

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
KUMASI**

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TOWARDS A SUSTAINABLE PROCUREMENT IN GHANA

BY

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**A THESIS SUBMITTED TO THE DEPARTMENT OF BUILDING
TECHNOLOGY, KWAME NKRUMAH UNIVERSITY OF SCIENCE AND
TECHNOLOGY, KUMASI IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF**

**MASTER OF SCIENCE
IN
PROCUREMENT MANAGEMENT**

NOVEMBER, 2013

DECLARATION

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

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ABSTRACT

The study made use of physical, scientific and social science tools. In order to assess sustainable procurement issues, structured questionnaires were circulated, targeting procurement staffs in building and civil consulting outfits, few building and civil engineering contractors, government ministries, Metropolitan, Municipal and District Assemblies and a few manufacturing companies in and around Greater Accra region with building technologists making up the greater percentage. Most of the questions in the questionnaire were designed using Likert scale strategy, which measures respondents' attitude by asking the extent to which they agree or disagree with most of the issues at stake. The questionnaires were randomly circulated for this study. In all, about 100 questionnaires were circulated of which 56 were received and analysed using descriptive statistical tools like Mean, median, mode and standard deviations. A software called Statistical Package for Social Sciences (SPSS) was used for the data analysis. From the study, one of the key findings was that majority of the people do not adopt effective sustainable procurement practices. The study found out that, the Public Procurement Act, somewhat succeeded in harmonizing the process of procurement in public entities. To a larger extent, however, it has failed to address issues of Green Procurement, as well as issues of effective monitoring and evaluation of procurement activities. To ensure sustainable procurement in Ghana, the Public Procurement Act must be amended to include effective green procurement elements. There must be effective monitoring and evaluation of procurement activities of firms, as well as instituting effective penalizing mechanisms. Sustainable procurement is key to attaining sustainable development, and its attainment depends on efforts of all stakeholders. Through redesigning of its procurement policies and procedures, Government of Ghana can see many multiplier benefits internally and across society as a whole, including efficiency gains, energy usage reductions, financial savings, improved access to services and better working conditions.

ACKNOWLEDGEMENT

My first and foremost thanks go to the Almighty God, the fountain of all knowledge. He has been so gracious and merciful to me throughout my life and I owe him much gratitude. Also, sincere gratitude goes to my supervisor, Mr. K. Ofori-Kuragu whose great efforts and push helped in finishing this dissertation.

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DEDICATION

This project work is dedicated to Almighty God, My lovely Wife- Hindu, My children: Chalsong, Halsung, Mandieya, Yalsma and Nabiya, my lovely siblings and to all those who helped to make this project a success.

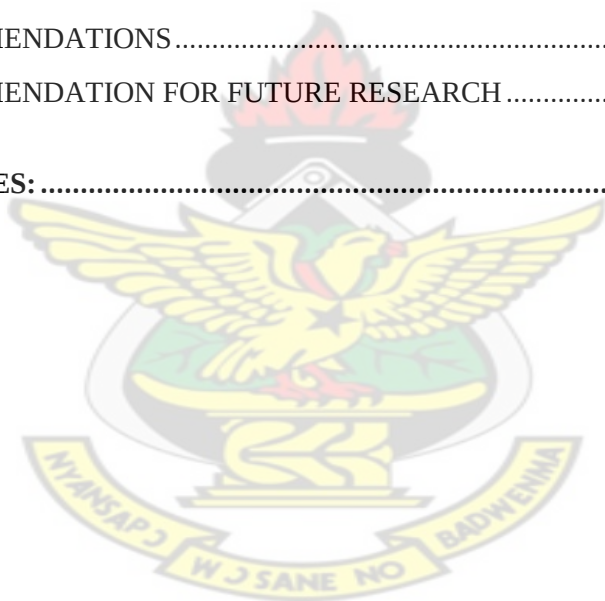
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CHAPTER ONE

GENERAL INTRODUCTION

1.1BACKGROUND

Sustainable procurement could be described as an acquisition process whereby public and private organizations meet their needs of goods, services and works in a way that achieves value for money on a whole life-basis in terms of generating benefits not only to the organization, but to society and the economy at large, whilst minimizing damage on the environment. In addition, sustainable supply chain is the management of raw materials from suppliers to manufacturers / service provider to customer and back, with improvement of the social and environmental impacts explicitly considered.

It is important we make our procurement processes environmentally friendly and climate neutral, a process we can call "Green Procurement". Factors such as the efficient use of energy and resources, reclamation of mined sites, reforestation and eliminating wasteful practices that could lead to global warming and environmental pollution should be adopted. We need to develop sustainable procurement guidelines which will establish the criteria that may be used by any organization or procurement entity for the procurement of local order categories of goods, works and services in Ghana. This we will say will be a good pacesetter towards being mindful and conscious about the environment in the sub-region, an example others will follow.

One should however note that procurement situations and market conditions are not the same everywhere and therefore there can be no straightforward solution to that effect. In this regard there is a need for an agency like the Public Procurement Authority to form under it a body with a sustainable development expertise or knowledge with a sole task of making sure we procure sustainably in all endeavor.

Strategies like corporate social responsibility, which affect ethics, citizenship and philanthropy where economic performance or the financial viability of a business organization balances with environmental and social responsibility should be encouraged.

1.2 PROBLEM STATEMENT

Sustainable public procurement is increasingly recognized as an instrument of government policy and a lever for wider economic, social and environmental changes. OECD, (2007). In Ghana, however there exist not a clear cut criteria, principles or guidelines for sustainable procurement of goods, works and services. In our quest as a nation in attaining sustainable development, and transiting into a full middle income status country, sustainable procurement must be our main focus.

Public and private organizations procure goods, works and services without consciously taking into consideration its impacts on the environment. Legislations to sustainable procurement in Ghana are not clear cut, thus making the implementation process a cumbersome one. The Public Procurement Act (663) of 2003 for instance, lacks sustainability ingredients to help ensure green procurement. This resulted in local conditions and market, remaining devoid of Sustainable Procurement elements. Businesses in the country remain ignorant of the best sustainable procurement practices, since education in this field is limited. According to the Chief Executive Officer of Public Procurement Authority, Mr. Sallas-Mensah, in March 2013 Edition of Ghana Business News, waste management and economic use of resources are some obvious challenges we face as a nation and sustainable Public Procurement can help address them to a larger extent. Despite the important role played by the procurement

act, it appears that, government institutions go through a lot of lengthy bureaucratic processes in acquiring goods and services. This according to Nketia-Asante, (2009) leads to low productivity, inefficiency and loss of money and detrimental effect on government. This study therefore looks at steps that should be carried out in Ghana to maximize the benefits of sustainable procurement practice.

1.3 ORGANIZATION OF THE STUDY

The study is organized into four chapters. Chapter one provides the background of study, looks at the problem statement and continues to state the research aims and objectives. This chapter also includes the significance, scope and organization of study. Chapter two focuses on the review of relevant literature concerning the study. Chapter three is devoted to the research design and methodology employed for this study, including analysis and key findings, as well as discussion of findings. Chapter four presents a summary of findings of the study. It also includes conclusions and recommendations of the study.

1.4 AIMS

The aim of this study is to;

Suggest ways by which procurement processes by public and private organizations will take into consideration negative impacts such processes have on the environment, and thus put in place necessary steps to mitigate such impacts.

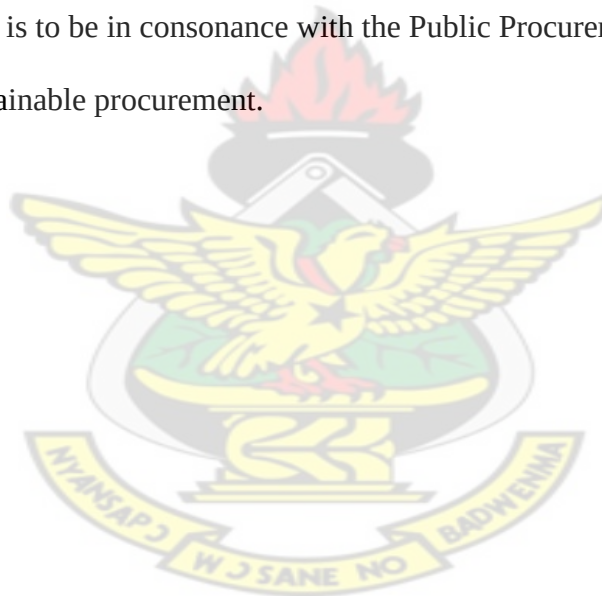
1.5 OBJECTIVES

Main Objectives are;

- To find out the extent to which procurement practices in Ghana, embrace sustainability considerations.
- To bring out the potential challenges existing in procurement practices, which work against sustainable procurement in Ghana, thus helping us move towards sustainable procurement.
- To make recommendation geared towards attaining sustainable procurement

1.6 SCOPE

The scope of this study is on a broad base to cover sustainable procurement practices in Ghana and it is to be in consonance with the Public Procurement Act (663), 2003 and global sustainable procurement.



CHAPTER TWO

LITERATURE REVIEW:

2.1 THE NATURE OF SUSTAINABLE PROCUREMENT

Sustainable procurement is a process whereby public institutions meet their needs for goods, services and works in a way that achieves value for money on a whole life cycle basis in terms of generating benefits not only to the organization, but to society and the economy, while minimizing damage to the environment (Aurora Energy system, 2008; DEFRA, 2006).

Sustainable procurement (or Green Procurement) is a spending and investment process typically associated with public policy, although it is equally applicable to the private sector. It is linked to the wider agenda of sustainable development.

Traditional procurement has focused on value for money considerations only whilst sustainable procurement involves achieving value for money on a whole life basis by considering the economic, environmental and social issues having to do with the goods and services bought, with an aim of reducing possible extreme effects. The Ghana's Public Procurement Act, Act 663, as it stands now, seems to address only few of the sustainability issues. The challenge is to define how to possibly include economic, social or environmental considerations in the process, while ensuring that, government's decisions, as far as procurement is concerned are fair and transparent. Sustainable procurement is a global problem and therefore Ghana is not an exception.

The purpose of this project is to find out the extent to which procurement practice in Ghana, embraces sustainability considerations. Secondly, to bring out potential challenges existing in procurement practices, which work against sustainable procurement in Ghana, thus helping us move towards sustainable procurement.

Mostly, sustainable procurement has been concentrated on environmental protection. For example, Lamming and Hampson (1996) argued that; in supply chain management the purchasing function is beginning to play a more important role in the future strategy of businesses and will need to have policies in place that can cope with a range of issues, many of which closely affect the environment. Similarly, a research by Vachon and Klassen (2006), concerned with green supply chain management, key themes developed included investigating the antecedents of engagement with environmental issues in supply management.

Sustainable procurement refers to the act of integrating a concern for broader social and environmental impacts within procurement undertaken by government or public sector bodies. (Preuss, 2009; Walker and Brammer, 2009). Several research works have contributed to the debate of attaining sustainable procurement, especially in the construction industry. There seem to be challenges in existing procurement processes and structure in the developing countries (Boomsma, 2008) of which Ghana is a part. These challenges create some form of deficiency in the capacity needed to ensure sustainability in public procurement. Such challenges are deeply seated in the Ghanaian procurement systems and this study seeks to spell out such challenges and suggested solutions.

Brammer and Walker (2011), in their international comparative study of sustainable procurement in the public sector, found out that, some sustainable procurement practices are evident in the public sector procurement practice and that, the extent and nature of sustainable procurement practices varies significantly across regions. This project work seeks to look at such practices specifically to Ghana, a developing country and in the West African sub-region.

In many sectors of the economy, there has been an evaluation in management practices towards more sustainable modes of operation. This has involved all facets of business operation, from procurement and production through to marketing, sales, packaging and labeling. Climate change and cognizance of the greenhouse emissions generated in the process of production of goods and services will keep the focus on the environmental performance of businesses and government well into the future (Carlsen, 2009). The above illustrates the importance of climate and environment on sustainable procurement. In a similar context, Carlsen, (2009) stated that, procurement is an essential component of environmental performance of business and government. So much so that, some companies now have dedicated Environmental Management Strategies [EMS], divisions, reporting processes and auditing programs built in to their organizational structure. Procurement is positioned as the starting point for improved environmental performance and transition towards more economically viable, socially acceptable and environmentally responsible business practices.

2.2 SUSTAINABLE PROCUREMENT FRAME WORKS:

Crucial to the formation of sustainable procurement policy is to be able to define when a procurement process is said to be sustainable. One of the means of determining how sustainable procurement will be is by the Whole Life Cycle (WLC) approach. It can be applied at either an asset or multiple asset level (Berry and McCarthy, 2011). WLC analysis is typically used at either the sourcing strategy stage to help decide between competing procurement options and/or at the tender evaluation stage to ensure that, contract award decisions are made on cost assumptions over the life of the goods, works or service and not just on the upfront capital cost. John Steward (2008) sent a caution that, the cheapest whole-life cost does not necessary

equate to the most environmentally sustainable options. The practice of procurement in Ghana seems to have neglected sustainability considerations.

Brammer and Walker, (2011) in an international comparative study of sustainable procurement in the public sector, identified that, policy makers need to be careful of the emphasis they place on the various aspects of sustainable procurement. This gives rise to the need to develop a sustainable procurement framework that suits public procurement in developing countries such as Ghana. A policy framework should include; planned development of targets for all environmental impacts and extension of the framework to cover social issues. Such policy should also envelope economic and social implications of good sustainable procurement practices. These key features seem to be lacking in the existing procurement practices in Ghana. Many sustainability strategies emerging have bordered on the purchase of goods and services (Vanweele, 2005; Wynstra 2006; Boomsma, 2008). Shayoh et al (2003) focused on the role of supply based timber firms in the rural areas, with the aim of improving processes, creating opportunity for continuous flow of employment and most importantly, availability of the product at an affordable price. This did identify challenges that could pave the way for the development of a comprehensive policy for sustainable procurement.

Kennnard (2006) also identified some challenges facing the capacity building in attaining sustainable procurement in general businesses. These include; lack of understanding of sustainability within, businesses, coupled with poor training and accountability being significant barriers to building supplier capacity.

2.3 CHALLENGES FACING SUSTAINABLE PROCUREMENT:-

2.3.1 Absence of Internal Management Structure:

The absence of support from the existing top management in driving procurement organizations towards sustainable procurement is identified as one of the factors militating against sustainable procurement. (The prince of Wales, 2004). In such situations, an organization will face difficulties in making its business more sustainable as becoming sustainable, requires additional investments in the supply chain, such as in quality control and adapted management structures. Rice, Jr and Spayd (2005) believe that, while there are benefits derived from investing in supply chain, the challenges are also enormous. This could be one of the barriers to the institutionalization of sustainable procurement practices.

2.3.2 Lack of Social Drive

An external force, such as demand for quality and traceability (promoted by the government and consumers demand for sustainability and safety), demonstrate lack of social responsibility in general. The press from NGO's and the media to bring problems to public attention for the country to be socially and environmentally responsible towards sustainability has not been adequate. Helmsing and Knorringa (2008) identified that, private actors have not become involved in the NGO's policy development nor do they influence monitoring and evaluation systems. Such lack of private efforts would result in market pressure on the relevant institutions to ensure sustainability in the procurement process, which will in turn fulfill corporate social responsibility.

2.3.3 Low Technical and Management Capacity

In developing countries, there are cases where integration in the chain, technical and management capacities need to be much further developed. There are no clearly defined good procurement practices, making it extremely difficult and expensive, to fulfill international standards. (OECD, 2007).

Such situations have been attributed to the non-upgraded practices where standardization procedures are not promoted to improve quality and traceability to enable cutting losses. In terms of management skills, too, it is identified that the actors in the supply chain in developing countries need to further strengthen their position. Inadequate education systems means there is a shortage of managers who can both manage the procurement processes and understand the technical aspects of its sustainability. Management support is required, but how can this be put into practice and, more importantly, who should take on this role? The government being a major client in construction projects could take up the role to use resources to invest in capacity building. In order to improve technical and managerial capacity for increased sustainable development, Lacy et al. (2009) call for investments in talent. They are of the view that, firms must invest in helping employees desire to make a positive difference in their organization, communities and the world. Whilst the concentration of Lacy et al (2009) was on how leading private firms in developed world can improve upon sustainable procurement practice, the focus of this study is on how the government, the largest employer in Ghana, can take the first step to ensure that, the necessary investments are done into managerial capacity to foster integration of sustainability into public procurement.

2.3.4 Low Multi Stakeholder Approach

Boomsma (2008) found out that, sustainable sourcing needs involvement of multi-stakeholder processes. As well as the primary value chain actors, it is important to involve other stakeholders-researchers, government, support agencies, etc. to improve sustainability. These actors have different understandings of value chain development, different expectations, and different approaches. It is necessary to create synergy among these differences by managing conflicts and interest in order to ensure that all actors gain. This is expounded in the study of Edelman (2009). He identified that, massive corporate failures and malfeasance have further eroded stakeholders trust in business. This trust need to be regained since it is essential for companies not to only achieve sustainability goals, but also acquire and retain the necessary top talent, win new business and forge productive partnership, with regulators, NGO's and other civic entities. Carter and Fortune (2002) also found out that, with the involvement of stakeholders such as the end users housing scheme from the beginning of the procurement process, there is much satisfaction with the end product. As much as this is important for development agencies to fulfill their social responsibilities in the practice of sustainable procurement, the challenge that is envisage in the procurement landscape of Ghana is how stakeholders could be identified from the early stages of procurement. It is believed that, the stakeholders in public procurement should be well defined in order to know who is required to assign responsibilities and who is required to be held responsible as far as sustainable procurement practice is concerned.

In public procurement practice, one of the difficulties for governments is to monitor the implementation of construction contracts, by contractors and sub- contractors that are often outsourced and ensure that, labour and environmental standards are

respected (OECD; 2007). It is the ultimate responsibility of governments to set and enforce clear public standards for both the main contractors and sub-contractors, defining the parties' responsibilities for integrity. This responsibility of government in monitoring construction contract from construction project inception stage of the procurement process is emphasized in this study. This would enable a comprehensive consideration of the procurement process, such as to ensure achievement of effective sustainability of the public procurement in a developing country like Ghana. Such approach is expected to enhance effective stakeholder perception about the essential elements of the environmental, social and economic issues of sustainable procurement.

2.3.5 Higher Initial Cost of Green Products

In addition to the fact that, potential demand for green housing has not been fully explored for people's undeveloped environmental consciousness, Ning et al. (2003), identified that, the initial cost of green buildings is more than conventional buildings. They are also limited by design and technology levels which make them challenging when it come to the practice of sustainable procurement. He concluded that, the popularization of green buildings in the market need the participation and co-operation of all the interest groups involved in the green building practice, from the end user, the contractors to the government. This buttresses the need for multi-stakeholder approach as remarked earlier in this paper.

2.4 Information Technology and Sustainable Procurement

This seeks to examine the relationship between sustainable procurement and e-procurement, to the policy objectives in public procurement in many countries. e-

procurement and communication may help environmental, labour, health and safety aspects of sustainable procurement. Conversely, e-procurement may hinder buying from local suppliers.

Public sector expenditure attributable to purchases of goods and services has been the subject of significant recent attention. {Brulhart and Trionfetti, (2004); Fernandez-Martin, (1996); McCrudden, (2004); Trionfetti, (2000)}.

Within evolving discussions, concerning public procurement, the role of government purchases as a stimulus for sustainable development has been a topic of particular interest in recent years (McCrudden, 2004; Weiss and Thurbon, 2006). Although sustainable procurement has an increasingly high profile in policy circles around the world, very little is known about the extent to which sustainable procurement has an increasingly high profile in policy circles around the world, very little is known about the extent to which sustainable procurement policies and practices are embedded within the practice of public procurement professionals globally. Electronic procurement in the public domain can be seen as a policy tool to support the delivery of public procurement policy, improving transparency and efficient (Carayannis and Popescu, 2005). Information technology offers a range of new opportunities to make sustainable purchasing operational for public sector organizations (Legarth, 2001). E-commerce is expected to influence a wide range of supply chain systems and thus lead to unidentified environmental impacts (Abukhader and Jonson, 2004).

This sub-title makes several contributions to the purchasing and supply field. First, while many researchers have studied information systems and sustainable supply chain management, individually, the relationship between the adoption of e-procurement practices and sustainable procurement has barely been explored in

Ghana. We explore the possible contributions of IT use to the delivery of sustainability outcomes. Also, sustainability in the supply chain has tended to focus on environmental supply in the manufacturing sector; we extend this to include investigation of the social aspects of sustainable procurement in the public sector. (Abukhader and Jonson, 2004)

Further, from a policy perspective, we tend to explore the relationship between two public procurement policy objectives, these being sustainable procurement to achieve broader government objectives and e-procurement to achieve greater efficiency and transparency in procurement. (Abukhader and Jonson, 2004)

2.5 E-Procurement in the Public Sector:

Information and communication technology (ICT) is changing the way that companies do business together and exchange of information, commercial scope of e-business includes information exchange, commercial transactions and knowledge sharing between organizations (Croom, 2005), whereas e-commerce focuses only on commercial transactions (Cullen and Webster, 2007). Some of the technologies associated with e-commerce include websites, email, extranets, internets and electronic data interchange (EDI) (McIvor and Humphre, 2004). E-procurement has been defined as the use of information technologies to facilitate business-to-business (B2B), purchase transactions for materials and services (Wuzsidisin and Ross, 2007). E-procurement utilizes electronic commerce technologies to identify potential suppliers of goods and services, to interact with suppliers and to transfer payments (Min and Galle, 2003). E-procurement can assist the government in the way it does

business by reducing transaction cost, making better decisions and getting more value (Panayiotou, Gayialis and Tatsiopoulos, 2004).

Despite major initiatives and claims of reduced cost through wider choice and higher efficiency, e-procurement may have been adopted to a less extent than expected by the public sector in some countries (Moe, 2004). Institutional theory may help understand the different attitudes towards adoption, and community goals expressed as concern for the regional business community may be an important institutional factor (Moe, 2004). It has been suggested that, government face particular problems in introducing e-government due to the challenges they face in modernizing such vast enterprise (Deva doss, Pan and Huang, 2003). When the electronic revolution first began, some expected it to rapidly spread across the entire governmental landscape worldwide. Such expectations were based, at least in part, on the sharp rate of internet use by individuals and businesses.

Others were a bit more cautious from the start, well aware of a historical distrust between the public and private sectors (MacManus, 1992, Sinclair, 2000) and/or of the incremental nature of public implementation; especially in a very complex inter and intra-governmental organizational systems (Peters, 1999). In sum, e-procurement has been increasingly introduced across public sectors in different countries, although possibly at a slower rate than anticipated. E-procurement policy aims to support greater transparency and efficiency in the procurement process in Ghana.

The step towards sustainable procurement in Ghana cannot be achieved fully without taking a closer look at initiatives and policies, some countries employed to attain sustained procurement. An example of such a country is Brazil. Since 1995, the Sao Paulo government has adopted policies aimed at improving efficiency and

transparency in government procurement. (Brauch, IISD, 2012). In 2004 a working group provided initial technical and legal guidance on the adoption of sustainable criteria in procurement. The group included representatives from different sections of government, levels and areas. During this first decade of the millennium, Sao Paulo developed a legal framework that allowed for sustainable procurement. It included, among other elements, the creation of an electronic procurement system and laws accounting for socio- environmental concerns. Eventually, nine criteria for government policies and measures were agreed upon, including incentives to social policies, transparency, water and energy consumption, savings and adoption of technologies with lower green house gas emissions. (Brauch, IISD, 2012). The state also made a deliberate effort and investment to train public servants on sustainable procurement policies.

The Sao Paulo sustainable procurement policy program now includes socio-environmental criteria in the technical specifications and contracts, using among other things labels but not yet life cycle analyses. In construction works, the sustainable procurement program focuses mainly on sustainability criteria for the consumption of timber. To avoid concerns about corruption, and enhance efficiency in the decentralized procurement system, the state does not explicitly include socio-environmental criteria during the reverse action. (Brauch, IISD, 2012). It does foresee a sanctioning regime for non compliance, which allows for the state government to exclude suppliers and service providers that do not comply with socio-environmental norms or specifications from public procurement. While the state government has advanced relatively quickly and with limited resources, there are still challenges left and opportunities present to level up sustainable public procurement. The IISD study identifies potential to upgrade sustainable procurement

policy in reporting and accountability; specification of goods, services and construction works; socio-environmental responsibility of suppliers; contract monitoring and management; and information exchange and dissemination. Some concrete examples include the evaluation of sustainable purchases over the total value of purchase to measure the benefits of sustainable procurement policy, adopting at the state level the preferential status of goods with the socio-environmental label, developing socio-environmental and quality criteria for the pre qualification of suppliers, and intensifying information exchange with the federal union, other states and municipalities. (IISD, 2013). Ghana thus has a very good example in Brazil to learn from.

Sustainable procurement cannot be effectively achieved, without taking into consideration, 'A low carbon Economy'. An Indian-specific study approached the issue of sustainability through the lens of energy efficiency. It was found that, while sustainable public procurement was not yet a concept, generally known and integrated into policy, some sustainability practices were already present in procurement policies. While the private sector saw green procurement as costly, they identified energy efficiency in particular as a measure that can generate both public and private gains. The study found that, incorporating energy efficiency into procurement was not a conscious sustainable procurement policy measure but rather was influenced and driven by internal and external factors. Regulatory impediment was found to be one of the main challenges to internalizing energy efficiency within the procurement process. The study also found that, the outsourcing of public procurement process could lead to obstacles in ensuring that energy efficiency or other environmental criteria are actually adopted within the procurement process. (IISD, 2013)

On the other end of the procurement relationship, the suppliers' capacity to provide energy-efficient options is in some industries challenged by lack of resources and capacity to determine which product is more energy efficient than others. Stakeholders suggest that, enabling tools such as ratings, calculators, codes and guiding documents can help in this regard. The study also concluded that, there are not enough adequate incentives for companies to adopt efficiency measures, which is often even discouraged.

Most of the policies already mentioned are captured in the Swiss- Ghana sustainable public procurement project. This is a three year project, being implemented by the Swiss Government with a \$2.7 million grant. The project's aim among other things is to improve the public procurement practices of the Government of Ghana by introducing sustainable public procurement. Ghana has been involved for the past few years in the field of sustainable public procurement through the Marrakech process. Ghana Task Force on sustainable Public procurement-a multi-stakeholder group to lead the process of introducing sustainable public procurement; Development of Government Policy on sustainable Public Procurement; Training of procurement officers, practitioners, consultants on sustainable procurement policies; (Ghana Business News, November, 2013). Awareness creation programs for public organizations, procurement officers and procurement boards of sustainable public procurement; Re-design of standard tender documents and last but not the least, training private sector on sustainable public procurement. The government must move a step further in adopting sound programs and policies of countries that have achieved great strides in achieving sustainable procurement. (Ghana Business News, November, 2013). The government has to put in place programs to curb corruption

in the public procurement process in Ghana, as well as making Green procurement one of its policy priority areas.

2.6 Global Sustainable Challenge

The African continent is often reported as a land of poverty, civil strife and endless lines of begging hands. Problems facing the continent are portrayed and communicated mostly by foreign eyes through the monopoly controlled media. Rarely are Africans themselves given a forum to highlight what they see as pressing problems and offer analyses and solutions to tackle the challenges.

From COP 15 in Copenhagen through Cancun, Bangkok, Bonn and the Durban climate change talks, there are ominous signs that the concerns of Africa in the climate change negotiations would not count as the developed countries, the major culprits refuse to take responsibility to mitigate the damning effects of climate change. {African Agenda, Issue Vol. 14 No. 2, (2011)},

Japan is a signatory to the Kyoto protocol but is dead against it while the US which is not a signatory to the Kyoto protocol has made it clear in Bangkok that it will not negotiate any legally binding commitments to cut its emissions. The United Nations Framework Convention on Climate Change (UNFCCC) common but differentiated responsibilities approach to the climate change menace more or less stands doomed.

Another critical issue dogging the negotiations is not honoring financial commitment to help developing countries who are most affected by climate change. Initial pledges of \$30 billion to fast track moves to mitigate the effects of climate change have proved to be mere talks so new talks of raising \$100 billion a year for that purpose has been received with no hope. Meanwhile as the politicking goes on, the damage to the world goes on unabated. Flash floods, drought, high temperatures and the destruction

of life forms and property that come in their wake are not waiting and will not wait for the negotiations so long as the causal factors go on. {African Agenda, Issue Vol. 14 No. 2, (2011)},

Calls from the major victims of climate change; Africa, Latin America and Asia seem to fall on deaf ears no matter how strident they sound. It is obvious then that the climate health is at stake. Developing countries might be suffering the brunt of the negative effect but in the long run the whole world will suffer. Because international countries are not under any binding obligations, developing countries will continue to suffer especially so because remedies for both past actions and likely future ones are not taken seriously.

The United Nations Environmental Programme (UNEP) warns that the world's temperature is likely to rise by between 2.5°C - 5°C by the end of the 21st century. The World's Meteorological organization, 2010 reports that increase in temperature in Africa is 1.29°C. {African Agenda, Issue Vol. 14 No. 2, (2011)}.

The only global mechanism legally obliging developed countries to cut their emissions is the Kyoto protocol. It also enjoins developing countries to take all necessary domestic measures to limit their pollution.

According to Kwesi (2011), page 7 of the African Agenda, Issue Vol. 14 No. 2, on the topic Decent Deal in Durban looks bleak; the US has announced that it will not negotiate on long-term sources of finance until negotiation of Measurement, Reporting and Verification (MRV) of mitigation actions are complete. This effectively means that developing countries such as Africa, Latin America and Asia which require substantial but also predictable funds to adapt to climate change will not know whether, how and when they will get international funding until the US

resolves its tussle with China and other major economies over national reporting to UNFCCC.

2.7 Wildlife Forensics as a Slow Identification Tool.

Wildlife forensics is the use of molecular techniques to investigate crimes committed against world's plants and animals.

Everyone knows that DNA fingerprinting can be an invaluable tool for identifying criminals. Similar forensics techniques are now being used to investigate crimes against endangered species and for ecological studies.

In 1985, the invention of the Polymerase Chain Reaction (PCR) transformed many aspects of biological research. Starting with as little as a single molecule of DNA, PCR produces multiple copies of a particular region until there are sufficient amounts for easy analysis.

There is now a real likelihood that suspected goods seized from shipping containers, luggage or local markets can be identified, even sometimes revealing the population from which the particular animal or plant came.

CHAPTER THREE

RESEARCH METHODS

3.1 INTRODUCTION

This chapter presents the methodology employed for the study. It presents a concise description of the case study that was used. It explains the research design, population, sample as well as the sampling procedure adopted to achieve the objectives of study. It describes the research instrument used, validity and the reliability of the instrument, data collection procedures, and how the data was collected and analysed. The study was aimed at determining the extent to which public and private organizations take into consideration, the negative impacts such processes have on the environment.

3.2 DESIGN OF STUDY

The study made use of descriptive survey, designed to assess sustainable procurement in Ghana. A survey research is well suited to descriptive studies or where researchers want to look at relationships between variables occurring in particular real life contexts. A descriptive survey according to Varkervisser, (2003) aims predominantly at describing, observing and documenting aspects of a situation as it naturally occurs rather than explaining them. It is therefore appropriate when a researcher attempts to describe some aspects of a population by selecting unaided samples of individuals who are asked to complete questionnaires. It is concerned with the conditions or relationship that exists, such as prevailing practices, conditions and attitudes, processes that are going on, opinions that are held; or trends that are developed (Varkervisser, 2003).

Descriptive survey design was an ideal one for this study because it only elicits ideas, perceptions and level of acceptability as well as the level of satisfaction of clients, challenges, and effects associated with attaining sustainable procurement in Ghana.

3.3 SOURCES OF DATA

Both primary and secondary sources of data were obtained for the study. The primary data was obtained directly from respondents through the administration of questionnaires. The primary data provided reliable and accurate firsthand information to the study. The secondary data was obtained from the library, internet, journal articles, newspapers and research reports. The idea of secondary data was to gather the necessary information to guide the conduct of the study in order to confirm or reject primary data.

3.4 PRE-TEST

In order to test the reliability and validity of the data collection instrument, pre-test was carried out. There was a reconnaissance study in order to pre-test the instruments. This stage revealed the suitability of the methods and instruments that were employed in the study. This consequently led to early detection of errors and distortions in the questionnaire which were corrected in the process. This helped the researcher to familiarize himself with the research environment and also offered the opportunity to practice research in real situation before the main study began. (Sarantakos, 1998).

3.5 DATA COLLECTION INSTRUMENT

Questionnaire was the main data collection instrument used for this study. The questionnaire was appropriate because, it was assumed that, procurement staffs in building and civil consulting outfits, few building and civil engineering contractors,

government ministries, MMDA's and few manufacturing industries were literates. The population of procurement staff is not known in Accra or Ghana because it is a new field and therefore difficult to calculate sample size. In this regard questionnaires were distributed to sample size of one hundred number (100No.) randomly to procurement staffs, from one office to the other. Most of the questions in the questionnaire were designed using Likert scale strategy, which measures respondents' attitude by asking the extent to which they agree or disagree with the issues at stake. Questionnaire facilitated the collection of data that ensured the best matching of concepts with reality. It helped reduce inconvenience caused by unfavorable interview times and busy schedules.

According to Saunders, (2007) questionnaire is used for explaining research which will enable the study to examine and explain relationships between variables, in particular cause-and-effect relationships. In all, 100 questionnaires were circulated of which 56 were received and analysed using descriptive statistics tools like mean, median, mode and standard deviations, with the aid of a software called, Statistical Package for Social Sciences (SPSS). Sample questionnaires can be found in the Appendix. The questionnaires were personally administered to the respondents.

3.6 DATA ANALYSIS AND PRESENTATION

This section deals with the methods of analysis of the data. Quantitative and qualitative methods were used to analyse the data. Computer data analyses software called the statistical package for social sciences (SPSS) was the software that aided the descriptive statistics tools like the mean, median, mode and standard deviations employed to analyse the data. Interpretations of results were then carried out. The

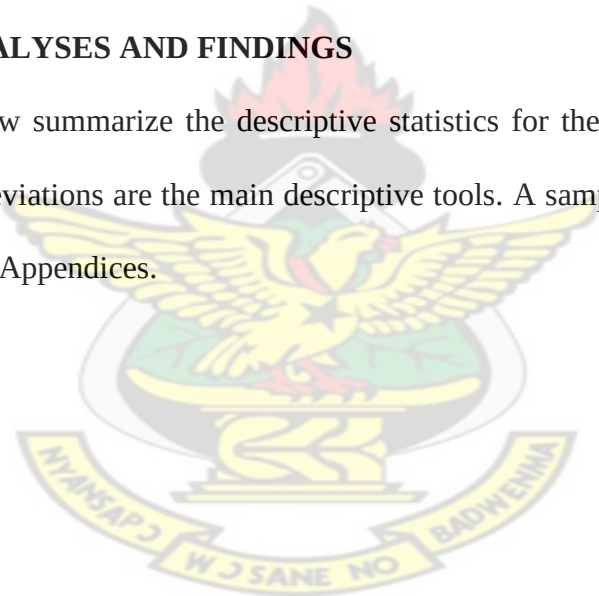
justification for the choice of this program was that, it facilitated word processing and data analysis.

3.7 DISTRIBUTION OF RESPONDENTS

The data showed the distribution of respondents, into various occupations namely accountants, who were four in number representing 10.7%, one Lawyer representing 1.8%, twenty five building technologists giving 44.6%, nine civil engineers representing 16.1%, two lecturers representing 3.6%, nine MMDA officials representing 16.1%, as well as 4 workers without main specifications representing 7.1 %, the total number giving 56.

3.8 DATA ANALYSES AND FINDINGS

The tables below summarize the descriptive statistics for the questionnaires. Means and Standard deviations are the main descriptive tools. A sample of the questionnaire can be found at Appendices.



SECTION (A) BIOGRAPHICAL DATA:

TABLE (1a) Descriptive Statistics Que_1

	N	Minimum	Maximum	Mean	Mode	Std. Deviation
Your profession/occupation	56	1.00	7.00	3.7679	3	1.67322
Valid N (listwise)	56					

TABLE (1b) Your profession/occupation

	Frequency	Percent	Valid Percent	Cumulative Percent
Accountant	6	10.7	10.7	10.7
Lawyer	1	1.8	1.8	12.5
building technologist	25	44.6	44.6	57.1
civil engineer	9	16.1	16.1	73.2
Lecturer	2	3.6	3.6	76.8
government official	9	16.1	16.1	92.9
others(specify)	4	7.1	7.1	100.0
Total	56	100.0	100.0	

TABLE (2a) Descriptive Statistics que_2

	N	Minimum	Maximum	Mean	Std. Deviation
Highest education level.	56	1.00	5.00	3.2857	.77961
Valid N (listwise)	56				

TABLE (2b) Highest education level

	Frequency	Percent	Valid Percent	Cumulative Percent
senior high school	1	1.8	1.8	1.8
higher national diploma	6	10.7	10.7	12.5
bachelor degrees	27	48.2	48.2	60.7
Valid (including honors)	20	35.7	35.7	96.4
Postgraduate	2	3.6	3.6	100.0
Others	2	3.6	3.6	100.0
Total	56	100.0	100.0	

TABLE (3a) Descriptive Statistics que_3

	N	Minimum	Maximum	Mean	Std. Deviation
No. of years of experience	56	1.00	5.00	2.4821	1.29321
Valid N (listwise)	56				

TABLE (3b) No. of years of experience

	Frequency	Percent	Valid Percent	Cumulative Percent
1-5 years	14	25.0	25.0	25.0
6-10years	20	35.7	35.7	60.7
11-15years	9	16.1	16.1	76.8
Valid 16-20years	7	12.5	12.5	89.3
more than 20	6	10.7	10.7	100.0
Total	56	100.0	100.0	

TABLE (4a) Descriptive Statistics que_4

	N	Minimum	Maximum	Mean	Std. Deviation
What is your outfit engaged in?	56	1.00	7.00	3.5000	2.11488
Valid N (listwise)	56				

TABLE (4b) What is your outfit engaged in?

	Frequency	Percent	Valid Percent	Cumulative Percent
Manufacturing	1	1.8	1.8	1.8
Construction	35	62.5	62.5	64.3
district assembly	1	1.8	1.8	66.1
Valid government ministry	12	21.4	21.4	87.5
Others	7	12.5	12.5	100.0
Total	56	100.0	100.0	

TABLE (5a) Descriptive Statistics que_5

	N	Minimum	Maximum	Mean	Std. Deviation
In which region(s) of Ghana do you currently operate?	56	1.00	10.00	1.3036	1.32005
Valid N (listwise)	56				

TABLE (5b) In which region(s) of Ghana do you currently operate?

	Frequency	Percent	Valid Percent	Cumulative Percent
Greater Accra	51	91.1	91.1	91.1
Valid Volta region	2	3.6	3.6	94.6
Western	2	3.6	3.6	98.2
Ashanti	1	1.8	1.8	100.0
Total	56	100.0	100.0	

SECTION (B) SUSTAINABLE PROCUREMENT ;

TABLE (6a) Descriptive Statistics que_6

	N	Minimum	Maximum	Mean	Std. Deviation
At what procurement cycle stage do you consider sustainability issues?	56	1.00	2.00	1.5000	.50452
Valid N (listwise)	56				

TABLE (6b) At what procurement cycle stage do you consider sustainability issues?

	Frequency	Percent	Valid Percent	Cumulative Percent
sourcing stage	28	50.0	50.0	50.0
tender evaluation stage	28	50.0	50.0	100.0
Total	56	100.0	100.0	

TABLE (7) Descriptive Statistics que_7

	N	Minimum	Maximum	Mean	Std. Deviation
What is the sustainability issue that you have ever considered? Energy wastage	56	1.00	7.00	4.0	1.22
What is the sustainability issue that you have ever considered? Water pollution	56	1.00	7.00	4.04	1.25
What is the sustainability issue that you have ever considered? Air pollution	56	1.00	7.00	3.84	1.32
What is the sustainability issue that you have ever considered? Deforestation	56	1.00	7.00	3.87	1.29
What is the sustainability issue that you have ever considered? Green house effect	56	1.00	7.00	3.51	1.43
What is the sustainability issue that you have ever considered? Destruction of life forms	56	1.00	7.00	3.33	1.21
What is the sustainability issue that you have ever considered? Protection of endangered species	56	1.00	7.00	3.2	1.21
Valid N (listwise)	56				

TABLE (7a) What is the sustainability issue that you have ever considered? Energy wastage

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	3	5.4	5.4	5.4
Disagree	4	7.1	7.1	12.5
Valid Neutral	10	17.9	17.9	30.4
Agree	10	17.9	17.9	48.2
strongly agree	29	51.8	51.8	100.0
Total	56	100.0	100.0	

TABLE (7b) What is the sustainability issue that you have ever considered? Water pollution

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	4	7.1	7.1	7.1
Disagree	3	5.4	5.4	12.5
Valid Neutral	10	17.9	17.9	30.4
Agree	10	17.9	17.9	48.2
strongly agree	29	51.8	51.8	100.0
Total	56	100.0	100.0	

TABLE (7c) What is the sustainability issue that you have ever considered? Air pollution

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	5	8.9	8.9	8.9
Disagree	4	7.1	7.1	16.1
Valid Neutral	11	19.6	19.6	35.7
Agree	11	19.6	19.6	55.4
strongly agree	25	44.6	44.6	100.0
Total	56	100.0	100.0	

TABLE (7d) What is the sustainability issue that you have ever considered? **Deforestation**

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	5	8.9	8.9	8.9
Disagree	3	5.4	5.4	14.3
Valid Neutral	11	19.6	19.6	33.9
Agree	12	21.4	21.4	55.4
strongly agree	25	44.6	44.6	100.0
Total	56	100.0	100.0	

TABLE (7e) What is the sustainability issue that you have ever considered? **Green house effect**

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	7	12.5	12.5	12.5
Disagree	5	8.9	8.9	21.4
Valid Neutral	14	25.0	25.0	46.4
Agree	10	17.9	17.9	64.3
strongly agree	20	35.7	35.7	100.0
Total	56	100.0	100.0	

TABLE (7f) What is the sustainability issue that you have ever considered? **Destruction of life forms**

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	7	12.5	12.5	12.5
Disagree	3	5.4	5.4	17.9
Valid Neutral	21	37.5	37.5	55.4
Agree	15	26.8	26.8	82.1
strongly agree	10	17.9	17.9	100.0
Total	56	100.0	100.0	

TABLE (7g) What is the sustainability issue that you have ever considered?
Protection of endangered species

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	7	12.5	12.5	12.5
Disagree	6	10.7	10.7	23.2
Valid Neutral	23	41.1	41.1	64.3
Agree	9	16.1	16.1	80.4
strongly agree	11	19.6	19.6	100.0
Total	56	100.0	100.0	

TABLE (8a) Descriptive Statistics que_8

	N	Minimum	Maximum	Mean	Std. Deviation
In your opinion, to what extent do procurement officials make sustainability decisions?	56	1.00	5.00	2.8214	.95550
Valid N (listwise)	56				

TABLE (8b) In your opinion, to what extent do procurement officials make sustainability decisions?

	Frequency	Percent	Valid Percent	Cumulative Percent
very frequent	7	12.5	12.5	12.5
Frequent	9	16.1	16.1	28.6
Valid Occasionally	28	50.0	50.0	78.6
Seldom	11	19.6	19.6	98.2
Never	1	1.8	1.8	100.0
Total	56	100.0	100.0	

TABLE (9a) Descriptive Statistics que_9

	N	Minimum	Maximum	Mean	Std. Deviation
Knowledge on sustainable procurement is wide spread in Ghana	56	1.00	5.00	3.6964	.97084
Valid N (listwise)	56				

TABLE (9b) Knowledge on sustainable procurement is wide spread in Ghana

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	2	3.6	3.6	3.6
Agree	7	12.5	12.5	16.1
Neutral	4	7.1	7.1	23.2
Valid Disagree	36	64.3	64.3	87.5
strongly disagree	7	12.5	12.5	100.0
Total	56	100.0	100.0	

TABLE (10)Descriptive Statistics que_10

	N	Minimum	Maximum	Mean	Std. Deviation
Challenge for sustainable procurement in Ghana is Lack of social drive.	56	1.00	5.00	4.07	1.09
Challenge for sustainable procurement in Ghana is Low technical & Management capacity.	56	1.00	5.00	4.07	1.12
Challenge for sustainable procurement in Ghana is Low multi-stakeholder approach.	56	1.00	5.00	4.04	1.04
Challenge for sustainable procurement in Ghana is Higher initial cost of green products.	56	1.00	5.00	4.00	1.26
challenges for sustainable procurement in Ghana is Difficulties in ICT application	56	1.00	5	3.8	1.34

TABLE (10a) Which challenges affect sustainable procurement in Ghana? Lack of social drive

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	3	5.4	5.4	5.4
Disagree	2	3.6	3.6	8.9
Neutral	7	12.5	12.5	21.4
Agree	20	35.7	35.7	57.1
strongly agree	24	42.9	42.9	100.0
Total	56	100.0	100.0	

**TABLE (10b) Which challenges affect sustainable procurement in Ghana?
Low technical & Management capacity**

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	2	3.6	3.6	3.6
Disagree	2	3.6	3.6	7.1
Valid Neutral	8	14.3	14.3	21.4
Agree	17	30.4	30.4	51.8
strongly agree	27	48.2	48.2	100.0
Total	56	100.0	100.0	

TABLE (10c) Which challenges affect sustainable procurement in Ghana? Low multi-stakeholder approach

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	2	3.6	3.6	3.6
Disagree	3	5.4	5.4	8.9
Neutral	7	12.5	12.5	21.4
Valid Agree	21	37.5	37.5	58.9
strongly agree	22	39.3	39.3	98.2
No response	1	1.8	1.8	100.0
Total	56	100.0	100.0	

TABLE (10d) Which challenges affect sustainable procurement in Ghana? Higher initial cost of green products

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	4	7.1	7.1	7.1
Disagree	4	7.1	7.1	14.3
Valid Neutral	8	14.3	14.3	28.6
Agree	13	23.2	23.2	51.8
strongly agree	27	48.2	48.2	100.0
Total	56	100.0	100.0	

TABLE (10e) Which challenges affect sustainable procurement in Ghana? Difficulties in ICT application

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	5	8.9	8.9	8.9
Disagree	6	10.7	10.7	19.6
Valid Neutral	7	12.5	12.5	32.1
Agree	14	25.0	25.0	57.1
strongly agree	24	42.9	42.9	100.0
Total	56	100.0	100.0	

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TABLE (11) Descriptive Statistics que_11

	N	Minimum	Maximum	Mean	Std. Deviation
Which of these does your outfit commit money annually in respect of the following environmental management programmes? Vegetation restoration	56	1.00	5.00	2.8	1.1
Which of these does your outfit commit money annually in respect of the following environmental management programmes? Water purification	56	1.00	5.00	2.64	1.07
Which of these does your outfit commit money annually in respect of the following environmental management programmes? Health (hospital)	56	1.00	5.00	2.84	1.22
Which of these does your outfit commit money annually in respect of the following environmental management programmes? Education (schools)	56	1.00	5.00	3.1	1.23
Valid N (listwise)	56				

TABLE (11a) Which of these does your outfit commit money annually in respect of the following environmental management programmes?

Vegetation restoration

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	11	19.6	19.6	19.6
Disagree	4	7.1	7.1	26.8
Valid Neutral	27	48.2	48.2	75.0
Agree	12	21.4	21.4	96.4
strongly agree	2	3.6	3.6	100.0
Total	56	100.0	100.0	

KNUST

TABLE (11b) Which of these does your outfit commit money annually in respect of the following environmental management programs?

Water purification

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	11	19.6	19.6	19.6
Disagree	10	17.9	17.9	37.5
Valid Neutral	25	44.6	44.6	82.1
Agree	8	14.3	14.3	96.4
strongly agree	2	3.6	3.6	100.0
Total	56	100.0	100.0	

TABLE (11c) Which of these does your outfit commit money annually in respect of the following environmental management programs?

Health (hospital)

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	11	19.6	19.6	19.6
disagree	7	12.5	12.5	32.1
Valid Neutral	24	42.9	42.9	75.0
Agree	8	14.3	14.3	89.3
strongly agree	6	10.7	10.7	100.0
Total	56	100.0	100.0	

TABLE (11d) Which of these does your outfit commit money annually in respect of the following environmental management programs?

Education (schools)

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	9	16.1	16.1	16.1
disagree	8	14.3	14.3	30.4
Valid Neutral	17	30.4	30.4	60.7
Agree	15	26.8	26.8	87.5
strongly agree	7	12.5	12.5	100.0
Total	56	100.0	100.0	

KNUST



TABLE (12) Descriptive Statistics que_12

	N	Minimum	Maximum	Mean	Std. Deviation
What measures does your outfit undertake to mitigate environmental problems? Education to adapt to situation	56	1.00	5.00	4.02	1.09
What measures does your outfit undertake to mitigate environmental problems? Research & development to find better ways	56	1.00	5.00	3.88	1.17
What measures does your outfit undertake to mitigate environmental problems? Stakeholder consultation	56	1.00	5.00	3.9	1.14
What measures does your outfit undertake to mitigate environmental problems? Compensation	56	1.00	5.00	3.82	1.08
What measures does your outfit undertake to mitigate environmental problems? Vegetation restoration	56	1.00	5	3.71	1.30
Valid N (listwise)	56				

TABLE (12a) What measures does your outfit undertake to mitigate environmental problems? Education to adapt to situation

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	2	3.6	3.6	3.6
disagree	3	5.4	5.4	8.9
Valid neutral	11	19.6	19.6	28.6
Agree	16	28.6	28.6	57.1
strongly agree	24	42.9	42.9	100.0
Total	56	100.0	100.0	

TABLE (12b) What measures does your outfit undertake to mitigate environmental problems? Research & development to find better ways

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	3	5.4	5.4	5.4
disagree	4	7.1	7.1	12.5
Valid neutral	12	21.4	21.4	33.9
Agree	15	26.8	26.8	60.7
strongly agree	22	39.3	39.3	100.0
Total	56	100.0	100.0	

TABLE (12c) What measures does your outfit undertake to mitigate environmental problems? Stakeholder consultation

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	3	5.4	5.4	5.4
disagree	3	5.4	5.4	10.7
Valid Neutral	12	21.4	21.4	32.1
Agree	17	30.4	30.4	62.5
strongly agree	21	37.5	37.5	100.0
Total	56	100.0	100.0	

TABLE (12d) What measures does your outfit undertake to mitigate environmental problems? Compensation

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	2	3.6	3.6	3.6
disagree	2	3.6	3.6	7.1
Valid neutral	20	35.7	35.7	42.9
Agree	12	21.4	21.4	64.3
strongly agree	20	35.7	35.7	100.0
Total	56	100.0	100.0	

TABLE (12e) What measures does your outfit undertake to mitigate environmental problems? Vegetation restoration

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	5	8.9	8.9	8.9
disagree	4	7.1	7.1	16.1
Valid neutral	15	26.8	26.8	42.9
Agree	10	17.9	17.9	60.7
strongly agree	22	39.3	39.3	100.0
Total	56	100.0	100.0	

TABLE (13) Descriptive Statistics que_13

	N	Minimum	Maximum	Mean	Std. Deviation
What does your outfit consider as the primary environmental concern in connection with its operation? Disposal of waste or by products	56	1.00	5.00	4.1786	1.02881
What does your outfit consider as the primary environmental concern in connection with its operation? How to save power or electricity	56	2.00	5.00	4.2143	.84669
What does your outfit consider as the primary environmental concern in connection with its operation? How to save water	56	1.00	5.00	4.1071	1.12296
What does your outfit consider as the primary environmental concern in connection with its operation? Safety at work place	56	2.00	5.00	4.3036	.80723
What does your outfit consider as the primary environmental concern in connection with its operation? How to conserve wildlife	56	1.00	5.00	3.5893	.98676
Valid N (listwise)	56				

TABLE (13a) What does your outfit consider as the primary environmental concern in connection with its operation? Disposal of waste or by products

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	1	1.8	1.8	1.8
disagree	4	7.1	7.1	8.9
Valid neutral	7	12.5	12.5	21.4
Agree	16	28.6	28.6	50.0
strongly agree	28	50.0	50.0	100.0
Total	56	100.0	100.0	

TABLE (13b) What does your outfit consider as the primary environmental concern in connection with its operation? How to save power or electricity

	Frequency	Percent	Valid Percent	Cumulative Percent
disagree	3	5.4	5.4	5.4
Neutral	6	10.7	10.7	16.1
Valid Agree	23	41.1	41.1	57.1
strongly agree	24	42.9	42.9	100.0
Total	56	100.0	100.0	

TABLE (13c) What does your outfit consider as the primary environmental concern in connection with its operation? How to save water

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	2	3.6	3.6	3.6
Disagree	5	8.9	8.9	12.5
Valid Neutral	5	8.9	8.9	21.4
Agree	17	30.4	30.4	51.8
strongly agree	27	48.2	48.2	100.0
Total	56	100.0	100.0	

TABLE (13d) What does your outfit consider as the primary environmental concern in connection with its operation? Safety at work place

	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	1.8	1.8	1.8
Neutral	9	16.1	16.1	17.9
Agree	18	32.1	32.1	50.0
strongly agree	28	50.0	50.0	100.0
Total	56	100.0	100.0	

TABLE (13e) What does your outfit consider as the primary environmental concern in connection with its operation? How to conserve wildlife

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	2	3.6	3.6	3.6
Disagree	4	7.1	7.1	10.7
Neutral	19	33.9	33.9	44.6
Agree	21	37.5	37.5	82.1
strongly agree	10	17.9	17.9	100.0
Total	56	100.0	100.0	

CHAPTER FOUR

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

4.1 INTRODUCTION

This chapter presents the summary of study, conclusion that have been arrived at and recommendations.

4.2 SUMMARY OF FINDINGS

The study was set out to assess the extent to which procurement practices in Ghana, embraces sustainability issues, and to bring out potential challenges existing in procurement practices, which work against sustainable procurement in Ghana. The study was undertaken purposely not only to fulfill the academic pursuit, but also to ascertain the extent to which sustainability elements are being considered in procurement practices.

4.3 KEY FINDINGS

- The study revealed that, low technical and management capacity, low multi stakeholder approach, higher initial cost of green products, lack of social drive as well as difficulties in ICT application, are major factors that are preventing the easy attainment of sustainable procurement in Ghana.
- The study revealed that, procurement practices are well known, since most of the outfits knew about the Public Procurement Act (663), 2003. There is however, limited knowledge, as far as application of sustainable procurement strategies in the procurement process were concerned, with about 64% agreeing to this.
- Table 7 seeks to find out what sustainability areas the respondents have ever involved themselves. It came to light that apart from Destruction of life forms

and the Protection of endangered species which most of the respondents have not ever considered in procurement, most of the respondents have however considered Energy wastage and Water Pollution in procurement with 51.8% strongly agreeing to this, while Air Pollution and Deforestation also scored 44.6%. About 35.7% of the respondents have ever considered Green house effect. This trend clearly indicates that there is limited commitment, in Sustainable Procurement.

Table 11 also confirms the fact in Table 7, in that most of the respondents outfit do not commit money annually towards vegetation restoration, ater purification, and effective health care and education. This resulted in most of the procurement processes, having debilitating effect on the environment, thus making the attainment of sustainable procurement very difficult.

- The study found out that, effective ways of mitigating environmental problems, in the procurement process such as research and development to find better ways, stakeholder consultation and compensation were not being considered at the various levels of the procurement process.
- Many considered disposal of waste, saving power or electricity, saving water and safety at work place as the primary environmental concern in connection with its operation, with an average of 78.6% of the people agreeing to this. There is however lack of commitment in conserving wildlife and endangered species.
- The study also shows that, sustainability issues are generally considered at the sourcing and tender evaluation stages. A greater percentage of people, considered energy wastage, water pollution, air pollution deforestation and greenhouse effect as grave sustainability issues, but do not take concrete steps

in mitigating them, some of the reasons being lack of social drive and higher costs involved.

- The current Public Procurement Act has succeeded in harmonizing entities. Most procurement entities consulted followed the laid down procedure or the provision of the act which states that all procurement entities should prepare procurement plans. There are sustainability issues however, since the procurement act is not clear cut on green procurement elements.

4.4 CONCLUSION:

The world of procurement had moved on and many changes had occurred, including changes in specifying requirements of how goods, works and services are procured. Our Public Procurement has to keep pace with such changes. It is important we make our procurement processes environmentally friendly and climate neutral. Factors such as the efficient use of energy and resources, reclamation of mined sites, reforestation, and eliminating wasteful practices that could lead to global warming and environmental pollution must be adopted. We need to develop sustainable procurement guidelines which will establish the criteria that may be used by any organization or procurement entity for the procurement of local order categories of goods, works and services in Ghana. The Public Procurement Act (663), 2003, needs to be amended to embrace sustainability requirements. Vigorous sensitization has to follow this to make people aware. The government has made efforts as far as this is concerned. There is however limited commitment, in working on sustainability elements in the procurement process. Government must put in place effective processes that will help curb corruption and bureaucratic tendencies in the procurement process. This will help in the attainment of sustainable procurement and sustainable development.

4.5 RECOMMENDATIONS

The following recommendations were made to ensure the easy and effective attainment of sustainable procurement in Ghana.

- It is recommended that, there should be a re-designing of the country's procurement policies and procedures, to include sustainability ingredients in terms of lowest environmental impact, but also in terms of producing the most positive social impacts. By doing this, government can see many multiplier benefits internally and across society as a whole including efficiency gains, energy usage reductions, financial savings, improved access to services and better working conditions.
- More than that, sustainable public procurement should be seen as a tool in the wider development and support of domestic market growth and value adding. Due to its significant spending patterns, public sector procurement is a major contributor to industry growth and stability across a wide range of sectors, providing finances and contracts that drive markets for goods and services.
- Harnessing and strategically directing public investment can see government using its purchasing power as a long term incentive to stimulate green investment production and innovation across domestic and global value chains, thereby creating jobs, diversifying industry, and preparing domestic enterprises to compete internationally on green and equitable products and services.
- Each jurisdiction needs to design sustainable public procurement policies that are suited to their legal and institutional governance structures. This does not mean that, best practices are not available. In general, procuring sustainably requires a thorough understanding of material inputs, processes and impacts. A

variety of tools and methods are available, such as life cycle costing in procurement decisions, integration of social and environmental standardization, when preselecting suppliers or in technical criteria of procurement tenders and the use of product lists, which are regularly updated to support innovation in product technology and design.

- It is further recommended that procurement entities are provided with procurement units that are managed quality personnel who have the necessary knowledge and requisite sustainable procurement training and competences. This can be done by giving procurement practitioners with in-service training and opportunities, to gain professional procurement qualifications.
- Government has to put in place programs to curb corruption in the public procurement process in Ghana, as well as making Green procurement one of its policy priority areas.

4.6 RECOMMENDATION FOR FUTURE RESEARCH

- This research was conducted in Accra, so it should be extended to other regions.
- The contributing effect of corruption and bureaucracy on Sustainable Procurement.
- How can Social Accountability be enhanced for Sustainable Procurement.

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APPENDICES(A):-QUESTIONNAIRE SAMPLE

TOPIC: TOWARDS A SUSTAINABLE PROCUREMENT IN GHANA

Introduction

Do you Procure Sustainably? To What Extent? What Challenges do you face in Sustainable Procurement in Ghana?

With your help, this survey attempts to answer these questions.

This study is to draw individuals and corporate organizations attention to the fact that procurement has negative impact on the environment and that the health of our nation Ghana is at risk and requires legal rethinking as Public Procurement Act 663 lacks Sustainability issues. There had been public outcry recently throughout Ghana towards the destruction of the environment by illegal mining activities. The economies and socio-cultural life forms of indigenous communities are also being disrupted.

The purpose of this survey is to draw on the experiences of procurement officials on the nature and extent to which Procurement processes in Ghana embraces Sustainability considerations.

The survey is in the following sections:

Section A: Biographical Data.

Section B: Procurement Officials experience regarding Sustainable Procurement.

Answering this questionnaire will take approximately 10 minutes of your time.

The following definitions will help one understand better certain words while answering this questionnaire.

- 1) **Procurement:** An acquisition process.
- 2) **Sustainable Procurement:** An acquisition process to achieve value for money in a whole life cycle basis while minimizing negative impact on the environment.
- 3) **Environment: Our surroundings**
- 4) **Green House Effect:** The destruction of the Ozone layer by carbon dioxide leading to rising temperatures on Earth.
- 5) **Air Pollution:** Releasing harmful substances into the atmosphere.
- 6) **Water Pollution:** Releasing harmful substances into water bodies.
- 7) **Deforestation:** Indiscriminate cutting down of trees leading to the destruction of forests.

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TOPIC: TOWARDS A SUSTAINABLE PROCUREMENT IN GHANA

QUESTIONNAIRE

SECTION A: BIOGRAPHICAL DATA

1) Your Profession/Occupation

- ☐ Accountant
- ☐ Lawyer
- ☐ Building Technologist
- ☐ Civil Engineer
- ☐ Lecturer
- ☐ Government Official
- ☐ Other (Please specify)

2) Highest Education Level

- ☐ Senior High School
- ☐ Higher National Diploma (HND)
- ☐ Bachelor Degrees (including honours)
- ☐ Postgraduate (MA/MSc/MPhil/PhD)
- ☐ Other (Specify)

3) Number of years of experience

- ☐ 1 to 5 years
- ☐ 6 to 10 years
- ☐ 11 to 15 years
- ☐ 16 to 20 years
- ☐ More Than 20 years

4) What is your outfit engaged in.

- ☐ Manufacturing
- ☐ Construction
- ☐ Farming
- ☐ District Assembly
- ☐ Municipal Assembly
- ☐ Government Ministry
- ☐ Other (Specify)

5) In which region/regions of Ghana do you currently operate?

- ☐ Greater Accra
- ☐ Volta Region
- ☐ Eastern region
- ☐ Western Region

- ☐ Northern region
- ☐ Upper East
- ☐ Upper West
- ☐ Central Region
- ☐ Brong Ahafo
- ☐ Ashanti region

SECTION B: SUSTAINABLE PROCUREMENT IN GHANA.

6) At what procurement cycle stage do you consider Sustainability issues?

- ☐ Sourcing Stage
- ☐ Tender Evaluation Stage

7) What is/are some of the sustainability elements that you have ever considered in your outfit?

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Energy Wastage					
Water pollution					
Air Pollution					
Deforestation					
Green House Effect					
Destruction of Life forms					
Protection Of endangered Species					

8) In your opinion, to what extent do Procurement officials make Sustainability decisions?

- ☐ Very frequent
- ☐ Frequent
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

9) Knowledge on Sustainable Procurement is widespread in Ghana.

- ☐ Strongly Agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

10) Indicate by scale which of the under listed Challenges affect Sustainable Procurement in Ghana

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Lack of Social Drive					
Low technical & Management capacity					
Low Multi-stakeholder approach					
Higher Initial costs of Green Products					
Difficulties in ICT application					

11) Which of these does your outfit commit money annually in respect of the following environmental management programmes?

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Vegetation Restoration					
Water Purification					
Health (hospital)					
Education (Schools)					

12) What measures does your outfit undertake to mitigate this / these problem(s)?

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Education to adapt to situation					
Research and development to find better ways					
Stakeholder consultation					
Compensation					
Vegetation Restoration					

13) What does your outfit consider as a primary environmental concern in connection with its operations?

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Disposal of waste or by products					
How to save Power or electricity					
How to save water					
Safety at work place					
How to conserve wildlife					

THANKS