

Information Asymmetry and Environmental Accounting: An Empirical View

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Abstract: *This study was based on the level of information asymmetry in environmental accounting practice in Nigeria. This study was necessary on the grounds of providing solution to the green house effect from the accountant's perspective. Two big oil prospecting firms were studied and primary data was collected with a questionnaire and data was analysed with SPSS, the results revealed that information asymmetry has a correlation with lack of full disclosure of financial statements, objectivity of financial statement and lack of value disclosure of negative economic externalities. The study recommended that, Governments at both the Federal and State levels should put up strong legislations on disclosure of environmental externalities in the financial statements again IFRS should come up with standards on environmental accounting with special reference to disclosure of negative externalities.*

Keywords: *Information, Asymmetry, Environmental, Accounting and Empirical.*

1. INTRODUCTION

The concept of information asymmetry was able to explain many common phenomena that could not be otherwise explained when it was first introduced in the early 1970s. Since then it has become a valuable tool in the field of economics and it is used to explain a diverse set of phenomena. It's significance was established well when the original authors of the theory received the noble prize in economics sciences. (George 2001).

According to George (2001), Information Asymmetry occurs when one party has more or better information than another. He further explained in his writing that information asymmetry refers to the fact that different people know different things. For example, workers know more about their abilities than the firm does; the person buying insurance knows too well about his health whether he smokes and drink immoderately than the insurance firm. Similarly, polluters know more about their releases than community members or regulators. Early analyses of this problem argued that information asymmetry was merely a "transaction cost" problem i.e. information collection was in expense and it absorbed by one of the parties to the transaction, out comes should still be efficient. But more recently, analyses suggest that imperfect information is so pervasive that market failure is often the norm.

Research on the economics of information showed that whenever information is imperfect, in particular when there are information asymmetries without appropriate government regulation and intervention markets do not lead to economic efficiency. The implication is that markets need institutional fixes to generate total social welfare, (Sankar 2000).

Asymmetries of information abound in pollution regulation. Firms with pollution releases are likely to know more about what pollution they are releasing into the environment and when they are doing so than the communities in which they are located and regulators. Regulations are

removed from the day to day activities of the firms and rely on limited air-toxics data to assess compliance. Communities depend on the imperfect information of regulators to enforce standards. This asymmetry in information between firms, regulators and communities leads to regulatory failure i.e. it decreases the likelihood of regulatory action and limits communities' ability to motivate stricter enforcement. As an institutional response or fix, academic observers have focused on attempts to create incentives for those with information to disclose it. These mechanisms include various MONITORING and AUDITING SCHEMES and INFORMATION-DISCLOSURE SYSTEMS. The idea behind monitoring and auditing is to create a credible threat of consequences for institutions by revealing private information on performance, which can then be used by the public to independently assess firm behaviour and validate the public trust in private firms. The problem envisaged in this study can be characterized as follows:

1. To determine the level of information disclosure in the financial statements of oil firms on environmental externalities.
2. To establish the relationship between reporting environmental cost and information asymmetry adopted by oil firms in delta state.
3. To determine the effect of information asymmetry on accounting information objectivity. On the other hand, "EXTERNALITIES" arise when certain actions of producers or consumers have unintended external (indirect) effects on other producers or /and consumers: Sankar (2000). Externalities may be positive or negative. "POSITIVE EXTERNALITIES" arises when an action by an individual or a group confers benefits to others. A technological spillover is a positive externality and it occurs when a firm's invention not only benefits the firm but the society as a whole. "NEGATIVE" EXTERNALITIES" arise when an action by an individual or a group produces harmful effects on others. Pollution is a negative externality. When a factory discharges its untreated effluents in a river, the river is polluted and consumers of the river water bears the costs in the form of health costs or/and water purification cost. In an activity generating positive externality, social benefit is higher than private benefit and in an activity generating negative externality, social cost is higher than private cost. Thus in the presence of externalities, social benefit or cost and private benefits cost differ. (Sankar 2000).

The Environmental protection Act, (1986) defines environment to include water, air and kind and the interrelationship which exists among and between water, and human beings, other living creatures, plants, microorganisms and property. Industrial discharges of untreated effluents into water bodies and emissions into air have deteriorated the quality of water and air respectively. Divan and Rosehcranz (2000).

The purpose of this paper, is to give the reader a good overview of the asymmetric information and environmental externalities and its significance to accounting information objectives in relation to oil prospecting firms in Nigeria.

Industrial and other polluters release enough hazardous elements into the air which has placed over 92% of the population at an increased risk of developing respiratory disease, while 17% of the population is at an even higher risk of toxic respiratory exposures. (Owen and Lehman 2000). However, the monitors used to create regional estimates of air quality are limited in number and provide only rough estimates over large areas. This level of resolution does not inform communities living near industrial emitters of hazards on their neighborhoods, (Marshall and Paul 2003).

Lack of specific information hampers individuals and non-governmental organisations' (NGOs) ability to understand the risks they face from industrial activity. This asymmetry in information between firms and community groups decreases the likelihood of social mobilization and limits community ability to motivate stricter enforcement measures on environmental accounting information. However, environmental law has paid insufficient attention to the important role of information and the effect that information asymmetry has on citizens and NGO's framing of environmental problems, their mobilization of resources and their capacity to demand accountability from regulators and polluting firms. This is indicative of the fact that the firms have not attained proper choice of capital mix which may be explained by the existence of information asymmetry, poor business characteristics and non utilization of capital markets to develop their businesses.

The impact of environmental factors often differs across sectors (Grigle. And Hemmer 2001) and a positive effect in one industry may be balanced by a negative effect in another. (Gale (2006). Most prior research has also been concentrated on large companies in the world index that are included in the leading sustainability indices and ratings. Little attention has been paid to the external influences on the capital markets response to improved environmental performance (SHARFMAN and FERNANDO, 2008). This study is motivated by the fact that information asymmetries caused by the company-specific industry- and size-effects have not been under a systematic study, hence this project will examine the information asymmetry, environmental externalities and accounting information objectives as its effect on the objectives of accounting information system.

Therefore, the purpose of this study is to examine information asymmetry, environmental and accounting information objectives. Specifically, the research problem set for this study can be characterized as follows:

1. To determine the level of information disclosure in the financial statement of oil firms on environmental externalities.
2. To establish the relationship between reporting environmental cost and information asymmetry adopted by oil firms in delta state.
3. To determine the effect of information asymmetries in accounting information objectivity.

Theoretical Framework (Agency/Stewardship Theory)

Agency theory is based on the principal agent framework. Jensen and Meckling (1976) viewed organizations as set of explicit and implicit contracts with associated rights. Separation between ownership and control of corporations characterizes the existence of agency relationship between the board who represent the shareholders and the management who represent the board and other stakeholders. In the context of corporations and issues of corporate control, agency views corporate governance mechanism especially the board of directors, as being an essential monitoring device to try to ensure that problems that may be brought about by the principal agent relationships are minimized (Rosanas, 2008; Van Sylke 2006). According to Donaldson (2005), managers as agents must be monitor red and institutional arrangements made to insure that checks and balances are in place to avoid abuse of power.

Agency theory is a dominating perspective in corporate governance studies; has been criticized in recent years (Donaldson 2005,) because of its limited ability to explain sociological and psychological mechanisms, inherent of the principal agent interactions (Divanand Rosehcranz (2000).

According to STEWARDSHIP theory, directors are regarded as the stewards of the company assets and are predisposed to act in the best interest of the shareholders (Daily et-al (2003). Stewardship theory relates to the board's task or providing support and advice to management (Divanand Rosehcranz 2000). The stewardship theory has its root from psychology and sociology. According to Daily et-al (2003)), stewards are company executives and managers working for the shareholders. The stewards protect and make profits for shareholders and are satisfied and motivated when organizational success is attained.

Stewardship theory argues that the effective control held by professional managers empower them to maximize firm performance and corporate profit. Regarding the leadership structure, stewards maximize their utility because they achieve organizational objectives rather than self serving objectives (Grigle. and Hemmer 2001).

Stewardship theorists contend that superior corporate performance is associated with the majority of inside directors because first, they contribute and ensure more effective and efficient decision making and they contribute to maximize profit for shareholders (Kesi and Nicholas, 2003). Consequently, insider dominated boards are favoured for their depth of knowledge, access to current information, technical expertise and commitment of the firm and provision of stewardship accounts to stakeholders as needed by the stakeholders.

Information Asymmetry

The concept of information asymmetric was introduced in George (2001) paper, “the market for ‘lemons,’ quality uncertainty and the market mechanism” George relates quality and uncertainty and develops the notion asymmetric information using the automobile market as his example. The main idea in George’s paper is that the parties to a transaction have unequal amount of information about the other party.(Healy and Palepu 2001)

George explained that in many markets the buyer uses some statistics data to measure the value of a class of goods. The asymmetry is between the information held by the seller of the used car, for example, and the buyer. Thus, the buyer sees the average of the whole market, while the seller has more knowledge of a specific item. Rosser (2003, p. 10) shows that “awareness of their relative ignorance would lead potential buyers to assume that any used car would have a high probability of low quality a lemon.” On the other hand, George (2001) argues that information asymmetry provides the seller with a reason to see goods of less than the divergence of interests among agents and principals but impose costs only to the extent that principal cannot write perfect contracts (JENSEN AND MECKLING (1976), Aboody, (2000), MILLER (2002). Principals cannot write perfect contracts because of asymmetric information concerning the efforts and actions of agents. Because the principals cannot perfectly monitor or measure the behaviour of agents (Adams.2004), agency costs are incurred. They are manifest when the agents (managers) impose additional direct costs on the firm such as personal perquisites or by imposing opportunity costs such as shirking and by imposing uncertainty in the value of the firm’s shares since the existence but not the extent of these agency costs is known to the market. (Adams.2004), specially, bonus may be earned only when managers reveal the level of effort they expend, thereby reducing asymmetric information concerning their actions. Additionally corporate governance mechanism might reduce asymmetric information indirectly by improving monitoring systems by splitting the role of the CEO from the chair of the board of directors, or by increasing the number of independent directors on the board. These measures inhibit collusion and make it more difficult for managers to hide their perquisite consumption and shirking behaviour while opening a window through which the shareholders view the behaviour of the managers.

There has been limited investigation of the relationship between the nature of the firm’s corporate governance and the degree of asymmetric information; much of the evidence that has been acquired is contradictory. Healy and Palepu (2001), find that large shareholders can reduce asymmetric information and improve long term performance.

Studies that do examine the relationship between corporate governance and asymmetric information usually deal with limited aspects or individual mechanism of corporate governance. Ball and Shivakumar (2006), find that board independence reduces asymmetric information, while Berthlot.et-al (2003)) suggest that board independence aids the integrity of Financial statements. Brown et al (2004) examine the importance of the form of executive compensation in reducing agency problems and mitigating asymmetric information. and shows that high amounts of free cash flow and external financing needs reduce information asymmetry among firms and strengthen the influence of the quality of corporate governance practices on firm value respectively. In contrast, we provide a more comprehensive review of the relationship between corporate governance and asymmetric information by exploring the ability of 18 proxies for corporate governance to explain three measures of asymmetric information. (Stein, 2006)

Externalities

Externalities are a loss or gain in the welfare of one party resulting from an activity of another party without there being any compensation for the losing party.

In other words externalities arise when certain actions of producers or consumers have unintended external (indirect) effects on other producers or and consumers. Externalities can result from consumption activities or from production activities. Externalities may be positive or negative. Types of Externalities

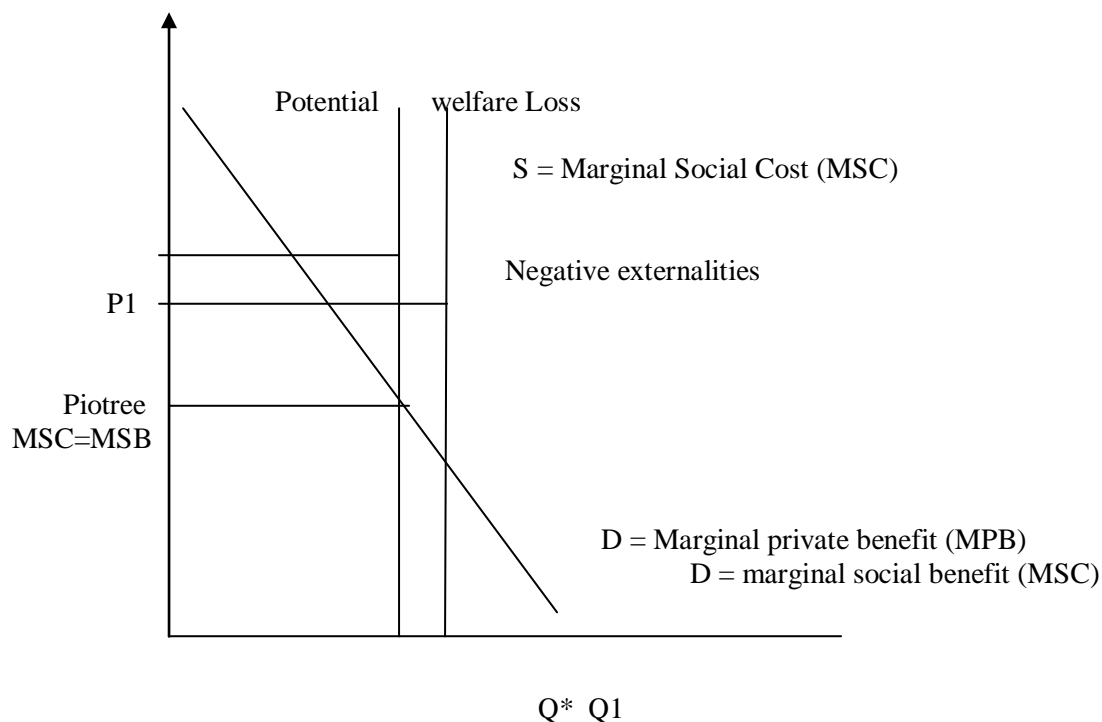
Negative Externalities

Negative externalities arise when an action by an individual or group produces harmful effects on others. Pollution is a negative externality. When a factory discharges its untreated effluents in a

river, the river is polluted and consumers of the river water bear water purification costs in an activity generating negative externality, social cost becomes higher than private cost. Thus, in the presence of externalities, social benefits (cost) and private benefits (cost) differ. When negative externalities occurs, the marginal social cost will be higher than the marginal private cost (price) and hence the private optimal level of output will be higher than the social optimal output. Negative externalities can result from consumption activities or from production activities. Therefore negative externalities of (1) consumption and (2) production.

A. Negative Consumption Externalities

Negative consumption externalities occur due to consumption of certain goods and services example, smoking. By smoking in public places, the consumer is creating negative externalities, in the form of passive smoking, for non-smokers. Other examples include fossil fuels that pollute the atmosphere, playing loud music and disturbing neighbours, discarding garbage in public places.



Adopted from Oyadonghan and Gbalam (2013)

In negative consumption externality, the MPB is not reflecting social benefit and thus MSB lies below MBB. The vertical difference between MPB and MSB is the negative externality. The optimal level of consumption is where MSB=MSC i.e. Q*. However the negative externality is being ignored and thus is an over consumption of the goods at Q1.

Negative consumption externalities can be corrected through the following: (Rosanas 2008)

(1) Advertising

Government can use persuasive advertising or awareness campaigns to alert the consumers and influence them reduce their consumption. Which will lead to a shift of MPB curve to the left thus reducing the gap between socially optimal level of consumption Q* and Q1

(2) Legislations And Regulations

Government can also pass legislations or impose fines on certain activities which create nuisance for the societies. Many countries had already banned smoking in public places.

(3) Imposing Indirect Taxes

By putting taxes on the production of goods that cause negative consumption externalities, government can reduce the supply. By putting taxes, the supply curve (MSC) will shift upwards to MSC + tax. This will reduce the gap between Q* and Q1.

(4) Negative Production Externalities

Negative production externalities are the side effects of production activities. As a result an individual or firm making a decision does not have to pay the full cost of the decision. Pollution created by firms due to negative production externality.

In an unregulated market, producers do not take responsibility for external costs that exist, these are passed on to the society. Thus producers have lower marginal costs than they would otherwise have and the supply curve is effectively shifted down (to the right) of the supply curve that society faces. Because the supply curve is increased, more of the product is bought than the efficient amount that is, too much of the product is produced and sold. Since marginal benefit is not equal to marginal cost, a dead weight welfare loss results. Oyadonghan and Gbalam (2013).

The diagram illustrates negative production externality. The supply curve given by MPC reflects the firm's private costs of production and the marginal social cost curve given by MSC represents negative externality. Therefore for each level of output, Q_1 , social costs given by MSC are greater than the firm's private costs by the amount of externality. The optimal production quantity is Q^* . But the negative externality results in production of Q_1 . The dead weight welfare loss is shown in blue (block).

Negative production externality can be corrected through the following measures:

(1) Legislation and Regulations

Government can pass legislations to prevent or reduce the effects of production externalities which will lower the quantity of goods produced and bring it closer to the optimal quantity Q^* by shifting the MPC curve upward towards the MSC curve. It might include legislations to

- Limit the emission of pollutants by setting limits to the extent of pollutants produced by a firm.
- Limit the production to a certain level
- Force polluting units to install technologies to reduce emissions.

(2) Putting Taxes

Government may impose a tax on the firm either on per unit of production or per unit of pollutants emitted. These will lead to a shift of MPC curve upwards towards the MSC curve and thus reducing output and bringing it closer to socially optimal level that is Q^* .

(3) Tradable Permits

Tradable permits are a cost-efficient, market driven approach to reducing green house gas emissions. A government must start by deciding how many tons of a particular gas may be emitted each year. It then divides his quantity up to a number of tradable emissions entitlements-measured perhaps, in Co₂-equivalent tons and allocates them to individual firms. This gives a quota of green house gases that it can emit over a specific interval of time then the market takes over those polluters that can reduce their emissions relatively cheaply may find it profitable to do so and to sell their emissions permits to other firms. Those that find it expensive to cut emissions may find it attractive to buy extra permits. Trading would continue until all profitable trading opportunities had been exhausted.

Tradeable permits will result in firms to lower the quantity of goods produced so that it equals Q^* and to raise the price of the goods.

(2) Positive Externalities

Positive externalities arise when an action by an individual or a group confers benefits to others. A technological spill over is a positive externalities and it occurs when a firm's invention not only benefits the firm but also enters into the society's pool of technological knowledge and benefits the society as a whole. When positive externalities occurs, the marginal social benefit will be higher than the marginal private benefit (price) and hence the private optimal output will be higher than the social optimal output. Positive externalities are of two (2) types namely:

(a) Positive consumption externalities

(b) Positive production externalities

(A) Positive Consumption Externalities

Positive consumption externalities occurs when there is a positive externalities created by the consumption of certain goods. Examples include consumption of education and health care. Both of them lead to more productive workforce and hence high rate of economic growth for the society.

As the diagram illustrates, the MSB lies above the MPB and the difference between the two consists of positive externalities. The socially optimal level is where $MSB = MSC$ i.e. Q^* , however, due to under-allocation of resources the output/consumption is at Q_1 . Positive consumption externalities can be corrected through the following means

(1) Advertising

Through positive advertising, government can persuade consumers to increase their consumption and thus lead to a shift of MPB to the right. That increase in demand. If the MPB curve shifts enough, it will coincide with MSB and Q^* will be produced and consumed.

(2) Subsidies

By giving subsidies to the producers of the goods with the positive externalities will result in increasing supply and shifting the supply curve downwards. This will lead to MSC curve shifting to $MSC + \text{subsidy}$ which means high output/ consumption at socially optimal level Q^* and at lower process from p_1 to p^* .

Positive Production Externalities

These are positive externalities created due to production of certain goods and services. Examples include, when firms train their employees which result in better manpower or invest in research and development and succeed in developing new technologies which benefits the society. Due to the fact that positive externalities is produced, the MSC lies below illustrates positive production externalities. As we can see that goods should be Q^* , however there is under allocation of resources and thus there is output is at Q_1 .

One of the ways that positive production externalities can be corrected is through subsidy.

Subsidy

Subsidies can be provided to firms which produce these goods. The effect will be the lowering of MPC and thus MPC will move downward to MSC. This will increase the output to a level Q_2 near to the socially optimal level Q^* . The price will also fall from P_1 to P_2 .

Environmental Externalities

According to "Oyadonghan and Gbalam (2013) defines environmental externalities as the Economic concept of uncompensated environmental effects of production and consumption that affects consumers, Utility and enterprise cost outside the market mechanism.

Many firms undertake research and development (R & D) investment in order to improve on their existing products and to develop new ones or new process. The R and D investment generates intra-industry externality. This is because, as noted by ADENUGA et al (2006), a distinguishing feature of research and development investment from other forms of investment is that firms which do the investing are often not able to exclude others from freely benefiting from the research and development projects. Hence (R & D) investments generate a kind of positive spill overs in industries. The R & D benefits spill overs through (other firms) do not pay for the use of knowledge generated by the research and development project executed by the investing (externality generating) firms.

Environmental Accounting

Environmental accounting covers information relating to all aspects of the environment. It includes environmental-related expenditure, environmental benefits of products and details regarding sustainable operations (Oyadonghan and Gbalam 2013). Environmental accounting, as defined in these guidelines, aims at achieving sustainable development, maintaining a favourable

relationship with the community, and pursuing effective and efficient environmental activities. These procedures allows a company to identify the cost of environmental conservation during the normal course of business, identify benefits gained from such activities, provide the best possible means of quantitative measurement (in monetary value or physical units) and support the communication of its results. (Owen .and. Lehman 2000)

According to the world conservation union and consumption of natural capital. The depletion of natural capital-forest, in particular is accounted for as income. Thus the accounts of a country which harvests trees very quickly will show quite an income for a few years, but nothing will show for the destruction of a productive asset, the forest in the accounts, where as in accordance with conventional business accounting principles, the gradual depletion of physical capital-machines and other equipment are treated as depletion rather than income, (Dorweiler and Yakhou , 2002). However, most experts on environmental accounting agree that the depletion of natural capital should be accounted for in the same way as other productive assets. Gale .(2006) specified that environmental accounting is an inclusive field of accounting. It 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 to interested persons and to the public and to the host communities. (Rondiwell and. Vastage 2000)

Environmental accounting enables organizations to track their environmental data and other green house gas (GHG) emissions against reduction targets and facilitates environmental data that is comprehensive, auditable and dependent and mutually reinforcing pillars of sustainable development-economic development, social development and environmental protection in Nigeria (UNCIAD, 2003; Gale .(2006)). Consumers and investors are demonstrating increased interest in supporting responsible business practices and are demanding more information as to how companies addresses risks and opportunities relating to environmental issues (Grigle. and Hemmer 2001)

Ibanichuka and oyadonghan (2014), in their study, examined the selected companies in Nigeria and found 66% issuing environmental reports, of these CR reports is 12% addressing energy change, with 9% publishing quantitative GHG emission data, 15% and human resources 36% addresses climate change in the CEO or chairperson introduction. However, only 16% assign management responsibility for addressing climate change. A closer look at their operations shows that organizations with increased report on environmental issues and global warming are receiving increased patronage from stakeholders. Oyadonghan and Gbalam (2013)

Investors increasingly require that companies pursue environmental accounting strategies that reduce the damage caused to the environment while increasing or at least not decreasing shareholders value. The aim is to produce environmentally sound management report by reducing the environmental impact while increasing the value of an enterprise.

Reasons for Environmental Accounting

According to YAKHOU and DORWEILER (2003) companies are expected to engage in environmental accounting for the following reasons.

- (1) Comply with national guideline.
- (2) Comply with financial reporting requirement
- (3) Express the company's environmental concerns and communicate them to a range of stakeholders.
- (4) Reassure consumers that they take their responsibilities seriously.

Environmental Accounting and Reporting Issues

The following are generic environmental issues identified by the UNCTAD as impediments to sustainable development:

- (a) Global warming contribution
- (b) Energy use

(c) Water use

(d) Ozone depleting substances

(e) Material usage and wastage leading to high production cost and inflation

A: Global Warming Contribution

Green house gas (GHG) emissions include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydro and per fluoride (SF₆) emissions from fuel combustions, process reactions and treatment processes. The climate change issue related to increasing concentration of greenhouse gases is a global concern and because it is closely linked to emissions from energy sources- is relevant across business. The definition of green house gas emission covers the gases detailed in the Kyoto protocol and their relative contributions are commonly accepted as detailed in the work of the inter-governmental panel on climate change. The concept of the “boundary fence” is clearly important for this indicator. This generally applicable indicator covers only emissions from direct corporate activities, although companies may choose to track significant greenhouse gas emission from suppliers such as electricity providers and also from producers and use them where they are relevant. (www.ghprotocol.org). This protocol will provide further detail on comprehensive green house reporting. However, the amount of green house emissions to the air from fuel combustion, process relations and treatment process, including CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ are to be reported in metric tons of CO₂ equivalents in connection with the value added to get the net value added per unit of metric ton contributed to global warming. Holthansen and Walts (2001)

B. Depletion of Non-Renewable Energy Resources

To Holthansen and Walts (2001), energy consumption is a global issue and relevant to all businesses across sectors. The total energy consumed equals energy purchased or obtained (e.g. Coal, natural gas) minus energy sold to others for their use (e.g. electricity, steam). The definition agreed with general applicability, which relates solely to energy consumed and transformed on site, which means that electricity companies would report the purchased energy amount and subtract energy sold, keeping generation and transfer losses as part of their consumption.

Companies could further elaborate on energy used by identifying separately the renewable energy consumption and a break down into different types of energy sources as natural gas, oil and others. This can be in units of gigajoules (or other appropriate multiplier of Joules) and to get the net value added per unit of gigajoules required in foundation on value added (net sales- costs of goods purchased)

© Depletion of Fresh Water Resources

Water consumption is the sum of all fresh water purchased from a water supplier or obtained from surface or ground water sources. Availability of fresh water is a global issue. Even though for many areas there may be no local concern about availability, it is increasingly becoming costly to generate water used for domestic purposes even if there is no physical contact to process materials. (UNCTAD, 2003). The sum of all fresh water purchased from public supply or obtained from the surface or ground water sources (including water of cooling purposes) are expected to be reported in cubic meters. And the net value added per cubic meter is gotten through the ratio of total cubic meter of water consumed over value added as the case may be.

(D) Depletion of the Ozone Layer

Ozone depleting substance (ODS) emissions are a global concern, defined in the Montréal protocol which lists the groups of gases that are contributing to the effect and describes their impact potential. This issue has relevance across business, even though the markets of most dangerous gases have been strongly reduced and less harmful alternatives introduced. Even though the effect will be visible in the stratospheric ozone layer over many decade or even centuries the indicator might lose its relevance in the near future, when policies to eliminate ODS from applications continue to be implemented successfully on a global scale. Owen and Lehman . (2000)

(E) Material Useage

Resources such as the sum of weight of all materials purchased or obtained from other sources including raw materials for conversion to other process material (such as catalysts solvent) . pre – or semi manufactured goods and parts are expected to be reported in metric tons. And the unit of metric ton per net value added disclosed

Types of Environmental Accounting

Environmental accounting is of three types namely

- (A) Environmental financial accounting (EFA)
- (B) Environmental national/ green accounting (ENA)
- (C) Environmental management accounting (EMA).

A: Environmental Financeial Accounting (EFA)

Environmental financial accounting is an external account with a particular focus on reporting environmental liability costs and other significant environmental costs.

(B): Environmental National/Green Accounting (ENA)

(C) Environmental Management Accounting

Environmental management accounting is an internal accounting with a particular focus on material and energy flow in the formation and environmental cost information. EMA is further divided /classified in the Following sub-systems

- (a) Corporate environmental accounting
- (b) Eco- balance environmental accounting
- (c) Segment environmental accounting.

A: Corporate Environmental Accounting

This is a tool to inform the public of relevant information complied in accordance with the environmental accounting rules. It should be called as corporate environment reporting. For this purpose the cost and effect (in quantity and monetary value) of its environmental conservation activities are recorded and used.

B: Eco – Balance Environmental Accounting.

This is an internal environmental accounting tool use to support PDCA for sustainable environmental management activities

C: Segment Environmental Accounting

This is an internal environmental accounting tool use to select an investment activity or a project related to environmental operations and to evaluate environmental effects for a certain period

Limitations of Environmental Accounting.

Environmental accounting suffers from various serious limitations as follows.

- (1) There is no standard accounting method
- (2) Comparison between two firms is not possible due to differences in the methods of accounting which is quite obvious
- (3) Input for environmental accounting is not easily available because costs and benefits relevant to the environment are not easily measurable
- (4) Many business and government organizations even large and well managed ones do not adequately track the use of energy and materials or the cost of materials used, waste management and related issues. Many organizations, therefore significantly under estimates the cost of poor environmental performance to their organization.
- (5) It mainly considers the cost that is internal to the company and excludes cost to society.

(6) Environmental accounting is a long term process, therefore to draw a conclusion with help of it is not easy.

(7) Environmental accounting cannot work independently. It should be integrated with the financial accounting which is not easy

(8) Environmental accounting must be analyzed along with other aspects of accounting because costs and benefits related to the environment itself depend upon the result of the financial management and cost accounting etc.

(9) The users of information contained in the environmental accounting needs adequate knowledge of the process of environmental issues as well as rules and regulations prevailing in that country either directly or indirectly related to environmental aspects. (Mechenna and Dorweiler, 2004)

Functions of Environmental Accounting

The functions of environmental accounting are divided into internal and external function.

(1) Internal Functions

Internal functions make it possible to manage environmental conservation activities versus the benefits obtained and promote effective and efficient environmental conservation activities through suitable decision making.

Internal functions are carried out within a company. They assess the cost incurred by environmental conservation activities and the related benefits and are beneficial in improving the efficiency and effectiveness of environmental conservation activities and help in gaining an understanding of what impact such activities might have on business operations. By using environmental accounting as environmental information system plays the role of a tool to be employed by management and related business segments.

(2) External Functions

External functions are effective in conveying information about a company and environmental activities to stakeholders. Environmental accounting data is made public through environmental reports and covers a company's stand on environmental conservation activities and concrete measures being taken by the company. By disclosing such information society can build trust and confidence in the company which improves and aids in achieving a better public assessment. Therefore environmental accounting not only fulfils a company's accountability to people such as consumers, investors and local residents but also facilitates attaining a favourable corporate assessment, not just from the standpoint of environmental conservation.

Accounting Information Objectives

Accounting information according to Stein (2000) is the information prepared and presented in a way that enables users to discern and evaluate similarities in and differences between the nature and effects of transactions and other events taking place over time and across different reporting entities. Furthermore understandable accounting information is the one that significantly can be perceived by users willing to study the information provided with reasonable diligence to enable them have a reasonable knowledge of the business and its economic activities and the accounting system in order to make informed decisions.

Accounting information system (AIS)

AIS is a whole of component put together to collect information, raw data and transform them into financial data for the purpose of reporting them to decision makers (Rondiwell and Vastage (2000)

Objectives of Accounting Information

According to Oyadonghan and Gbalam (2013)

There are many objectives of maintaining a financial accounting system in any organization and they are as follows:

(1) Help in Decision Making

Financial accounting system records all the transactions happening in the organization on a day to day basis. To meet decision makers, need for information. Necessary information can be generated through financial accounting system as it record actual transactions happening in the company.

(2) Provide Information to Potential and Present Investors to Make Investment Decision

Investors expect a return on the investment they make. If the return is satisfactory they hold/buy an investment. To decide whether to by/hold or sell the investment investors need reliable information. This investment information can be generated through financial accounting system.

(3) Meet Legal Obligations

In certain countries, it is a legal obligation of the companies to maintain ledger accounts and final accounts. In some countries it is a legal obligation of the companies to carry out an independent audit to obtain an opinion about financial statements. Companies are under obligation to provide necessary accounting information to tax authorities to calculate the tax liability of the organization. (Marshall and Paul (2003)

(4) Forecast Future Performance

When forecasting future performance an organization needs to analyse the past information to find out the trend. For example, if a company wants to forecast sales for a future period they need past sales records to identify the trend. In such a situation, relevant information can be generated through financial accounting system.

(5) To Carry Out Performance Appraisal and Exercise Control

At the year end, the organization needs to appraise the performance of employees and reward them accordingly. Any favourable situation must be highlighted to motivate employees. If there are any deviations from the budget they have to take corrective actions to avoid any such situations in the future. When comparing budgeted information with actual information. Actual information can be generated through financial information.

Accounting Information Asymmetry in Environmental Accounting

Over recent decades, environmental problems such as soil degradation, water resources, and diminution and air quality reduction have increased dramatically. To deal with such problems, different governmental and non governmental organizations have implemented policies and tools such as market-based instrument (e.g. environmental taxes, subsidies and tradable permits), command and control instruments and voluntary tools (e.g. environmental management systems). The aim of these policies is to stimulate or compel organizations responsible for environmental degradation to implement environmental management practices to mitigate their impacts. By introducing the principles of Environmental management, firms and participants of financial markets adopt environmental management impacts and enhance economic benefits.

The successful implementation of such environmental practices by firms and financial participants requires a range of safe and clear environmental information mainly provided by environmental management accounting methods. Relevant literature outlines a number of different environmental management accounting methods that record such information utilizing different measurement units and accounting principles such as life cycle roosting, environmental accounting and environmental accounting methods based on generally accepted accounting principles (GAAP) (DORWEILER and YAKHOU, 2002). Such information helps participants of financial market to avoid potential financial risks associated with the poor environmental performance of firms, also while playing an important role in preserving the environment by stimulating such firms to implement sticker environmental management practices.

There is accounting information asymmetry in environmental accounting practice and generally, the majority of financial participants want to know how the level of environmental performance of firms is associated with their financial performance (positive or negative) and the way in which these consequences are transferred to market contract which are signed between participants and firms. Likewise, the public want to know the financial report about our environment which has been damaged by various types of negative externalities information about our environmental

accounting is provided through a range of means such as formal financial statements annual reports, environmental reports and internet sites current environmental disclosures are based neither on the mandatory regulatory regime or on self regulatory initiatives of firms. The former practices relies on the ideal that it is better to disclose environmental information through financial statements based on current accounting regulations (London and London 2004) since these could be move credible due to the utilization of advance financial auditing standards. Based on those views governments and independent regulatory accounting agencies issues accounting regulations such as the security and exchange commission on environmental accounting standards.

MATERIALS AND METHODS

The descriptive survey research method was used for the study. An earlier report (Bowling 1999) revealed that the survey method of a research design analyses data collection in detail and factual information is often generated and it also justifies correction condition and practices.

The study population includes two (2) well established companies, dealers of oil and gas located in Warri, Delta State, Nigeria. These oil and gas companies are: -Nigerian National Petroleum Corporation (NNPC) and Chevron and Texaco Ltd. Random sampling techniques were used for the sample selection. The instrument used was a questionnaire. A questionnaire was designed by the researcher and validated by two experts in the field for the test and measurement data collected for the study. A closed ended questionnaire was used for the purpose of this research.

Data from the field was compiled sorted, edited and rooted to have the required quality, accuracy and completeness. They were then entered into the computer using the statistical package for social sciences (SPSS). Data was analyzed according to the research questions and hypotheses. Cross tabulations were use to describe sample characteristics and simple correlation coefficient was used to establish the relationship between the study variables.

DATA ANALYSIS AND RESULTS

This study is concerned with the issue of information asymmetry and variables such as cost of full disclosure of externalities and information objectivity of the financial reports of oil producing firms in the Niger Delta. A total of forty five (45) questionnaires were distributed to staff of the two selected companies and forty three (43) were retrieved for the study.

Test of Hypotheses and Presentations

Test of hypothesis one: there is no significant relationship between information asymmetry and full disclosure of externalities in oil producing firm’s financial statements.

		asymmetry	Disclosure
ASYMMETRY	Pearson Correlation	1	0.302
	Sig. (2-tailed)		.028
	N	43	43
DISCLOSURE	Pearson Correlation	0.302	1
	Sig. (2-tailed)	.028	
	N	43	43

Source. Field work 2013(spss print out)

*Correlation is significant at the 0.01 level (2tailed),

Table 1: shows the results of spearman correlation co-efficient on the effect of information asymmetry and full disclosure of externality effects in the financial statements. The spearman correlation on the above relationship is 0.302 with p= 0.028, implying that the desire to hide information has a direct link with the non disclosure of externalities in the financial statements, which situation is statistically significantly correlated.

Test of hypothesis two: there is no significant relationship between information asymmetry and cost of full disclosure of externalities in the financial statements of oil firms.

Table 2 Correlations			
		assymetry	Cost
ASSYMETRY	Pearson Correlation	1	0.246
	Sig. (2-tailed)		0.04
	N	43	43
COST	Pearson Correlation	0.246	1
	Sig. (2-tailed)	0.04	
	N	43	43

*Correlation is significant at the 0.01 level (2tailed)

Researchers’ field word 2012.

Table 2: show the spearman rank order correlation coefficient on the effect information assymetry on cost of disclosure of full externalities to be 0.246 with p=0.040, implying a statistically significant correlation. This result shows that with the existence of information assymetry, partial disclosure of information, firms tend to reduce the cost of full disclosure, this encourages them to hide information at all times.

Test of hypothesis three: there is no significant relationship between information assymetry and accounting information objectivity in oil firms.

Table 3 Correlations			
		assymetry	Objectivity
ASYMMETRY.	Pearson Correlation	1	-0.075
	Sig. (2-tailed)		0.025
	N	43	43
OBJECTIVITY	Pearson Correlation	-0.075	1
	Sig. (2-tailed)	0.025	
	N	43	43

*Correlation is significant at the 0.01 level (2tailed)

As shown in table 3, there is a negative relationship between information assymetry and the objectivity of accounting information. The two tailed test has a coefficient of -0.075, indicating that an improvement in the objectivity of information in the financial statement, the practice of information assymetry in the financial statements by firms will reduce. With a probability of 0.025, the relationship is inverse in nature.

DISCUSSION OF FINDINGS

The study was centered on the issues information assymetry raised on the effective reporting of environmental accounting. The study revealed that information assymetry is instrumental to the poor level of reporting environmental cost in financial statements with a view to exploiting the ill informed such as the oil producing communities through the application of divide and rule concept.

The result of the analysis is as follows;

The spearman correlation on table 1 shows the relationship is 0.302 with p= 0.028, implying that the desire to hide information has a direct link with the non disclosure of externalities in the financial statements, which situation is statistically significantly correlated.

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Governments at both the Federal and State levels should put up strong legislations on disclosure of environmental externalities in the financial statements again IFRS should come up with standards on environmental accounting with special reference to disclosure of negative externalities.

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