AN OVERVIEW OF ENVIRONMENTAL ACCOUNTING

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Abstract

Today an increasing number of companies and other organizations are engaging in environmental management as part of their management strategies to specify measures for dealing with environmental issues and to internally carry out environmental conservation activities. Environmental accounting is a tool to supplement environmental management. Environmental accounting data is not only used by companies or other organizations internally, but is also made public through disclosure in environmental reports. The disclosure of environmental accounting data as one of the key elements in an environmental report enables those parties utilizing this information to get an understanding of the company's stance on environmental conservation and how it specifically deals with environmental issues. Keeping this in view, the authors have made an attempt to analyze the concept, objectives, functions and benefits of environmental accounting as the main aims of the paper. It also discusses the approaches, types and guidelines of environmental accounting.

Key words: Environmental Accounting, Guidelines, Functions, Benefits, Elements.

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1. Introduction

Environmental protection has become a key issue all over the world these days. Several factors and forces are responsible for destruction of environment. Of these, growing hazardous industrialization is a major culprit. Though swift industrialization is an essential perquisite for overall economic growth, yet it is damaging the environmental drastically, Water pollution, air pollution, solid and toxic waste pollution and other environmental contamination are common in many production process- Every company has a overriding responsibility to make the fullest possible use of its resources both human and material. The issue of environmental responsibility and the sustainable industrial development has given birth to new branch of accounting i.e. environmental accounting and reporting. Environmental accounting is relatively a recent entrant in the domain of accounting. It is process of identification measurement and communication of information in the environmental responsibility performance of an entity to permit economic decision. In the other words, "Environmental accounting forms that part of accounting that deals with environmental concerns".

Environmental accounting is essential for an organization implementing the concept of sustainable development as it facilitates to take into account ecological activities of an organization in economic measurement. The economic development without environmental considerations can cause serious environmental damage. This is in turn daggering the life of present as well as future generations. "Environment is the situation or circumstance which exists around us and influence directly and indirectly on the lives and livelihood of man, animals and plants on earth." Environment means everything which surrounds us. A- native American proverb states that, "only when the last tree is cut, only when the last river is polluted, only when the last fish is caught only when they will realize that we cannot eat money". The first environmental accountings were constructed by Norway in the 1970s and were only so lowly adopted by other countries. Although, environmental accounting and reporting is voluntary exercise in India, the organization that opt to disclose environmental issues in their statements get various benefits such as improved image of the product or company.

2. Objectives of the Study

The study has been made:

- To explain the concept and meaning of Environmental Accounting;
- To discuss about the objectives, approaches, functions and types of Environmental Accounting; and
- To review the guideline of Environmental Accounting.

3. Research Methodology

This study is based on the secondary data which is collected from the various research papers, journals, magazines, periodicals, newspapers and internet etc.

4. Environmental Accounting - Definition

Environmental accounting, as defined in these guidelines, aims at achieving sustainable development, maintaining a favorable relationship with the community, and pursuing effective and efficient environmental conservation activities. These accounting procedures allow a company to identify the cost of environmental conservation during the normal course of business, identify benefit gained from such activities, and provide the best possible means of quantitative measurement (in monetary value or physical units) and support the communication of its results.

Herein, environmental conservation is defined as the prevention, reduction, and/or avoidance of environmental impact, removal of such impact, restoration following the occurrence of a disaster, and other activities. The environmental impacts are the burden on the environment from business operations or other human activities and potential obstacles which may hinder the preservation of a favorable environment.

5. Objectives of Environmental accounting

Environmental Accounting is required to fulfill a lot of demands from different stakeholders. However, for academic reasons, the following basic objectives can be identified on the logical ground:

i. Environmental accounting would aid the discharge of the organization's accountability and increase its environmental transparency;
ii. It helps negotiation of the concept of environment and determines the company's relationship with the society in general and the environmental pressure group in particular. This helps an organization seeking to strategically manage a new and emerging issue with its Stakeholders;
iii. Because of the ethical investment movement, ethical investors require the companies to be environmentally friendly. Therefore, by upholding friendly image, companies may be successful in attracting fund from 'green' individuals and groups;
iv. Environmental accounting consumerism movement launched by the environmental lobby groups encourages the consumers to purchase the environmentally friendly products, i.e., green products. Companies, thus producing green products may take competitive marketing advantage by disclosing the same;
v. By making environmental disclosures, companies may show their commitments towards introduction and change and thus appear to be responsive to new factors;
vi. Companies engaged in environmentally unfriendly industries arose strong public emotion. There is a strong environmental lobby against these industries.
vii. Green reporting may be used to combat potentially negative public opinions;
viii. By cultivating the enlighten approach of environmental accounting, companies can increase their image of being enlightened to the outside world and this, can be regarded as enlightened companies.

6. Approaches of Environmental Accounting

Physical Approach vs. Monetary Approach

Two approaches are adopted in Environmental Accounting. Firstly, the Physical Approach was suggested by the United Nations where a complete guides to be prepared indicating the available resources within a country classified according to its state and uses (for instance, agriculture, desert land etc). Depending on this approach the environmental operations are presented in a physical terms, the current balance of the resource and the additions and deductions from that resource. No monetary value is assigned according to this approach. Then, the monetary approach emerged due to the fact that the Physical Approach does not fulfill the requirements of the Environmental Accounting.

Nevertheless, the physical approach is very important to get physical information about the resources which enables to prepare the environmental statistics and is considered the first step in the Monetary Approach. Despite the difficulties associated with the monetary approach, it gained a lot of interest as such data will enable to know the profit and loss associated with environmental operations and to get an environmentally adjusted economic indicator (Hamid, 2002).

7.0. Types of Environmental Accounting

7.1. Monetary Environmental Management Accounting (MEMA)

Although monetary environmental management accounting (MEMA) is extremely important for successful management, MEMA is designed for internal use; it is normally voluntary and is not needed for external stakeholders (Schaltegger, et. al.1996). If MEMA is performed correctly, it will be the base for financial accounting, environmental management systems like ISO 14000, and other environmental performance evaluations. In MEMA, environmental costs are recorded in different accounts from no environmental costs. New accounts are regularly created to present direct costs of each environmental impact, in a way that different environmental costs of each process can be easily distinguished. As an example, direct monetary value of waste reduction, the consumption of raw material, or labor and energy costs must be accounted separately (OECD 2000).

7.2. Physical Environmental Management Accounting (PEMA)

Physical environmental management accounting (PEMA) is used to determine the level of the environmental impact produced by the company. Physical data are important when the company has set targets to reduce emissions, waste, use of materials, etc. Managers generally find measuring physical quantities easier when monitoring progress towards achieving targets (Envirowise 2003a). Examples would include: recording the level of greenhouse gases emitted; the toxic emissions of an incinerator; and releases of a cleaning facility or sewage plants, tons of wastes generated etc. (Schaltegger et al 1996). The information produced in PEMA can be used in different ways, for example, it can be used for C02 equivalent trading, which can produce extra income for the company. In other cases, it can be used to determine pollution levels, better positioning the company for potential new regulations. Additionally, it could be used by some companies to control environmental impact; for example, when sustainable development policies

are in place (Burritt et al 2002).

7.3. External Monetary Environmental Accounting (EMEA)

Some stakeholders have gained enough power over companies to request special information. These stakeholders are commercial banks, creditors and insurance companies (Schaltegger et al 1996). The information that is provided can be used for pollution subsidies, to accelerate depreciation of clean production technologies, to evaluate the consequence of various

Environmental taxes (e.g. CO2 taxes), and to contract insurance for potential product liabilities. The methodology does not vary from other financial reports though the information must be nominally presented in a very specific format to obtain specific results.

7.4. External Physical Environmental Accounting (EPEA)

External ecological accounting is a tool to report to external stakeholders, and it has the same objective as EMEA. External stakeholders today put increasing pressure on companies in order to enhance the transparency of the environmental performance of the companies (Schaltegger et al 1996). This type of accounting is becoming extremely important for some companies when they have interest groups and individuals seeking environmental information more than economic information. Some special mutual funds require that in order to borrow money, the company has to comply with certain criteria or ---, which have to be evaluated by using EPEA. Environmental protection agencies normally have an interest in PU figures such as waste and pollution, and may not have much direct interest in the amount paid by the company for their disposal (National Statistics UK 2002), even more so if the costs are capitalized or considered as expenses in the monetary accounts. Marketing departments can use EPEA to improve the “green” image of a certain company using the information produced by PEAM (Burritt et al 2002).

7.5. Other Types of Environmental Accounting

These types of environmental accounting refer to those reports requested by a stakeholder that requires specific information, and forces the company to develop special accounting relationships. This is the case for taxing agencies and in certain cases for environmental protection agencies that require a specially organized report. They may require information in regards to environmental interventions, to check if regulations are met, to evaluate the severity of environmental problems in the company, and to design future environmental policies (Schaltegger et al 1996).

8. Environmental Accounting Guidelines 2005(Regulatory framework)

It is apt to mention that ultimate objective of environmental accounting is to clearly indicate the environmental cost of each process, separating the non-environmental costs from the environmental costs. Therefore, implementing an environmental accounting system can provide more accurate information for analysis options (Mein-chin 2002), because environmental accounting ensures that management decisions are made with knowledge (BDO 2002).

One of the major factors that have influenced the emergence of environmental accounting is that the relative cost of the generation of environmental accounts has been reduced. In the past, the cost of detecting environmental issues was lower than the cost of collecting the information itself. This has changed as the costs of corporate impact on the environment and environmentally induced financial impact on firms is rising rapidly, while the cost of data management has been reduced (Cox 2001). The use and objective of environmental accounting has changed also during these last 17 years, from being used to calm external environmental activists; it is now an important source of information for the company’s managers (Schaltegger et al 1996).

Environmental accounting is a useful and sometimes necessary tool to learn more about the influences of environmental input/output of a company’s activities on its bottom line and on the natural environment. Environmental accounting has become very important during the last years. This was not necessarily the case a decade ago when environmental accounting was normally only a footnote on the year-end report. Today, in some companies, it has become an integral part of financial reports (Cox 2001).

9.0. Functions and Roles of Environmental Accounting

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

9.1. Internal Functions:-As one step of a company’s environmental information system, internal function makes it possible to manage environmental conservation cost and analyze the cost of environmental conservation activities versus the benefit obtained, and promotes effective and efficient environmental conservation activities through suitable decision-making. It is desirable for environmental accounting to function as a business management tool for use by managers and related business units.

9.2. External Functions: - By disclosing the quantitatively measured results of its environmental conservation activities, external functions allow a company to influence the decision-making of stakeholders, such as consumers, business partners, investors, local residents, and administration. It is hoped that the publication of environmental accounting results will function both as a means for companies to fulfill their responsibility for accountability to stakeholders and, simultaneously, as a means for appropriate evaluation of environmental conservation activities.

10. Benefits of Environmental Accounting

- Assessment of annual environmental costs/ expenditures

- Budgeting
- Business planning processes
- Calculating costs and savings of environmental projects
- Cleaner production and eco-design projects
- Design and implementation of environmental management systems
- Developing of environmental performance measures, evaluation, indicators and benchmarking
- Ensuring that environmental performance management systems are integrated into the business management systems (including performance appraisal exercises)
- External disclosure of environmental expenditures, investments and liabilities
- External environmental or sustainability reporting
- Incorporating environmental considerations into the capital budgeting decision
- Investment appraisal, calculating investment options
- Other reporting of environmental data to statistical agencies and local authorities
- Participation in strategy formulation
- Product costing or pricing
- Setting quantified performance targets

11.0. Structural Elements of Environmental Accounting

Environmental accounting consists of the following structural elements with the purpose of attaining two types of benefits derived from costs incurred from environmental conservation activities during the regular course of business.

11.1. Environmental Conservation Cost: - Investments and expense related to the prevention, reduction, and/or avoidance of environmental impact, removal of such impact, restoration following the occurrence of a disaster, and other activities are measured in monetary value.

Investment amounts are expenditures allocated during a target period for the purpose of environmental conservation. The benefits from these investments are seen over several periods and are recorded as expense during the depreciation period (the amount of depreciable assets recorded during the period). Expense amounts refer to the expense or losses recorded under financial accounting standards resulting from the consumption of goods or services for the purpose of environmental conservation.

11.2. Environmental Conservation Benefit: - Benefits obtained from the prevention, reduction, and/or avoidance of environmental impact, removal of such impact, restoration following the occurrence of a disaster, and other activities are measured in physical units.

11.3. Economic Benefit Associated with Environmental Conservation Activities: - Benefits to a company's profit as a result of carrying forward with environmental conservation activities are measured in monetary value.

12. Conclusion

The focus of traditional (conventional) accounting practices is on the economic aspects only. Taking into consideration the environmental dimensions, in the accounting system, especially natural resources/assets, depletion etc., can be termed as "environmental accounting/green accounting". The term "Greening" has been used a lot in the past thirty years in relation to different environmental issues. In many cases, the term is also used to name organizations such as Green Belt Movement, operations such as Green Contracting … etc. Green Accounting is a general term where it may mean Environmental, Ecological or Natural Resource Accounting. Needless to say that Environmental Accounting is also a general term which may mean the integration of environmental dimension into the macro or micro level despite that it is more applicable to the latter level. However, the four main terms mentioned overlap with each other. Environmental Accounting, which calls to introduce a system that supports Sustainable Development (SD) that is gaining more interest especially from multinational energy companies, has many meanings and uses. Environmental Accounting can support national income accounting, ecological accounting at local administration level and at micro level related to financial accounting, cost accounting or internal business managerial accounting.

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