

# Natural Resources Accounting: The Nigerian Experience

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## ABSTRACT

Environmental and natural resources make an important contribution to long-term economic performance and can be considered economic assets, even when they do not enter the market transactions directly. Over the years, there has been increasing awareness about environmental issues across the globe and growing concern about the depletion and degradation of the natural resources. Initially, work on the natural resource accounts was motivated by a desire to improve the management of natural resources within a national context. Over time, it was gradually recognized that lack of systematically organised data is not the main obstacle to a satisfactory resource management in Nigeria. Therefore, more emphasis is now put on trying to integrate environmental and resource issues within the traditional economic planning tools, highlighting the linkages between economic development, natural resource use and environmental concerns. Based on the foregoing, the study investigated natural resources accounting within the Nigerian context. The study aimed to illustrate the importance of organising the natural resource accounts in a manner that facilitates its usefulness for analytical purposes. Content analysis was employed in analyzing the data. The study found that Nigeria using their environmental accounts to track pollution; the use of natural resources, such as water, forests, and mineral deposits; and environmental protection expenditures. The accounts are also used in policy analysis and resource management decision making. The study recommends that natural Resources Accounting should be effectively implemented by the government to ease the quantification or measurement and valuation of each class or type of natural resources, as well as estimate the effects on the natural environment, habitat and on humans.

**Keywords:** Natural Resources, Accounting, Natural Resources Accounting

## INTRODUCTION

Natural resources such as water, soil, air, forest and woodland etc are very important to mankind and needed to be explicitly considered both at the macro and micro planning levels. For effective planning at the macroeconomic level, consideration of the natural environment is important. Also the inclusion of the natural environment in national accounts provides information on the use of natural resources in economic activities. Hence, there is a growing interest in the development of resource and environmental accounting in Nigeria. The development of national resource accounting has focused on placing monetary value on known physical quantities of the resource in order to obtain a wealth value for natural capital (Oladoye 1998). The natural resources stock account is usually recorded both in physical and monetary terms. Natural resource accounting is an accounting system that deals with stocks and stock changes of natural assets, comprising biota (produced or wild), subsoil assets (proved reserves), water and land with their aquatic and terrestrial ecosystems (Okafor, 2012).

It is recognized that economic activities use the environment and natural resources for inputs in production activities, and as sink of its byproducts. For purposes of clarity, environment and natural resources is disaggregated into the different major ecosystems that provide services to these human activities. In the context of economic activities, environment and natural resources is distinguished from ecosystems. The former are treated as source of natural capital, whereas the latter provide both natural resources and services needed not only in economic but also other human activities.

Terrestrial, aquatic, and marine ecosystems provide renewable and non-renewable resources to support economic activities and also provide ecosystem services, which in most cases are not accounted in economic valuation. Ecosystems' goods and services enter almost all economic production, consumption, aesthetic, and/or cultural needs, and are therefore essential to sustain the well-being of communities. However, the ability of ecosystems to sustain its inputs is governed and influenced by natural processes, climatic changes, extreme or natural calamities, and by human exploitation activities (United Nations, 2014a).

Changes due to normal natural processes are of less concern because its effects are regulated and steady. Of greater concern is the exploitation caused by economic and human activities. In the case of renewable resources, the harvest or draw down is replenished by natural growth, provided that sufficient mass or growing stock of resources remains after each event of human exploitation. If human exploitation of the resource exceeds its rate of recovery, the resource stock declines. Once the renewable resource stock declines beyond the threshold or its ability to recover, the result is depletion. In the case of non-renewable resources, recovery takes a longer gestation period so that over the human horizon, it trends towards depletion. The stock of non-renewable resources can rapidly decline if human exploitation intensifies and where exploitation technologies are resource-intensive and inefficient, thereby not maximizing the extraction of the vital resource.

Ecosystem capacity is also impacted by byproducts and wastes of human and economic activities, such that if waste discharges exceed its assimilative capacity, the ability to provide inputs is reduced. In turn, a compromised assimilative capacity produces negative amenity such as air, land, and water pollution, thereby reducing human welfare. Thus, the usefulness of natural resource assessment is in documenting the link of economic and human activities via the drivers and pressures of ecosystem change, and measuring the impacts on the state of the ecosystem.

Accounting of the environment and natural resources is essential because the productivity of the ecosystems and its natural resources are linked to the productivity of economic production entities. The government must have an accounting of its natural resources in order to know if its economic activities can be sustained through local production to meet consumption needs. The results of accounting form the basis of every development plan. The unsustainable activities in the environment have brought the push to account for the natural resources. Compounding the pressure is the threat of climate change hazards that pose continuing threats to environmental and community's resilience. Always, many economic production activities are severely hampered by such calamities increasingly degrading natural resources. It therefore imposes upon the government to have continuing information on the status of their resources, including all forms of local capital to sustain the local economy and strengthen community and environmental resilience. Based on the foregoing, the study investigated natural resources accounting within the Nigerian context.

### **Overview of Natural Resources Accounting**

Before we go into what natural resources accounting (NRA) is all about, let's conceptualize natural resources. The concept of Natural resource refers to all types of environmental assets existing in the environment and incorporates the broad set of services provided by ecosystems assets. Natural resource is essential for economic growth, employment, and, ultimately, prosperity of a country. The benefits derived from environment range from the use of environmental assets as raw materials for production and the dependence on environmental conditions for production -the benefits derived from being able to enjoy nature, we constantly derive benefits from the environment. The interplay of the environment and the economy is crucial to be understood by the policy makers while framing the policy for growing economy using the natural resource on sustainable basis.

There is now widespread international support for the concept and practice of Natural Resource Accounting (NRA). One of the key international developments has been the System of National Accounts (SNA) which is an accounting framework for measuring the economic activities of production, consumption and accumulation of wealth in an economy and provides for analyzing and evaluating the performance of an economy during a period of time. Further, major development has been adoption of integrated System of Environmental and Economic Accounting (SEEA) which describes the interrelationship between the economy and the environment. Unlike the conventional accounting system, this system provides for computing the depletion of natural resources and environmental degradation.

Natural resources accounting is a process of estimating the value of natural resource depletion and environmental degradation due to economic activities. In recent years, it became an important environmental assessment tool. Global Green Growth Institute (2016) defined natural resource accounting as an accounting system that deals with stocks and stock changes of natural assets comprising biota (produced or wild), subsoil assets (proved reserves), water and land with its aquatic and terrestrial ecosystems. Hence, natural resource accounting deals with measuring and valuing the stocks and stock changes of natural assets comprising biotic and abiotic resources, including subsoil assets, water and land with its aquatic and terrestrial ecosystems. Valuation in natural resources and its capital is emphasized in order to be linked to indicators of economic growth in order to support policy and decisions at the national and local level.

Government Accounting Standards Advisory Board Secretariat (2020) noted that natural resource accounting is the compilation of data relating to natural resources within an accounting framework. National resources accounting is an accounting system that deals with stocks and stock changes of natural assets, comprising biota (produced or wild), subsoil assets (proved reserves), water and land with their aquatic and terrestrial ecosystems. Natural resources accounts may involve both physical units and monetary values. The resources in question may include both those which contribute to marketable forms of production as well as non-commercial or environmental resources such as air, water and biological life. Natural resource accounts are regarded as a means of creating linkages between the environment and the economy. The terms 'NRA', 'green accounting' and 'environmental accounting' are used interchangeably. One of the particularly thorny problems relating to NRA is the valuation of resources in monetary terms. The way in which natural resources are priced is often the result of decisions based on subjective criteria.

The process of developing environmental accounting spins from the conceptual framework of the economy and environment linkage. The conceptual framework provides the main rationale for the valuation method and natural resource accounting. The tools used in developing the environment and natural resources accounts at the local level includes focus group discussions, key informant interviews, household surveys, map analyses, and modelling of natural resource processes. Applying these tools require expertise from physical, biological, and social science disciplines working on forest, agriculture, coastal and marine, and water sector. Data collection requires field surveys, sampling, discussions with local managers and planners, conduct of workshops, household interviews, and analyses of remote sensing data and mapping. Details of each methodology are provided in separate reports by experts who undertook data collection and analysis of results.

### **Macroeconomic Perspective Of Natural Resources Accounting**

Traditionally, gross national product (GNP) or gross domestic product (GDP) is used as the main indicator for measuring economic development. The three main weaknesses in GNP for SD are that: it does not take into account environmental degradation; the natural resources are valued at zero; and that repair and remedial expenditure such as pollution abatement measures, healthcare, etc. are counted as positive contributions to GNP. Natural resources are not entirely free, although there is no investment cost. Only market activities are included in GDP, but non market activities should be given equal standing and hence added to GDP. For instance, the proceeds of wood cut from forest are added to GDP but no deduction is made for the loss of forest and other non market benefits. The same applies to other activities such as mining, agriculture, industrial production- all of which cause pollution and loss of natural capital. Man made capital is depreciated in all accounting procedures but natural capital is not (United Nations, 2014b).

A more appropriate measure for SD that includes inter- generational well-being and sustainable resource use is net national product (NNP). NNP is the sum of the social value of an economy's consumption and the social value of the real changes in its stock of capital assets, including manufactured capital and natural resource stocks. Since only man-made assets are valued as productive capital whose drop in value is depreciated, a consumption level attained by reducing the stock of capital exceeds the sustainable level of income. Natural resources are not valued and losses are not debited against current income that may reduce future income earning possibilities. Depreciation of natural capital should be deducted to obtain the green GDP. For resource based economies like Nigeria, estimates of macroeconomic relationship that fails to account for natural resources depreciation distort the macroeconomic relationship (United Nations, 2014a).

### **Microeconomic Perspective of Natural Resources Accounting**

Accounting reports have been the most significant formal means of communication of an entity, which are prepared for the benefit of shareholders, potential investors, government and the public at large. It forms the basis for decision making. The external users will evaluate the use of the scarce resources and internal users can use them for formulation of major plans and policies. Traditional accounting approaches provide partial information by excluding non-priced transactions and important natural resources which are critically important to the assessment of human welfare. Traditional accounting deals with resources that have clearly defined property rights and market prices. Including environmental effects will provide a more complete reporting system for the management of the firm (Ahmed, 2000).

Environmental accounting focuses on the monetary implications of the environmental impact and aspects of an organization, including implications for cash outlays and revenue, etc. It translates environmental impact and concern into monetary values. A company wishing to embrace sustainable development needs to devise an equitable means of valuing its uses of the environment irrespective of whether it relates to the degradation or to the depletion of resources and that this valuation be disclosed in the company accounts.

The success of environmental accounting depends on the vision and philosophy of the company. Companies with a well defined vision of SD will want to embark on full- cost environmental accounting. Those companies without an environmentally sustainable development vision may only prefer to use private environmental accounting, with a misguided view that ignoring environmental concerns may maintain high profits. This may be true in the short-run but not in the long-run.

Proper green accounting will reveal the problems associated with certain technologies and may compel them to adopt environmentally friendly approaches to production. The way some business entities report economic activity in cash terms but not in environmental magnitudes in physical units such as the number of carbon dioxide emitted, is still pointing at the need to develop a proper accounting standard for environmental reporting, which will help to change the old perception of economic growth by government and others.

### **Aim Of Natural Resources Accounting**

The aim of NRA is to provide information on the state of natural resources and the changes affecting them. As such, it is an important link in the chain of sustainable development. The term 'sustainable development' is taken to mean a form of development which is capable of meeting the needs of the present generation without jeopardizing the ability of future generations to meet their own needs. Environmental accounting or NRA aims to provide a framework for organizing information on the status, use, and value of natural resources and environmental assets as well as expenditures on environmental protection and resource management. Natural resource accounts differ from other data as they are organized in terms of stocks and flows.

NRA also combines national income and product accounting concepts with analysis of natural resource and environmental issues. The development of resource accounting is generally perceived as having gone along two different paths; these are characterised as "physical" accounts and "monetary" accounts. In essence, an environmental account must be:

- Purposeful and consequential for the account-user who depends on the reported information;
- Able to measure change in a defined account subject through time;
- Organised to enable comparisons and crosschecks in an internally consistent manner; and
- Comparable with other relevant accounts so it can provide the basis for more detailed or aggregated analyses.

### **Different Approaches To Natural Resource And Environmental Accounting**

No neat classification of approaches to environmental and resource accounting is available although several writers have provided some classification (Peskin, 1991). There is certainly room for improvement on the taxonomy of approaches. One possibility might be classify them according to whether they use monetary valuation or not; the degree of aggregation which they involve and the comprehensiveness of their coverage. Thus we may have:

- 1) Value based systems;
- 2) Physical (non-monetised) indicators; and,

3) Systems with value and physical indicators.

Environmental accounts may be highly aggregated as in the case of most national accounts or desegregated e.g., by sectors or by major industries. They may cover the whole economy or environment or only a part of it. In principle, there is a wide choice of approaches. The literature has, up till now, concentrated on just a few of the possibilities. Three major possibilities were identified:

1. Proposals to adjust estimates of GDP or Net National Product (NNP) to reflect welfare or sustainable welfare more accurately taking particular account of environmental considerations.
2. Physical resource and environmental accounting systems such as those used in Norway.
3. Systems involving both valuation on physical entities such as that proposed by Peskin (1991), and that suggested by UNSO System of Integrated Environmental Economic Accounting.

Each of these approaches is considered in this section.

**Adjustments to National Income Aggregates for Changes in Environmental/Natural Resource Conditions:** To reflect changing environmental conditions and variations in natural resource stocks, one proposal is to make adjustments to national income aggregates such as GDP and NNP. By making appropriate adjustments, it is believed that the resulting money value will provide a better indicator of human welfare and its sustainability. Two types of adjustment have been proposed to allow for environmental change:

1. Deduction of expenditure on protecting against adverse environmental change or defensive environmental expenditure ; and,
2. Deduction of a sum to allow for the using up of natural resource stocks, namely a sum of money to allow for the net depreciation or depletion of these stocks.

However, calculating the appropriate deduction is not always straightforward. Consider defensive environmental expenditure. Total expenditure on environmental improvement or maintenance needs to be determined and the proportion of this considered to be defensive must be estimated. This is not always straightforward. For example, while air conditioning involves a local environmental change only a small portion of this expenditure may be defensive, e.g., a defense against outside air pollution or temperature increase in urban setting. Deducting expenditures for such items as the cost of sewage treatment are also problematic. What one really needs to consider is the net benefit of such treatment as compared to non-treatment.

In addition, some non-defensive environmental costs should be considered for deduction. These include lost earnings resulting from greater morbidity due to greater pollution, lost earnings and leisure-time due to greater traffic congestion, reduced amenity values due to environmental deterioration. Regarding natural resource depletion, in relation to SNA, it is generally argued that National Domestic Product (NDP) is a better indicator of welfare than GDP. NDP equals GDP less an allowance for the depreciation of man-made capital. However, no similar allowance i.e. made for the depreciation or depletion of natural resource stocks, that i.e. capital-like assets provided by nature. Income earned from the depletion of such assets, however, is included in GDP.

It has been argued that this asymmetric treatment of man-made capital and natural resource stocks in the existing national accounts should be removed. Two different methods of depreciating natural capital have been proposed. These are the 'user-cost' method suggested by El Serafy (1989) and the 'net price' approach recommended by Repetto, Magrath, Wells, Beer and Roesini (1989). Both methods are designed for application to those natural resources which produce commercial products such as mineral resource and forest harvested for saleable timber. They make use of a neoclassical economics framework for estimation purposes and assume the existence of perfectly competitive industry and perfect capital markets. In fact numerous assumptions are required in practice to make these depreciation estimates (Bartelmus et al. 1993) so their reliability in practice is open to uncertainty.

While there can be little doubt that GDP and NDP are not suitable measures of economic welfare, one can also question whether deductions for defensive environmental costs and depreciation of natural resource stocks are adequate. GDP does not for example include values for free services provided by the environment, work provided without payment in the home or leisure-time. In effect, this suggests that monetisation needs to be extended to reflect the value of goods and services available to a community. At the same time, some reformers have suggested that additional deductions from GDP or NDP are needed beyond those for environmental costs to get a better measure of welfare. For

example, since some writers believe that most expenditure on advertising or product promotion is wasteful, this expenditure ought to be deducted. The same is often argued about defense expenditure. The view is that at least it should be regarded as a cost not as a net benefit to society- Some writers even believe that a large part of expenditure on education is defensive and suggested deductions on that account (Daly & Cobb, 1989).

In measuring 'aggregate' welfare, a number of quality of life indicators and indices have been developed (Doessel & Gounder, 1991). These include indicators such as GDP or NDP per capita, expected length of life, access to education, various environmental indicators and so on. There may be argument about what variables should be included in the quality of life index and how much weight should be placed upon each if it is intended to derive a single index value, for example for the purpose of comparison between countries. Since the collection of statistics and the keeping of accounts for any purpose is costly, it is necessary to be clear about the purpose of these before embarking on the exercise, and to assess whether for procedure to be followed the benefits will exceed the costs.

**Physical Resource Accounting:** Physical (real) changes in natural resources and the environment underlie monetary accounts designed to reflect these changes. Given the difficulties of assigning accurate monetary values to such changes, some systems of natural resource accounting concentrate only on the real or physical changes using 'satellite' accounts. This approach has been adopted in France and Norway, but also prominent in current efforts by Australia to establish NRA in the longer term.

Ideally, these separate or 'satellite' accounts to SNA would describe flows of resources, materials (including pollutants), and energy that underlie any economic system, so that the physical counterpart to the economic circular flow is fully described and measured. As Peskin (1991) points out: "The accounts show an initial stock (or 'opening balance') of a resource, its diminution through use and degradation, its augmentation through discovery or, in the case of renewable resources, through natural growth, and, finally, the total stock at the end of the accounting period (or 'closing balance')."

Thus, in principle, such accounts show depletion of natural resources and also transformation into goods and materials. Some of which may find their way back to the environment in the form of pollutants. The material or energy accounts can be linked to the conventional economic accounts through the use of ratios (or input-output coefficients) that express units of energy/ or material use per unit of production or sales." However, no country has specified all these relationships fully. Even if a comprehensive set of physical accounts is not completed, it can be useful to do accounts for natural resources and environmental conditions of special economic or social interest to a country.

**Integrated Natural Resource/Economic Accounts:** The most comprehensive form of natural resource/environmental accounting i.e. that which specifies physical characteristics, places valuations on these and links them to SNA. The United Nations Statistical Division has prepared a framework for such integration and, in the South Pacific context, a case study was completed in Papua New Guinea to pilot its application (Bartelmus, Lutz & Schweinfest, 1993). To complete such a fully integrated set of accounts is a large task. The case study of Bartelmus et al. (1993) shows that considerable progress can be made in doing this. Nevertheless, they could not be entirely satisfied with the accuracy of their estimate because they lacked accurate physical data on stocks of several types of natural resources and on defensive environmental expenditures. They pointed out the lack of data on environmental expenditures is one of the weak points of PNG's environmental data analysis. Similarly, the lack of physical resource accounts, with the notable exception of mineral resources, made it difficult to estimate scarcities in other renewable and non-renewable resources.

They were also concerned about the assumption and simplifications which they had to make to get results. For example, both methods of depreciating natural resource stocks (user costs and net price) were considered to be theoretical simplifications. There are also wider conceptual problem (some of which have been raised above) to be solved about the value of 'environmentally modified SNAs as a measure of welfare and as a guide to policy formulation and implementation. While there is scope for improved environmental accounts and statistics, the desirable extent and nature of these improvements will vary from country to country. The above approaches dominate current efforts to account for the environmental and natural resource factors in GDP. However, another possibly useful methodology for measuring the contribution of major resource sectors to GDP has been advanced, and is of some interest.

### **Issues In Natural Resources Accounting**

**Who Regulates the Environmental Effects?:** The rapid growth in industries such as breweries, refineries, tourism and other environmental activities has created serious environmental damages in many countries. There is great need for the regulation of these adverse impacts without damaging the prospects of these sectors. The main issue is the nature of the regulation, and control approaches. The subject matter is highly relevant in determining the nature of regulation. In the case of industrial pollution, strict regulation through requirements and prohibitions may be more effective than taxes or levies. However, in the social arena, eliminating the use of child labour by a remote organization in the supply chain may be more likely to result from stakeholder engagement than from requirements and prohibitions (ICAEW 2004).

**Valuing Environmental Goods:** It is difficult to assign monetary value to environmental resources. This requires the use of implicit or shadow prices which may not be helpful since they may be affected by imperfections. The non-consumptive use values such as values of wilderness have been assessed using methods such as travel cost (TC) and contingent valuation (CV) and other methods. In assessing management for environmental resources, if non-use values are apparent, they need to be considered and measured as precisely as possible in order that public decision making be as fully informed as possible.

**Ethical issues in Valuation:** Decision makers need to think through the consequences of any outcomes and how it affects members of the society. Thus, what moral position should be adopted is controversial, Should rights be recognized first as suggested in the deontological approach, or should ends justify the means as is implied by the teleological tradition?

**Policy Problems:** In some countries, environmental policies themselves may be at the heart of the accounting problem. For instance, taxation provisions in Australia clearly discriminate against natural resources (Herath, 2005). Government policies should support sustainability, As Michael Meacher, the former UK Environment Minister, stated in June 2003, “it is this Government’s policy to make sure that environmental concerns are on the corporate radar. We need to make the most responsible business the most competitive one...”

**Absence of a Uniform Reporting Framework:** Inclusion of the environment in any credible manner in documents designed for information and planning purposes require acceptable reporting methods, computational techniques and indicators<sup>4</sup>. In Nigeria this is usually met by reports produced by the Federal Environmental Protection Agency in line with the Environmental Impact Assessment (EIA) Decree No 86 of 1992. Accountants fail to join up with other groups-such as environmental economists to develop appropriate environmental costing techniques. It is noticeable that many of the advances in environmental accounting at the management accounting and strategic sustainability accounting levels-are being carried out by non-accounting based organizations. These include the United States Environmental Protection agency (EPA), Forum for the Future (FoF-UK) and the World Resources Institute (WRI), (ACCA Accounting Sectoral Report 2002). Accountants should rise up to their responsibility to enhance credible reports.

### **The Nigerian Experience**

Nigeria has undergone rapid socio-economic and physical development since independence. The country therefore faces numerous challenges to achieve development that is economically and environmentally sustainable. Development achieved so far cannot be described as sustainable because the various development processes have misused or over exploited the natural resources and in the process, affected the environment negatively as well. The ecosystem of the country has been disturbed as a result of rapid population growth with great pressure on the natural resources (Federal Office of Statistics, 1999). Apart from the issue of natural and manmade disaster, global environmental matters constitute enormous threat. Meanwhile attempts are now being made in designing a statistical system that will describe the inter-relationships between the natural environment and the economy.

The natural resource stock account is one of the major satellite accounts being currently developed in the environmental and economic account at the Federal Office of Statistics. The issue of valuation is also being properly considered. The system of Integrated Environmental and Economic Accounting (SEEA) developed by the United Nations Statistical Division, applies three categories of valuation in different version. There are, maintenance costing of natural asset, depletion and (environmental quality) degradation, and contingent and related valuations of welfare efforts of environmental

degradation. However, for reasons of data availability and compatibility with conventional accounting rules, Nigeria has adopted the market valuation approach.

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Recent developments in Nigeria and other developing economies in the world have made it imperative for the need to account for the stock of Natural wealth in the hands of the Governments of States. Strictly speaking, natural resources such as solid/mineral deposits, petroleum and gas deposits, timber, just to name but a few, though gift of nature, can be classified as state assets. They constitute the resource based of most economies which are owned and controlled by government. These governments make laws and regulations to protect these resources from unauthorized encroachment. As in the case of Nigeria, South Africa and Ghana, most jurisdictions have data on the quantities, valuations and measurements of these resources on a continuous basis, though in patches. This brings to mind, the question, why are these natural resources not always reported in the financial statements of government? (that is, the National Balance Sheet). Alternatively, why are they not disclosed even in a separate financial statement with a caption such as “a statement of resource base” and then presented along with other financial statement to give a holistic view of the net worth of a nation?

Whatever answers critics of this position may advance, it is important to note that natural resources especially those that constitute the resource base of a nation – earning assets of state, can be classified into national assets. Arising from accounting definition of what constitute assets both in the private and public sector, this category of resources fit into such classification. The conceptual framework identifies what it labels ‘elements’ of financial statements – the building blocks that together constitute the contents of financial statements. The framework identifies assets, liabilities, equity, income and expenses. However, the motors of these are the definitions of assets and liability. It gave the definition of an asset as: A resource controlled by the entity as a result of past events from which future economic benefits are expected to flow to the entity (Framework for the Preparation and Presentation of Financial Statements, Para 49[a]). *Whereas a liability is:* A present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits (Framework for the Preparation and Presentation of Financial Statements, Para 49[b]). These definitions determine what constitutes an asset or liability of the entity, but they do not on their own satisfy the requirement for recognition in the Financial Statements, for an asset or liability to be recognized (i.e. appear in the financial statements) it must satisfy two criteria: the future cash flow must be probable (interpreted as more likely than not in IFRS): and it must be capable of being measured with reasonable certainty.

A related issue is that the asset must be controlled by the entity to qualify for possible recognition. From the above, it can be seen that Natural resources, especially those that are earning assets qualify to be recognized as national assets and therefore, recorded in the books. Apart from the issue of definition, these resources are earning assets. Expected revenue from these resources are always estimated and captured in the Annual Budget of the Public Sectors. Budgets in the public sectors are the basis and prime documents for National Accounting. Therefore, if the earnings potentials of a resource is recognized in the budget, the quantity stock of these resource should be recorded in the final accounts. Most others may argue from the point of placing value on the stock of natural resource. Of course, there are ready International Markets for this very important assets of state. You have International Oil Markets, Timber, Gold, etc., meaning that the fair values of the assets can be easily ascertained.

Alternatively an annual revaluation approach could be adopted to quantify these assets as the need arises. The physical quantities of resource such as solid minerals and other deposits can be estimated through geo-physical survey and other scientific methods. As a result, there is no likely problem of not being able to ascertain reasonably and reliably the monetary value of these assets as the need arises. It is no longer news that governments in the developing countries are suffering from the syndrome of corruption and fraud associated with the exploitation of national wealth by the privilege class along with their foreign predators. Natural resource accounting will enhance transparency and discipline in the conduct of the affairs of states and countries.

It is observed that the issue of environment in Nigeria are basically on human population, land use and soil conservation, water resources management, toxic and hazardous substances, agricultural production, air pollution, noise pollution, working environment and settlements (Nigerian Federal Office of Statistics). Current efforts are also targeted towards the measurement of deforestation, soil degradation, loss of biological diversity and wildlife and coastal degradation. Deforestation for instance, is one of the top priority environmental problems in Nigeria. The present effort in developing resource and environmental accounting will definitely improve economic performance measures and the measure of sustainable income and growth.

## CONCLUSION

Natural resources are the resource base of nations, in most countries, their availability have become a curse and a source of sorrows instead of happiness for the citizens. In jurisdictions where this is the case, there have been increasing rate of poverty, crime, prostitutions, urban slumps among industrial unrest, riots and other maladies. Where natural resources are properly accounted for, the worth of nations in terms of their balance sheet could be used as a measure of potential wealth among other factors. For the developing countries, this will attract foreign investors as the net worth of assets can be a basis at least for evaluating the economic potentials of a state. The non-disclosure of stock of natural resources in the accounts of state has led to the creation of secret reserves in the hands of managers of state affairs. This in Nigeria and other developing nations is not good enough as it forms the basis of corruption in the use of these resources.

Though, there are some improvement in environmental reporting among developed countries, problems still abounds, the most important of them being the difficulty in measuring the values of natural resources which are often not marketed. There are ethical issues on how certain items are measured to be incorporated in environmental accounting. There is a feeling that most firms may not be comfortable with disclosing their environmental, social or full sustainability information, especially if they show excessive depletion of resources and will impact much on their profit. Nevertheless, there is still much to be done to forge ahead; embarking on a multi-disciplinary approach by related professions like accounting, economics and management, and other relevant profession like psychology and philosophy to make environmental accounting a common practice in all business enterprises.

The present effort in developing resource and environmental accounting will definitely improve economic performance measures and the measure of sustainable income and growth. Meanwhile, there are many empirical problems in definitions, methodology, data collection and imputing by values to factors where data are not readily available. However, further study is still needed before we can reach a standardized accounting procedure. It is also envisaged that the data base and consequently the information system will improve over time especially with improvements in the

density of data points and in the level of sophistication of data gathering and analysis. The study therefore recommends that Natural Resources Accounting should effectively be implemented by government in a strategic manner with proper planning, monitoring and control mechanisms to guarantee the sustainable exploration of these resources for the economic (revenue generation for both government and private entities; employment opportunities), cultural (display of manifestations in healthy and eco-friendly spaces) and social (variety of products and services) benefits of Nigerians. Also, natural resources accounting should be effectively carried out by the government using qualified personnel for the purpose of appropriately documenting the different stockpile of natural resources available in the country.

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