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**FINANCIAL RECOGNITION AND REPORTING**

**OF ENVIRONMENTAL COSTS**

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**ABSTRACT.**

*Production of goods and services lead to two categories of costs, namely; conventional costs and environmental costs. The former are the costs of turning raw materials and human labour into finished goods and services, while the latter means costs of degradation and pollution of the environment as a result of production. While conventional costs are well recognized and reported in financial statements, environmental costs are largely ignored despite UN advice that they should be incorporated into national income accounting. This study reviewed the concepts of environmental costs, related theories and some previous studies, and examined the environmental financial reports that are available from very few firms. The study found out that almost all companies ignored any reports on environmental costs while few have scanty reports mostly in foot notes. It was recommended that laws should be made by nations to make environmental costs recognition and reports mandatory for all organizations.*

*Key Words: Environmental Accounting, pollution, hidden costs, environmental reporting.*

**INTRODUCTION.**

The industrial revolution transformed many areas of the world from its natural settings to manufacturing, mining, automated and mass production land. This transformation has led to destruction of natural habitat, pollution of air water and land with the concomitant danger to plant, animal and human lives.

Economic growth has become the yardstick for measuring development and classifying countries into developed and developing nations. Nations of the world aim at achieving planned level of annual economic growth which becomes pivot of investments. In executing national plans, air, water and land are utilized to achieve targeted objectives. The decline in these natural resources and its effects on living and non-living things are the adverse side of economic growth (Nallathiga, 2008).

In compiling national income, only the monetary values of goods produced are considered. This has a lot of flaws because the environmental costs are ignored (Rahim and Rahim, 2010). But ‘evidence exists that financial statement users want environmental accounting information, yet it remains underdeveloped. This underdevelopment becomes notable because it is increasingly clear that long-term economic viability is wholly dependent on ecological sustainability’ (Mobus, 2011).

The argument boils down to the fact that meeting the wants of the present human generation, resources should be left over for oncoming generations. That is, there should be sustainable development which has been defined as the development that will meet the requirement and needs of the present generation of human beings without jeopardizing the needs and survival of future generations (WCED, 1987).

**STATEMENT OF THE PROBLEM.**

Environmental pollution and degradation are serious threats to the world. Industrial emissions are a great threat to societies, but native farmers, by their activities, also destroy the natural environment. Inability to manage the environment is associated with poverty, especially in less developed countries. Poverty can led to crimes, while pollution of air, water and land are usually accompanied with diseases, protests, sabotage and revolts (Enahoro, 2012).

Nallanththiga (2008) categorizes environmental pollution into three: air pollution, water pollution and land degradation. Firstly, air pollution comes from emissions from various economic activities which include industrial production, household and transport consumption of fuel, and electricity generation. The pollutants discharged into the atmosphere hydrocarbons, sulphur, carbon oxide and nitrogen oxide. Secondly, water pollution comes from the discharge of industrial and domestic waste water into seas, lakes, rivers and streams. This threatens the supply of aqua resources and makes rivers unusable for rural dwellers. Coupled with this, is the depletion of water resources from excessive usage by industries. Thirdly, there is a lot of pressure on land due to increase in global population over the years. Regular and intensive human activities which include agricultural production, industrial activities and expansion of cities, towns and villages have depleted land resources, exposed land to gully and wind erosion and have reduced land fertility.

The United Nations have advised members to build environmental costs into their systems of national accounts. As such, many countries have taken to this advice and have introduced environmental accounting into their systems of national accounts and have advised their private and public enterprises to do the same (Hecht, 1999). This introduction comes with its own challenges of identifying, recognizing and accounting for environmental costs. This paper, therefore, examine environmental costs and financial reporting recognition of the costs.

**OBJECTIVES OF THE STUDY.**

The general objective is to examine financial reporting recognition of environmental costs. The specific objectives are:

i. To identify environmental costs.

ii. To discuss the regulations guiding environmental costs and environmental financial reporting.

iii. To examine financial report recognition of two firms.

**LITERATURE REVIEW.**

This section reviews the relevant literature related to environmental accounting, costs and financial recognition.

**DEFINITION OF CONCEPTS.**

Environmental Accounting is the preparation, presentation and communication of information related to an organization’s interaction with the natural environment (Enahoro, 2012). According to US EPA (1995), the use of the term environmental accounting can be linked to three contexts, namely, national income accounting, financial accounting and managerial accounting. The first two contexts are mainly for external use while the third is for internal use.

However, Debnath et al (2011) attempted to distinguish between Environmental Accounting and related subjects, Environmental Management Accounting. They argued that Environmental Management Accounting (EMA) grew from Environmental Accounting into an independent area of study. The researcher added that while Environmental Accounting has been growing along financial accounting to institutionalize environmental concerns, Environmental Management Accounting has been concerned with Management Accounting.

It is pertinent in this paper to also discuss costs. A cost is the economic resources used up in doing the thing costed. While Cost Accounting is well discussed in accounting textbooks, little is said about environmental costs. Cost Accounting discussed extensively about cost of production of goods and services but these are visible costs. Hidden and intangible costs are either classified as overheads or ignored (Joshi et al, 2001).

Environmental costs have two dimensions; they may mean the costs which a firm is solely responsible as a result of its activities in a community, in that case, they are referred to as private costs. They may also refer to costs for which a firm cannot be directly held liable and are therefore called social costs (EPA, 1995). Furthermore, EPA threw light into environmental costs by classifying them into three; namely, potentially hidden costs, contingent costs, image and relationship costs. Potentially hidden costs are further subdivided into four. Firstly, upfront environmental costs incurred before operation commences, such as costs of citing design of products that are environmentally friendly and installation of control equipment. Secondly; regulatory costs which include costs of reporting, environmental insurance and remediation. Thirdly, voluntary costs such as community relations outreach, training, audit, landscaping and R & D. Fourthly, back end costs involving closure, disposal of inventory, post closure care and cite survey.

The second category by EPA is the contingency costs. Contingency is the probability of occurrence of an event; contingency costs are costs that may be incurred or not in the near or distance future. They include legal costs of court cases, penalties and fines, remediation, property and personal injury damages. Since these costs have not arisen, they may be overlooked in internal costing and management accounting. But environmental accounting makes estimated provisions for contingency costs.

The third category is the image and relationship costs. These costs can be intangible and arise as a result of subjective judgement to maintain corporate image or good relationship with the environment. They include relationship with customers, investors, insurers and the host community.

The above classes of costs are regarded as environmental costs but the regular financial accounting costs are categorized by EPA as conventional costs for which the following quotation is applicable.

‘The costs of using raw materials, utilities, capital goods and supplies are usually addressed in cost accounting and capital budgeting, but are not usually considered environmental costs. However, decreased use and less waste of raw materials, utilities, capital goods and supplies are environmentally preferable, reducing both environmental degradation and consumption of non-renewable resources. It is important to factor these costs into business decisions, whether or not they are viewed as environmental costs’ EPA (1995).

It follows that conventional costs and environmental costs are interwoven and both aspects should be considered in cost and management accounting for proper pricing and accountability. The full costs of environmental activities should be taken into consideration in monetary evaluation of costs (Antheaume, 2003).

**THEORIES RELATED TO ENVIRONMENTAL ACCOUNTING.**

Some of the theories that have been linked to Environmental Accounting are discussed in this section. The theories provide insight to the subject.

**LEGITIMACY THEORY.**

Legitimacy theory presupposes that firms will take actions to ensure that their activities are regarded to be legitimate (to be right) in the opinion of the society in which the particular firm operates. That is, firms are social systems operating in larger social systems, their interests and behaviour should align with the standard of norms and beliefs of the larger social systems. It means there is a social contract between organizations and hosting communities where the former operate (Matthew, 1993).

In other words, organizations should maintain congruent relationship between their value systems and the value system of acceptable behaviour of the people in their environments. As long as these ‘two value systems are congruent’, there is organizational legitimacy. When there is divergence in the systems, there would be a danger to the presence of organizational legitimacy (Matthew, 1993). In order to enjoy legitimacy, organizations tend to conform with the societal norms and make voluntary disclosure of their activities.

**SOCIAL CONTRACT THEORY.**

Social contract theory originated from the Age of Enlightenment that examined societal origin and the authority wielded by the state over its citizens. The theory states that individuals in a society agree explicitly or impliedly to forgo some of their freedoms and thereby submit to the authority of a ruler or group of rulers. In exchange for the forgone freedom, the ruler(s) acts to safeguard the remaining rights of the individuals (Enahoro, 2012). Applying this to corporate establishments means that there is a social contract between firms and the societies where they carry out their activities. The societies allow the firms to use their lands and resources (forging a part of their rights) in exchange of firms’ participation in programmes that positively affect the societies.

**QUALITY OF LIFE THEORY.**

Quality of life is the general well-being of individuals and societies. The theory states that industrial activities have become unrestrained, bringing about environmental pollution, land degradation and very high increase in social costs and social ills. These have impacted negatively on the society’s belief and trust in industrialization (Owolabi, 2007). Quality of life theory is applicable to the protests of Nigerian indigenes in the Niger Delta Region against continuous oil exploration and its accompanied pollution without proper care of the communities by the oil firms.

**RISK SOCIETY THEORY.**

A risk is the probability in the occurrence of an unpleasant event. Risk society is the way in which modern society organizes itself in response to risk. Risk society theory is concerned with the way of dealing with hazards and insecurities induced and introduced by modernization. As a result of the decline in trust, the level of risk in the society has gone up and there is a need to rebuild societal trust in order to reduce risks.

This paper adopts the legitimacy theory, being the most appropriate to the study objectives.

**EMPIRICAL REVIEW.**

Several studies by Satish et al, 2001; Nallathiga, 2008; Hecht, 1999 and Debnath, 2012) have pointed out the dangers of environmental pollution; discussed governmental and corporate actions being taken to guide against the problems and proffer solutions. Hecht (1999) recommended that countries should ‘institutionalize construction of environmental account’ Traditional accounting ignores costs of production to the society, Environmental Management Accounting (EMA) has brought in the concepts of measuring environmental costs that were not considered useful earlier by organization to track wastage and resource utilization (Debnath et al, 2012). Antheaume (2004) discussed the nature of external cost which he called external effects taking a clue from neoclassical economic theory. According to Antheaume, ‘an external effect can be described as a phenomenon, which occurs outside the market system or shows up in the market system but remotely from its source. An external effect occurs, for example, when a substance is emitted by an agent into the natural environment without any sort of market transaction taking place. An external cost occurs if and when that substance causes damage to other agents’.

The challenge in environmental accounting is valuing the external cost in monetary terms and allocating it to corporate expenses.

Joshi et al examined how environmental regulations affect product costs in the USA steel industry and found out that the visible environmental costs reported by firms were far below actual costs associated with regulatory compliance. These researchers established that a $1 increase in visible environmental operating expenditure is associated with an increase of $9.23 in total cost which created hidden costs of $8.23.

The managers of firms in the steel industry said they were aware of the hidden costs but had difficulties with the separation of these costs and allocating them to the various departments of their organizations. The researchers therefore concluded that the steel industry suffered from gross underestimation of hidden costs which was likely to lead to sub-optimal decisions in costs management. They recommended standard costing systems for tracking of environmental costs.

In their study of Green Accounting, Abdel-Rahim and Abdel-Rahim (2010) examined Environmental Accounting and Environmental Reporting (EA/ER) and observed the following among other things.

The absence of clear-cut regulations and tools to implement the EA/ER).

The dispersed responsibilities of implementing and imposing the EA/ER among legislatures, accounting standard setters, professional organizations and governmental accounting, environmental and social agencies. The lack of experienced corporations’ personnel to describe fully and forthrightly the environmental activities in either corporations’ annual reports or in stand-alone environmental disclosures.

The lack of standardized formats for the presentation of environmental information either in stand-alone reports or as components of annual reports.

Although there have been many regional in international regulations for EA/ER, but the researchers argued that no standard formats for presentation of environmental information is globally or regionally accepted. They therefore recommended ‘mandatory environmental filing system which comprised: contents on environmental filing, method of filing, approval of filing and objectives of filing.

**ENVIRONMENTAL FINANCIAL REGULATIONS AND POLICY.**

There has been abundance of agreements that have been reached by United Nations and regional continental interests over several years. They included the Basel Convention (1989), the Bamako Convention at the African regional level (1991), the UN Framework Convention of climatic change in 1992, the Ottawa Convention on landmines in 1997and the ASEAN Agreement on Trans-boundary haze pollution in 2002 (Enahoro, 2012). Concerning financial reports, the Modernization Directive of the EU and the OFR standard in the UK mandated environmental disclosures in annual reports which are to be subjected to attestation by public accountants. This in itself created a conflict because defining standards have not been established (Abdel-Rahim and Abdel-Rahim, 2010).

In Nigeria, regulations and policies are not lacking but the implementation has been poor (Adeoti, 2008 and Offiong, 2011). Adeoti (2008) noted that the Federal Ministry of Environment (formerly Federal Environmental Protection Agency) was established in 1988 with the responsibility to propose policies for industrial pollution control and carry out compliance monitoring in collaboration with State Environmental Protection Agencies. Nigeria promulgated a composite law known as National Effluent Limitation Regulation, 1991 and Pollution Abatement Facilities Generating Wastes Regulations, 1991. These regulations mandated firms to adopt technologies for effluent treatment and prescribed the national minimum standards for industrial emissions.

Also, Offiong (2011) discussed the laws and regulations in Nigeria for environmental accounting and reporting. He noted that between 1937 and 1991, twenty-two environmental ordinances, laws and edicts were enacted in Nigeria. They included The Forestry Ordinance in 1937; the Wild Animals Laws Amendment Edict (Kano State) in 1978 and the National Parks Act of 1991. Additional forty laws and regulations were enacted between 1990 and 1994, they included Oil in Navigable Waters Act, 1990; Oil Pipelines Act, 1990; Rivers State Government Protection Agency Act, 1994 and Sea Fisheries Act, 1990.

Despite the laws, edicts and regulations, Offiong (2011) found that implementation had been very minimal. He argued that poor implementation was traceable to some Nigerian judges’ reluctance in pronouncing judgement against pollutants to cease their actions that were harmful to the communities and to remedy losses attributable to fishing, farming and health, especially in the oil producing region. Adeoti (2008) opined that that environmental policy through laws and regulations were not sufficient rationale for firms’ responses. Also, that there were no incentive programmes in Nigeria that could help in minimizing the effect of high costs of pollution.

**ENVIRONMENTAL FINANCIAL REPORTING.**

Environmental financial reporting is voluntary for organizations. It has been argued that voluntary environmental reporting will not work (Gray and Milne, 2004 in Abdel Rahem, 2010). Being voluntary, it is very difficult to come across environmental financial reporting statements in published accounts in Nigeria and other countries. The Nigerian Stock Exchange FactBook (2012) which contains all the published accounts of listed companies in Nigeria does not have environmental financial reporting. All the published accounts in the FactBook are based on conventional accounting practice of statements of profit or loss and comprehensive income and statement of financial positions. A perusal of some of the listed companies’ websites financial statements did not yield positive results concerning environmental financial reporting recognition. These firms, such as Nigerian Breweries, were silent on financial recognition and reporting of environmental costs.

Therefore, this researcher searched foreign firms that might have environmental financial reporting in their published accounts. The searches resulted in Fuji Xerox Co. Ltd, Japan and Chevron International Corporation, while the former has a separate environmental financial report apart from the conventional statements, the latter only remarks about the policy of its environment accounting. Due to this limitation, a full analysis of financial reporting could not be done in this paper.

**ENVIRONMENTAL REPORTING BY FUJI XEROX AND CHEVRON.**

Fuji Xerox Co. Ltd. is a Japanese company with international affiliates. It produces digital multifunction machines and laser printers. The company prepares its environmental accounting reports based on the Japanese Ministry of Environment guidelines known as Environmental Accounting Guidelines (2005). In their 2013 annual financial statements, there were three tables of environmental reports. The first two are unconsolidated; the third is a unconsolidated report. It is the consolidated report that is discussed below.

Chevron International Corporation is an oil producing company that operates in all continents of the world but has its headquarters in the USA. It does not mention the regulation on which its environmental reports are based, but the policy it adopted in providing for environmental costs suggests that it follows the recommendation of UN ISAR Accounting Guideline.

**ENVIRONMENTAL FINANCIAL REPORTS OF FUJI XEROX COMPANY LTD.**

The consolidated environmental financial report for the year ended 31st March, 2013 was categorized into six, under each item; there were columns of investments, costs and benefits. The six classes were: cost in business areas, breakdown, upstream and downstream, management activities, research and development, social studies and environmental damage.

In all cases, the costs were higher than the investments and benefits. Pollution prevention (under costs in business areas) had zero benefits. EMS maintenance, operation and environmental impact measurement (under management activities) had no investments and no benefits. Also cost of supporting environmental groups (under research and development) was without investments and benefits. No costs were provided for environmental damage, probably the company considered this as external costs for which it was not responsible.

The overall total costs were 12, 506 million yen. This was far above the investments at 276 million yen and the benefits at 5, 778 million yen. The long term environmental target was for the company to obtain to reduce carbon dioxide emissions by seven million tons per year. Comparative analysis could not be done because this researcher could not obtain reported financial environmental accounts from other companies.

**ENVIRONMENTAL REPORT OF CHEVRON INTERNATIONAL CORPORATION.**

Information of environmental policy of the company was contained on pages 36 and 63 of notes attached to its 2013 Annual Reports. The information was itemized as follows:

Environmental expenditures that relate to on-going operations or to conditions caused by past operations were expensed.

Expenditure that created future benefits or contributed to future revenue generation was capitalized.

Liabilities related to future remediation costs were recorded when environmental assessments or cleanups or both were probable and the costs could be reasonably estimated. For the company’s U.S. and Canadian Marketing facilities, the accrual was based in part on the probability that future remediation commitment will be required. For crude oil, natural gas and mineral-producing properties, a liability for an ARO (asset retirement obligation) is made in accordance with accounting standards for asset retirement and environmental obligations.

Chevron’s environmental reserve as at 31st December, 2013 was $1,456 million. Included in this balance were remediation activities at approximately 174 sites for which the company had been identified as a potentially responsible party of otherwise involved in the remediation by the U.S. Environmental Protection Agency or other regulatory agencies. (Source. Notes to Chevron’s Annual Published Accounts, 2013).

Chevron only provided notes as its environmental financial report. This is insufficient, taking into consideration that the company is engaged in oil business which is known for pollution of the environment.

**CONCLUSION.**

Conventional cost accounting takes care of the costs of raw materials, labour and expenses incurred in production but largely ignore environmental costs of air, water and land pollution. Although the UN has taken a resolution that all member nations should account for and report on environments costs, however, reporting is voluntary. A perusal of published accounts of local and international firms showed an absence or very scanty environmental financial reporting. In Nigeria, none of the publicly quoted firms’ financial statement, as per FactBook, 2012, made any environmental reports of their activities. Also, a search on the website of many quoted firms showed that they reported about environmental policies only in notes attached to their annual financial statements or they were completely silent about environmental issues. This may not be unrelated to the fact that reporting of environmental accounts is voluntary and international standard for the reports have not been finalized. Previous researchers found that the laws on environmental pollution were not effectively enforced in Nigeria.

**RECOMMENDATIONS.**

There is a need for nations of the world to review their laws and make environmental financial recognition and reporting compulsory; and stipulate stiff penalties for failure to report. The UN can look into the problem of standardization by constituting a committee of member nations to come out with policies that will be acceptable to members. Nigerian government should enforce the laws on environmental pollution and make financial reporting of environmental costs and benefits compulsory. Nigerian companies should recognize environmental costs; make adequate provisions and reports in their annual financial statements.

**AREAS OF FURTHER RESEARCH.**

Subsequent studies may examine the causes and remedies of poor environmental financial recognition and reporting by companies in Nigeria and other selected countries.

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