

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,  
KUMASI, GHANA

Environmental Sustainability Requirement by MMDA'S in Procurement of Works

by

Yussif Olatunji Jimoh (BSc. Quantity Surveying and Construction Economics)

A Thesis Submitted to the Department of Building Technology,  
College of Art and Built Environment  
In Partial Fulfilment of the requirements for the degree of  
MASTER OF SCIENCE

JUNE 2016

**CERTIFICATION**

I hereby declare that this submission is my own work towards MSc in Procurement Management and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the university , except where due acknowledgement has been made in the text.

KNUST

Yussif Olatunji Jimoh  
(PG 1769914)

..... Signature

.....  
Date

Certified By:  
Dr. Gabriel Nani  
(Supervisor)

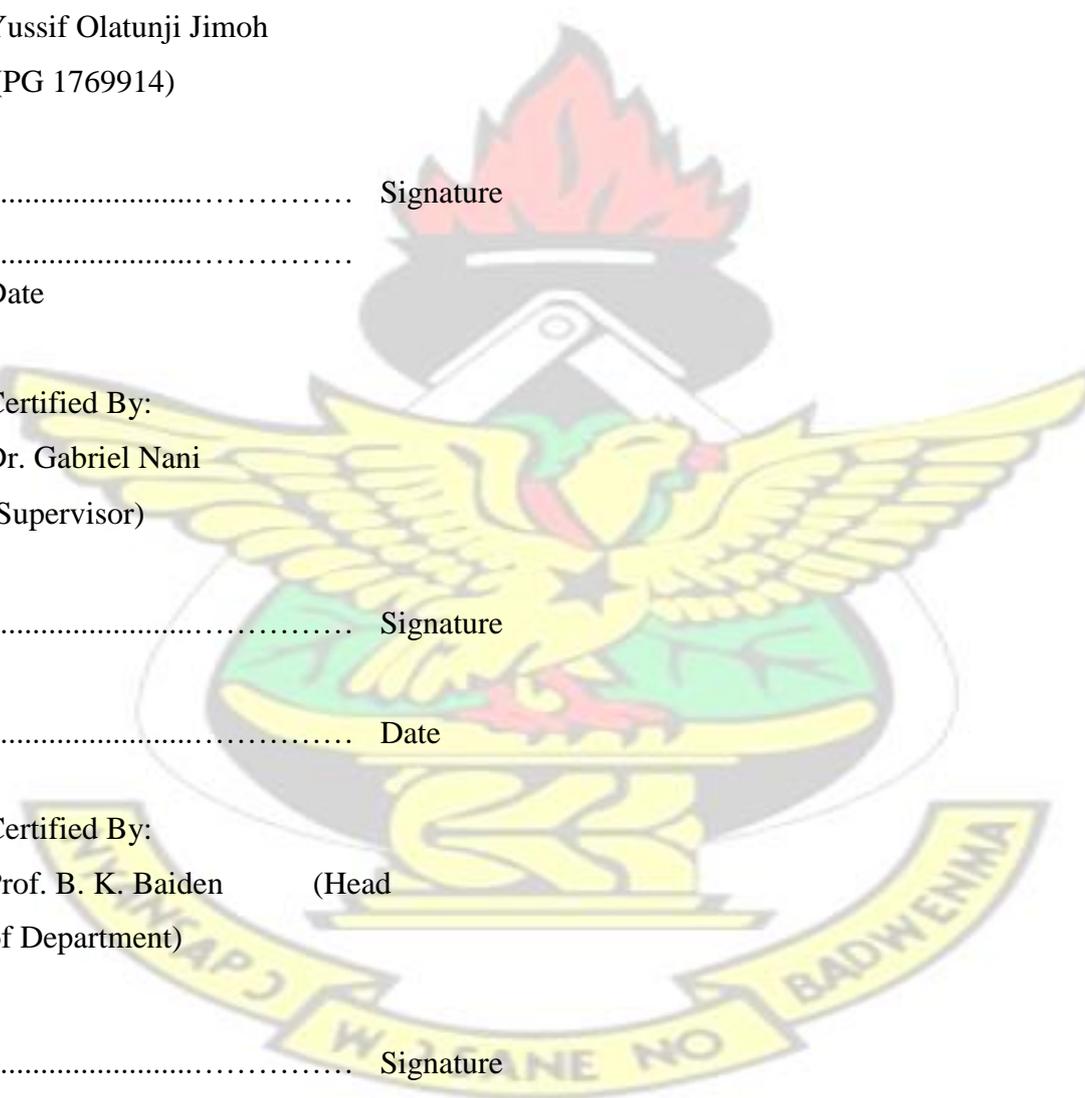
..... Signature

..... Date

Certified By:  
Prof. B. K. Baiden (Head  
of Department)

..... Signature

..... Date



## ABSTRACT

Sustainable procurement is reviewed from previous works to identify some of the environmental issues and challenges faced by the procurement officers. Questionnaires was established on a scales for which the respondents are to use in administering the questionnaires. This study identified some of the environmental factors being considered by the MMDA's during procurement activities and the challenges they face in implementation of sustainable procurement. The research was carried out in Upper East Region of Ghana where all the 13 Districts were considered during the study. Maximum of 26 questionnaires were sent out to be administered by the procurement officers within the Districts. Only 20 of the questionnaires were retrieved and the analysis of the findings is based on the 20 questionnaires retrieved. The analysis of the quantitative survey data reveals that, some of the environmental sustainability issues were not considered during procurement. Environmental issues such as; water pollution, air pollution, noise pollution, deforestation and energy wastage were only considered often while issues like protection of endanger species and greenhouse effect were mostly ignored. Cost, budget constraint and top management support were identified as some of the barrier or challenges to the sustainable procurement. Therefore, there is a need to review public procurement Act, Act 663 in order to include sustainability during procurement activities. Sustainability manual can be produce as a guide for the attainment of sustainability during procurement.

## TABLE OF CONTENTS

<b>CERTIFICATION</b> .....	<b>i</b>
<b>ABSTRACT</b> .....	<b>ii</b>
<b>TABLE OF CONTENTS</b> .....	<b>iii</b>
<b>LIST OF TABLES</b> .....	<b>vi</b>
<b>ACKNOWLEDGEMENTS</b> .....	<b>vii</b>
<b>CHAPTER ONE</b> .....	<b>1</b>
<b>INTRODUCTION</b> .....	
<b>1</b>	
<b>1.1 BACKGROUND</b> .....	<b>1</b>
<b>1.2 PROBLEM STATEMENT</b> .....	
<b>3</b>	
<b>1.3 AIMS</b> .....	
<b>4</b>	
<b>1.4 OBJECTIVES</b> .....	
<b>4</b>	
<b>1.5 SCOPE</b> .....	
<b>4</b>	
<b>1.6 METHODOLOGY</b> .....	<b>5</b>
<b>1.7 ORGANIZATION OF THE STUDY</b> .....	<b>5</b>
<b>CHAPTER TWO</b> .....	
<b>7 LITERATURE REVIEW</b> .....	
<b>7</b>	
<b>2.1 SUSTAINABLE PROCUREMENT</b> .....	<b>7</b>
<b>2.2 PUBLIC PROCUREMENT PRINCIPLES</b> .....	<b>8</b>
<b>2.3 CHALLENGES TO SUSTAINABLE PROCUREMENT</b> .....	<b>9</b>
<b>2.3.1 FINANCIAL</b> .....	
<b>9</b>	
<b>2.3.2 INFORMATION</b> .....	
<b>10</b>	

2.3.3 ORGANIZATIONAL ATTITUDES AND INCENTIVE .....	11
2.3.4 AVAILABILITY OF SUSTAINABLE GOODS AND SERVICES .....	11
2.4 STRATEGIES FOR SUCCESSFUL SUSTAINABLE PROCUREMENT .....	12
2.4.1 ORGANIZATIONAL POLICY .....	12
2.4.2 TRAINING AND GUIDANCE .....	13
2.4.3 REGULAR MONITORING AND AUDIT .....	13
2.4.4 SUPPLIER INVOLVEMENT .....	13
2.5 BENEFIT OF SUSTAINABLE PROCUREMENT .....	14
2.5.1 FINACIAL BENEFITS .....	14
2.5.2 ECONOMIC BENEFITS .....	14
2.5.3 ENVIRONMENTAL BENEFITS .....	15
2.5.4 SOCIAL BENEFITS .....	16
2.6 DIMENSIONS OF SUSTAINABLE PROCUREMENT .....	17
2.6.1 SOCIAL DIMENSIONS .....	18
2.6.2 ENVIRONMENTAL DIMENSIONS .....	19
<b>CHAPTER THREE .....</b>	
<b>22 RESEARCH METHODOLGY .....</b>	
<b>22</b>	
3.1 INTRODUCTION .....	22
3.2 RESEARCH ASSUMPTION /PHILOSOPHICAL WORLDVIEWS .....	22
3.3 SRTATEGIES OF INQUIRY .....	23
3.4 RESEARCH APPROACH .....	24
3.5 RESEARCH METHOD .....	24
3.6 TIME FRAME .....	25
3.7 RESEARCH SCOPE AND DATA SOURCE .....	25
3.8 POPULATION .....	25
3.9 SAMPLE SIZE DETERMINATION .....	26
3.10 DATA COLLECTION METHODS .....	26
3.11 DESIGNING THE RESEARCH INSTRUMENT .....	26

3.12 PILOTING .....	26
3.13 DATA COLLECTION .....	27
3.14 DATA ANALYSIS .....	27
<b>CHAPTER FOUR .....</b>	
<b>28 ANALYSIS AND DISCUSSIONS</b>	<b>28</b>
4.1 INTRODUCTION .....	28
4.2 DEMOGRAPHIC OF THE RESPONDENTS .....	28
4.3 SUSTAINABLE PROCUREMENT IN GHANA .....	30
4.3.1 AT WHAT PROCUREMENT CYCLE STAGE DO YOU CONSIDER ENVIRONMENTAL SUSTAINABILITY ISSUES? .....	30
4.3.2 WHAT IS / ARE SOME OF THE SUSTAINABILITY ELEMENTS THAT YOU HAVE EVER CONSIDERED IN YOUR OUTFIT?.....	31
4.4 ENVIRONMENTAL CONSIDERATIONS IN SUSTAINABLE PROCUREMENT .....	32
4.5 IN YOUR OPINION, TO WHAT EXTENT DO YOU CONSIDER THESE SUSTAINABILITY ISSUES IN YOUR OUTFIT .....	33
4.6 KNOWLEDGE ON SUSTAINABLE PROCUREMENT IS WIDE SPREAD IN GHANA. ....	34
4.7 WHICH OF THE UNDER LISTED CHALLENGES AFFECT SUSTAINABLE PROCUREMENT IN GHANA? .....	35
4.8 WHICH OF THESE DOES YOUR OUTFIT COMMIT MONEY ANNUALLY IN RESPECT OF THE FOLLOWING ENVIRONMENTAL MANAGEMENT PROGRAMMES? .....	36
4.9 WHAT MEASURES DOES YOUR OUTFIT UNDERTAKE TO MITIGATE THIS / THESE PROBLEM(S)? .....	37
4.10 WHAT DOES YOUR OUTFIT CONSIDER AS A PRIMARY ENVIRONMENTAL CONCERN IN CONNECTION WITH ITS	

OPERATIONS? .....	38
<b>CHAPTER FIVE .....</b>	<b>39</b>
<b>SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION .....</b>	<b>39</b>
5.1 INTRODUCTION .....	39
5.2 IDENTIFICATION OF ENVIRONMENTAL SUSTAINABILITY ISSUES .....	39
5.3 DETERMINATION OF THE EXTENT OF ENVIRONMENTAL SUSTAINABILITY IMPLEMENTATION DURING PROCUREMENT. ....	39
5.4 IDENTIFICATION OF SOME CHALLENGES IN THE IMPLEMENTATION OF SUSTAINABLE PROCUREMENT .....	40
5.5 CONCLUSION .....	40
5.6 RECOMMENDATION .....	40
<b>REFERENCES .....</b>	<b>42</b>
<b>APPENDIX QUESTIONNAIRE .....</b>	<b>45</b>
<b>LIST OF TABLES</b>	
Table 4.1 Profession/Occupation .....	28
Table 4.2 Educational Level .....	29
Table 4.3 Years of Experience .....	29
Table 4.4 Procurement Cycle Stage .....	30
Table 4.5 Sustainability Elements .....	31
Table 4.6 Environmental Considerations in Sustainable Procurement .....	32
Table 4.7 Sustainability Issues in your Outfit .....	33
Table 4.8 Knowledge on Sustainable Procurement .....	34
Table 4.9 Challenges affect Sustainable Procurement .....	35
Table 4.10 Outfit Commit Money Annually .....	36
Table 4.11 Outfit undertake to mitigate problem(s) .....	37
Table 4.12 Primary Environmental concern in connection with its operations .....	38

## **ACKNOWLEDGEMENTS**

My first and foremost thanks go to the Almighty God, who has graciously granted me the strength and the wisdom to embark on this academic endeavor successfully. Special thanks to my supervisor Dr. Gabriel Nani, for his tremendous supervision, advice and guidance throughout this research.

# KNUST



# KNUST



## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 BACKGROUND**

Sustainable procurement is a process whereby organizations meet their needs for goods, works or services and utilities in a way that achieves value for money on a whole life basis in terms of generating benefit not only to the organization, but also to the society and the economy, while minimizing damage to the environment (IDeA, 2007). Sustainable procurement can also be defined as socially and ethically responsible purchasing, minimizing environmental impact through the supply chain, delivering economically sound solution and good business practice (CIPS, 2011).

The concept of sustainable development first emerged in the late 80s' according to the report of World Commission for Environment and Development (WCED) where sustainability was described as the process of meeting the need of present generation without compromising the ability of future generations to meet their own need. The concept targets long-run strategy of achieving or solution to social and environmental issue and to bring similarities among countries of different economical and social development stage. The sustainable dimension which is environmental, social and economic consideration stands for profit, people and planet. These three dimensions are regarded as the pillar for corporate sustainability Carter (2005) as cited by Isen (2012). According to Cathy & Shaun (2011), by the next forty years, the world population is expected to be doubled. This is good news to the construction industries since more homes , schools, workplace and infrastructure facilities will be needed,

Good as it may be to the construction industries, it poses some threats to the natural resources because the world has finite resources and within forty years, some of the natural resources such as oil, water, some base metals and minerals will reduce in

quantity and if care is not taken there will be shortage. Within the same period, climate change as a result of greenhouse gas emissions will alter the way people live and do business. In Ghana, Government spend 15-30% of national GDP on procurement while the public sector across the world spend between 8% to 25% of GDP on goods and services which is very substantial expenditure (Brammer & Walker, 2011). Government is the biggest customer in terms of procurement within a country. This purchasing power can be used to influence the private sector towards sustainable procurement and to lead by example in procurement process by achieving the goals of sustainability through their procurement (UNEP, 2012).

Sustainable procurement is an important strategy in country's development. It provides a lot of benefit including costs control by considering whole life costing of project during procurement; meeting internal and external standard of sustainable procurement; complying to the social and environmental legislations; risk management and organizational reputations; creation of markets; provision of security for the future sustainable supply; ensuring value for money and communities benefits (IAPWG, 2006). It is important to adopt green procurement in other to achieve environmental friendly in our procurement activities. Sustainable procurement has been seen as a way of achieving sustainable development by Government which improve the hope of future generations (IAPWG, 2006). Sustainable procurement enhance the achievement of good governance through the promotion of value for money, increase efficiency and effectiveness of delivery, reduction in corruption, improvement in the positive impact on a country's investment climate, promotion of transparency and accountability and provision of equal opportunities.

## 1.2 PROBLEM STATEMENT

Public procurement is a tool of government policy in the development of a country. It is also a major contribution to environmental problems due to excessive consumption of resources from both construction and building operations leading to the pollution of the environment (Ding, 2008). Ghana as one of the developing countries that spends a lot of the country resources on infrastructural development. According to the 2015 budget, about GHC1.5billion is allocated for infrastructural development. This is a very huge amount money. The procurement processes for these activities are however faced with major challenges in terms of maintaining sustainable environment. The Procurement Act, ACT 663 which serves as a guide to the public procurement process requirement is silent on the issue of sustainability in public procurement activities as far as the environment is concerned.

It has been observed that, the procurement of works in Ghana have been neglecting the issues of sustainability in the procurement process. Meanwhile, construction activities are one of the major activities of the government of Ghana which contribute extensively to environmental pollution. Environmental issues need special attention as it has great impact on procurement in the developing world compared to the developed world. As a result of this, green procurement is imperative in other to help promote the general goals of achieving sustainable procurement which addresses environmental issues in procurement of works.

This study therefore looks at the environmental factors considered globally to ensure sustainable environment through procurement and the level of compliance by the Metropolitan, Municipal and District Assemblies (MMDAs) in Ghana to the factors.

### **1.3 AIMS**

The aim of the study is to examine the implementation of environmental sustainability requirements in the procurement of works at the Metropolitan, Municipal and District Assemblies (MMDAs)

### **1.4 OBJECTIVES**

The main objectives are;

- To identify environmental sustainability issues considered by Metropolitan, Municipal and District Assemblies (MMDAs) during procurement;
- To determine the extent of implementation of environmental sustainability requirements during procurement; and
- To identify challenges in implementing environmental sustainability in procurement at Metropolitan, Municipal and District Assemblies (MMDAs) level

### **1.5 SCOPE**

The scope of the study will be based on a broad assessment of sustainable procurement practice in the Metropolitan, Municipal and District Assemblies (MMDAs) in relation to the global sustainable procurement practice. The major focus will be on the environmental sustainability issues practiced in the Ghanaian Metropolitan, Municipal and District Assemblies (MMDAs) in procurement of works compared to the environmental requirements in Ghana and the world at large.

The study will be limited to Upper East Metropolitan, Municipal and District Assemblies (MMDAs).

## **1.6 METHODOLOGY**

The study will adopt exploratory research design where the researcher will compare what is supposed to be the practice and what is actually practiced. The researcher will use quantitative approach. The data for the study will be collected by the use of both questionnaires and literature. The source of the literature will be books, internet, articles, journals, and newspapers. The questionnaires will be close ended by using Likert scale to categorize the respondents' views. The questionnaires will be developed, the researcher will pilot it similar group of respondents to test its clarity and to avoid any discrepancies to make necessary corrections. The researcher will use census approach in choosing the sample size, since the number of the Metropolitan, Municipal and District Assemblies (MMDAs) in Upper East Region is not much. Some of the questionnaires will be delivered through mail, friends, and others by hand. The data will be collected by hand or mail and analyze using descriptive statistic by computer data analysis software called Statistical Package for Social Science (SPSS) version 21. The target group will be the procurement officials in various District Assemblies and Municipal Assemblies.

## **1.7 ORGANIZATION OF THE STUDY**

The study is divided into five chapters. Chapter one provides the background of the study, the problem statement, aim and the objectives. Chapter two contains the literature on the sustainable procurement. Chapter three demonstrates the research design, methodology, and analysis of the study. Chapter four present the summary of the findings and the discussion of the findings. The last chapter presents the summary with the conclusion and recommendation.

## **1.8 SIGNIFICANCE OF THE STUDY**

Sustainable procurement is recognised as an instrument of government for the infrastructure development of a country. The procurement process in Ghana is much is silent mostly on sustainability which posed challenges on our procurement process. The procurement Act, Act 663 that serves as a guide during procurement is silent on sustainability which really affects the society environmentally, socially and economically. It has been observed that, the procurement of works in Ghana have been neglecting the issues of sustainability in the procurement process. Meanwhile, construction activities are one of the major activities of the government of Ghana which contribute extensively to environmental pollution. Environmental issues need special attention as it has great impact on procurement in the developing world compared to the developed world. As a result of this, green procurement is imperative in other to help promote the general goals of achieving sustainable procurement which addresses environmental issues in procurement of works.

The study is to encourage sustainability policy in our Metropolitan, Municipal and District Assemblies (MMDAs) during procurement. Sustainable procurement is an important strategy in country's development. It provides a lot of benefit including costs control by considering whole life costing of project during procurement; meeting internal and external standard of sustainable procurement; complying to the social and environmental legislations; risk management and organizational reputations; creation of markets; provision of security for the future sustainable supply; ensuring value for money and communities benefits (IAPWG, 2006).

## **CHAPTER TWO**

### **LITERATURE REVIEW**

## 2.1 SUSTAINABLE PROCUREMENT

Sustainable procurement is a process whereby organizations meet their needs for goods, works or services and utilities in a way that achieves value for money on a whole life basis in terms of generating benefit not only to the organization, but also to the society and the economy, while minimizing damage to the environment (IDeA, 2007). In addition to this, sustainable procurement can also be defined as the socially and ethically responsible purchasing, minimizing environmental impact through the supply chain, delivering economically sound solution and good business practice (CIPS, 2011). According to BBC (2011), sustainable procurement is the process of purchasing goods, services and works that takes into account the social, economic and environmental impact that such purchasing has on people and communities while still achieving value. According to Gary (2007) sustainable procurement leads to reduction in risk to the environment, human health and traditional considerations of price, quality and functionality. Sustainable procurement also lead to habitat protection, less natural resources use, less energy use in manufacturing, no toxic substances, energy efficient operations, minimal pollution and recyclable. According to Preuss (2009), public sector procurement in the UK account for 18% of GDP, 14% of the GDP in the USA while Walker and Brammer (2009) reported that, between 8% and 25% of the GDP of the Organization for Economic Co-operation and Development (OECD) countries to and 16% of (EU) GDP are attributed to public procurement. In Ghana, Government spend 15-30% of national GDP on procurement. Based on this, the researchers argued that, procurement is an important policy tools that help achieve result in the society by promoting our policy goals.

According to Nijaki and Worrel (2012), sustainable procurement can be used as an instrument for achieving both economic and environmental goals as well as a leverage for promoting policy and planning in achieving green procurement. Every government and organization carry out procurement in order to fulfil their day to day activities. Both the government and the organizations need to incorporate environmental and economic goals in their day to day procurement activities in order to achieve sustainability. There are four major economic activities performed by the government. This include; provision of legal frame work, provision of public goods with no additional cost to the people, redistributions of income through spending and taxation and finally the procurement of goods, works or services for the public. Thus public procurement is one of the major activities of every developed or developing countries and needs serious attention in order to promote good governance.

The availability and use of procurement manual in an organization help the organization to incorporate the sustainable issues such as economic, social and environmental in procurement decision making (Meehan et al., 2011). The concept of sustainability such as the triple bottom line is a difficult ones to translate into practice. It poses complexity in strategic decision making and make it necessary for fundamental shift in operations, resulting in significantly positive development for organization.

## **2.2 PUBLIC PROCUREMENT PRINCIPLES**

Public procurement has guiding principles which support the ultimate aim of achieving value for money. Walker and Brammer (2009) identified some basic principles for sustainable procurement namely, transparency, competitiveness, accountability, efficiency, value for money, legality and intergrity.

## **2.3 CHALLENGES TO SUSTAINABLE PROCUREMENT**

Although, sustainable procurement can be used as an instrument for achieving economic, environmental and social goals as well as an element for promoting policy and planning in achieving green procurement according to (Nijaki and Worrel, 2012), there are some challenges which hinder the promotion of sustainable procurement. According to Brammer and Walker (2011), some of the challenges could be the different view on environmental criteria and how to measure. This differs from countries. Other challenge include lack of common legal frame, increase cost of procurement and lack of common criteria in monitoring green procurement and familiarity with the sustainable procurement for implementation of policy. The implementation of sustainable procurement require skills, competencies and tools necessary to leverage its operations are identified as challenges of implementing sustainability in procurement. Some of these challenges has made it difficult for realising sustainable procurement. According to Alejandre, et al. (2010), european commission was able to achieve about 50% of implementation of green procurement in EU countries. Even though the developed countries who have been advocating for the implementation of sustainability years back were not able to achieved more than 50% of its implementation. This will pose serious challenges to developing countries like Ghana in achieving sustainability in our procurement.

### **2.3.1 FINANCIAL**

Walker and Brammer (2009) identified some of the challenges of sustainable procurement as financial. It is assumed that green procurement is very expensive and this can be affected by budget constraints. Meanwhile, cost effectiveness play a major roles in assuring sustainable procurement. The perception of financial implication on implementing sustainable procurement play a crucial role on which the policies are

acted upon since green procurement are perceived to be more expensive than other method (Stephen and Walker, 2007). Cost effectiveness play an important role in sustainable procurement due to the tight budget constraint faced by many public sectors. According to Blair and Wright (2012) as cited by Chari and Chiriseri (2014), sustainable product or service is perceived to be costly and require huge amount of money for its investment. The United Nations also support the fact that, the whole process and the result or outcomes are very expensive and time consuming. This goes contrary to the procurement object which focus on the lowest possible price by (Lyons and Farrington, 2006) cited by Chari and Chiriseri (2014). Cost is a prime factor in decision making in purchasing. Many organization do not have policy that factor not only the acquisition cost but the whole life cycle cost.

### **2.3.2 INFORMATION**

Information is needed in relation to the implementation of sustainable procurement. The information must be in line with government policies. For any organization to successfully implement sustainable procurement activities, the organization must understand the concept of sustainable procurement and government policies with respect to procurement and ensure the organization has the tools and the skills necessary for effective operation of such implementation (Stephen and Walker, 2007). Francesco et al. (2012) reported from their study that, based on a survey carried out in Italy, some of the problems in the implementation of sustainable procurement is the lack of information about the environmental impact of the product to be procured. There is little or no knowledge about some of the product to be procured and it leads to procurement with environmental problem. Another survey carried out by OECD about the sustainability in procurement reported that, some of the barrier to the implementation of sustainable procurement is the lack of training of procurement staff,

lack of information about financial aspect of the procurement and finally, lack of information about the environmental benefit of sustainable procurement. Some organisations refused to implement sustainable procurement due to financial burden without considering the benefit in terms of environmental quality.

### **2.3.3 ORGANIZATIONAL ATTITUDES AND INCENTIVE**

Support from top management and incentive toward the sustainable procurement is also recognised as a challenge in implementation of environmental sustainability during procurement. The implementation of sustainable procurement will depend on organizational culture and support (Gary Wilde, 2007). Organizational culture presents some level of barrier to the implementation of sustainable procurement. Some organizational cultures do not support easy change; others are not in support of sustainability or any change in general. The idea or support from the top management or at senior level and the structural support of the organization and the process may lower the speed of the implementation of sustainable procurement (Stephen and Walker, 2007). As it is reported from the study, some organizations that proclaim culture that is not easily changed have difficulties in implementation of sustainable procurement. Lack of guideline to sustainable procurement from the higher authority leads to internal organizational difficulties (Francesco et al., 2012).

### **2.3.4 AVAILABILITY OF SUSTAINABLE GOODS AND SERVICES**

Sustainable goods and services some of the goods and services required by public sectors are specialist in nature and very challenging in identifying and procuring.

NAO, (2005) as cited by Preuss (2009) also identified some barriers to sustainable procurement as the trade-off between sustainability and cost, lack of leadership commitment and integration of sustainability into the standard procurement process.

Francesco et al., (2012) reported that lack of service providers or suppliers pose serious challenge achieving sustainability. Some of the product or services to be procured can be of specialised nature and few suppliers or service provider are available. You are sometimes forced to forgo certain things in other to get your procurement fulfilled.

## **2.4 STRATEGIES FOR SUCCESSFUL SUSTAINABLE PROCUREMENT**

### **2.4.1 ORGANIZATIONAL POLICY**

Organizations must setup policies to strategically ensure that sustainability is implemented in their procurement process (IAPWG, 2006). This may be realised when the organization incorporate sustainability as a criteria in the evaluation of potential suppliers or contractors. There should be some high level of commitment to the policy set by the organization in assuring sustainability. The policy need to be flexible such that, it can be easily manipulated to fulfil any further improvement in the sustainability in the future or to easily adapt to other organizations achieving sustainability. is an important instrument in achieving success in an organization. Leadership has a great influence in every decision of the organization and there is need for clear understanding of sustainability in procurement by the leaders or higher authority to support the act. The most important strategy in ensuring sustainability in procurement is by managerial concern (Qi G. et al., 2010). The top management needs to embrace the policy of sustainability and monitor its application to ensure that the procurement achieve value for money in whole. The government needs to provide clear policy starting from the top leadership on procurement.

### **2.4.2 TRAINING AND GUIDANCE**

There is the need for government and organizations to organize training for the employee to understand and appreciate the incorporation of sustainability into the procurement. There is the need for guidance to be provided which serves as a basis for

the procedure for implementation of sustainability in the procurement (IAPWG, 2006). The government must provide a single unified sustainable procurement frame work which take care of environmental, social and economic factors of the sustainable procurement. There is a need for a short guide which will be readily available to all procurement entities. The government must ensure that the guidance is followed by any procurement entities through good monitoring to ensure compliance to the guide and impose penalty on any procurement entity fail to complies to the guides (IDeA, 2007).

#### **2.4.3 REGULAR MONITORING AND AUDIT**

The organizations and the government should put in place the system or procedures for auditing and monitoring the procurement process to ensure that sustainability is considered through out the procurement process, and to studied the obstacles that might have arises in the process in other to eliminate or reduce the effect and ensure complete sustainable assurance in the procurement process.

#### **2.4.4 SUPPLIER INVOLVEMENT.**

There is the need to educate the suppliers in other to broaden their imaginations on sustainability and its importance and benefits. The suppliers can be involved in the specification of the product in other for them to appreciate and understand the customers requirements.

#### **2.5 BENEFIT OF SUSTAINABLE PROCUREMENT**

Sustainable procurement achieved a lot of benefits if successful implemented and carried out effectively. Some of the benefit will be categorised into financial benefits, economic benefits, environmental benefits and social benefits.

### **2.5.1 FINACIAL BENEFITS**

The implementation of sustainable procurement provide some financial benefits. Some of the benefits are; it promote the efficient and effectiveness use of public resources (Wilde, 2007). This enable the organisation to achieve the aim of which the procurement was made and provide value for money. It minimise life cycle cost of procured goods and services. From the procurement, the considerations of life cycle in the selection criterias lower the running cost of maintaining the product through out the life of the product. It minimised the cost of waste, emission and disposal. Sustainable procurement also save cost by reducing the quantity of materials going to landfill. It also ease regulatory burden since the procedures set down for the sustainable procurement will be followed in the procurement process and also improve employee productivities.

### **2.5.2 ECONOMIC BENEFITS**

Implementation of sustainable procurement also ensure certain economics benefits. Some of the benefits are; improvement in the market and bringing innovation at the market place by the government since the rate at which government procure is high. Sustainable procurement also support sustainable communities and the sustainable development. This also lead to the creation of sustainable suppliers since all the suppliers will have it in mind that only the materials with positive environmental friendly has greater advantage than the materials with negatives environmental friendly. According to Alejandro et al. (2010), sustainable procurement enhanced the development of new product market as well as improving the competitions of the enterprise and their considerations to environmental performance. Even though some product prove to have higher initial cost or up-front acquisition cost but lower running and maintenance cost that is whole life cycle cost. The sustainable procurement

provide some other economic benefit according Government of western Australia (2014). Sustainable procurement create job opportunities through the use of local suppliers, green technology and creating market for recycled product. It lead to cost saving and reduction in the whole life cycle cost in other to achieve value for money. Sustainable procurement support both small and medium businesses and increase competition among the potential suppliers. It improve supply chain efficiently and at the same time ensure business continuity.

### **2.5.3 ENVIRONMENTAL BENEFITS**

Environmental goods or services is defined as goods or services with little or no negative impact to the environment through out the life span as compare to the other goods serving the same purpose with much negative environmental impact (Government of western Australia, 2014). The sustainable procurement also allow the procurement process to meet the environmental responsibility. Since the procurement will surely ensure environmental requirement if the sustainability is followed. It also minimise the environmental impact, liabilities and risk. When environmental requirement is met, the negative impact of the procurement will be minimise while the positive impacts will be maximise. It enhanced human health and wellbeing which benefit the workers at the same time the communities. Improve safety impacts of procuring and the use of goods and services. It also improve achieving the value for money as far as environmental is concern and promote perceptions of the organisation in ensuring environmental standard in procurement. Sustainable procurement enhanced the quality of air releases to the environment by reducing or eliminating the causes of air pollution such as carbon dioxide and other air pollutants, efficiently manage the use of water as well enhanced the quality of water due to the control of the pollutants to the water bodies, improve soil quality by control of chemicals releases to

the land, improve sustainable forestry and biodiversity through reduction of raw material and natural resources, improve the use of energy and promote the use of renewable energy, it reduces heat, noise, radiation and vibration that might have caused by energy emitted, it promotes the use of recycled material and reduces waste generated through the procurement (Government of Western Australia, 2014).

#### **2.5.4 SOCIAL BENEFITS**

Implementation of sustainable procurement ensures social responsibilities are achieved. It will also provide a good image of an organisation with sustainable practices and improve its reputation in terms of sustainable procurement. Sustainable procurement also creates sustainable consumption and promotes a market for sustainable products. It leads to improvement in local economic development. It ensures better alignment of organisational practices with organisational goals. It attracts and retains staff and at the same time provides an opportunity to lead by example. According to the Government of Western Australia (2014), suppliers adopt ethical practices and adhere to legislative requirements and other actions which benefit society in terms of inclusiveness, equality, diversity, regeneration and integration. The Government of Western Australia (2014) recognises other benefits of sustainable procurement on social life. Sustainable procurement enables suppliers with ethical and social responsibility to gain government support in terms of soliciting for suppliers, it promotes the development of up-coming and small businesses, it focuses on the disadvantaged group in the society by providing them with employment and training and ensures compliance with health and safety requirements as well as other regulatory requirements.

#### **2.6 DIMENSIONS OF SUSTAINABLE PROCUREMENT**

According to the Government of Western Australia (2014), sustainable procurement contains three dimensions; the social dimensions, economic dimensions and

environmental dimensions. This is also supported by Willard (2012) that, the economic, social and environmental dimension are the three legged stool metaphor in which if one leg is weak, will make the sustainability unstable. The downside of the metaphor is that, it makes the economic, social and environmental legs appear differently and equal. Belfitt et al. (2011) supported the fact that the general accepted definition for sustainable procurement is with the triple bottom line. This three pillars must be fulfilled in order to achieve sustainable procurement. This mean that, the procurement process must look beyond the basic criteria of price, quality and service when deciding on procurement decision. The up-front cost of procurement are not only considered, but consideration of whole life cycle cost must be emphasise on awarding the contract. Another dimension in the field of procurement need embedment of sustainability principle in the procurement process. There is requirement to reduce waste, procurement risk and increase competition through the consideration of environmental issue in the procurement process (Kalubanga, 2012). Many procurement organization consider environmental issue and issues relating to society and economy in their design and implementation of procurement process.

Triple bottom line has showcase as a paradigm for sustainable development. Where procurement fulfil the need of present generation and does not compromise the future generation to meet their own need. The way to ensure sustainability is through strategy formulation and the implementation through out the procurement process. The implementation of environmental in the procurement result to financial savings which added to economic sustainability (Meehan et al., 2011).

### **2.6.1 SOCIAL DIMENSIONS**

The development of green procurement has promoted the development of sustainable procurement. The sustainable procurement has taken into account the social dimension

which promote interest in the social aspect of procurement. The attempt to link the social dimension to procurement originated in the 19<sup>th</sup> century in England, United State and France (Christopher, 2004). The ethics of carrying out the procurement activities in the global world is under scrutiny due to exploitation of work forces under force labour condition in some major construction companies (Cathy and Shaun, 2011). The influence of stakeholders such as NGO's and consumers must be considered seriously because many firms go green in response to public pressure (Helen & Phillip, 2008).

Since 1990s, the development of green procurement has been advocating not only at the national level, but more particularly at the European and international level. The advocating of this more often than not separate the intergration of social policy goals into procurement (Christopher, 2004). The development of green procurement finally seen as a way of promoting sustainable development. Since sustainable development has taken social dimension into considerations. There is now much interest in the social aspect of procurement. There is no much accessible information to the extent of social issues in procurement nation wide. Sustainable procurement is used as mechanism to tackle the status discrimination and improve status equality. According to (D'souza et al., 2007),there are some of the social activities that need to be considered during the procurement: The support to suppliers who are responsible to the government and fulfil their ethical standard and social responsibilities, to consider human health and safety either at the workplace or in the society, to support the small and local businesses by helping them to develop, employing and training the less previledge group in the society and supporting and implement the regulatory requirement during the procurement.

## **2.6.2 ENVIRONMENTAL DIMENSIONS**

According to Meehan, et al. (2011), organizations seeking to improve sustainability on environment must work with the suppliers to reduce material toxicity or the amount of package use on the products. The focusing on the environmental sustainability aspect of supply chain may provide transitional route toward complete sustainability. Many corporations are now turning into green procurement in order to save the environment (D'souza, et al., 2007). The green procurement can be distinguished in few ways. Green product must provide some level of achievement by reducing the environmental impact of the procurement. It may include some strategies of recycling recycled content, using less toxic materials and product that will reduce packaging. According to UNDP (2008), there are some of the challenges affecting the environment; greenhouse gases, emission of hazardous chemicals, over consumption of resources and the volume of resources wasted, depletion of ozone layer and how to safeguard the biodiversity.

## **2.7 IMPORTANCE OF SUSTAINABLE PROCUREMENT**

Public procurement is one of the instruments used in achieving sustainability by International Financial Institutions (Bosch, et al., 2012). The International institutions and Government have appreciated and accepted sustainability in procurement as a way to sustainable development. Some organizations have also developed strategies in order to ensure the implementation of sustainability in their procurement. Public procurement contributes largely to the country economy while sustainable procurement reduces the cost of the procured goods and services in terms of long-term benefits. Sustainable procurement has the potential to save costs, though it may lead to higher initial cost or acquisition cost but reduce the overall cost of the life time of the product. The running and maintenance cost of the product will be less and this will lead to less cost over its overall cost.

Sustainable procurement promote strong, health and just society, living within the environmental limits and promoting good governance (Stephen and Walker, 2007). The procurement is guided by certain principles such as; transparency, accountability, efficiency and effectiveness, probity and fairness which contribute to the achieving value for money. It lead to socio-economic benefits ranging from creation of employment and providing training opportunities to the disabilities and solve long-term unemployment which lead to the elimination of child labour. It promote and develop the local businesses and small medium enterprices by giving them opportunity to grow. Sustainable procurement also lead to management in consumption of raw materials and energy which improve good resource management, chemicals in products, pollution emission and waste generations (UNDP, 2008).

## **2.8 CONCLUSION**

Sustainable procurement is identified as the major contribution to the development of the country. The literature demostate the percentage of the GDP that is invested on procurement. With this, the sustainability issues do not considered mostly during procurement and as a result, affect the quality of the environment. Sustainable procurement can only be achieved by providing policy that take into consideration, the environment; social and economic perpective of the countries. The literature demonstrate some of the environmental issues includes; air polluion, deforestation; noise pollution; protection of endangered species; energy wastage; water pollution and depletion of ozone layer.

the social and environmental concerns underlying sustainable procurement are averagely addressed through the public procurement law as well as the conventional procurement.

# KNUST



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

This chapter outlines the methodology to be employed in carrying out the study. It contains the research design, populations and sampling procedures to be used in order to achieve desirable result. This chapter also explain the method and procedures for the data collection and analysis.

#### **3.2 RESEARCH ASSUMPTION /PHILOSOPHICAL WORLDVIEWS**

According to Creswell (2009), there are four philosophical worldviews. Namely, positivism, constructionism, advocacy, and pragmatism. These have different features.

##### **Positivism philosophical assumption;**

Positivism as a philosophical assumption is characterized by the collection of numerical data. These data are then examined for biases for data validity. After this, the data is analyzed using mathematical models to draw conclusions and to make generalization (Campana, 2010).

##### **Constructionism philosophical assumption**

Constructionism however is qualitative in nature. It collects social data on the view of the participants. Such data are not subject to mathematical models.

##### **Advocacy philosophical assumption**

Advocacy or Participatory worldview, this type of philosophical view is action oriented in which the main aim is to call for a change or agenda for a change.

##### **pragmatic philosophical assumption**

Pragmatic worldview: This philosophical worldview normally arises out of situation or problems.

For this research, key scales were identified from the literature. Some of these included sustainability elements, challenges of sustainable procurement in Ghana and environmental sustainability programs. Each scale had variables which were measured numerically using Likert scales, after which data were analyzed mathematically.

Based on this, the research bears close semblance to the philosophy of positivism than any of the other three philosophies.

### **3.3 STRATEGIES OF INQUIRY**

According to Creswell (2009), research strategy refers to the models that give guidance for procedures in research design. It could be quantitative, qualitative or a mixture of both quantitative and qualitative. Quantitative strategy approach describes a phenomenon using numerically measured data (Yilmaz, 2013). These data are then analyzed using mathematical models. However, qualitative strategy does not require numerical data to describe a phenomenon. It involves the collection of descriptive data mostly with open-ended questions. Both qualitative and quantitative strategy may be combined to take the advantage of mixed approach.

Since this study seeks to assess the level of compliance of MMDAs to environmental sustainability using quantitative or numeric data and analyzing the data with statistical models, the research strategy is quantitative.

### **3.4 RESEARCH APPROACH**

To achieve the stated aim of this study, the researcher first of all reviewed critically current literature on sustainable procurement and compliance level in sustainable procurement. This then informed the researcher on the methodological design for the

study. After the research methodology was designed, data was collected for analysis. The whole processes shows that the study started from more general area (literature review) to specific area (the aim and the objectives). This indicates that the researcher used a deductive approach. However, the inductive approach which starts with the more specific and then to general was not suitable for this study based on its nature (Burney, 2008).

### **3.5 RESEARCH METHOD**

According to Gray (2004), research method includes experimental research, action research, ethnography research and survey research.

Since this research does not require any control environment for data collection, experimental research is not suitable for this study.

The nature of the study also rules out action research because the researcher is not a member or a worker at the MMDAs being studied and is not advocating for any actions among the MMDAs after the study.

Ethnography research aims to study the cultures or the lifestyles of communities. This study does not seek to study the lifestyle of the MMDAs and therefore will not adopt ethnographic research.

This research seeks to measure the variables identified from literature by sampling respondents from the population and then collecting data from the sample by asking them questions. Based on these characteristics, the research is a survey (Bryman and Bell, 2011).

### **3.6 TIME FRAME**

A study could be a longitudinal study or research or a cross-sectional study or research. The type of study that will be adopted depends on the time required for the study and

the nature of the data to be collected. For instance, when there is enough time for study so as to enable or allow for the observation of a phenomenon over time, then longitudinal research is appropriate. However when the time available for a study allows for a snapshot collections of data, then such a study or research is a crosssectional study (Gray, 2004).

Because the researcher does not require to study patterns in compliance level in sustainable procurement among MMDA's overtime but requires a snapshot data collection, this study is a cross-sectional study.

### **3.7 RESEARCH SCOPE AND DATA SOURCE**

Data for the study were collected from the Upper East Region among the thirteen district assemblies. The researcher chose this scope because of his familiarity with the region which enables him to collect data from the thirteen districts for the study.

### **3.8 POPULATION**

There are 13 districts in the Upper East Region. These include Bawku municipal, Binduri (new), Pusiga, Bawku West, Bolgatanga municipal, Bongo, Builsa, Builsa south (new), Garu-Tempare, Kassena-Nankana, Kassena-Nankana West, Talensi and Nabdam (new). These districts form the population for this study. It was out of this population that the sample was drawn for the study.

### **3.9 SAMPLE SIZE DETERMINATION**

Among the sample size determination methods include the use of formular, using size of similar study, using table and census. Due to the limited size of the population, census was used in which all the thirteen districts were reconsidered for the study.

### **3.10 DATA COLLECTION METHODS**

According to Dawson (2002), research method refers to the tools used for the data collection. These include observations, questionnaire and interview. Since the research is a survey, questionnaire and interview are appropriate tools. Moreover, since the research strategy is quantitative, questionnaire survey is most suitable tool for data collections. This is because interview is appropriate for collecting qualitative data.

### **3.11 DESIGNING THE RESEARCH INSTRUMENT**

The questionnaire for data collection was structured into five sections. Section A sought for answers concerning respondent's demographic data. Section B contained questions about sustainable procurement practices in Ghana. However section C was centered on environmental considerations in sustainable procurement. Section D look at how often sustainability issues were considered in the outfit of the MMDAs. Finally, section E asked MMDAs about the challenges they face with regards to compliance to achieve sustainable procurement.

### **3.12 PILOTING**

The questionnaires were piloted among some districts in kudos before the actual survey.

### **3.13 DATA COLLECTION**

Since census was used for the sampling, all the districts assemblies in the Upper East Region were considered. Two questionnaires were administered to each district. In all, twenty questionnaires were retrieved from the questionnaires administration. Thus, out of twenty-six administered questionnaires, twenty were retrieved giving a response rate of 77%.

### 3.14 DATA ANALYSIS

The data were collected and analyze by using descriptive statistics with the aid of Statistical Package for Social Science (SPSS) version 21. The analysis were described with the aid of tables.

# KNUST



## CHAPTER FOUR

### ANALYSIS AND DISCUSSIONS

#### 4.1 INTRODUCTION

This chapter provides the details of the findings on sustainable procurement from the respondents. It details the level of understanding of the respondents on sustainable procurement and the level of their compliance to the environmental factors in carrying out their various procurement activities. The chapter also captured the respondent's demographic information which includes their profession, educational level and their years of working experience.

#### 4.2 DEMOGRAPHIC OF THE RESPONDENTS

##### **Response Rate.**

A total sample size of 26 was selected from thirteen Districts of Upper East Region. From the 26 respondents sampled, the researcher made maximum effort in retrieving 20 of the questionnaires. This 20 questionnaires represent 77% response rate from the sample targeted. The respondents were asked for their profession or occupation, educational level, their years of experience and what their outfit engaged in. The response or findings are presented below.

**Table 4.1 Profession/Occupation**

	Frequency	Percent
Quantity Surveyor	11	55.0
Building Technologist	7	35.0
Construction Manager	2	10.0
Total	20	100.0

Source: Field Survey, 2015

From Table 4.1, majority of the respondents representing 55% were Quantity Surveyor. Seven of the respondents representing 35% were Building Technologist, while the minorities of the respondents representing 10% were Construction Managers.

**Table 4.2 Educational Level**

		Frequency	Percent
Valid	Higher National Diploma	4	20.0
	Bachelor Degrees	13	65.0
	Postgraduate (MA/MSc/MPhil/PhD)	3	15.0
	Total	20	100.0

Source: Field Survey, 2015

From Table 4.2, the study shows that four of the respondents representing 20% were Higher National Diploma holders in their educational level, while three of the respondents representing 15% were (MA/MSc/MPhil/PhD) holders in their educational level. However, majority of the respondents representing 65% were Bachelor Degree holders in their educational level.

With the majority of the respondents have their educational level with Higher Diploma and first degree, the data received could be reliable for the study.

**Table 4.3 Years of Experience**

		Frequency	Percent
Valid	1 to 5	7	35.0
	6 to 10	8	40.0
	11 to 15	4	20.0
	16 to 20	1	5.0
	Total	20	100.0

Source: Field Survey, 2015

From Table 4.3, seven of the respondents representing 35% have their working experience between one to five years. Majority of the respondents, representing 40%, have their working experience between six to ten years. Four of the respondents also have their working experience between eleven to fifteen years, while only one of the respondents has his or her working experience to be between sixteen to twenty years.

### 4.3 SUSTAINABLE PROCUREMENT IN GHANA

#### 4.3.1 AT WHAT PROCUREMENT CYCLE STAGE DO YOU CONSIDER ENVIRONMENTAL SUSTAINABILITY ISSUES?

**Table 4.4 Procurement Cycle Stage**

		Frequency	Percent
Valid	Sourcing Stage	16	80.0
	Tender Evaluation	4	20.0
Total		20	100.0

Source: Field Survey, 2015

From Table 4.4, majority of the respondents representing 80% said that sustainability is considered at the sourcing stage while 20% of the respondents agree that sustainability is considered in procurement but at the tender evaluation stage. According to the response from the respondents, they all agree to the fact that sustainability is considered in procurement but have different views at the stage at which the sustainability is considered.

#### 4.3.2 WHAT IS / ARE SOME OF THE SUSTAINABILITY ELEMENTS THAT YOU HAVE EVER CONSIDERED IN YOUR OUTFIT?

**Table 4.5 Sustainability Elements**

	MEAN	STANDARD DEVIATION	RANKING

Water pollution	4.30	0.47016	1 <sup>st</sup>
Deforestation	4.15	0.81273	2 <sup>nd</sup>
Air pollution	4.10	0.55251	3 <sup>rd</sup>
Noise pollution	4.05	0.39403	4 <sup>th</sup>
Energy wastage	3.95	1.23438	5 <sup>th</sup>
Green House Effect	3.85	0.81273	6 <sup>th</sup>
Protection of endanger species	3.30	0.65695	7 <sup>th</sup>

Source: Field Survey, 2015

From table 4.5, on sustainability elements, water pollution with a mean score of 4.3 was ranked first indicating that most of the respondents consider water as the most agent to be sustained. Second on the list was deforestation with a mean score of 4.2. This shows that during procurement, the authorities ensure that policies are put in place to protect our forest. Air pollution and noise pollution were ranked third and fourth respectively.

Low on the list of ranking were greenhouse effect and protection of endanger species with mean score of 3.9 and 3.3 respectively. It is not surprising that these problems are not mostly considered because, on the issues of endanger species, only a few authorities consider it in the planning of procurement especially the procurement authorities in the agricultural sector (wilcove et al., 1998).

#### 4.4 ENVIRONMENTAL CONSIDERATIONS IN SUSTAINABLE PROCUREMENT

**Table 4.6 Environmental Considerations in Sustainable Procurement**

	MEAN	STANDARD DEVIATION	RANKING
Environmental sustainability is a priority.	3.95	0.88704	1 <sup>st</sup>
Public procurement decisions can contribute to the mitigation of extreme global climate change.	3.85	1.08942	2 <sup>nd</sup>

Procurement activities influence environmental quality	3.80	0.83351	3 <sup>rd</sup>
Sustainable procurement decisions can help prevent environmental quality deteriorations/degradation	3.75	1.51744	4 <sup>th</sup>
Tendering specifications always include environmental considerations	3.65	0.67082	5 <sup>th</sup>
There are processes or systems implemented to manage your environmental impact on projects	3.60	0.59824	6 <sup>th</sup>
There is a current statement or policy that commits you to sustainability and/or reducing environmental impact during procurement decision taking	3.55	0.51042	7 <sup>th</sup>
There is no need to consider environmental quality when it comes to sustainable procurement decisions.	1.55	0.88704	8 <sup>th</sup>

Source: Field Survey, 2015

From Table 4.6, the study shows that most respondents agreed that environmental sustainability is a priority. 3.95 mean score indicates that respondents affirmed the prioritization of the environmental sustainability. Most of the respondents with a mean score of 3.85 also agreed that public procurement decision can mitigate extreme global climate change and also influence environmental quality and help to prevent environmental deterioration.

The study also shows that, tendering specifications mostly include environmental consideration with the system to manage environmental impact. But, majority of the respondents disagreed to the fact that there is no need to consider environmental quality when it comes to sustainable procurement decision.

#### **4.5 IN YOUR OPINION, TO WHAT EXTENT DO YOU CONSIDER THESE**

## SUSTAINABILITY ISSUES IN YOUR OUTFIT

**Table 4.7 Sustainability Issues in your Outfit**

	MEAN	STANDARD DEVIATION	RANKING
Water pollution	2.25	0.78640	1 <sup>st</sup>
Noise pollution	2.25	0.71635	2 <sup>nd</sup>
Air pollution	2.35	1.03999	3 <sup>rd</sup>
Energy Wastage	2.45	1.19097	4 <sup>th</sup>
Deforestation	2.70	0.86450	5 <sup>th</sup>
Green House Effect	3.15	1.18210	6 <sup>th</sup>
Protection Of endangered Species	3.60	0.88258	7 <sup>th</sup>

Source: Field Survey, 2015

With a mean of one (1) representing very often, two (2) often, three (3) occasionally, four (4) rarely and five (5) not at all. As shown in the table 4.5, from Table 4.7, respondents indicate that water pollution with a mean score of 2.25 was often considered followed by noise pollution and air pollution. However issues or factors that could cause greenhouse effect and could lead to depletion or affect the life of endanger species were occasionally and rarely considered respectively. This could be as a result of the low public consent or lack of government policies on these issues.

### 4.6 KNOWLEDGE ON SUSTAINABLE PROCUREMENT IS WIDE SPREAD IN GHANA.

**Table 4.8 Knowledge on Sustainable Procurement**

	Frequency	Percent
Valid Disagree	12	60.0

Neutral	5	25.0
Agree	3	15.0
Total	20	100.0

Source: Field Survey, 2015

The study show from the Table 4.8 that, majority of the respondents disagreed to the fact that knowledge on sustainable procurement is wide spread in Ghana. Only 25% of the respondents were indifferent with minority of 15% agreed to the awareness of sustainable procurement.

The fact that most of the respondents disagreed that knowledge on sustainable procurement is wide spread in Ghana could be as a result of lack of sustainable procurement policies in public procurement act, Act 663 and the pink form. Therefore, to ensure that sustainability in procurement becomes a national agendum. The PPA especially should contain clauses that advocate for sustainability issues in procurement. This will ensure wide spread knowledge of procurement sustainability.

#### **4.7 WHICH OF THE UNDER LISTED CHALLENGES AFFECT SUSTAINABLE PROCUREMENT IN GHANA?**

**Table 4.9 Challenges affect Sustainable Procurement**

	MEAN	STANDARD DEVIATION	RANKING
Budget constrain	4.35	0.48936	1 <sup>st</sup>
Organizational attitude and incentives	4.20	0.61559	2 <sup>nd</sup>
Insufficient Information about sustainable procurement	4.05	0.75915	3 <sup>rd</sup>
Higher Initial costs of Green Products	3.90	0.85224	4 <sup>th</sup>
Availability of sustainable product and services	3.45	0.82558	5 <sup>th</sup>

Source: Field Survey, 2015

From the Table 4.9, the study shows that most of the respondents attested that, budget constraint, organizational attitude and incentives with insufficient information about sustainable procurement have been the major challenges in ensuring sustainability. Higher initial cost of green product is also a challenge but its effect is not as the first, second and third in the ranking. The respondents also see availability of sustainable product or service as less challenging for sustainable procurement.

According to Francesco et al (2012), budget constraint and organizational attitude and incentives are outcomes of insufficient or lack of information about sustainable procurement. Therefore, making provision in the public procurement act, Act 663 on sustainable procurement will help eliminate the barriers of budget constraint and organizational attitude to sustainable procurement.

#### **4.8 WHICH OF THESE DOES YOUR OUTFIT COMMIT MONEY ANNUALLY IN RESPECT OF THE FOLLOWING ENVIRONMENTAL MANAGEMENT PROGRAMMES?**

**Table 4.10 Outfit Commit Money Annually**

	MEAN	STANDARD DEVIATION	RANKING
Health	4.40	.50262	1 <sup>st</sup>
Education	4.00	.64889	2 <sup>nd</sup>
Water purification	2.95	.88704	3 <sup>rd</sup>
Vegetation restoration	2.60	.82078	4 <sup>th</sup>

Source: Field Survey, 2015

From Table 4.10, the study shows that the respondents put priority in health and education on which the assemblies commit money into in order to improve the state and level of their workers in environmental management during procurement. The

study also shows that less consideration is given to water purification and vegetation restoration as the assemblies spend less or no money on them during their procurement activities.

It is surprising that much priority is given to the health to the neglect of the factors that ensures healthy environment and workers condition in the assemblies. The fact that assemblies commit money annually to health could be as a result of the neglect of water purification and vegetation restoration which were ranked low. Therefore committing much to water purification and vegetation restoration and other factors will ensure that much money is not spent on health issues.

#### **4.9 WHAT MEASURES DOES YOUR OUTFIT UNDERTAKE TO MITIGATE THIS / THESE PROBLEM(S)?**

**Table 4.11 Outfit undertake to mitigate problem(s)**

	MEAN	STANDARD DEVIATION	RANKING
Stakeholder consultation	4.20	.52315	1 <sup>st</sup>
Compensation	3.85	.93330	2 <sup>nd</sup>
Education to adapt to situation	3.60	.50262	3 <sup>rd</sup>
Research and development to find better ways	3.10	.85224	4 <sup>th</sup>
Vegetation Restoration	3.05	.82558	5 <sup>th</sup>

Source: Field Survey, 2015

From Table 4.11, the study shows that stake holder consultation, compensation and education has been the system adopted to mitigate the issues of environmental management during procurement activities. According to the study, less money is spent on research and vegetation restoration as the way to mitigate environmental problems during procurement.

From the respondents, even though the PPA is silent on most of the environmental sustainability issues, public procurement authorities could mitigate the situation by paramount considering stakeholders, especially at the early stage of procurement (Francesco, et al. 2012)

#### 4.10 WHAT DOES YOUR OUTFIT CONSIDER AS A PRIMARY ENVIRONMENTAL CONCERN IN CONNECTION WITH ITS OPERATIONS?

**Table 4.12 Primary Environmental concern in connection with its operations**

	MEAN	STANDARD DEVIATION	RANKING
How to save water	4.10	.91191	1 <sup>st</sup>
Disposal of waste or by products	4.05	.88704	2 <sup>nd</sup>
Safety at work place	4.00	1.02598	3 <sup>rd</sup>
How to save Power or electricity	3.60	.99472	4 <sup>th</sup>
How to conserve wildlife	3.30	.80131	5 <sup>th</sup>

From Table 4.12, the study shows that high regards is given to how water will be saved, disposal of waste or by product and safety at work place. Most respondents agreed that, saving water, disposal of waste and safety of workers at work place has been the major priority in their procurement activities. According to the study, less considerations is given to power saving and conservation of wild life.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

## **5.1 INTRODUCTION**

This chapter summarizes the main findings of the study on the environmental sustainability requirement by MMDAs in the procurement of works. The findings addressed the primary objectives of the study which includes; the environmental issues, the extent of implementation of environmental sustainability and the challenges in implementing environmental sustainability.

## **5.2 IDENTIFICATION OF ENVIRONMENTAL SUSTAINABILITY ISSUES**

The findings demonstrate the availability of sustainability issues which identifies in procurement as water pollution, air pollution, noise pollution, energy wastage, deforestation, greenhouse effect and protection of endanger species. This fulfils the first objective of the study.

## **5.3 DETERMINATION OF THE EXTENT OF ENVIRONMENTAL SUSTAINABILITY IMPLEMENTATION DURING PROCUREMENT.**

The study found that some of the environmental sustainability issues were complied during procurement while others were less complied. From the study, 70% of the respondents consider water pollution during the procurement activities with 30% of the respondents affirmed it. Air pollution, noise pollution and energy wastage were all considered often by the respondents but greenhouse effect and protection of endangered species were less considered during procurement activities.

## **5.4 IDENTIFICATION OF SOME CHALLENGES IN THE IMPLEMENTATION OF SUSTAINABLE PROCUREMENT.**

The study identified some of the challenges faced by the MMDA's during their procurement activities. Some of the challenges includes; budget constraint, higher initial cost of green products, insufficient information about sustainable product and services. Some of the challenges were ranked higher than others by the respondents. Majority of the respondents identified budget constraint as the major challenge in the implementation of sustainable procurement. The availability of sustainable products and services is seen as less of a challenge to the implementation of the sustainable procurement

## **5.5 CONCLUSION**

Public procurement has been identified as a major activity in many countries including Ghana. The amount of money allocated to procurement is so huge and thus there is a need for advocacy on sustainable procurement. The study identified that many practitioners were not aware of sustainable issues when carrying out procurement activities.

Therefore, there is a need to improve on the procurement activities by overcoming some of the challenges posed during the implementation of environmental sustainability.

## **5.6 RECOMMENDATION**

There is a need for the government to provide a sustainable procurement guide which will be different from public procurement Act, Act 663. They should include all the stages in procurement cycle and the sustainability issues that will be attached to each stage of the procurement cycle.

There is a need for the government to monitor the activities of the procurement officers at the Assemblies and ensure that any procurement practitioner that goes against procurement guide is sanctioned.

Government need to make it compulsory that any contractor that win a contract for public procurement should provide a sustainability plan in carrying out the project. A contractor that cannot submit a sustainability plan should be rejected for the contractor award. Also, there must be a thorough monitor to ensure that, the contractor implement the sustainability plan in the progress of the project.



## REFERENCES

- Alejandre E., Traspaderne A. and Elgea A. O. d., (2010). *Best practice on green or sustainable public procurement and new guidelines*.
- BBC, (2011). *Sustainable Procurement Strategy*. Downloads.bbc.co.uk /supplying/pdf/Sustainable-Procurement-Strategy.pdf
- Belfitt R. J., Schweber D. L., Sexton . P. M. & Handcock B., (2011). *Sustainable Procurement – Challenges For Construction Practice..* Reading, University of reading.
- Bosch M., Kemperman M. and Raes S., (2012). *ustainable Procurement and International Financial Institutions*. [Online] Available at: <http://www.unpcdc.org/media/403727/discussion-paper-on-sustainable-procurement-and-international-financial-institutions-final-version.pdf> [Accessed 07 06 2015].
- Brammer S. and Walker H. (2011). Sustainable procurement in the public sector: an international comparative study. *International Journal of Operation & Production Management*, 31(4), pp. 452-476.
- Bryman A. and Bell E., (2011). *Business Research Methods*. 3 ed. Oxford: Oxford University Press.
- Burney S. A. (2008, march 06). Inductive & deductive research approach. p. 4 and 5.
- D'souza C., Taghian M. and Khosla R. (2007). Examination of environmental beliefs and its impact on the influence of price quality and demographic characteristic with respect to green purchase intention. *Journal of targeting measurement and analysis for marketing*, 15(2), pp. 69-78.
- Campana J. (2010). The Soft Skills of Project Management: A view from Diploma Graduates, Master Thesis, Faculty of Education, Queensland University of Technology.
- Cathy B. and Shaun M., (2011). *Guide to sustainable procurement in construction*, CIRIA: london.
- Chari F. and Chiriseri L. (2014). Barriers to Sustainable Procurement in Zimbabwe. *Greener Journal of Business and Management Studies* , 4(1), pp. 014018.
- Christopher M., (2004). Using public procurement to achieve social outcome. *In natural resources forum*, 28(4), pp. 257-267.
- CIPS, (2011). *CIPS Sustainable procurement review*. Availabe at [https://www.cips.org/.../Sustainable\\_Procurement\\_Review\\_%20new\\_logo.pdf](https://www.cips.org/.../Sustainable_Procurement_Review_%20new_logo.pdf)
- Creswell J. M. (2009). *Research Design. Qualitative, Quantitative and Mixed Methods Approaches*. 3<sup>rd</sup> ed. London: Sage Publication. Inc.

- Dawson C. (2002). *Practical Research Methods*. How To Book Ltd.
- Ding G. K. (2008). Sustainable Construction-the role of environmental assessment tools. *Journal of Environmental Management*, 86(3), pp. 451-464.
- Francesco T., Fabio I., Marco F. and Tiberio D., (2012). what factors influence the uptake of GPP (Green Public Procurement) practice? New evidence from an Italian survey. *Ecological economics*, Volume 82, pp. 88-96.
- Gary, W. (2007). Green Procurement and Sustainable Procurement. Corporate energy management. <http://www.peelregion.ca/finance/corp-energy/.../gary-wilde-session.pdf>
- Gray, D. E. (2004). *Research in the Real World*. London: Sage Publication.
- Government of western Australia, (2014). [Online] Available at: [https://www.finance.wa.gov.au/cms/uploadedFiles/Government\\_Procurement/Guidelines\\_and\\_templates/goods\\_and\\_services\\_sustainable\\_procurement\\_practice\\_guidelines.pdf?n=4084](https://www.finance.wa.gov.au/cms/uploadedFiles/Government_Procurement/Guidelines_and_templates/goods_and_services_sustainable_procurement_practice_guidelines.pdf?n=4084) [Accessed 01 06 2015].
- Helen W. and Phillip W. (2008). Sustainable procurement: emerging issues. *International journal of procurement management*, 2(1), pp. 41-61.
- IAPWG, (2006). *Procurement Practitioner's Handbook*. Available at: <https://www.ungm.org/Areas/Public/pph/channels/PPH.pdf>
- IDeA, (2007). *Local government sustainable procurement strategy*. s.l.:s.n.
- Isen, M. M. (2012). *Developing a sustainable procurement strategy for fashion buyers in the German retail sector*. Hamburg: s.n.
- Kalubanga M., (2012). SUSTAINABLE PROCUREMENT: Concept, and Practical Implications for the Procurement Process.. *International Journal of Economics and Management Sciences* , 01(07), pp. 01-07.
- Meehan J. and Bryde, D. (2011). Sustainable procurement practice. *Business strategy and the environment*, 20(2), pp. 94-106.
- Moe C. E. and Palvarinta T., (2013). Challenges in Information System Procurement un the Public Sector. *Electronic journal of e-Government*, 11(2), pp. 308-323.
- Nijaki, L. K. and Worrel, G. (201)2. Procurement for Sustainable Local Economic Development. *International Journal of Public Sector Management*, 25(2), pp. 133-153.
- OGC, (2007). [Online] Available at: [http://webarchive.nationalarchives.gov.uk/20110601212617/http://www.ogc.gov.uk/documents/CP0016AE\\_Guide11.pdf](http://webarchive.nationalarchives.gov.uk/20110601212617/http://www.ogc.gov.uk/documents/CP0016AE_Guide11.pdf) [Accessed 06 06 2015].
- Preuss, L. (2009). Adressing sustainable development through public procurement:

the case of local government. *Supply Chain Management: An International Journal*, 14(3), pp. 213-223.

Roseland, M. (2012). *Toward Sustainable Communities*. 4th ed. Canada: New Society.

Stephen, B. and Walker, H. L. (2007). Sustainable procurement practice in the public sector: an international comparative study.

UNDP, (2008). Environmental Procurement. *Practice guide*, September.

UNEP, (2012). *Sustainable Public Procurement Implementation Guideline*. s.l.:s.n.

Walker, H. and Brammer, S. (2009). Sustainable procurement in the United Kingdom public sector. *Supply Chain Management: An International Journal*, 14(2), pp. 128-137.

Wilcove, S. David, Rothstein David, Dubow Jason, Phillips Ali and Elizabeth (1998). Quantifying Threats to Imperiled Species in the United States. *American Institute of Biological Sciences*, 48(8), pp. 607-615.

Wilde, G. (2007). *Green Procurement and Sustainable Procurement*. Canada, Regional of Peel.

Willard, B. (2012). *The new sustainability advantage*. 2nd ed. Canada: New society.

Qi G. Y., Shen L. Y., Zeng S. X., and Jorge, Ochoa J., (2010). The drivers for contractors' green innovation: an industry perspective. *Journal of cleaner production*, 18(14), pp. 1358-1365.

Yilmaz K. (2013). Comparison of Quantitative and Qualitative Research Traditions: epistemological, theoretical and methodological difference. *European Journal of Education*, 48(2).

## APPENDIX QUESTIONNAIRE

### INTRODUCTION:

I am a post graduate student of *KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY* offering a programme leading to award of *MSC PROCUREMENT MANAGEMENT*. I am carrying out a project on the topic “*ENVIRONMENTAL SUSTAINABILITY REQUIREMENT BY MMDA’S IN PROCUREMENT OF WORKS*”.

The aim of this survey is to draw on the experience of the procurement officials on the nature and extent to which procurement processes in Ghana consider sustainability. All the participants should be rest assured that all the information provided shall be confidential and anonymous to any other person. Thank you for participation.

## SECTION A: BIOGRAPHICAL DATA

1) Your Profession/Occupation a.

Accountant

b. Quantity surveyor

c. Building Technologist

d. Civil Engineer

e. Government Official

f. Construction manager

g. Other (Please specify) 2) Highest Education Level a. Senior High School

b. Higher National Diploma (HND)

c. Bachelor Degrees (including honours)

d. Postgraduate (MA/MSc/MPhil/PhD)

e. Other (Specify)

3) Number of years of experience a.

1 to 5 years

b. 6 to 10 years

c. 11 to 15 years

d. 16 to 20 years

e. More Than 20 years

4) What is your outfit engaged in? a.

Manufacturing

b. Construction

c. Farming

d. District Assembly

e. Municipal Assembly

f. Government Ministry

g. Other (Specify)

## SECTION B: SUSTAINABLE PROCUREMENT IN GHANA.

- 5) At what procurement cycle stage do you consider Sustainability issues?
- Sourcing Stage
  - Tender Evaluation Stage
  - Not at all

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)
Q5	Energy Wastage					
Q7	Water pollution					
Q3	Air Pollution					
Q9	Noise Pollution					
Q10	Deforestation					
Q11	Green House Effect					
Q12	Protection Of endangered Species					

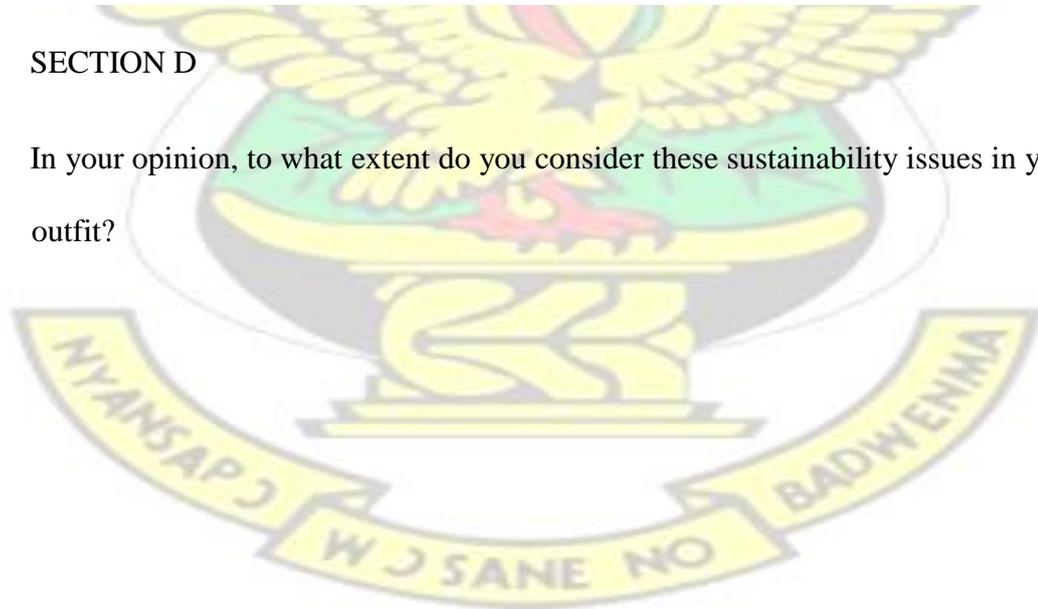
SECTION C: ENVIRONMENTAL CONSIDERATIONS IN SUSTAINABLE PROCUREMENT

		Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Q 13	There is a current statement or policy that commits you to sustainability and/or reducing environmental impact during procurement decision taking					
Q14	There are processes or systems implemented to manage your environmental impact on projects					

Q15	Environmental sustainability is a priority.					
Q16	Tendering specifications always include environmental considerations					
Q17	Procurement activities influence environmental quality					
Q18	There is no need to consider environmental quality when it comes to sustainable procurement decisions.					
Q19	Public procurement decisions can contribute to the mitigation of extreme global climate change.					
Q20	Sustainable procurement decisions can help prevent environmental quality deteriorations/degradation					

SECTION D

In your opinion, to what extent do you consider these sustainability issues in your outfit?



		Very often (1)	Often (2)	Occasionally (3)	Rarely (4)	Not at all (5)
Q21	Energy Wastage					
Q22	Water pollution					
Q23	Air Pollution					
Q24	Noise Pollution					
Q25	Deforestation					
Q26	Green House Effect					
Q27	Protection Of endangered Species					

28) Knowledge on Sustainable Procurement is widespread in Ghana.

a. Strongly Agree

b. Agree

c. Neutral

d. Disagree

e. Strongly disagree

SECTION E) 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)
Q29	Budget constrain					
Q30	Higher Initial costs of Green Products					
Q31	Insufficient Information about sustainable procurement					
Q32	Organizational attitude and incentives					
Q33	Availability of sustainable product and services					

SECTION F1) 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)
Q34	Vegetation Restoration					
Q35	Water Purification					
Q36	Health					
Q37	Education					

SECTION F2) what measures does your outfit undertake to mitigate this / these problem(s)?

		Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Q38	Education to adapt to situation					
Q39	Research and development to find better ways					
Q40	Stakeholder consultation					
Q41	Compensation					
Q42	Vegetation Restoration					

SECTION F3) 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)
Q43	Disposal of waste or by products					
Q44	How to save Power or electricity					
Q45	How to save water					
Q46	Safety at work place					
Q47	How to conserve wildlife					