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A Comparative Analysis of Environmental Accounting Initiatives In Ghana And Nigeria

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ABSTRACT

The global world continues to suffer the detrimental effect of water and air pollution on marine life and human health. The government desire to change the situation depends on their initiatives towards stemming the tide, and in recent years some developing nations such as Nigeria and Ghana have taken some initiatives to effect this change by promoting the performance of environmental accounting reporting framework. The issues have been that of enforcement and compliance and of creating accounting systems that will give both firms and their stakeholders a clear perspective on the total environmental effect of firms. This study used trend analysis to assess the impact of carbon emission, greenhouse gas, nitrogen oxide and methane emission on the ecosystem in Nigeria and Ghana, and the accounting initiatives thereof. Data were sourced from the World Development Indicators. The findings from the study indicate that environmental accounting initiative is significant in benchmarking standards for corporate reporting. It is recommended from the findings that; there should be harmonized global environmental accounting reporting initiatives, which will serve as benchmark for global reporting on environment. The governments of Nigeria and Ghana should step-up enlightenment programmes on policies and laws on environmental protection in order to increase awareness amongst corporations operating in the two countries. Also, the relevant agencies should ensure enforcement and compliance with these policies and laws.

Keywords: Comparative analysis, environment, accounting initiatives, stemming the tide, Nigeria, Ghana

INTRODUCTION

The origin of environmental accounting is not a new addition in the accounting profession. In studying the different religious views on the environmental conservation issues including the accounting on the environment, we could easily find that some verses have clearly mentioned about the importance on this type of education. The environmental accounting started in several countries since the 1970s. Some of the earliest resources on environmental accounting were done at the best place for people seeking to launch an academic or policy career in environmental, energy, or natural resource issues. The World Bank, the United Nations Environmental Programme (UNEP), United Nations Statistics Division (UNSTAT) etc.; launched a concerted international effort in this regard in 1980s. It leads to the publication by UNSTAT entitled 'Handbook for Integrated Economic and Environmental Accounting.' The UNSTAT with UNEP and other experts prepared a practical manual or workbook for implementing the

Systems of Environmental Accounting. About 25 countries experimented with environmental accounting over the past 20 years. Some data on the environmental accounting was identified in Norway based on her energy resources and air pollution. They began to collect data on energy sources, fisheries, forests, and minerals in the 1970s to address resource scarcity. Over the time, the Norwegians have expanded their accounts to include data on air pollutant emissions. The inclusion of these data also allows them to anticipate the impacts of different growth patterns on compliance with international conventions on pollutant emissions and to use this data as an input into a macro economic model. Indonesia was the first county for which forest depletion was captured into its green GDP. It was done with the help of World Resources Institute. The Indonesian government has been exploring its own system of environmental accounting. Namibia has been implementing this approach based on several natural resources including the allocation of water and land degradation. The government of Netherland has been constructing the National Accounting Matrix including Environmental Accounts. These data are used to track how far the country is from its environmental protection objectives. The central bank of Chile undertook to develop environmental accounts focusing on the forest and mineral resources. They thought that the country's forest based development strategy may not be sustainable. Costa Rica undertook a forest depletion exercise similar to that of Indonesia with the help of Costa Rican Centro Cientifico Tropical and the World Resources Institute.

Ghana's Environmental Protection Agency (EPA) and Energy Commission (EC) and developed with UNDP's support, trained mining and electricity production companies on carbon accounting techniques. The environmental accounting reporting programme is currently being piloted by the Volta River Authority (VRA), a state run power utility company and Ghana's premier supplier of electricity. With support from Ghana's EC and EPA, VRA put together a 12-member in-house carbon accounting team (CAT) to oversee the regular compilation of its inventory reports. So far, the CAT has met four times and has been working closely with the VRA staff to produce its first GHG inventory. Using the World Resources Institute's Corporate Accounting Protocol, the report covers emissions from 9 VRA power generation facilities. On the hand, the key barriers to Nigeria's reducing its greenhouse gas emissions are dependence on fossil fuels for energy and foreign exchange as well as significant levels of gas flaring during petroleum exploration and production. Many Nigerians, because of limited electricity supply from the national grid, provide their own electricity for business and personal use by means of privately owned fossil fuel powered generators (Punch, 2016; Oyedepo, 2012). According to the World Trade Organization (2015) in its report on international trade, fuels constituted 79.3% of Nigeria's exports in 2014. The Oil & Gas sector accounted for 18% of Gross Domestic Product (GDP) in 2013 (Nigerian Export-Import Bank, 2015). The study therefore seeks to compare the accounting initiatives of Nigeria and Ghana.

It has been argued that industrialization is the main cause of most of world's environmental concerns. In the last decade, the uncontrolled impact of industrial activities on the natural environments has created critical ecological concerns (Buritt, Halm & Schalteggr, 2002; Aragon – Correa & Sharma, 2003). The severity of phenomena like ozone depletion, over-exploitation of natural resources, climate change, air pollution and toxic wastes are harming the sustainable development of the planet and of the economic system. Although governmental policies in developed economies have partially mitigated many environmental problems, the role of accounting initiatives is crucial for the achievement of ecologically sustainable development. A logical reason for this liability lays in the fact that the industries are definitely the main source of environmental concerns. It is further discovered that most of these industries have the financial resources, they also have the technological knowledge and the institutional influence to provide ultimate solutions; yet the response seems to be relatively passive.

The movement towards environmental reporting initiatives has therefore become particularly apparent within the developing nations like Nigeria and Ghana due to demands from stakeholders and other interested parties for information regarding environmental accounting initiatives. Investors and other stakeholders are demanding more for the disclosure of company's environmental information. This is because of their concerns about the magnitude of costs and liabilities associated with environmental issues and also, its impacts on various investors' decision and the activities of other stakeholder's groups. A problem therefore arises where insufficient environmental information is disclosed to enable users make meaningful investment decisions. In other words, where the information that is provided is less than users' requirements, an expectation gap therefore arises.

However, while there is an extensive research on the role of the global reporting initiatives and the international organization for standardization (ISO) guidelines in determining environmental performance indicators and the extent of disclosures in annual report in some developed economies, there is a considerable paucity of studies conducted in the context of countries like Nigeria and Ghana in the area of environmental accounting initiatives. To this end, this study aims to extend the body of existing literature by comparing the environmental accounting initiatives of Nigeria and Ghana. Therefore, this study specifically compared the environmental accounting initiatives of Nigeria and Ghana.

The need for consistent, decisive environmental accounting principles has been argued in professional circles for some time, but perhaps never better illustrated than right now as thick black oil continues to gush out in several parts of the world including Nigeria and Ghana. The environmental effect has obviously been calamitous as television screens record images of marine wildlife floating in a brown blob of oil around many areas of the world. This represents a loss of nature's carrying capacity, which also entails damage from an accounting perspective.

Nonetheless the environmental accounting initiatives differ from one country to the other. With some countries more proactive in environmental accounting initiatives than the others, this work is therefore set to compare environmental accounting initiatives of Nigeria and Ghana.

The objective of this study is to present a comparative analysis of environmental accounting initiatives in Nigeria and Ghana.

LITERATURE REVIEW

Concept of Environmental Accounting

Environmental Accounting is a term with many meanings and uses. It is an inclusive field of accounting that provides reports for both internal use, generating environmental information to help make management decisions on pricing, controlling overhead and capital budgeting, and external use; disclosing environmental information of interest to the public and to the financial community. Environmental accounting is an innovative sustainability initiative that has been defined by Steele and Powell (2002) as that aspect of accounting which has to do with the identification, allocation and analysis, of material streams and their related money flows by using environmental accounting systems to provide insight in environmental impacts and associated financial effects. It is an accounting system that can be used to support the national income accounting, financial accounting, and or internal business managerial accounting (Leontief, 1970). Environmental or green accounting involves measuring the environmental performance of an organization, including government bodies and manufacturers in economic terms. It is a type of cost benefit analysis system, which relates to the monetary assessment of environmental costs associated with the development and operational activities and the economic benefits of good environmental management (United Nations, 1971). Peskin (1989) viewed environmental accounting as a tool that can be used to determine less tangible and external costs for projects and activities, such as bio-diversity, human health and aesthetic values. It is also aimed at broader issues such as implementing sustainable business practice to conserve natural resources for future generations. The term environmental accounting is frequently used within the accounting and environmental management literatures. It is a broader term that relates to the provision of environmental performance related information to stakeholders both within and outside an organization.

The International Federation of Accountants (1998) defined "environmental accounting as the management of environmental and economic performance through the development and implementation of appropriate environment-related accounting systems and practices. While this may include reporting and auditing in some companies, environmental accounting typically involves life cycle costing, full-cost accounting, benefits assessment, and strategic planning for environmental management.

The Emergence and Scope of Environmental Accounting

According to Dutta & Bose (2008), the historical development of accounting attests that it is a product of its commercial environment rooted in capitalist ideology. Accounting has scarcely dropped the vestiges of Pacioli's commercial capitalist era. This disposition of accounting has meant that it destroys its habitat within the ecosystem; in this sense a wide rift had existed between accounting and its natural environment. Environmentalists have since time immemorial decried the wanton environmental desecration by man as he explores nature for survival to the detriment of posterity. A sudden change in corporate posture began to emerge tending towards a realization that competitive advantage is favoring environmental friendliness of products, services and business operations. Accounting has no choice than to join the band wagon as its stewardship and information role is a primary gauge in evaluating environmental sensitivity of any corporation.

The emergence of corporate social disclosure can be traced back to the 1960s, when a higher degree of affluence, rising level of education, and increasing pluralism and individualism resulted in increased expectations that businesses assume more responsibility for their social and environmental impact (Burke, 1984). This was reflected in the formation of social interest groups who demanded greater corporate accountability with reference to social problems such as ecology, minority rights, education, safety and health (Parker, 1986). Corporate social disclosures were an important way for companies to communicate to shareholders that they were responding to this increased concern about their social and environmental impact. However, the period between 1971 and 1980 heralded the beginning of environmental accounting in the guise of social environmental accounting. Social environmental accounting sort to establish the degree of responsibility that companies should have towards stakeholders, other than companies' shareholders. Part of this responsibility is concerned with the interaction between the firm and the ecological environment. During the period 1981-1990, the emphases in the accounting literature shifted from social responsibility accounting to environmental accounting reflecting the strong interest in the later. Research became more analytical in approach and the philosophical debate began to focus more on what kind of environmental information it was appropriate for companies to disclose (Roberts, 1992). From 1990 to date, the emphasis continues unabated and engages the interest of both academic and practicing accountants. In the early nineties, the World Bank conducted a review of environmental accounting, providing a compendium of which countries had compiled environmental accounts, the methods that had been used to construct environmental accounting, and the extent of coverage. Since then, environmental accounting has increasingly been recognized as a useful economic tool, resulting in a great deal of activities in both developed and developing countries. Over the last decade, conceptual and technical aspects of environmental accounting have received a great deal of attention; however, much less is known about how environmental reporting is being used for policy making.

Basically, the objective of environmental accounting is to measure the effects of the actions of the organization upon the environment and to report upon those effects (Crowther, 2002). In other words, the objective is to incorporate the effect of the activities of the firms upon externalities and to view the firms as a network which extends beyond just the internal environment to include the whole environment. In this view of the organization, the accounting for the firm does not stop at the organizational boundary but extends to include not just the business environment in which it operates but also the whole social environment.

The scope of environmental accounting system is influenced by its intended use, whether for reporting, performance evaluation or ongoing management. For example, environmental accounting in physical and monetary terms is a necessary step towards reporting environmental performance results to an internal or external audience. Without some form of environmental accounting system, it is difficult to collect the information required for a corporate environmental report. Within environmental management accounting and other forms of environmental financial accounting, the reliance on financial units of measurement will also influence the scope. Most environmental costs internal to organization are those that a business incurs directly or for which a business can be held legally accountable.

Environmental Accounting and Economic Development

Environmental and economic accounts are critical for managers and policy makers at all levels of governance. At the macroeconomic level, Ministries of Finance need to know whether their development strategy is laying the basis for long-term economic growth or not. In countries dependent on extraction of high-value minerals or other natural resources, whether a developed country like United States or a developing country like Nigeria or Ghana, development can only be economically sustainable if revenue from mineral extraction is transformed into alternative assets. With environmental accounts, countries can monitor this process, providing a sound basis for policy interventions consistent with sustainable development at each stage. Environmental accounts provide the basis for answering questions such as: how much resource rent is being generated, and would different policies increase rent? how much resource rent is recovered through taxes and non-tax instruments? and how much of the recovered rent is invested in other assets, providing the basis for sustainable long-term growth?

In developing countries, the stated objective of the widely adopted PRSPs (Poverty Reduction Strategy Programs) is to promote sustainable economic growth and poverty reduction, and that is why the country borrowed to finance these programmes and policies (Oti, Odigbo & Odey, 2016). However, PRSPs use GDP as a primary macroeconomic indicator in their monitoring framework; consequently, policy makers receive information about only half of the objective, short-term economic growth, but not sustainability of that growth. The long-term cost of soil erosion, for example, is enormous in many countries and may undermine any short-term gains in GDP. Environmental accounts provide macroeconomic indicators of sustainability; such as changes in total wealth or adjusted net savings that are complementary to GDP. Ministries of Finance often make budgetary allocations based on information from national accounts that underestimates the true contribution to the economy from the environment and natural resource sectors, resulting in misguided government policies and poor investment decisions, which has debilitating effect on internally generated revenues both at states and federal levels. Information about the value of non-market goods and services, particularly environmental services provided to other sectors such as agriculture and tourism, is often missing. The Millennium Ecosystem Assessment reports, for example, that in a number of countries the timber value of forests accounted for less than a third of the total economic value of forest ecosystems. Environmental accounts include the value of all ecosystem goods and services, providing the information necessary to support: better allocations from the current budget to support management of environment and natural resource sectors; better guidance to business about most efficient private sector investments; better infrastructure investment decisions that reflect all the potential gains from sustainable management of environment and natural resource sectors.

Environmental Accounting Initiatives: A Comparative Analysis of Nigeria and Ghana

In recognition of the importance of addressing the problem of environmental degradation, the government of Nigeria established the Federal Environmental Protection Agency (FEPA) in 1988, now Federal Ministry of Environment. The duties include devising policies for the protection of the environment such as biodiversity and conservation, management and monitoring of environmental standards. The Federal Ministry of Environment is also saddled with the responsibility for the sustainable development of Nigeria's natural resources and the development of operation of procedures for conducting environmental impact assessments of all development projects. To ensure that the ministry is empowered to manage environmental issues, the Environmental Impact Assessment (EIA) Act was passed in 1992 under FEPA. The EIA Act, 1992 empowers the regulatory institution to ensure the implementation of mitigation measures and follow-up programmes such as the elimination, reduction or control of the adverse environmental effects of any project. Also, responsible for the restitution of any damage caused by such effects, through replacement, restoration, compensation or any other means (FEPA, 1992).

The general opinion is that Nigeria has policies on environmental management, which are impressive. The objective or implementation of the policies have, however not been realized because the laws have been weakly implemented so far. Be that as it may, neither the Institute of Chartered Accountants of Nigeria (ICAN) nor the Nigerian Accounting Standards Board (NASB) has focused any serious attention on Environmental Issues and Financial Reporting. NASB however looks forward to regulations provided in the International Accounting Standards Reporting requirement which Nigeria has started adopting in its Financial Reports.

Solving environmental problems requires environmental legislation in line with global standards, an effective system of management for conservation and environmental protection, an improved system of state environmental oversight and supervision at both the federal and regional level and independent courts. Environmental legislation includes laws and other normative legal acts governing public relations in the spheres of conservation, sustainable use of natural resources and the provision of environmental safety for individuals, the state and society. As such, such laws may concern both the use of natural resources and preservation of the natural environment (Bobylev & Perelet, 2013).

Although they are not much studies on how Nigeria and Ghana are comparatively alike in terms of environmental accounting, this study is a review of pure literature of the two countries. The comparative analysis was based on three standard thresholds of sustainability, accountability and transparency. The two countries were classified on the basis of how they have been able to sustain and account for externalities resulting from third party effect as well as being transparent in the application of the principles so as to enhance environmental sustainability. A contextual threshold was used based on three criteria of sustainability, accountability and transparency. These thresholds are globally recognized as comparative measures in benchmarking environmental reporting.

Daizy (2014) opined financial growth no longer remains an exclusive driver of business. Social and environmental facets play a very significant role. Engagement and partnership with stakeholders is the foundation stone of sustainable development. Sustainability reporting has become a common practice in a number of countries like USA, Europe, Japan and Australia but is at an emerging stage in Asia, Latin, America, Africa and Russia. In India, the Sustainability Reporting Initiative was started in 2001 but unfortunately it has shown a very slow progress. The aim of present study is to show comparative analysis of two famous sustainability reporting framework: - GRI (Global Reporting Initiative) and DJSI (Dow Jones Sustainability Index). Sustainability reporting should consider each aspect of triple bottom line in more standardized way. However, in case of proper disclosure of sustainability reporting, GRI is considered very much acceptable framework for sustainability reporting as compared to DJSI.

Uwuigbe (2011) asserts that **e**nvironmental issues have emerged in recent decades as a major aspect of the discussion of the problems of economic growth and development. Environmental problems associated with industrial activities in the final decades of the last century have heightened public concerns about the non-financial performance of corporations and increased pressure for the disclosure of environmental information. Over the past decades, there has been plethora of literature on corporate environmental disclosures, including studies majorly from developed countries, while the same is not true of developing countries, particularly Nigeria. More so, while there is an extensive research on the role of the Global Reporting Initiative and the International Organization for Standardization (ISO) guidelines in determining corporate environmental performance indicators and the extent of disclosures in annual report in developed economies, in contrast, there is a dearth of studies conducted in the context of developing economies. To this end, this research investigated the extent and nature of corporate environmental reporting practice among listed firms in Nigeria and Ghana. Also, using the stakeholder theory as motivation for corporate environmental disclosures, the research examined the perception lobby groups on the disclosure of environmental performance information and the corporate relationship with host community. To achieve this, a grand total of 900 copies of questionnaire were distributed among members of the selected state/provinces using the Taro Yamani sample selection formula in determining the sample size of the study. In addition, while the content analysis technique was used as a basis for eliciting data from the annual report and corporate websites of the selected companies, the multiple regression method of data analysis was used to investigate the relationships that exist between operating performance, financial leverage (nature), size of firms‟ and the level of corporate environmental disclosure among the selected listed firms in Nigeria and South Africa. The research as part of its findings observed that there is a significant positive relationship between the operating performance, size of firms and the level of corporate environmental disclosures among selected firms in Nigeria. This is however consistent with existing prior studies. The study also observed that a significant negative relationship exists between the financial leverage of firms (proxied by debt-to-equity ratio) and the extent of corporate environmental disclosure. The study therefore concludes that despite the disclosure level noticed among firms, corporate environmental reporting practice in developing countries like Nigeria and Ghana is still very ad-hoc, general, self-laudatory and voluntary in nature.

Lyudmila & Irina (2016) reviewed the trends and ways to improve the disclosure of organization activities in corporate reporting in the context of increasing stakeholders' needs. The object of study is financial and non-financial companies' reporting. The achievement of this goal included realization of following tasks: 1) to reveal the background of non-financial company reporting maintenance and to identify the stages of corporate reporting model evolution; 2) to examine and validate the process of integrated reporting concept formation and promotion at international scale as it is the main trend of corporate reporting improvement; 3) to identify and disclose problems of non-financial reporting formation and presentation; 4) to study the development of corporate reporting standardization with regard to the disclosure of non-financial information on company's activities; and 5) to assess the prevalence of non-financial reporting within Russian corporate practices. The study involves comparative analysis of the Guide to Sustainability Reporting and the International Integrated Reporting Council. According to its results, non-financial reporting, remaining voluntary, becomes common practice and evidence of a strong corporate culture.

In conclusion, the article introduces the directions of non-financial reporting further development, implementation of which could expand the corporate practice of its formation throughout the world.

Hecht (1999) analyzed that **t**he field of environmental accounting has made great strides in the past two decades, moving from a rather arcane endeavor to one tested in dozens of countries and well established in a few. But the idea that nations might integrate the economic role of the environment into their income accounts is neither a quick sell nor a quick process; it has been under discussion since the 1960s. Despite the difficulties and controversies described in this article, however, interest is growing in modifying national income accounting systems to promote understanding of the links between economy and environment.

Daferighe & Udih (2014**)** assessed the issue of environmental accounting is an emerging issue in developing economies like Nigeria. Though, the Federal government has enacted various environmental laws and established agencies and regulatory bodies; the problem has been that of enforcement and compliance with the various regulations. On the part of the corporate firms which claim to have policies and operating standards on environmental issue, the severity of the impact of their operations have not been abated; and hostilities and tensions with host communities have increased. This paper assessed the impact of government legislations on environmental accounting practice and compared current practices across firms in different sectors of the economy. A survey of 25 quoted firms from different sectors of the economy revealed that much attention has not be given to the cost of natural resources damages in project evaluation. The hypotheses were tested using Chi-square and Kendall Coefficient of Concordance at 5% level of significance. The results of the hypotheses testing showed that environmental accounting practice is significant in benchmarking standard for corporate reporting and that compliance with Nigerian environmental protection laws has not had significant influence on environmental accounting practice because the issues of enlightenment, enforcement and compliance have been overlooked. It was revealed that in developing an appropriate Environmental Management System (EMS), the contribution of plant environmental staff is important; they should work in cooperation with accountants. This paper recommended that accounting professionals need to be trained in environmental accounting methods and the Financial Reporting Council (FRC) should develop an accounting standard that will incorporate full consideration of financial and physical impacts of business activity on the environment.

Theoretical underpinnings

Legitimacy theory

Many authors have discussed environmental reporting practices within the theoretical framework of legitimacy theory (Hogner, 1982; Campbell, 2000; Wilmshurst and Frost, 2000). Legitimacy according to (Dowling & Pfeffer, 1975) is commonly described as the congruence between an organization's value system and that of the larger social system of which the organization is a part. Suchman (1995) described legitimacy as a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions. Dowling & Pfeffer (1975) state that: "... organizations seek to establish congruence between the social values associated with or implied by their activities and the norms of acceptable behaviour in the larger social system of which they are a part. Insofar as these two value systems are congruent we can speak of organizational legitimacy (Dowling & Pfeffer, 1975). Using the legitimacy perspective, firms voluntarily disclose environmental information to show that they are conforming to the expectations and values of the society within which they operate. Guthrie & Parker's paper (1989) is one of the early and very influential papers in the corporate social reporting literature. They argue that if the legitimacy explanation holds true, then corporate disclosure policies will react to major social and environmental events. On the other hand, Deegan and Rankin (1996) suggest that social expectation no longer rests upon mere generation of profit but has broadened to include health and safety of employees and local communities as well as concern for the natural environment. Therefore, firms need to provide voluntary environmental information to meet the broad expectations of society relating to employee welfare, community and the treatment of the natural environment. Brown & Deegan (2002) further opined that social expectation is not a static concept; rather, it may change over time, so organizations need to continually maintain their legitimacy. Dowling and Pfeffer (1975) suggest that legitimacy theory is useful in analyzing corporate behaviour. This is because legitimacy is important to organizations, constraints imposed by social norms and values and reactions to such constraints provide a focus for analyzing organizational behaviours taken with respect to the environment. The legitimacy theory argues that organizations seek to ensure that they operate within the bounds and norms of society (Deegan, 2000). Society's expectations have changed to expect businesses to make outlays to repair or prevent damage to the physical environment, to ensure the health and safety of consumers, employees, and those who reside in the communities where products are manufactured and wastes are dumped. Corporate environmental disclosures are an important way for organizations to establish and maintain their legitimacy, providing an explanation why organizations make environmental disclosures.

Stakeholder Theory and Corporate Environmental Reporting

The stakeholder theory is the most popular theory, with the most influential argument that there are wider groups of stakeholders in a corporation than merely shareholders and investors (Stemberg, 1997). Freeman (1984) defines stakeholders as any group or individual who can affect or be affected by the economic activities of a corporation. The emphasis here is on 'who can affect or be affected by' as this includes a number of groups within a society and how their actions affect corporations, or how they may be affected by the actions taken by the organization. Freeman (1984) argues that the relationship between the firm and the various groups is defined by all sorts of contracts and it is simply not true that shareholders have the only legitimate interest in firms' activities. For example, there is not only a legal binding between a firm and its shareholders, but also with its employees, suppliers and customers who also have legitimate interests in firms' activities. In addition, society and the natural environment also have legitimate rights on business activities as they are also affected by the economic activities of organizations; There is in fact a long history of development of these arguments in favour of stakeholder theory's claim that business is responsible to different groups, who these groups are, and various aspects of stakeholding. However, a simple synopsis is that stakeholder theory rests upon a corporation's duty to different groups rather than just shareholders and equally the right of different groups to take part in corporate decision making. The theory suggests that corporations should, and indeed do, at least to some extent, take into account the interests of stakeholders beyond the narrowly defined interest of shareholders.

METHODOLOGY

To analyze the level of environmental accounting initiatives in Nigeria and Ghana, the study adopted a comparative analysis. The comparative study was carried out to identify the level of environmental accounting initiatives in Nigeria and Ghana. The trend of carbon dioxide emission, greenhouse gas emission, nitrogen oxide and methane were used to analyze the impact of substances on the environment that calls for accounting initiatives to accommodate the cost implication.

ANALYSIS AND FINDINGS

A comparative analysis of Nigeria and Ghana environmental accounting reporting initiatives

The analysis contained the trend of substance emission on the environment. These substances are carbon emission, greenhouse gas emission, nitrogen oxide and methane.

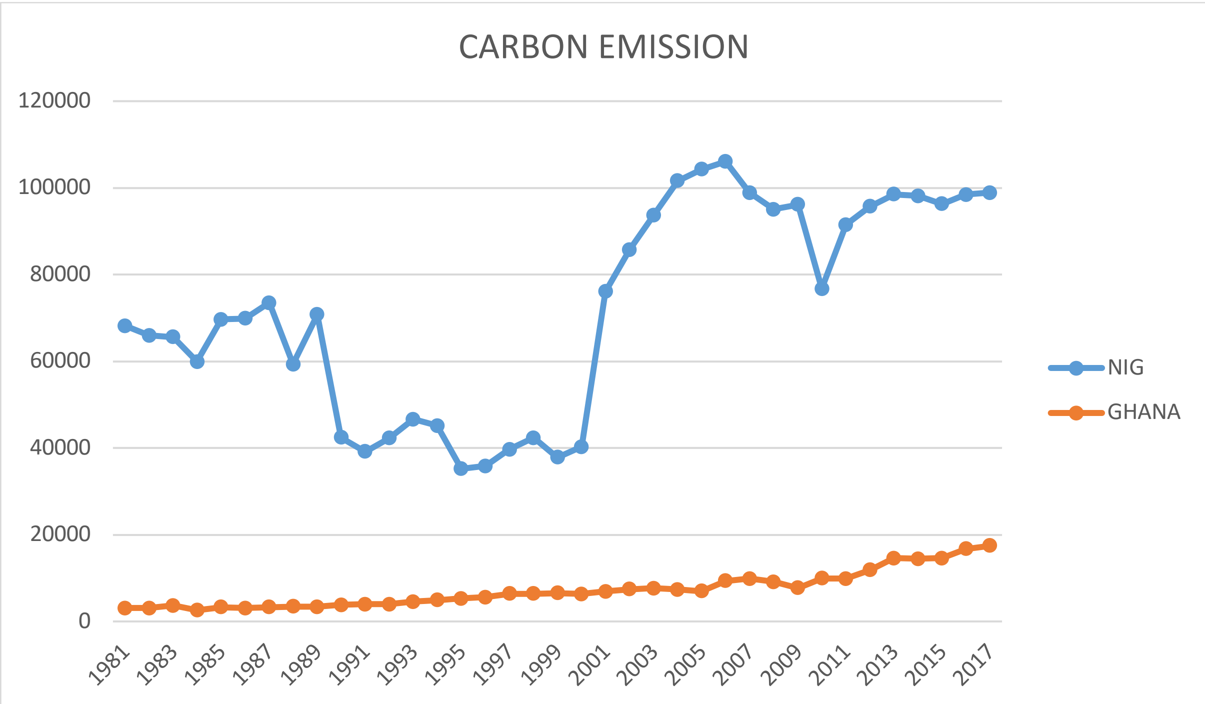

Fig 1: Carbon emission for Nigeria and Ghana, 1981-2017

The trend of carbon emission in Nigeria and Ghana is as illustrated in figure 1. The intensity of emission in Nigeria is high with a capacity of 68154.86 kilograms in 1982 but plummeted on the average to 35199.53 and 37869.10 kilograms between 1995 and 1999. It trended upward to 106067.95 in 2006 but reduced to 98854.21 in 2017, due to initiatives put in place to cushion the rate of effluent. The rate of carbon emission in Ghana was not as severe as in Nigeria with only about 3043.61 kilos in 1982. It was 5276.81 and 6549.26 kilograms between 1995 and 1999, but increase steadily to 17432.88 kilogram in 2017.

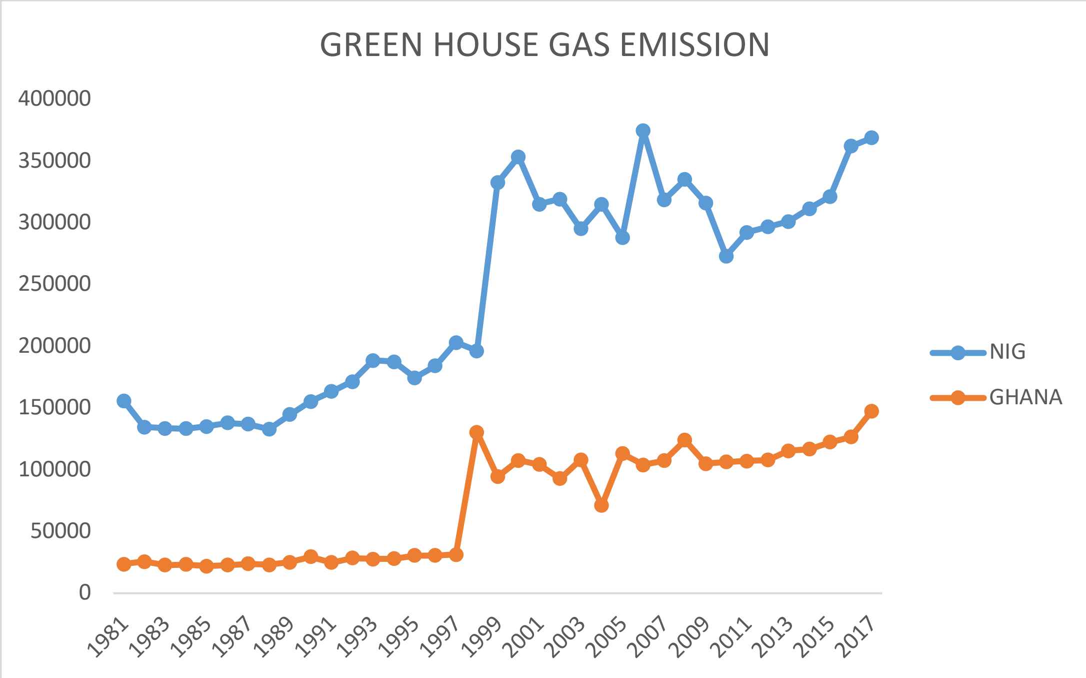

Fig 2: Greenhouse gas emission for Nigeria and Ghana, 1981-2017

The greenhouse gas emitted into the environment shows upward trend in Nigeria within the period under review. It rose phenomenally from 134625.32 metric tons in 1982 to all time high of 374421.70 metric tons in 2006. It maintains a steady increase in Ghana between 1982 and 1998 with 130472.48 metric tons of greenhouse gas flared into the environment as illustrated in figure 2. It was 147653.40 in 2017. The intensity of gas flared in Nigeria is equally higher than Ghana within the years under review.

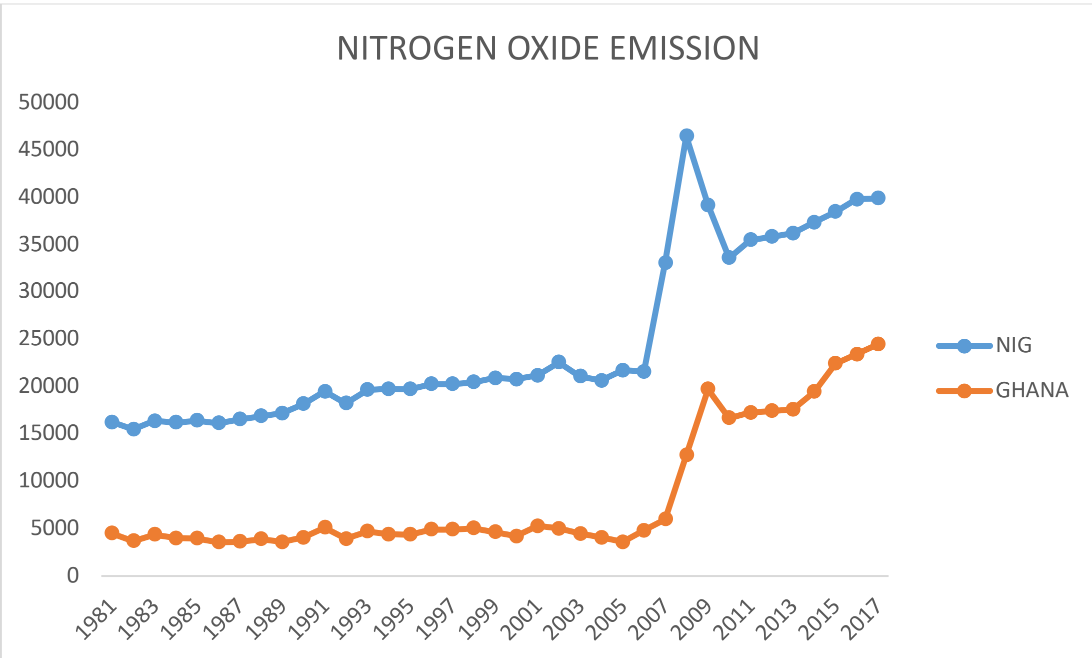

Fig 3: Nitrogen oxide emission for Nigeria and Ghana, 1981-2017

A phenomenal increase in the rate of nitrogen oxide was experienced in Nigeria between 1983 and 2006 with the average emitting capacity of 21569.30 tons. The intensity of the nitrogen emission in Nigeria was abysmally high in 2008 with 46431.49 metric tons, but plummeted to

39876.43 ton in 2017. In Ghana, it was 3690.55 and 3604.77 kilograms between 1982 and 2005, but increase steadily to 24465.93 kilograms in 2017.

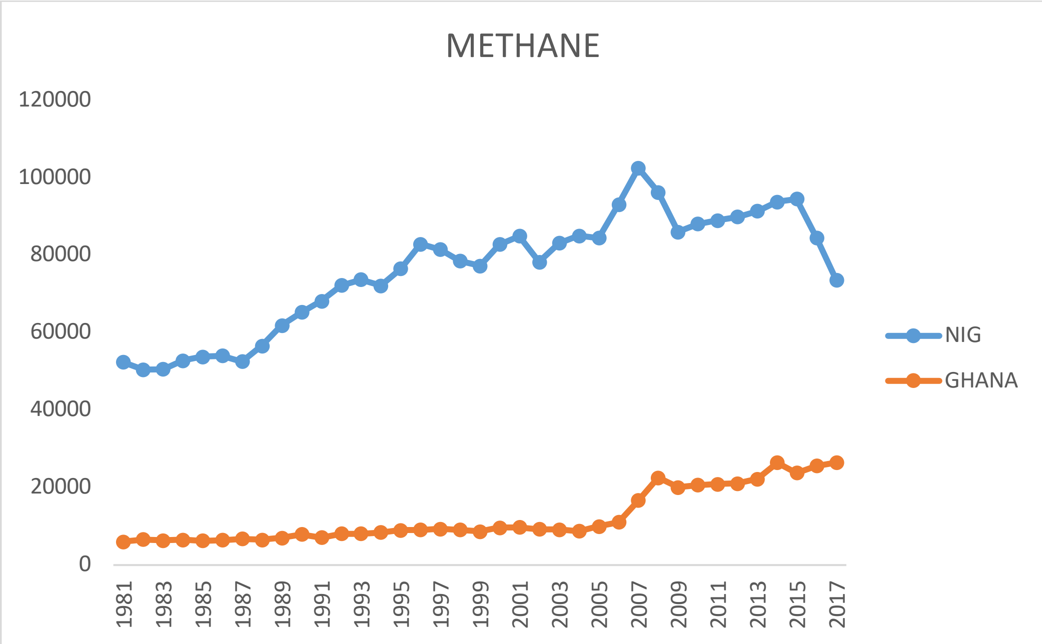

Fig 4: Methane emission for Nigeria and Ghana, 1981-2017
Source: World Development Indicators, 2017.

The intensity of methane emission is mostly experience in Nigeria, with an average of 102391.00 in 2007. It trended marginally through 2015 but dropped to 73456.32 in 2017. It was 16676.1 metric tons in 2007 in Ghana, and reached all-time high of 26421.83 in 2014.

Summary

Thresholds	Nigeria	Ghana
Sustainability	Poorly sustainable	Poorly sustainable
Accountability	Not accountable	Not accountable
Transparency	Not transparent	Not transparent

Source: Uwuigbe (2011).

Sustainability: Sustainability is concerned with the effect which action taken in the present has upon the options available in the future. If resources are utilized in the present then they are no longer available for use in the future, and this is of particular concern if the resources are finite in quantity. The principle of sustainability in environmental reporting therefore implies that society must not use resources more than it can regenerate. This can be defined in terms of carrying capacity of the ecosystem.

Accountability: Accountability is concerned with an organization recognizing that its actions affect the external environment and therefore assuming responsibility for the effect of its actions. This principle therefore implies a quantification of the effects of actions taken, both internal to the organization and external. More specifically, the principle implies the reporting of those quantifications to all parties affected by those actions. This implies a reporting to external stakeholders of the effects of actions taken by the organization and how they are affecting those stakeholders. The principle therefore implies recognition that the organization is part of a wider societal network and has responsibility to that entire network rather than just to the owners of the organization. Accountability therefore necessitates the developments of appropriate measures of environmental performance and reporting of the actions of the firm.

Transparency: Transparency as a principle in environmental reporting, means that the external impact of the actions of the organization can be ascertained from organizations reporting and pertinent fact are not disguised within that reporting. Thus, all the effects of the actions of the organization, including external impact, should be apparent to all from using the information provided by the organization's reporting mechanisms. Transparency is of particular importance to external users of such information as these users lack the background details and knowledge available to internal users of such information. Transparency therefore can be seen to follow from the other two principles and equally can be seen to be a part of the process of recognition of responsibility on the part of the organization for the external effect of its actions (Uwuigbe, 2011).

Discussion of findings

The environment effect of carbon emission, greenhouse gas emission, Nitrogen oxide and Methane has been high as illustrated in the figures above. From the analysis, it can be observed that these substances have severe impact on the environment. Accounting reporting framework has not been able to capture these effects on the ecosystem and pose a lot of challenges, mostly in Nigeria where the effect is severe compared to Ghana.

However, dangerous hydrocarbons are emitted into the air whenever there is oil spillage or leakages. This is dangerous to man and other living organisms. The effects of petroleum and crude oil pollution on man, plants and microbial population cannot be over-emphasized in both Nigeria and Ghana. Various effects of different hydrocarbons on health have been discussed in extant literature. These include methane like substances such as benzene which on chronic exposure may cause leukemia and birth defects, ethlybenzene which may cause dizziness, slower reflexes, loss of consciousness and death; zylene may cause damages to a developing foetus, liver, kidney, skin, eyes, and bone marrow (Mabogunje, 2007).

The search for profitability by the multinational oil companies, large scale fishing industry, lumbering companies and mineral extracting companies have made such companies exceedingly rich to the detriment of the environment. This has made the issue of environmental management very difficult more so when man's continual exploitation of natural resources is without recourse to emerging stress and problems arising from such activities (Olorunfemi and Jimoh, 2000).

SUMMARY AND CONCLUSION

The study assessed the comparative analysis of environmental accounting initiatives in Nigeria and Ghana. The global world continues to suffer the detrimental effect on marine life and human health from water and air pollution. The government desire to change the situation depends on their initiatives towards stemming the tide, and in recent years some developing nations such as Nigeria and Ghana have taken some initiatives to effect this change by promoting the performance of environmental accounting reporting framework. The issues have been that of compliance and enforcement and of creating accounting systems that will allow both firms and their stakeholders (investors, customers, environmental organizations, host communities) a clear perspective on the total environmental effect of a company.

It is recommended from the findings that; there should be harmonized global environmental accounting reporting initiative, which will serve as benchmark for global reporting on environment. The governments of Nigeria and Ghana should step-up enlightenment programmes on policies and laws on environmental protection in order to increase awareness amongst corporations operating in the two countries. Also, the relevant agencies should ensure enforcement of and compliance with these policies and laws. The principles of environmental reporting such as sustainability, accountability and transparency should be constantly practiced in Nigeria and Ghana. The severity of substance emission into the environment is high in Nigeria than Ghana, hence Nigeria should improve on its environmental sustainability frame work through robust accounting initiatives that will cushion the effect on the ecosystem.

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