



**SYSTEM OF ENVIRONMENTAL-ECONOMIC ACCOUNTING: NEED,
OBJECTIVES AND PROBLEMS**

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ABSTRACT

Every business has an intervening accountability to make the fullest possible use of its resources both human and material. An enterprise is a corporate civilian. Like a civilian 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 act. As far as Incorporate sector of India is concerned it is sad, but true that it has not been acting as a good civilian that's why there are so many laws that have been made and further amended from time to time as and when required to bound the corporate sector to full their social responsibility for better development of Indian Economy. Accountability towards environment has become one of the most essential areas of social responsibility. Recent years have witnessed rising concern for environmental dreadful conditions, which is taking place mainly in the form of pollution of various types, viz. air, water, sound, soil erosion, deforestation, etc. It is a worldwide happening. It spoils human health, reduces economic productivity and leads to loss of facilities. The developing countries like India are facing the double problem of defending the environment and promoting economic development. A tradeoff between environmental protection and development is required. A cautious assessment of the benefits and costs of environmental damages is essential to find the safe limits of environmental poverty and the required level of development. Environmental accounting wants to work as a tool to gauge the economic efficiency of environmental conservation activities and the environmental efficiency of the business activities of company as a whole. Management rarely tries to make proper arrangement to save the environment unless it is mandatory as per law as there is no direct

connection between investment and benefits.

Key Words: *Legal Framework, Environmental Financial Accounting, Environmental National Accounting, Corporate Environmental Accounting, Pollution, Union Ministry of Environment*

Introduction

Environmental accounting, widely known as Environmental accounting is a type of accounting that tries to issue environmental costs into the economic results of activities. It has been tinted that gross domestic product (GDP) ignores the environment and hence decision makers require a revised model that incorporates Environmental accounting. Efforts towards environment discretion of Indian companies are multifold. India is one among the pioneer of developing countries to practice more of voluntary Environmental performance reporting. As a vigilant Environmental stakeholder there is answerability on us in handing over a Environmental future for our next generations. Global efforts on Environmental Impact Assessment (EIA) must go beyond measurement of air, water pollution etc. to ultimately enhance improved quality of life in future. Environmental friendly programs and practices like conservation of nonrenewable sources' of energy, Environmental, recovery and rehabilitation, a forestation, top soil management, noise abatement and vibration analysis, general aesthetic beauty etc. has resulted in better competence and enhanced environmental performance.

Reporting and voluntary environmental accounting has changed the way, how by traditional organizations tend to think on their corporate social responsibility (CSR). Compulsory reporting, how so ever severe, is nothing but a minimum prescribed reporting requirement. Corporate bodies are flourishing for socially responsible reporting. For them compulsory reporting would be just a miniscule form of representing their huge effort towards determining themselves as a socially responsible entity.

Objectives of Environmental Accounting:

1. Segregation and Elaboration of all Environment related Flows and Stocks of

Traditional Accounts: The segregation of all flows and stocks of assets related to environment permits the estimation of the total expenditure for the protection of the environment. A further objective of this segregation is to identify that part of the gross domestic product that reflects the costs necessary to compensate for the negative impacts of economic growth, that is, the defensive expenditures.

2. Linkage of Physical Resource Accounts with Monetary Environmental Accounts:

Physical resource accounts cover the total stock or reserves of natural resources and

changes therein, even if those resources are not affected by the economic system. Thus natural resource accounts provide the physical counterpart of the monetary stock and flow accounts of SEEA.

3. Assessment of Environmental Costs and Benefits: The SEEA expands and complements the SNA with regard to costing:

- (a) The use (depletion) of natural resources in production and final demand;
- (b) The changes in environmental quality, resulting from pollution and other impacts of production, consumption and natural events, on the one hand, and environmental protection, on the other.

4. Accounting for the Maintenance of Tangible Wealth: The SEEA extends the concept of capital to cover not only human-made but also natural capital. Capital formation is correspondingly changed into a broader concept of capital accumulation allowing for the use or consumption and discovery of environmental assets.

5. Elaboration and Measurement of Indicators of Environmentally Adjusted Product and Income: The consideration of the costs of depletion of natural resources and changes in environmental quality permits the calculation of modified macro-economic aggregates, notably an environmentally adjusted net domestic product (EDP).

System of Environmental-Economic Accounting (SEEA)

The System of Environmental-Economic Accounting (SEEA) is a framework that integrates economic and environmental data to provide a more comprehensive and multipurpose view of the interrelationships between the economy and the environment and the stocks and changes in stocks of environmental assets, as they bring benefits to humanity. It contains the internationally agreed standard concepts, definitions, classifications, accounting rules and tables for producing internationally comparable statistics and accounts. The SEEA framework follows a similar accounting structure as the System of National Accounts (SNA). The framework uses concepts, definitions and classifications consistent with the SNA in order to facilitate the integration of environmental and economic statistics. The SEEA is a multi-purpose system that generates a wide range of statistics, accounts and indicators with many different potential analytical applications. It is a flexible system that can be adapted to countries' priorities and policy needs while at the same time providing a common framework, concepts, terms and definitions.

Forms of Environmental Accounting

Forms of environmental accounting are as follows:

- (1.) Environmental Management Accounting (EMA): Environmental Management

Accounting with a particular focus on material and energy flow information and environmental cost information. This type of accounting can be further classified in the following sub-systems:

- (i). Segment Environmental Accounting: This is an internal tool of environmental accounting for selecting an investment action, or a project, related to environmental conservation from among all processes of operations, and to weigh up environmental effects for ascertain period.
 - (ii). Eco Balance Environmental Accounting: This is an internal tool of environmental accounting for supporting PDCA for sustainable environmental management activities.
 - (iii).Corporate Environmental Accounting: This is a tool for informing the public of significant information compiled in accordance with the Environmental Accounting.
2. Environmental Financial Accounting (EFA): Environmental Financial Accounting with a particular focus on reporting environmental liability costs and other relevant environmental costs.
 3. Environmental National Accounting (ENA): National Level Accounting with a particular focus on natural resources stocks and flows, environmental costs and externality costs etc. Environmental Accounting at Corporate Level helps to know whether corporation has been fulfilling its responsibilities towards environment or not.

Scope of Environment Accounting

The scope of Environmental Accounting is very wide. It includes corporate level, national and international level. As far as this paper is concerned the stress is given on the corporate level accounting. The following aspects are included in Environment Accounting:

1. From Internal point of view, investment made by the corporate sector for minimization of losses to environment. It includes investment made into the environment saving equipment/tools. This type of accounting is easy because money measurement is possible.
2. From external point of view, all types of losses indirectly due to business activities. It mainly includes:
 - (i). Dilapidation and destruction like soil erosion, loss of biodiversity, air pollution, noise pollution, water pollution, problem of solid waste, coastal and marine pollution.
 - (ii).Exhaustion of non-renewable natural resources i.e. loss emerged due to over exploitation of nonrenewable natural resources like water, minerals, gas, etc.
 - (iii) Deforestation and carelessness uses of Land.

This type of accounting is not easy. It is so because losses to environment cannot be measured exactly in monetary value. Further, it is very difficult to decide that how much

losses were occurred to the environment due to a particular industry. For this purpose, approximate idea can be given or other measurement of losses like quantity of non-renewable natural resources used, how much Square .meter area deforested and total area used for business purpose including employees' residential quarters etc., how much solid waste are produced by the factory, how much wasteful air leave behind through chimney in air and what types of elements are included in a standard quantity of wasteful air, type and degree of noise pollution made by the factory, etc. can be used.

Problems of Environmental Accounting:

The System of Environmental-Economic Accounting (SEEA) method of calculating Environmental NDP is beset with a number of problems discussed below:

1. SEEA does not include comprehensive natural resource accounting because regional natural resource accounts are not reflected in the main accounts of the SEEA.
2. It focuses on the use of natural resource for economic activities and ignores the flows and transformations within the natural resources.
3. The types of data needed for SEEA are not available in the necessary format. Thus lack of data has been one of the main problems in the SEEA.
4. Another problem arises when environmental data are directly connected with data of existing national accounts for the preparation of the SEEA. They require assigning of environmental pollution loads to the appropriate economic activities. However, the costs of preventing pollution can only be determined if the causes of pollution are identifiable. But the causes of many types of environmental pollution are not clear. If there are several pollution factors which cause environmental damage, the assignment of this damage will be highly arbitrary.
5. Another problem arises when some of the consequences of environmental pollution become visible after a long time. Estimating only the immediate consequences will lead to wrong policy decisions.
6. Unlike the market prices used by the SNA, there is no simple justifiable valuation system for the SEEA. For different aspects of environmental problems, different valuation problems are used such as prevention and restoration costs and contingent evaluations based on surveys. There are mainly theoretical and arbitrary constructions in SEEA.
7. The pricing of all environmental variables in monetary terms in the SEEA has consequences:
 - (i) The accounting system is restricted to those variables which are easily monetized thereby reducing the range of the accounting system,

(ii) Monetization of environmental variables and their concentration of only a few aggregates results in a drastic reduction of the SEEA system.

It's Superiority over Conventional Accounting System:

Conventional national income accounting does not fully take into account pollution preventive expenditure. Environmental accounting considers pollution preventive expenditure and also environment impact studies.

Conventional national income accounting does not measure the depletion of natural resources and the degradation of the environment. Environmental accounting considers the costs of depletion of natural resources and changes in environmental quality.

Conventional national income accounting does not fully report different types of resource expenditure:

- (i) Consumption of environmental goods such as exhaustible resources; and
- (ii) Conflicting uses of environmental services such as the atmosphere used by producers as an input into production and by household as a consumption good.

On the other hand, Environmental accounting expands and complements the conventional system of national accounts with regard to costing:

- (a) The use (depletion) of natural resources in production and final demand; and
- (b) The changes in environmental quality, resulting from pollution and other impacts of production, consumption and natural events.

Environmental accounting milestones in India

The National Biodiversity Action Plan 2008 observes that policy implementation in India has been grossly inadequate due to 'non visibility' of environmental deterioration. The Action Plan notably targets, the “valuation of goods and services provided by biodiversity, and use of economic instruments in decision making process.” The Environmental Indian States Trust has been one of the chief institutions advancing the agenda of environmentally adjusted accounts. The Economics of Ecosystem and Biodiversity (TEEB), India Project too had made efforts to publish a number of studies in this regard but have failed to make a substantial impact.

Last year, the ministry of environment, forests and climate change had launched their crucial Environmental Skill Development Programme to combat unemployment and environmental degradation by creating 'Environmental jobs' for the youth and provide training on Environmental GDP implementation. The government is also starting a five-year project to measure the Environmental GDP of Indian states to make climate mitigation and land acquisition decisions easier in terms of compensation policies.

Environmental Accounting is retarded by a variety of methodological barriers, sluggish political will and lack of data. However, this advancement is extremely important in the sustainable development policy framework of a country. It is crucial to revisit the capital assessment agenda, as a part of the corporate social responsibility and R&D functions of big companies to ensure better quality of life intertwined with the environment.

It is important to note that depletion of natural capital is an irreversible process and steps to assess and combat this is urgently needed. The application of natural resource accounting will aid a host of public policies with regard to linear infrastructure development, judicial proceedings in environmental cases, and compensation mechanisms for climate displacements.

Advantages of Environmental Accounting

- 1) The accounting system helps to detect any leakages spills or any such problems with the operation and process at an early stage, thus reducing the risk of future problem.
- 2) It helps to measure the environmental problem impact of each and every process and operation on the air, water, soil, worker's health and safety and society at large.
- 3) It helps to measure the organization environmental performance.
- 4) It gives an indication of the effectiveness of the environmental management and suggests how it can be improved.
- 5) It provides a database for corrective action and future places it identifies the area where the steps have to be taken to reduce the waste, raw material and energy consumptions.
- 6) The result of the environmental accounting system helps the management to develop its environment strategy for moving toward a Environmental corporate culture.
- 7) Proper environmental accounting system facilitates proper reporting of the results of environment practices followed by the company. It facilitates communicating environmental performance towards stakeholder which goes along way in enhancing the corporate image of the organization.
- 8) Environmental accounting leads substance to verify compliance to local, national and international standards or best available techniques as well as company's own standard as stated in company's environmental policy.

Limitations of Environmental Accounting

1. There is no standard accounting method for Limitations of Environmental Accounting.
2. Comparison between two countries or firms is not possible if method of accounting is different which is quite clear.
3. Input for Environmental Accounting is not easily available as costs and benefits relevant to

the environment are not easily measurable.

4. Many businesses and the Government organizations even large and well managed ones don't sufficiently track the use of energy and material or the cost of incompetent materials use, waste management and related issue. Therefore, many organizations, significantly underestimate the cost of underprivileged environment performance to their organization.
5. It mainly considers the cost internal to the concerned institutions and excludes cost to society.
6. Environmental Accounting is a long-term process. Therefore, to draw a conclusion with help of it is not simple and easy.
7. Environmental Accounting cannot work independently. It should be integrated with the financial accounting, which is also not simple and easy.
8. Environmental Accounting must be analyzed along with other aspects of accounting. It is so because costs and benefits related to the environment itself depend upon the results of the financial accounting, tax accounting, cost accounting, management accounting, national accounting, etc.
9. The user of information contained in the Environmental Accounting needs sufficient knowledge of the process of Environmental Accounting as well as rules and regulations prevailing in that country either directly or indirectly related to all environmental aspects.

Legal Framework for Environmental Accounting in India

While industrial licensing has been terminated for all practical purposes, environmental clearance from various Government authorities has now taken the centre stage. With increasing global worry over the protection of the environment, India too has set up a Union Ministry of Environment with the object of coordinating among the various states and the various ministries, the environmental protection and anti-pollution measures. Essential legislation has also been passed. The various laws relevant to environmental protection are as follows:

(i) Directly related to Environment Protection:

- (a). Water (Prevention and Control of Pollution) Act, 1974.
- (b). Water (Prevention and Control of Pollution) Cess Act, 1977.
- (c). The Air (Prevention and Control of Pollution) Act, 1981
- (d). The Forest (Conservation) Act, 1980.
- (e). The Environment (Protection) Act, 1986.

(ii) Indirectly related to Environment Protection:

- (a). Constitutional provision (Article 51A).

- (b). The Factories Act, 1948.
- (c). Hazardous Waste (Management and Handling) Rules, 1989.
- (d). Public Liability Insurance Act, 1991.
- (e). Motor Vehicle Act, 1991.
- (f). Indian Fisheries Act, 1987.
- (g). Merchant of shipping Act, 1958.
- (h). Indian Port Act.
- (i). Indian Penal Code.
- (ji). The National Environment Tribunal Act, 1995.

It is to be noted that all new projects need environment clearance. This clearance concerns both the Union Ministry of Environment and Forests and the corresponding State Govt. department of environment. Guidelines have been issued and all such projects are expected to obtain environmental and anti-pollution clearance before they are actually implemented. A Central Pollution Control Board has also been set up. Wherever cases of violating of standards of water or air pollution have been come into the knowledge, show cause notices have been issued to concerned industrial units and all such units are being kept under constant examination. According to the Annual Report of the Ministry 1997-98, out of 1551 large and medium industries acknowledged in the 17 categories of extremely polluting industries, 1261 have installed the requisite pollution control facilities and 165 units are in the process of installing such facilities. 125 industrial units have been closed down.

During the year 1997-98 approximately 680 complaints regarding various types of pollution i.e. air, water, noise and soil have been received and attended to. The concern of the Ministry to protect the environment in the coastal waters and the coastal belt has led to the burden of a no-construction belt of 300 meters away from the high water tidal limit on the Indian coast line. This has affected the beach hotels and coastal resorts. Apart from the general concern for creation of the environment, the concern for the management of risky substances for the protection of the forest wealth and wild life and for preventing biological dreadful conditions have also brought about some limitations which the existing industrial units and also entrepreneurs wishing to set up new plants and factories should keep in view.

Conclusion

Reporting and Environmental accounting is in beginning stage in India and whatsoever presents in the accounts in this regard is more or less conformity of significant rules and regulation in the Act. Actually, unless ordinary people of India are not made conscious towards environmental safety, development of accounting in this regard is complicated.

Business houses have to get ready to make a solid environmental policy, take steps for pollution control, comply with the related rules and regulations, and reveal adequate details of environmental aspects in the annual reports. For sustainable development, a crystal-clear environmental policy as well as proper execution and appropriate accounting procedure is must.

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