (Years)</th>
<th>H (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>50.91</td>
<td>58.4</td>
<td>86</td>
</tr>
<tr>
<td>1994</td>
<td>50.04</td>
<td>58.6</td>
<td>87.9</td>
</tr>
<tr>
<td>1995</td>
<td>49.43</td>
<td>58.8</td>
<td>89.8</td>
</tr>
<tr>
<td>1996</td>
<td>48.93</td>
<td>58.9</td>
<td>92</td>
</tr>
<tr>
<td>1997</td>
<td>47.44</td>
<td>59.1</td>
<td>85.7</td>
</tr>
<tr>
<td>1998</td>
<td>46.79</td>
<td>59.3</td>
<td>79.9</td>
</tr>
<tr>
<td>1999</td>
<td>45.92</td>
<td>59.5</td>
<td>74.5</td>
</tr>
<tr>
<td>2000</td>
<td>44.53</td>
<td>59.6</td>
<td>69.4</td>
</tr>
<tr>
<td>2001</td>
<td>43.5</td>
<td>59.8</td>
<td>64.7</td>
</tr>
<tr>
<td>2002</td>
<td>43.84</td>
<td>60.0</td>
<td>60.3</td>
</tr>
<tr>
<td>2003</td>
<td>42.01</td>
<td>60.2</td>
<td>56.2</td>
</tr>
<tr>
<td>2004</td>
<td>40.21</td>
<td>60.4</td>
<td>52.4</td>
</tr>
<tr>
<td>2005</td>
<td>39.78</td>
<td>60.5</td>
<td>48.8</td>
</tr>
<tr>
<td>2006</td>
<td>38.92</td>
<td>60.7</td>
<td>45.5</td>
</tr>
<tr>
<td>2007</td>
<td>36.69</td>
<td>60.9</td>
<td>42.4</td>
</tr>
<tr>
<td>2008</td>
<td>35.57</td>
<td>61.3</td>
<td>39.5</td>
</tr>
<tr>
<td>2009</td>
<td>44.83</td>
<td>61.5</td>
<td>37.8</td>
</tr>
<tr>
<td>2010</td>
<td>33.48</td>
<td>61.7</td>
<td>35.3</td>
</tr>
<tr>
<td>2011</td>
<td>31.86</td>
<td>61.9</td>
<td>32.9</td>
</tr>
<tr>
<td>2012</td>
<td>31.98</td>
<td>62.0</td>
<td>30.7</td>
</tr>
<tr>
<td>2013</td>
<td>31.24</td>
<td>62.2</td>
<td>28.6</td>
</tr>
</tbody>
</table>

Sources: Central Bureau of Statistics, Khartoum, Sudan and Own Calculations based on the Growth Rate for Two End Points.

By applying the Ordinary Least Squares (OLS) technique, we investigated the impact of the WPI on income poverty and life expectancy at birth. The estimation results are shown in Table 4 where the figures inside the parentheses are the t-ratios of the estimated parameters (elasticities) and those inside the square brackets are the P-values.

The estimation results of Table 4 reveal that the WPI explains there is an 88% and 84% change in income poverty and health status, respectively. Both the estimated equations are statistically significant at the 1% level as indicated by the F–ratios in both estimated equations. The Durbin–Watson statistic (D.W.) indicates the absence of a serial correlation problem at the 1% level in both estimated equations. The results also signify that water poverty significantly increases income poverty. More precisely, a 1% increase in water poverty is found to increase
income poverty by 2.3%. It is worth noting that agriculture is the dominant economic activity in Gezira State for which water is of paramount importance for production, grazing, and agro-industries. Furthermore, the results reveal that water poverty significantly reduces life expectancy at birth. The elasticity of life expectancy at birth with respect to changes in the WPI is estimated at -0.11.

Table 4
*The Impact of WPI on Income Poverty in Gezira State, Sudan 1993 – 2013*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Estimated Coefficient (elasticity) of</th>
<th>F-Ratio</th>
<th>R²</th>
<th>D.W.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constant (a)</td>
<td>Ln WPI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ln H</td>
<td>- 4.6</td>
<td>2.3</td>
<td>133.2</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>(-6.1)</td>
<td>(11.5)</td>
<td>[0.000]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.000]</td>
<td>[0.000]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ln L</td>
<td>4.5</td>
<td>- 0.11</td>
<td>98.5</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>(105.5)</td>
<td>(-9.9)</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>[0.000]</td>
<td>[0.000]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source*: Researcher’s Own Calculations.

The study recommends the adoption of better water use in various fields of development, other than solving the water supply problems. Particularly in rural areas of the state, solving the environmental challenges that face water resources, enhancing institutional capacities for the water sector, improving the level of water management by the adoption of effective water regularity systems, and encouraging water awareness programs through different means of media should be the focus for creating policies. Investing in water and sanitation is highly recommended to generate rapid returns.

**Concluding Remarks**

This paper adopted Sullivan et al. (2003) methodology to compute the WPI for Gezira State during the period of 1993 to 2013. The average WPI during the period under study is estimated at 42%, which is considered quite high given the resources and capacities the state is endowed with. Environmental problems constitute the main cause of water poverty in the state. The results also reveal that the WPI impacts positively on income poverty and negatively on life expectancy at birth. The study recommends the adoption of better water management and use in various fields of development. Solving the problem of the water supply, particularly in rural areas of the state, is highly recommended in addition to adopting effective water regularity systems, encouraging water awareness programs, improving the environmental conditions for water resources, and investing in water and sanitation.
References


