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RESEARCH ARTICLE

CONSTRUCTION RELATED ENVIRONMENTAL LAWS AND POLICIES IN GHANA: A LITERATURE REVIEW

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ABSTRACT

The Act 490 mandates the Environmental Protection Agency (EPA) in Ghana to regulate the environment and ensure the implementation of government policies on the environment. The law mandates the EPA to ad infinitum improve and preserve the countries environment, while seeking solutions to global environmental issues. However by focusing only on large scale contracts, as is currently the case, the battle with the environment cannot be won through the EPA. Despite the existence of the EPA, there seem to be numerous environmental issues unaddressed. There is little knowledge about the existence of other environmental laws and how they could be incorporated into small, medium and large scale contracts in the public sector. The aim of this research was to identify and document environmental laws and legislation in Ghana with a view of making them a consideration in small and medium scale contracts through public procurement. A thorough literature review was conducted on environmental policies, laws and legislation in Ghana. Numerous laws, regulations and policies were identified, however, they were found to be scattered in various documents. The study recommended the training of procurement officers on ways to incorporate environmental laws into the procurement process, as well as the training of environmental officers as safeguard officers for public contracts.

INTRODUCTION

Environmental Laws in Ghana can be said to date back to the colonial era. However most of the environmental laws back then were related to disease prevention and control. There were few such as the Beaches Obstruction Ordinance (Cap 240) of 29th January 1897 that had some relations with the built environment. Implementation was mostly not at the local level but rather in the bigger towns and cities. Following the 1972 Stockholm Convention, the Environmental Protection Council (EPC) was established in 1974 with the view of coordinating all environmental issues in the country (Yeboah & Mensah, 2014). In the year 1976, the environmental protection council decree, 1974 (NRCD239) was amended by the EPC (Amendment) Decree, 1976 (Sub-Metropolitan District Council, SMCD 58). In the year 1985 the National oil spill Contingency Plan was prepared over two decades before oil discovery in Ghana in commercial quantities. Again in 1986 the National Plan of Action to Combat Desertification was developed (Yeboah and Mensah, 2014).

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In 1992 the Earth summit held in Rio-de-Janeiro generated a worldwide commitment to the environment according to Yeboah and Mensah (2014) and in Ghana the Environmental Protection Agency Act (Act 490) was passed in December 31, 1994. Despite the existence of the EPA there seem to be little knowledge about its impact, that is, operations, applications and implementation in small and medium scale contracts in both private and public sectors of the economy. Evidence of this is the gross environmental illiteracy among stakeholders in the small scale manufacturing and construction industry. For example, in the manufacturing industry, buying unfriendly environmental products is common, improper disposal of waste, improper storage and use of chemicals, pollution and harmful emissions are widespread. In the construction industry, whether small, medium or large scale, destruction of natural vegetation is common, buying products that are not environmentally certified and contracting firms with no environmental certification as well as building on unauthorized sites (e.g. building in water ways and farm lands) are regular (Opintan-Baah *et al*., 2011; Ayarkwa *et al*., 2010; Gbedemah, 2004). Are there environmental laws in Ghana that are applicable through procurement in small and medium scale contracts?

It is evident that by focusing only on large scale contracts, as is currently the case, the battle with the environment cannot be won. The United Nations Guidelines for Consumer Protection (1999) provides the mandate and legal basis for public agencies to work on promoting the enforcement of environmental laws through procurement (United Nations, 1999). This research aimed at identifying and documenting environmental laws and legislation in Ghana with a view of making them a consideration in small and medium scale contracts through public procurement.

Previous Research

Overview of Environmental Legislation in Ghana

Through a thorough review of literature, it was revealed that there are various laws, regulations and legislation that relate to construction activities in Ghana. These laws, regulations and other related legislation for protecting the environment are however scattered in various legal documents. These are discussed below:

The Constitution of Ghana and the Environment

In chapter six, article 41 (k) of the 1992 constitution of the fourth Republic of Ghana, citizens of Ghana are required to protect and safeguard the environment. This applies to all construction stakeholders in Ghana, large and small. This is a constitutional requirement and must be applied in all sectors, both private and public. One way this can be done is through public procurement (Gbedemah, 2011).

The Environmental Protection Agency Act, 1994 (Act 490)

According to Yeboah and Mensah (2014), the Environmental Protection Council (EPC) was established in Ghana as a public institution with oversight responsibility for the environment in 1974 through the National Redemption Council Decree, number 239 (NRCD 239). Section 2 of the decree required among other things, the Environmental Protection Council to ensure the observance of proper safeguards in the planning and execution of all development projects including those already in existence that are likely to meddle with the quality of the environment.

In March 1989, a government directive was issued that required that, the EPC be consulted on development proposals and that a "certificate of clearance" be issued indicating that adequate provisions had been made in the project proposals to contain potential adverse environmental impacts (Yeboah & Mensah, 2014). In 1994, the Environmental Protection Agency Act, 1994 (Act 490) was enacted to create a corporate body called the Environmental Protection Agency (EPA) which replaced the EPC.

This agency has been in existence and in charge of environmental issues in Ghana to date. Among its functions the EPA was mandated to "ensure compliance with any laid down environmental assessment procedures in the planning and execution of development projects, including compliance in respect of existing projects."; The Environmental Assessment Regulations, (1999) (L. I. 1652).

On the 24th of June 1999, The Environmental Assessment Regulations, (1999) (L. I. 1652) was enacted. The L. I. 1652 deals with the various procedures to be followed prior to the grant of a permit to develop, procedures for filing complaints, offences and penalties. Act 490 together with L. I. 1652 establishes the Environmental Assessment Systems in Ghana which briefly comprises Registration, Screening, Environmental Impact Assessment and Environmental Management Planning.

Regulations for Licensing of Industries

This procedure offers a viable option for prevention of pollution from industrial activities. The EPA requires the industry being licensed to show the appropriate pollution control technology that would be adopted within the license (Gbedemah, 2011). According to Schedule 1 (Regulation 1(1)) of the Environmental Assessment Regulations (1999), Undertakings Requiring Registration of an Environmental Permit are described. This is shown in Table 1

Gbedemah (2011) argues that after the establishment of the industries, management rubbishes the technology, some promise installing but never do. He attributes this to inadequate instruments and staff of the EPA to seek compliance to this mandate. Construction firms show similar attitude by not conforming to their own environmental management plans. In the construction industry, many view this as only a "paper requirement" since there is often no follow ups on such requirements.

Citing Of Industries

According to Gbedemah (2011), industrial zones are being created at designated areas in the country. This will check the haphazard way of siting industries in Ghana. The ad hoc nature of the construction industry however does not allow this initiative to be applicable.

Environmental Impact Assessment (EIA) of Industrial Projects

A planning tool that is designed to predict and evaluate the impacts of proposed projects to provide assistance in decision-making is the EIA (Ortolano & Shepherd, 1995). The EIA comprises a series of nine steps which includes: preliminary activities, impact identification, scoping, baseline study, impact evaluation, mitigation measures, assessment (comparison of alternatives), and documentation, decision–making and post auditing. Gbedemah (2011) argues that the EIA process has a problem of not showing relationship between impact assessment and environmental management. It also over emphasizes treatment of impacts calling for its combination with other tools. According to (Regulation 3) examples of undertakings in Ghana for which environmental impact assessment (EIA) is mandatory are listed in Table 2

Unfortunately not all these construction related activities are done with EIA mandatorily made. It can be said that most of them only exist in law and are not functional. The next section highlights policies and guidelines available in Ghana for environment protection.

Table 1. Undertakings Requiring Registration and Environmental Permits adapted from Schedule 1 (Regulation 1(1)) of the Environmental Assessment Regulations (1999)

	INDUSTRY	CONSTRUCTION RELATED ACTIVITY
11	CRUDE OIL AND NATURAL GAS	a. Facilities for crude oil or petroleum production; b. Facilities for natural gas production.
2	QUARRIES AND SAND PITS	a. Where the total area is greater than 10 hectares, or where any portion is to be located within an environmentally sensitive area. b. Sand and gravel pits where the total area is greater than 10 hectares, or c. Where any portion is to be located within an environmentally sensitive area.
3	CHEMICALS AND CHEMICAL PRODUCTS	a. Plastics and synthetic resins; b. Paints and varnishes. c. Other chemical products
4	CONSTRUCTION	a. Construction of pipelines for the transmission of oil, natural gas and other related products from the source to the point of distribution, where – • any portion of the pipeline is to be located at a distance greater than 500 meters • from an existing right-of-way; or • any portion of the pipeline is to be located in an environmentally sensitive area; b. Diesel electric power generating plants having a capacity greater than 1 megawatt; c. Gas turbine electric power generating plants having a capacity greater than 1 megawatt; d. Nuclear electric power generating plants.
5	HIGHWAYS AND HEAVY CONSTRUCTION	a. roads b. waterworks and sewage system – c. construction of trunk pipelines for transmission of water from the source to distribution; d. construction of trunk sewer pipelines; e. construction of trunk sewer pipeline outfalls. f. hydroelectric power plants and related structures – g. construction of dams and associated reservoirs; a. inter-or intra-basin water transfers; b. construction of hydroelectric power developments
6	UTILITIES	a. establishment of waste disposal sites; b. establishment of facilities for the collection or disposal of hazardous waste materials
7	ACCOMMODATION SERVICES	c. Establishment of recreation and vacation camps.
8	AMUSEMENT AND RECREATIONAL SERVICES	a. Commercial spectator sports – • establishment of horse racetrack operations; • establishment of racetrack operations for motorized vehicles sports and recreation clubs and services; b. Establishment of facilities, including trails c. Establishment of outdoor firearm ranges; d. Establishment of marina operations e. Establishment of facilities, including trails, for motorized recreational vehicles f. Other amusement and recreational services.

Table 2 Undertakings for which environmental impact assessment (EIA) is mandatory: Adapted from Schedule 1 (Regulation 3) of the Environmental Assessment Regulations (1999)

	INDUSTRY	CONSTRUCTION RELATED ACTIVITY
1	AIRPORT	a. Construction of all airport or airstrips as well as the enlargement of existing airports or airstrips.
2	HOUSING	a. Human settlement development undertaking; b. Housing development.
3	INFRASTRUCTURE	a. Construction of hospitals b. Industrial estate development c. Construction of roads and highways d. Construction of new townships e. Construction of railways
4	PORTS	a. Construction of ports b. Port expansion involving an increase of 25 per cent or more in handling capacity per annum
5	PETROLEUM	a. Oil and gas fields development b. Construction of off-shore and on-shore pipelines c. Construction of oil and gas separation, processing, handling and storage facilities d. Construction of oil refineries e. Construction of product depots for the storage of petrol, gas or diesel which are located within 3 kilometres of any commercial, industrial or residential areas
6	RESORT AND RECREATIONAL DEVELOPMENT	a. Construction of coastal resort facilities of hotels with more than 40 rooms b. Hill top resort or hotel development c. Development of tourist or recreational facilities in national parks d. Development of tourist or recreational facilities on islands in surrounding waters.
7	WASTE TREATMENT AND DISPOSAL	a. Construction of incineration plant b. Construction of recovery plant (off-site) c. Construction of wastewater treatment plant (off-site) d. Construction of secure landfills facility e. Construction of storage facility (off-site) f. Construction of composing plant g. Construction of recovery/recycling plant h. Construction of waste depots i. construction of marine outfall j. Night soil treatment
8	WATER SUPPLY	a. Construction of dams impounding reservoirs b. Groundwater development for industrial, agricultural or urban

Environmental Policies in Ghana

Ghana has a number of policies for protecting the environment. Whole or sections of these policies relate to construction and may be consulted for relevant aspects that may be incorporated into public procurement. According to the Environmental Protection Agency (2014) some environmental policies in Ghana include:

- Environmental Protection Agency- Guideline
- Environmental Sanitation Policy
- Growth and Poverty Reduction Strategy (GPRS II) (2006-2009)
- National Action Programme to Combat Drought and Desertification
- National Irrigation Policy
- National Land Policy
- National Water Policy
- National Wildlife Policy

Other Environmental Legislation in Ghana

Table 3 groups all environmental related laws and legislations in Ghana under relevant environmental themes for easy referencing. From Table 3, it is clear that there are no laws on noise control in the country currently. This explains the difficulty in dealing with construction noise and noise from churches in residential areas. These laws are available for consultation by procurement entities for planning environmental sustainable construction procurement.

The sections that follow discuss other indirect sources of environmental related laws in Ghana relevant to construction procurement. Sections in the Public Procurement Act 663 (2003*)* that provide opportunity for environmental laws and policies to be incorporated are highlighted and discussed.

The Public Procurement Act 663 (2003) and the Environment

- Section 19 under Tender evaluation panel requires each procurement entity to appoint a tender evaluation panel with the required expertise to evaluate tenders and assist the Tender Committee in its work. 'In the performance of its functions, a tender evaluation panel shall proceed according to the predetermined and published evaluation criteria.' This means that an environmental officer may be included in the tender evaluation panel to assist in promoting environmental sustainability issues. Any other environmental expert may be added to the panel. Also any intention to include environmental issues in the criteria for evaluation may be included in the published evaluation criteria prior to evaluation.
- **Section 28 of Record of procurement proceedings** can be argued to provide room to include environmental sustainability issues in the procurement process as a margin of preference. It states that records should include **'**a summary of the evaluation and comparison of tenders, proposals under section 69, offers or quotations including the application of any margin of preference pursuant to section 60.' If any environmental issues were used in the criteria for evaluation this could be recorded. The continued records on any environmental requirement could be vital in establishing an environmental culture in the long term. Under sub-section 4 'Disclosure of the portion of the record referred to in subsections (1) (c) to (e), and (1)(m), may be ordered at an earlier stage by a competent court; except that when ordered to do so by a competent court and subject to the conditions of the court order, the procurement entity shall not disclose information relating to the examination, evaluation and comparison of tenders, proposals, offers or quotations and tenders, proposal, offer or quotation prices, other than the summary referred to in subsection(1) (e) of this section.' The procurement entity is protected from examining tenders considering environmental issues to suit the entities environmental policy. This clearly provides room for including environmental issues into procurement evaluation criteria.
- **Section 48 of Contents of invitation to tender and invitation to prequalify** states that **t**he invitation to tender shall contain the following information: the criteria and procedures to be used to evaluate the qualifications of suppliers or contractors, in conformity with section 23; meaning environmental sustainability issues could be a criteria to be incorporated at the invitation to tender stage of the procurement process.
- **Section 50 of Contents of tender documents and use of standard tender documents,** indicates that the following may be included : the nature and required technical and quality characteristics, in relation to the goods, works or technical services to be procured under section 33 including, but not limited to, technical specifications, plans, drawings and designs; the quantity of the goods; any incidental services to be performed; the location where the works is to be effected or the services are to be provided; and the desired or required time, if any when the goods are to be delivered, the construction is to be effected or the services are to be provided. Clearly requirements to be included in tender documents are unlimited.
- **Section 50 of Contents of tender documents and use of standard tender documents,** states: 'The invitation documents shall include, the criteria and procedures, in conformity with the provisions of section 22, for the evaluation of the qualifications of suppliers or contractors; and the requirements on additional documentary evidence or other information that is to be submitted by suppliers or contractors to demonstrate their qualifications.' This means that Environmental certification documents and any other environmental requirement may be requested by the procurement entity. Also 'the criteria to be used by the procurement entity to determine the successful tender, including any margin of preference and any criteria other than price to be used under section 59(4)(b)(c) or (d) and the factors apart from price to be used to determine the lowest evaluated bid, shall, to the extent practicable, be expressed in monetary terms, or given a relative weight in the evaluation provisions in the tender documents' This provides room to set out points for environmental issues.
- **Section 57** (1) **under Examination of tenders states; '**The procurement entity may ask a supplier or a contractor for clarification of its tender in order to assist in the examination, evaluation and comparison of tenders.'

Table 3. Summary of Environmental Legislation in Ghana (Source: Environmental Protection Agency, 2014)

1. AIR POLLUTION
Environmental Protection Agency Act, 1994(Act 490), Management of Ozone Depleting Substances and Products Regulations,2005
2. COASTAL & MARINE ENVIRONMENT
Fisheries Act, 2002, Maritime Zone(Delimitation) Act,1986, Wetlands Management (RAMSAR Sites) Regulations,1999
3. ENERGY AND MINERAL RESOURCES
1. Atomic Energy Commission Act,2000, Diamonds Act,1972, Energy Commission Act, 1997, Ghana National Petroleum Act,1983 , Mining and Minerals Act,1986, Minerals Commission Act,1993, Minerals Export Duty(Abolition) Act,1987, Minerals Health Areas Act,1925 , Small Scale Gold Mining Act,1989, Volta River Development Act,1961, West African Gas Pipeline Act,2004
4. FLORA AND FAUNA
1. Animals (Artificial Insemination)Act,1955, Animals (Control and Importation)Act,1952 , Control and Prevention of Bush Fires Act,1990, Economic Plants Protection Act,1979, Forest Plantation Development Act,2000, Timber Resource Management Regulation Act,1998, Timber Operations Act, Tree and Timber Act,1974, Timber Resource Management Regulations,1998, Timber Industry and Ghana Timber Marketing Board Act,1977, Wild Animals Preservation Act 1961(Act 43)
5. HAZARDOUS SUBSTANCES/CHEMICAL
1. Mercury Act,1989
6. HUMAN DEVELOPMENT AND SETTLEMENT
1. Concessions Act,1939,Concessions Act,1962, Copyright Act,2005, Centre For Scientific and Industrial Research Act,1996, Centre For Scientific Research into Plant Medicine Act,1975, Confiscated Assets (Recovery and Disposal) Committee Act,1979, Food and Drugs Board, Administration of Lands, Act 1962, Ghana Ports and Harbors Authority Act,1986, Ghana Maritime Security Act, 2004,Ghana Maritime Authority Act,2002, Ghana Shipping Act,2003, Ghana National Fire Service Act, 1997, Ghana Meteorological Agency Act,2004, Ghana Tourist Control Authority Act,1973, Ghana Standards Board(Food, Drugs and Other Goods)General Labelling Rules,1992, Infectious Diseases Act,1908 Seeds(Certification and Standard)Act,1972, Local Government Act, ,Local Government Service Act, Standards Authority Act,1973, Telecommunications(Frequency Registration and Control) Act,1977, Town and Country Planning Act,1945, Towns Act,1992, Traditional Medicine Practice Act,2003, Vaccination Act,1919, Weights and Measures Act
7. HEALTH AND SAFETY
1. Factories, Offices and Shops Act of 1970
8. LAND MANAGEMENT
2. Lands Commission Act,1994 , Lands Miscellaneous Provision Act,1963, Land Planning and Soil Conservation Act,1953, Landed Properties of Ghana, Rubber Estates Limited and Fire Stone Act,1977, Land Registry Act,1962 Irrigation Development Authority Act,1977, Lands(Statutory Wayleaves) Act,1963 , Land Title Registration Act,1986
10. SOLID WASTE MANAGEMENT
1. Abandoned Property(Disposal)Act ,1974, Environmental Assessment Regulations 1999, (LI 1652) , Layout Designs, Local Government Act (1994), Act 462
11. WATER MANAGEMENT AND POLLUTION
1. Beaches Obstructions Act,1897 , Environmental Protection Agency Act, 1994(Act 490) Part I & II, Ghana Water and Sewerage Corporation Act 1965 (Act 310), Rivers Act,1903, Water Resources Commission Act, 1996 (Act 522)

Clarification on environmental sustainability requirements may be requested.

- **Section 58 (3) under Responsiveness of tenders ‘**The deviations shall be quantified, to the extent possible, and shall be taken into account in the evaluation and comparison of tenders. This deviation may include deviation from entity’s environmental policy.
- **Section 59 of Evaluation of tenders, ‘**The procurement entity shall evaluate and compare the tenders that have been accepted in order to ascertain the successful tender in accordance with the procedures and criteria set out in the invitation documents. Also, no criterion shall be used that has not been set out in the invitation documents.’ This provision makes it clear that environmental issues could be included right from the invitation to tenderers. Also ‘To determine the lowest evaluated tender, the procurement entity shall consider the cost of operating, maintaining and repairing the goods or works, the time for delivery of the goods, completion of works or provisions of the services, the functional characteristics of the goods or works, the terms of payment and of guarantees in respect of the goods, works or services.’ This section clearly side-line environmental issues which could have been explicitly stated. However, according to the European Commission (2011), you may allocate points during the award stage to recognise environmental performance better than the minimum requirement set in the specifications. It states that there is no maximum limit on the weighting you can give to environmental criteria. According to the European Commission (2011) two options for evaluation are
- available: either compare offers on the basis of lowest price only, or award the contract to the **‘**most economically advantageous’ tender (MEAT), which implies that other award criteria will be taken into account, as well as the price. The additional award criteria under MEAT can include environmental criteria. Indeed, others include quality, price, technical merit, aesthetic and functional characteristics, environmental characteristics, running costs, cost effectiveness, after-sales service and technical assistance, delivery date and delivery period or period of completion.
- It is not necessary for each individual award criterion to give an economic advantage to the procurement entity. Non- economic factors may influence the value of a tender from the point of view of the procurement entity, including a range of environmental factors. As the best offer is normally be determined on the basis of a number of different sub-criteria, several techniques for comparing and weighing up the different sub-criteria are used. These techniques include matrix comparisons, relative weightings and bonus systems (European Commission, 2011).
- **Section 60 of Margin of preference, ‘**A procurement entity may grant a margin of preference for the benefit of tenders for work by domestic contractors or for the benefit of tenders for domestically produced goods or for the benefit of domestic suppliers of services.’ This section is one area that may be extended to include environmental protection and management issues.
- **Section 62 of Repeat tender qualifications, ‘**The criteria and procedures to be used for the further demonstration

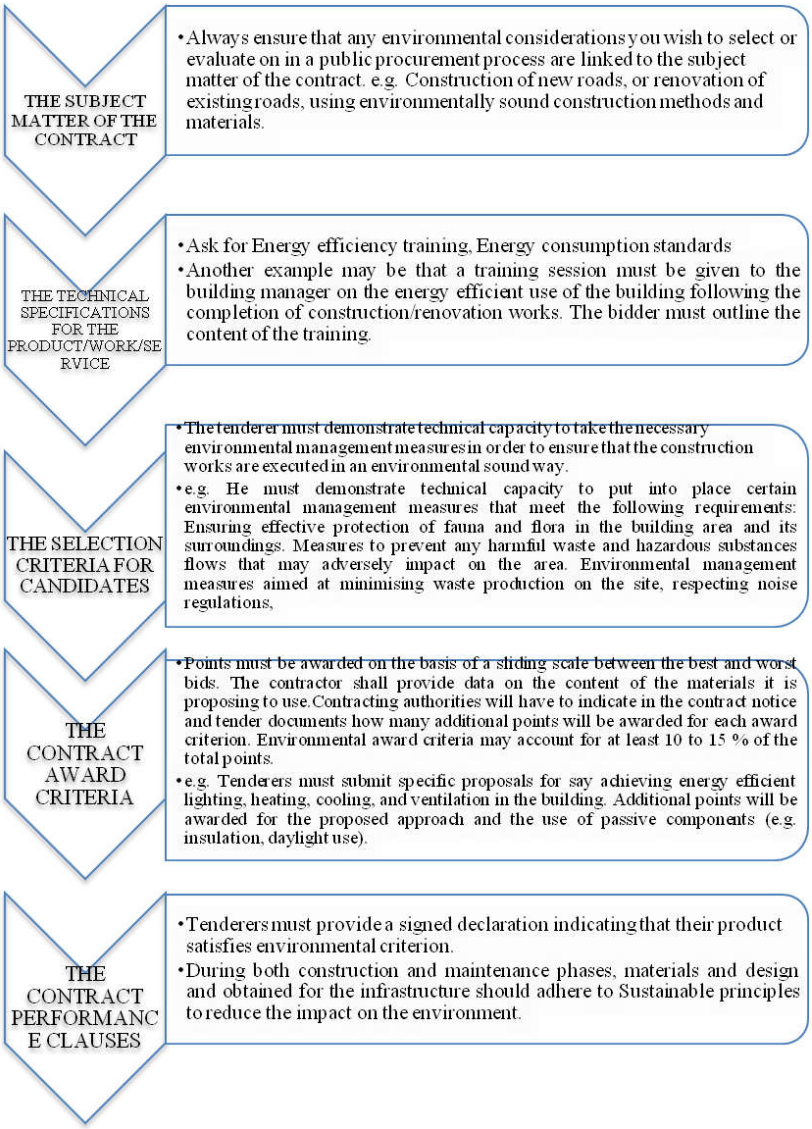

Figure 1. How to introduce environmental sustainability issues into the tender document

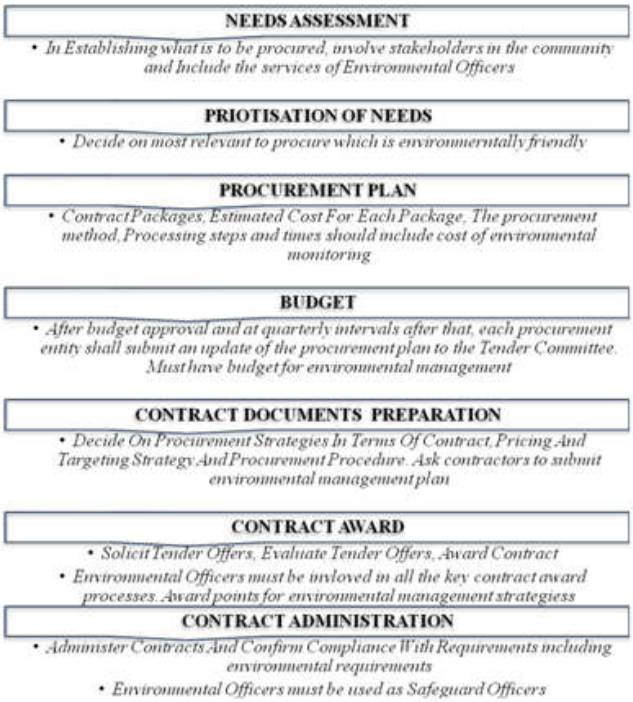

Figure 2. How to introduce environmental sustainability issues into construction procurement process

shall be set out in the tender documents'. Once the criteria includes environmental management issues, then where pre-qualification proceedings have been used, the criteria for further demonstration shall be the same as those used in the pre-qualification proceedings.

- **Section 63 under Non-disclosure of tender evaluation details '**Information relating to the examination, clarification, evaluation and comparison of tenders shall not be disclosed to suppliers or contractors or to any other person not involved officially in the examination, evaluation or comparison of tenders or in the decision on which tender should be accepted, except as provided in section 28 on the record of procurement proceedings. This provision protects entity from using any environmental criteria for evaluation.
- **Section 68 (1) under Content of requests for proposals for consultancy services,** consultancy services are not exempted from environmental considerations. **'**The procurement entity shall use the standard invitation for proposals stipulated in Schedule 4 and any requirements for a specific assignment shall be introduced through information to consultants, data sheets or contract data sheets and not by introducing changes in the standard tender documents. Under sub-section (2) 'The invitation for proposals shall include the criteria and procedures related to the evaluation of the qualifications of the consultants and those related to additional qualifications under section 24(5).
- **Section 69 (1) under Criteria for the evaluation of proposals '**The procurement entity shall establish criteria to evaluate the proposals and determine the relative weight to be accorded to each criterion and the manner in which they are to be applied in the evaluation of proposals'. This provision allows own environmental criteria to be set by the procurement entity.
- **Section 74 (1) under Evaluation of proposals, '**the evaluation of the proposals shall be carried out in two stages: first the quality, and then the cost.' Environmental criteria can be considered under quality evaluation.
- **Section 75 (1) Selection procedure where price is a factor**: Where the procurement entity uses the procedure in this section, it shall establish a threshold on the quality and technical aspects of the proposals in accordance with the criteria established under section 69 apart from those set out in the request for proposals and shall rate each proposal in accordance with that criteria and the relative weight and manner of application of those criteria set out in the invitation for proposals. Also under sub-section (2) The procurement entity shall notify the consultants whose proposals did not meet the minimum qualifying mark or were non responsive to the invitation for proposals and terms of reference after the evaluation of quality is completed within a period of 14 days after the decision has been taken by the procurement entity. (6) The successful proposals shall be the proposals with the best combined evaluation in terms of the criteria established under section 69 apart from price in the case of quality and cost-based selection; the proposals with the lowest price in the case of least-cost selection; or the consultants that submitted the highest ranked technical proposals within the budget.
- **Section 97 under Regulations** on the margin of preference in the evaluation of tenders; environmental sustainability issues may be incorporated.
- **Schedule 4 (Section 50, Section 68)** Standard tender documents and standard request for Proposals, Standard Tender Evaluation Format and Reporting Format for Goods, Works and Selection of Consultants do not currently have any provision for environmental issues, but provides room for inclusion.

The Public Procurement Manual and the Environment

- **Section 4.3 of Specification of Requirement,** Specifications for goods (including goods for construction works) shall include: a functional description of the goods, including any environmental or safety features.
- **Section 5.19 of Contract Supervision and Administration,** The Project Manager/Supervision should: Notify the Contractor in writing requesting rectification of any deficiencies in workmanship, materials used, safety or environmental standards, or other required performance standards.
- **Section 6.6.1 of Lump Sum (Fixed Price) Contracts** Lump sum contracts are widely used for simple planning and feasibility studies, environmental studies, detailed design of standard or common structures, preparation of data processing systems, etc.
- **Section 9.4.4 of Destruction, Dumping or Burying,** states that to ensure that the destruction, dumping or burying of hazardous items are properly executed, it is recommended that a committee of at least three persons supervise the process. The Committee should: Obtain approval from the relevant Environmental/Health Agency to destroy, dump or bury the items; should supervise the destruction, dumping or burial, at an appropriate place.

Environmental Management at the District Assembly Level

The Constitution of the Republic of Ghana (1992) provides that a District Assembly is the highest political authority in the district, and that the District Assembly has deliberative, legislative and executive powers. The main legislative texts pertaining to District Assemblies are:

- Civil Service Law 1993 (PNDCL 327);
- Local Government Act No. 462 of 1993;
- National Development Planning (System) Act 480 of 1994;
- National Development Planning Commission Act 479 of 1994;
- District Assemblies' Common Fund Act 455 of 1993;
- Local Government (District Tender Boards) Establishment Regulations (which has now been repealed);
- Local Government Service Act 656 of 2003, (and other legislation pertaining to administration of local government and central government personnel at local level);
- Institute of Local Government Studies Act 647 of 2003 and
- A range of finance legislation, such as the District Assemblies Common Fund Act No. 455 of 1993, and local government fiscal regulations (Kuusi, 2009).

According to the Local Government Act No. 462 (1993), Sections 1, 3 (1) there are three kinds of districts – districts, municipalities and metropolises and they are categorised as:

- District Assemblies in districts with a minimum population of 75,000 people;

- Municipal Assemblies in districts with a minimum population of 95,000 people; and
- Metropolitan Assemblies in districts with a minimum population of 250,000 people.

The Assemblies have an executive committee, which is headed by a District Chief Executive who is appointed by the President. The District Chief Executive has significant authority over the affairs of the Assembly. The District Environmental Management Committee incorporate environmental issues into their Medium Term Development Plan which normally has a four or five year lifespan depending on available funds and the time frame for the projects. The Environmental Management Committee respond swiftly to reports on allegations of activities that degrade the environment. Agyekwena (2010) explained that the services of the Police Force is sometimes sought to restore law and order on environmental issues in the communities where need be. Such reports are collated to enable the district to discuss and adopt appropriate action, Agyekwena (2010). Some members of the District Environmental Management team are the National Disaster Management Committee (NADMO), the Environmental Health and Sanitation Unit, District Community Development Officer, the Ghana Education Service (GES), the Department of Social Welfare, the Gender Desk office the, representatives of traditional rulers and the Town and Country Planning most of whom already have basic information about the environment and are given further training.

The Community Environmental Management Committees are set up and undergo training under the Ghana Environmental Management Project (GEMP) which was initiated in 2008 and funded by the Canadian International Development Agency (CIDA).Literature reveal environmental byelaws that cover key environmental issues such as protection of forest wildlife and habitats, forest resources and protected areas, cultural heritage conservation, protection and conservation of coastal environment etc. Apart from the bye laws, the National Development Planning Committee (NDPC) of the Ministry of Finance and Economic Planning has made it mandatory for all Medium Term Development Plans submitted by all district assemblies in Ghana to include an environmental component. Medium Term Development Plans that do not include the Strategic Environmental Assessment (SEA) needs into their Medium Term Development Plans are not funded by the NDPC. This forms part of efforts to check environmental degradation by ensuring that district assemblies adopt development strategies that are environmentally friendly. Other regulations include the National Environmental Management plan, Environmental Impact Assesment (EIA) and the District Environmental Sanitation Action Plan (DESAP). Environmental protection at the district assembly level is guided by the district assembly bye-laws. The environmental officer at the district assembly is responsible for ensuring the implementation of these bye-laws. There are a number of environmental bye-laws which when incorporated into the procurement system at the district level would ensure environmental sustainability. For example the Ahanta West District assembly has these laws:

- Ahanta West District Assembly (Protection of Forest Wildlife and Habitats) Bye-law, 2013
- Ahanta West District Assembly (Forest Resources and Protected Areas) Bye-law, 2013
- Ahanta West District Assembly (Cultural and Natural Heritage Conservation) Bye-law, 2013
- Ahanta West District Assembly (Protection and Conservation of Coastal Environment) Bye-law, 2013 (Farvacque *et al.,* 2008)

These laws are similar in the other districts in Ghana but the problem lies in how they could be incorporated into the procurement system.

Conclusion

Ghana has many environmental laws that could be promoted through procurement in the public sector, however, they remain scattered in various documents and institutions.

Recommendation

Recommendations and Policy Implications

The following recommendations are therefore prescribed to planning, designing, and incorporating environmental sustainability issues into construction procurement at the district assembly level in Ghana.

Recommendations to the Public Procurement Authority

The PPA should take the lead in educating public procurement officers on environmental sustainable procurement. They may in collaboration with the EPA develop syllabi on environmental sustainable procurement or green Procurement to provide education on environmental laws and policies applicable through procurement. This may be taught as a separate short course for practitioners or as part of the curricula for construction and procurement related programs in the universities and technical universities. With proper education and awareness on environmental sustainable procurement, the PPA can fulfill their role to the sustainable development goal of the country.

Recommendations to the Public Authorities

- Mandatorily, contractors should be made to show their comprehensive community environmental responsibility plan to the appropriate authorities before award of contract.
- There should be an environmental monitoring body or environmental auditors which include environmentally trained officers or safeguard officers to ensure that construction firms comply with regulations and see to it that the work is done to the benefit of the entire community.
- Apply evaluation meetings instead of just informative meetings where tenderers can discuss the client's perception over the environmental requirements of specific projects.
- Always provide opportunity to bidders to get in contact with the project's environment in order to acquire more valuable information in respect to the impacts to the environment and thus produce design solutions that take into account the environmental context and increase the environmental responsibility of the community.

Figures 1 and 2 show the researchers' proposal on how environmental sustainability issues may be introduced into the tender documents for construction procurement

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