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Accounting for Social and Environmental Challenges: A Theoretical Perspective

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Abstract: Globally, environmental problems have negatively impacted every area of human endeavours. Global increase in economic activities and the growing challenges generated by environmental activities have made the traditional accounting system ill-equipped to provide adequate information about the environmental activities of organizations. Conventional approaches of cost accounting have become inadequate because they have ignored important environmental costs and activities impacting consequences on the environment. Corporate neglect and avoidance of environmental costing have left a gap of financial incompleteness and absence of fair view of financial information reporting to users of financial statements and environmental regulatory agencies. The study seeks to provide a theoretical overview of accounting for social and environmental challenges and pointed out the superiority of Environmental Accounting over the Traditional Accounting in this wise, Our review showed that environmental accounting operating expenditures are not charged independently of other expenditures. There is also, absence of costing system for tracking of externality costs. Environmental accounting disclosure does not however, take the same pattern among listed companies globally. Considering the current limited exposure of many organizations to environmental accounting methodology, this study proffers an insight into new bases and design for environmental accounting. This paper posits that a lot can be done to douse environmental and social challenges and pacify those directly affected by applying palliative and preventive remedies using environmental accounting aspects of corporate social responsibility (CSR) policies as a tool.
Keywords: Environmental Accounting, Social Accounting, Environmental Costs, Theoretical Perspective, Challenges

INTRODUCTION

Due to global increase in economic activities and the growing challenges generated by environmental activities, the traditional accounting system is ill-equipped to provide adequate information about the environmental activities of organizations. Conventional approaches of cost accounting have become inadequate since conventional accounting practices have ignored important environmental costs and activities impacting consequences on the environment. Corporate neglect and avoidance of environmental costing leave gap in financial information reporting. There is no completeness and correctness of fair view to users of financial information, such as shareholders, environmental regulatory agencies, environmentalists and potential financial investors. If vital environmental issues and activities are not disclosed, financial statement cannot be said to reveal state of a 'true and fair view of affairs'. Also, the challenge of cost and valuation for damage, depletion and degradation of the environment externalities is a critical problem which continues to demand attention.

Since current requirement for reporting on environmental issues is voluntary, it is observed from most financial statements of corporate organizations that it has engendered disclosures of information which totally exclude environmental issues. Where reported, are grossly inadequate. Environmental disclosures have become critically important to an informed public and stakeholders. Also, pertinent is the difficulty of evaluating environmental remediation for environmental degradation where environmental costs do exist. The assessment of environmental impacts on company's financial situation cannot be achieved using the traditional accounting system. These and several other deficiencies associated with the traditional accounting system brought relevance to environmental accounting.

While social responsibility accounting is directly concerned with articulating or expressing the social and environmental impacts of organizations, environmental accounting according to Crowther [1] is basically a subset of social responsibility accounting which focuses on the cost structure and environmental performance of a company.

This study focuses on the Nigeria situation where some companies especially those in the petroleum sector are known for causing heavy degradation on the environment. For emphasis, the

problem is that the Nigerian business environment has yet to recognize and design environmental accounting for environmental information and issues of raw materials, energy consumption and use of natural resources which have systematically depleted the environment. Based on this, the study seeks to examine the superiority of environmental accounting to the traditional accounting system. This is the knowledge gap the study seeks to fill.

What is Environmental Accounting?

Environmental accounting is an innovative sustainability initiative that has been defined by Steele and Powell, [2] 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. According to the United State Environmental Protection Agency [3], "an important function of environmental accounting is to bring environmental cost to the attention of corporate stakeholders who may be able and motivated to identify ways of reducing or avoiding those costs while at the same time improving environmental quality." 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 [4]. According to the US EPA [3], Green Accounting or Environmental Accounting is defined as: 'Identifying and measuring the costs of environmental materials and activities and using this information for environmental management decisions. This definition was developed by international consensus of the group members, representing 30 nations. According to them, Environmental accounting involves the identification, collection, analysis and the use of two types of information for decision-making:

1. Physical information on the use, flow of energy, water and materials (including wastes) and
2. Monetary information on environment-related costs, earnings and savings.

In the real world, environmental accounting ranges from a simple adjustment of existing accounting systems to a more integrated environmental accounting practice that links both the conventional, physical and monetary information systems.

The consciousness and need to protect the environment will make for environmental costs to be identified, accurately measured and reported. Besides, certain environmental costs have previously been reported conventionally along with companies' overheads before allocation to products or processes. Sometimes they have been totally left out of financial reporting because they constitute externality social costs which did not form part of bottom-line financial reporting. Adverse effect on the society known as environmental social costs, or externality costs is a critical issue for consideration. This is considered an issue of responsibility for environmental accountability.

What are Environmental Costs?

There is no single accepted definition of environmental costs such that different organizations employ different definitions. To minimize possible uncertainty, an organization using the term environmental cost should provide a definition that clearly defines the scope of costs included. Any organization aspiring to achieve goals associated with reducing environmental expenses, increasing revenues and improving environmental performance, must clearly define how it intends to identify, measure and report its environmental costs in a consistent and systematic manner [5]. At this stage it is not essential that a single definition of environmental costs be developed. What is important is that environmental costs are not ignored.

According to United States Environmental Protection Agency, [3] environmental costs are those costs that have a direct financial impact on a company (internal costs); and costs to individuals, society and the environment for which the company is not accountable (external costs). Environmental costs have traditionally been thought of as being the end-of-pipe costs, such as the costs associated with cleaning up sites after production, or waste-water treatment costs. Environmental management policies that focus on these end-of-pipe costs and technologies can generate positive returns [6]. For a minority of organizations, the environmental costs might also include the environmental and social impacts caused to other entities by the organization's operations. These externalities are typically referred to as societal costs i.e. costs imposed on individuals, society and the environment for which the organization is not directly held accountable [7]. Most organizations restrict their attention to private costs, which are costs that the entity is held accountable and which in turn impact the organization's financial bottom line.

The relevance of environmental costs on organization's financial bottom line cannot be overemphasized as uncovering and recognizing environmental costs associated with a product, process, system, or facility is important for good management decisions. Attaining such goals as reducing environmental expenses, increasing revenues, and improving environmental performance requires paying attention to current, future, and potential environmental costs [8]. Obviously, some consistency in how an organization defines environmental costs from period to

period will enable more meaningful inter-period comparisons.

Beer and Friend, [9] identified environmental costs to basically consist of both internal and external costs. Internal costs comprise of Conventional costs, Hidden costs, Contingent costs, and Image and relationship costs while external costs include Environmental Degradation Costs, Human Impact Costs, and Noise and Air pollution costs.

Social and Environmental Challenges

There is no doubt that development improves lives and strengthens economy, but at a price. One of the great challenges of the twenty-first century is how to achieve necessary development without causing permanent damage to the environment. Over the years social and environmental challenges have been and are still burning issues among countries globally. The environment is faced with numerous challenges arising from human and industrial activities. Some of these social and environmental challenges include environmental pollution, sanitation, depletion of ozone layer, desertification, flooding, erosion, poverty, bush burning, deforestation, and so on.

Environmental pollution

In the 1960s the major environmental disasters led to more attention to the environmental impact of human activity [10, 11]. Since the 1970s, environmentalists have warned about the threats to the environment. Strip mining provides Ore for industry but destroys land. Chemicals pesticides and fertilizers produce larger food crops but harm the soil and water, and may cause certain cancers. Oil spills pollute waterways and kill marine life. Gasses from power plant and factories produce acid rain toxic, a form of pollution in which toxic chemicals in the air fall back to Earth as rain, snow, or hail. Acid rain has damaged forests, lakes, and farmlands.

Overpopulation

Without doubt the biggest issue facing the environment is over population of humans. All other major environmental issues flow from the very fact that we are over populating the planet. The world's population has tripled in the last 60 years placing stress on every aspect of the environment. More land is developed every day to accommodate the urban spread. In 1950 the world population stood at 2,555,982,611 compared to over 7,400,000,000 in 2016. This implies that the world's population has increased by almost 3 times. This figure is increasing even as we speak. The social effects of overpopulation are quite severe but not limited to depletion of natural resources, degradation of environment, conflicts and wars, rise in unemployment, high cost of living, and so on.

Global Warming

Another social and environmental challenge is global warming. Global warming refers to the rise of Earth's surface temperature over time. A rise in Earth's temperature could bring about changes such as the following: a rise in sea level, changes in weather patterns, increased desertification in some areas, and an increase in precipitation in others. Because climates in some areas could be colder, many scientists prefer to call the trend "climate change". Scientists agree that Earth's temperature has risen slightly over the past century. Many scientists think that this warming comes from the gasses released into the atmosphere by human activity such as the burning of fossil fuels. These "greenhouse" gases trap warmth in Earth's atmosphere. Some scientists, however, and many policy makers, argue that global warming is due to natural fluctuation in Earth's climate.

The debate over a treaty called Kyoto Protocol points to a central challenge facing world leaders: Does economic development have to conflict with protecting the environment? The treaty signed by 140 countries, with the major exceptions of the United States and Australia went into effect in 2005. Its purpose is to lower the emissions of carbon dioxide and other "greenhouse" gases that contribute to global warming. Many developing countries refused to sign because they said they must exploit their resources in order to develop fully. The United States has not signed the Kyoto Protocol because it believes the treaty could strain economic growth. Nations that have signed the treaty, however, argued that the developed nations must lead the way in slowing emissions.

Loss of Biodiversity

The loss of biodiversity on the planet can be directly related to the behaviors of human beings. Humans have destroyed and continue to destroy the habitats of species on a daily basis. When we exterminate one species, it has a knock on effect in the food chain which in turn upsets the Eco-systems interdependent on one another. The catastrophic impact of loss of biodiversity is likely to affect the planet for millions of years to come. The current loss of biodiversity is also being named "The Sixth Extinction". This to a large extent creates unemployment among teaming youths especially in the Niger-Delta region where major source of livelihood is fishing. The resultant effect is engaging in all forms of social vices such as Kidnapping, Pipeline Vandalism, Armed Robbery, Racketeering, Advance Fee Fraud, and so on.

Environmental Accounting as a Solution to Social and Environmental Challenges

"Environmental accounting" is more than accounting for environmental benefits and costs. It is accounting for any costs and benefits that arise from changes to a firm's products or processes, where the change also involves a change in environmental impacts. Improved accounting for non-environmental costs and benefits such as input prices, consumer

demand, etc. can lead to changes in decision-making that have environmental consequences.

A successful environmental accounting system should have a method for accounting for full environmental costs and should integrate environmental costs into capital budgeting, cost allocation, process/product design and other forward-looking decisions. Most corporate information and decision systems do not currently support such proactive and prospective decision making [3]. This is what environmental accounting sets to achieve.

Environmental accounting (EA) is seen by corporate managers and environmental advocates alike as a necessary complement to improve environmental decision-making within the private sector. Whether the goal is pollution prevention or some broader notion of "corporate sustainability," there is a widespread belief that sound environmental accounting will help firms identify and implement financially desirable environmental innovations.

Moreover, environmental regulation is evolving toward public policies that rely to a much greater extent on the collection and reporting of environmental information.

An expanding literature documents problematic accounting practices with the potential to bias environmental decision-making [3]. Frequent targets for criticism are the allocation of environmental costs to general overhead accounts, the failure to account for future contingent liabilities, and the failure to measure the impact of environmental decisions on corporate image and customer and supplier relationships. From a public policy perspective, poor environmental accounting means that the private sector is likely to "miss" investment, procurement, and process and product design opportunities that have financial and environmental benefits. It is widely believed that improved environmental accounting practices, working in conjunction with the private sector's own profit motives, will create significant environmental benefits. This perspective has in turn motivated a growing literature on financial and accounting methodologies to improve accounting practices [12, 13]. These are some of the social and environmental challenges environmental accounting came to address.

Environmental accounting provides better information that helps to correct a pre-existing inaccuracy; for example, it considers the use of an input that is highly toxic from the cost point of view. It would be inaccurate to view the cost of the input as equivalent to its bulk supply cost alone. Environmental accounting provides better information by attaching cost to the input that captures the expected cost of environmental and workforce hazards.

Environmental accounting information helps to reduce the uncertainty surrounding some future cost or benefit. For instance, future liabilities are inherently uncertain. Information that can narrow the variance on estimates of those uncertain liabilities should be considered better information. Reduced variance is particularly valuable when decision-makers are risk-averse, since a reduction in variance alone can lead to different decisions when there is risk aversion. If decision-makers are risk neutral (basing decisions purely on the expected value of an uncertain parameter), reduced variance has no effect unless it is accompanied by a change in the parameter's expected value. This information is generated using environmental accounting. Definitely, this cannot be achieved through the use traditional accounting system.

Information provided by environmental accounting system is better and more highly disaggregated. That is, it is more detailed and explicit for taking informed decision by management. For example, data on wastes produced by individual processes or product lines is better than data on wastes created by an entire factory. Also, accounting that assigns a wide variety of costs to overhead like the conventional accounting is problematic because of lack of disaggregation. Disaggregation is necessary to incremental financial analysis i.e., the evaluation of investment or production opportunities based on their incremental costs and incremental contributions to revenue. Without disaggregation it is more difficult for managers to differentiate between substitutes and identify the true cost of producing a product. In turn, this inhibits optimal decision-making. The above improvements relate to the collection and application of data in decision making.

Environmental accounting uses improved managerial accounting techniques, such as adjustments for risk, discount rates, and appropriate time horizons for cash flow analysis. This gives management accurate and reliable environmental accounting information and environmental financial estimates upon which informed decisions relating to social and environmental problems are made towards resolving social and environmental challenges.

The Significance of Environmental Accounting over Traditional Accounting

One of the basic features of accounting is that it records events within the company, events that can be verifiably proven and business events that can be expressed in terms of monetary value [14]. Taking environmental factors into account is all the more problematic, because environmental impacts appear primarily outside organizations. These external events are usually internalized with the help of statutory regulation, although the notion that environmental protection is becoming a key factor in corporate

competitiveness seems to be increasingly justified [15]. Traditional accounting focuses on economic transactions and disregards social costs and the exploitation of natural resources. Increasingly strict environmental regulations are also a reason why it is becoming more and more important for decision makers to be able to appropriately factor environmental information into their decisions [16].

Traditional accounting provides even less information than environmental accounting on how corporate activity impacts the environment or how high social cost is. The main reason for this is that natural resources are not owned by the company and, as such, are not featured in the statement of financial position; therefore, their depreciation cannot be shown either [15].

The most important task of accounting is to provide true and fair information for the stakeholder, which can be used to make a substantiated decision [14]. If the system builds on deficient information, this goal cannot be achieved, given its original function, traditional accounting is a standardized system of statements that cannot quantify and take into account the limited quantity of natural resources [17].

Traditional accounting gives priority to profit and cannot fully address environmental and social factors. It uses money as the standard unit of measurement and basically valuates at past value, which does not necessarily provide comparable and up-to-date information. Besides the fact that internal decision makers require information from environmental accounting, there is also increasing demand from external interest holders, such as government bodies, other organizations, buyers, and banks. Traditional accounting cannot provide adequate information on the financial efficiency of environmental activity either to internal, or to external interest holders. In order to be able to provide information on the environmental performance of an organization, appropriate data is required, which in many cases is reached through information expressed in physical units. Occasionally, it is expedient to analyze input-output processes or examine the volume of output expressed in material units, which do not appear in traditional management accounting specifically for environmental factors [18].

Conventional corporate accounting does not normally give explicit, separate recognition to company related environmental impacts. Instead, it is mainly designed to satisfy the needs of different stakeholders (like the government, the public, the consumers, internet users, regulation agencies, tax authorities, shareholders, etc.) seeking information about the economic performance of the company. Yet, from a pragmatic perspective, the critical test for any accounting system is whether it produces information that is useful to particular stakeholders for evaluating their own ends [15, 19]. Hence, different accounting systems should be designed to satisfy the fact that various addressees require different information. Different conventional accounting systems can be distinguished according to the main target audiences. Some stakeholders have a major concern with physical environmental impacts of corporate activities, whereas other stakeholders are mainly interested in monetary effects induced by the environmental impacts of the company. For instance, shareholders are interested in the monetary bottom line and may only be partially interested in a separate report containing pollution information expressed in physical units, even if it is put into a clear context with its monetary consequences, insofar as they affect the financial bottom line. Shareholders are interested in pecuniary information that shows material effects on shareholder value, including environmentally related impacts on the economic situation of companies. Environmental protection agencies and corporate environment managers [20], on the other hand, are interested in various waste and pollution figures expressed in physical units and generally have no direct interest in, for example, whether the costs of pollution abatement or waste reduction measures are capitalized or considered as expenses in the monetary account.

Unfortunately, the conventional approach to accounting tends to neglect the fact that information interests vary very much between different stakeholders. It is common to distinguish between at least two major target stakeholder groups in conventional accounting systems for companies: internal company addressees (e.g. management) and a fairly narrow range of external groups (e.g. shareholders, rating agencies and financial analysts). Internal and external accounting systems can be distinguished, depending on whether the main purpose of the accounting system is to satisfy the information needs of either internal or external stakeholders.

Environmental accounting may be defined as a sub-branch of accounting that includes the activities, methods and systems that record, analyze and disclose the environmental problems of a defined economic system, or the economic effects of an environmental activity" [15]. Its tasks include the presentation and examination of the financial consequences of environmental protection as well as the analysis of the effects of economic activity on certain environmental factors [21].

CONCLUDING REMARKS

Resulting from global increase in economic activities and the growing challenges generated by Corporate environmental activities, the traditional accounting system is has become inadequate to provide adequate information about the environmental activities of organizations; hence, the need for Environmental Accounting. The relevance of environmental accounting

in the 21st Century cannot be overemphasized. It provides management and stakeholders with accurate and reliable environmental information and environmental financial estimates upon which informed decisions relating to social and environmental problems are made towards resolving social and environmental challenges.

It is therefore recommended that adequate institutional and legal framework should be put in place to ensure the formulation and implementation of appropriate Accounting Standards on environmental accounting; Corporate organizations should develop Plans and Operating Guidelines expected to meet Industry Operating Standards which should focus on minimizing impact on environment; for environmental accounting to holistically achieve the purpose, legislation on environmental accounting should be modified to include the assessment of the impact of environmental degradation on a firm's host communities.

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