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Environmental Accounting - An Essential Tool for Long Run Survival

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KEYWORDS

Stakeholders;
Remediation;
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A B S T R A C T

Economic development will be sustainable only if it is pursued in a manner which protects the environment, and that there is a need to pay greater attention to the management of water, forest and land resources. Rising pressures on the environment and increasing environmental consciousness have generated the need to account for the various interactions between all sectors of the economy and the environment. Environmental accounting is the ability to provide accurate information in the financial statements regarding the estimated social cost occasioned by the production externalities on the environment and how much deliberate intervention cost had been incurred to bridge the gap between the marginal social cost and the marginal private cost by a firm. Environmental reporting has been seen as a way of increasing accountability of organizations regarding environmental issues. 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 of interest to the public and to the financial community. There are several advantages environmental accounting brings to business, notably, the complete costs, including environmental remediation and long term environmental consequences and externalities can be quantified and addressed. Companies and other organizations are required to have accountability to stakeholders, such as consumers, business partners, investors, employees, local residents, and administration, when utilizing environmental resources, i.e. public goods, for their business activities. This paper tries to explore the concept of environmental accounting in Indian scenario.

Overview on Environmental Accounting

As per Indian Constitution, Article 51A of Directive Principles "It shall be the duty of every citizen of India, to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures." The

constitutional provisions are backed by a number of laws, acts, rules, and notifications like Factories Act 1948; (Prevention and Control of Pollution) Act 1974; Forest (Conservation) Act 1980; Air (Prevention and Control of Pollution) Act 1981; Water Biomedical waste (Management and Handling) Rules 1998; Municipal Solid Wastes (Management and Handling) Rules, 2000; Ozone Depleting Substances (Regulation and Control) Rules 2000; Noise Pollution (Regulation and Control) (Amendment) Rules 2002; Biological Diversity Act 2002. The Department of Environment was established in India in 1980 to ensure a healthy environment for the country. This later became the Ministry of Environment and Forests (MOEF) in 1985. The EPA (Environment Protection Act), 1986 came into force soon after the Bhopal Gas Tragedy and is considered an umbrella legislation as it fills many gaps in the existing laws. Companies around the world aspire consciously for improved transparency in disclosure as their core competence (Williams, 2000). Environmental disclosure through internet would be the future of scientific reporting.
An enterprise is a corporate citizen. Like a citizen it is esteemed and judged by its actions in relation to the community of which it is a member as well as by its economic performance. Responsibility towards environment has become one of the most crucial areas of social responsibility. Recent years have witnessed rising concern for environmental degradation, which is taking place mainly in the form of pollution of various types, viz. air, water, sound, soil erosion, deforestation, etc. Environmental Accounting is a field that identifies resource use, measures and communicates costs of a company's or national economic impact on the environment. It can be conducted at the corporate level or at the level of a national economy through the National Accounts of Countries. An environmental accounting system is consisted of environmentally differentiated conventional accounting and ecological accounting. Environmentally differentiated accounting measures effects of the natural environment on a company in monetary terms. Ecological accounting measures the influence a company has on the environment, but in physical measurements.

Environmental accounting procedures allow a company to identify the cost of environmental conservation during the normal course of business, identify benefit gained form such activities, provide the best possible means of quantitative measurement and support the communication of its results. Environmental conservation is prevention, reduction, and/or avoidance of environmental impact, removal of such impact, restoration following the occurrence of a disaster, and other activities. The environmental accounting at the corporate level helps the management to know whether corporate has been discharging its responsibilities towards sustainable development while meting business objectives.

The developing countries like India are facing the twin problem of protecting the environment and promoting economic development. A tradeoff between environmental protection and development is required. A careful assessment of the benefits and costs of environmental damages is necessary to find the safe limits of environmental degradation and the required level of development.

Highlights of other select studies

Study	Highlights
Gamble et al (1995)	This study investigates the quality of environmental disclosures in 10K and annual reports (ARs) for 234 companies within 12 industries for the years 1986 through 1991 The principal findings are: (1) Total AR disclosures have significantly increased since 1989; (2) petroleum refining, hazardous waste management, and steel works and blast furnaces provided the highest quality of AR disclosures; (3) the 1989-1991 time period produced a significant increase in 10K environmental disclosures; (4) petroleum refining, hazardous waste management, and steel works and blast furnaces provided the highest quality of 10K disclosures; and, (5) the overall quality of environmental disclosures is low.
Carlos et al (2002)	Eighty per cent of companies in Spain do not provide any environmental information.
Archel et al (2001)	Analyzed environmental disclosures in the 1995–1998 annual reports of a sample of Spanish companies. They consistently found that both size and environmental sensitivity are corporate characteristics that explain the extent of environmental reporting.
Katsuhiko et al	There is no significant difference in corporate size (sales, total assets, and operating profits) between companies which disclose environmental accounting information in their environmental reports and those which do not. There is also significant difference according to industrial sector among companies which disclose environmental accounting information in their environmental reports.
King and Lenox (2001)	Examined the nature of relationship between environmental performance and financial performance for 652 US firms during the period 1987-96 and found an inverse relationship between financial evaluation and pollution. They concluded that fixed characteristics such as firm size, R&D intensity could be causing this negative relationship
Mathur & Mathur (2000)	Used event study methodology to analyze stock price reaction to the green marketing strategies of 73 companies during 1989-95.They documented negative price reactions
Lu & Batten (2001)	Asian firms do not have a tradition of disclosure since insiders often control the operating and reporting systems
Connelly et al (2004)	Empirical results reveal that there is no relation between environmental activity reporting and accounting performance.
Shuchi (2009)	The results provide strong evidence in support of the influence of variables size, profitability, sector, industry and environmental performance on Environmental Disclosure Practices.

Standard discloser by the companies about Environmental Accounting

a.	Present and future costs for products as well as processes redesign.
b.	Present and future capital expenditures for pollution and control.
c.	Physical data related to the reduction of toxicity and waste.
d.	Estimates of future environmental costs and benefits.
e.	Accumulation of current environmental costs from current as well as past activities and products.

Basic Dimensions:

Relevance	Environmental accounting should provide valid information related to a company's environmental conservation costs and benefits from associated activities which contribute to the decision-making of stakeholders.
Relevant to the Goal	The goal is to provide information beneficial to stakeholders in their decision-making. a. Materiality and Significance Consideration should be given to the materiality and significance of relevance

Objectives of Environmental Accounting and Reporting:

a.	Segregating and collaboration all environment related flows and stocks of assets or resources
b.	Taking the total stock of assets or reserves related to environmental issues, and changes.
c.	Minimizing environmental impacts through improved product & process design.
d.	Estimation of the total expenditure on protection or enhancement of environment.
e.	Assessing changes of environment in terms of costs and benefits.
f.	To identify that part of Gross Domestic Product this reflects the costs necessary to compensate for the negative impact of economic growth.
g.	Reducing costs through resource cooperation &management.
h.	Realizing organizational accountability and increasing environmental transparency.
i.	Elaboration and measurement of indicators, relating to environmentally adjusted product and income.
j.	Ensuring effective and efficient management of natural resources.
k.	Aiding strategic decision process regarding continuing or abandoning a particular product or process.
l.	Linking physical resource accounting with monetary accounting.

Environmental accounting needs to work as a tool to measure the economic efficiency of environmental conservation activities and the environmental efficiency of the business activities of company as a whole. Management seldom tries to make proper arrangement to save the environment unless it is required as per law as there is no direct relationship between investment and benefits. In many contexts environmental accounting is taken to mean the identification and reporting of environment specific cost such as liability cost and waste disposal costs.

Environmental Accounting Disciplines

Global Environmental Accounting,
National Environmental Accounting and
Corporate Environmental Accounting.

Corporate Environmental Accounting can be further sub-divided into

Environmental Management Accounting and Environmental Financial Accounting.

Functions

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

Internal Functions
External Functions

In EMA there is a particular focus on material and energy balance aspects and environmental cost information.

Many environmental costs can be significantly reduced or eliminated as a result of business decisions, ranging from operational and housekeeping changes, to investment in "greener" process .Technology, to redesign of processes/products. Many environmental costs may provide no added value to a process, system, or product.

Environmental costs (and thus, potential cost savings) may be obscured in overhead accounts or otherwise overlooked. Better management of environmental costs can result in improved environmental performance and significant benefits to human health as well as business success. Competitive advantage with customers can result from processes, products, and services that can be demonstrated to be environmentally preferable. Accounting for environmental costs and performance can support a company's development and operation of an overall environmental management system.

Obstacles

I. Environmental accountings have no economic value.

II.

III. The method of estimating the social value of environmental goods and services are Imperfect, often misleading and construers.

IV. Estimated values for environmental goods quantified or qualified in terms which have no fixed conversion into money.

V.

VI. On account of unrecorded environmental costs and difficulty in extracting and separating environmental cost the industry data is virally unreliable.

VII.

VIII. Social value placed on environmental goods and services are changing so fast that the estimates are likely to be obsolete before they are available for use.

IX.

X. Lack of accounting standards for environmental accounting

Inapplicable assumption.

In EMA there is a particular focus on material and energy balance aspects and environmental cost information

A 1	Segment Environmental Accounting	This is an internal environmental accounting tool to select an investment activity, or a project, related to environmental conservation from among all processes of operations, and to evaluate environmental effects for a specified period.
2	Eco Balance Environmental Accounting	This is an internal environmental accounting tool to support PDCA for sustainable environmental management activities
3	Corporate Environmental Accounting	This is a tool to inform the public of relevant information compiled in accordance with the Environmental Accounting. This could be referred to as Corporate Environmental Reporting.
B	Environmental Financial Accounting	Environmental Financial accounting concentrates on reporting environmental liability costs and other significant environmental costs.
C	Environmental National Accounting	In national level accounting the particular focus is on natural resources stocks & flows, environmental costs & externality costs, etc.

Legal Environment for environmental protection

Directly related to environment protection:	
I.	Water (Prevention and Control of Pollution) Act, 1974.
II.	Water (Prevention and Control of Pollution) Cess Act, 1977.
III.	The Air (Prevention and Control of Pollution) Act, 1981.
IV.	The Forest (Conservation) Act, 1980.
V.	The Environment (Protection) Act, 1986.
Indirectly related to environment protection	
i.	Constitutional provision (Article 51A).
ii.	The Factories Act, 1948.
iii.	Hazardous Waste (Management & Handling) Rules, 1989.
iv.	Public Liability Insurance Act, 1991.
v.	Motor Vehicle Act, 1991.
vi.	Indian Fisheries Act, 1987.
vii.	Merchant of shipping Act, 1958.
viii.	Indian Port Act.
ix.	Indian Penal Code.
x.	The National Environment Tribunal Act, 1995.

Environmental accounting is not a legal obligation in most of the cases in India.

Lack of reliable industry data.

Estimated values for environmental goods quantified or qualified in terms which have no fixed conversion into money.

The Environment Ministry has issued instruction in this regard to prepare environment statement. It can be observed through their accounts that mainly the following types of information are given:

(i) What type of devices installed for pollution control.
(ii) Steps taken for energy conservation.
(iii) Steps taken for raw material conservation.
(iv) Steps taken for waste water and production process waste.
(v) Steps taken for improvement of quality of product and services, process of production, etc.

Hurdles for Environmental Accounting

There is no standard accounting method.

Comparison between two firms or countries is not possible if method of accounting is different which is quite obvious.

Input for EA is not easily available because costs and benefits relevant to the environment are not easily measurable.

Many business and the Government organizations even large and well managed ones don’t adequately track the use of energy and material or the cost of inefficient materials use, waste management and related issue.
It mainly considers the cost internal to the company and excludes cost to society.

EA is a long-term process.

i. EA cannot work independently. It should be integrated with the financial accounting, which is not easy.

ii.

iii. EA must be analyzed along with other aspects of accounting. Because costs and benefits related to the environment itself depend upon the results of the financial accounting, management accounting, cost accounting, tax accounting, national accounting, etc.

iv.

v. The user of information contained in the EA needs adequate knowledge of the process of EA as well as rules and regulations prevailing in that country either directly or indirectly related to environmental aspects.

A Gazette Notification on Environmental Audit issued by the Ministry of Environment & Forests in 1992 (amended vide notification GSR 386 (E),dt.22-04-1993), under the Environmental (Protection) Act, 1986 has made it mandatory for all the industrial units to submit an environmental statement to the concerned State Pollution Control Boards while seeking consent to operate under the relevant environmental norms.

Indian Companies Act, 1956 requires to include in Director’s report environment related policies/ problems and annexure showing details of energy consumption/energy conservation.

Conclusion

Environmental accounting is in preliminary stage in India Very few corporations give adequate information regarding environmental issue. Environmental accounts provide data which highlight both the contribution of natural resources to economic well-being and the costs imposed by pollution or resource degradation Environment is a precious gift of the nature. People of India are not made aware towards environmental safety; development of accounting in this regard is a little bit doubtful. The industries should focus and set aside a part of their funds for Environmental protection and ecological balance. Thus business organizations are expected to account for the use of substances which may damage the Environment. There are several challenges of environmental accounting and reporting such as environmental accounting method, social values in applicable assumptions, economic value and lack of reliable industrial data. It is the time that corporate prepare a firm environmental policy, take steps for pollution control, comply with the related rules and regulations, and mention adequate details of environmental aspects in the annual statements

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