Concept of Environmental Accounting and Practice in India

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For India, both 'Environment Protection' and Economic Development' are the matters of great importance. However, some sort of tradeoff is needed between the two. For this purpose, Environmental Accounting is required to measure the environmental impact of economic activities by corporate sector. A standard system of this type of accounting is still evolving in India. The article provides an insight into the concept in the Indian perspective.

Every business has an overriding responsibility to make the fullest possible use of its resources both human and material. 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. As far as Indian corporate sector is concerned it is sad, but true that it has not been performing as a good citizen that's why there are so many laws that have been laid down and further amended from time to time as and when required to bound the corporate sector to fulfil their social responsibility for better development of Indian Economy.

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. It is a worldwide phenomenon. It spoils human health, reduces economic productivity and leads to loss of amenities.

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.

A study on price of pollution in India made by two World Bank officials for 1992 (M. Balachandran 2002) shows the impact of the major problems in terms of cost. They have calculated that damage to environment costs India about Rs. 34,000 cr per year, about 9.5 per cent of gross domestic product.

But unless the proper accounting work is done either by the individual firm or by the Government itself, it cannot be determined that both has been fulfilling their responsibilities towards environment or not. Therefore, the need of environmental accounting has emerged. The joint workshops organised by the United Nations Environment Programme (UNEP) and the World Bank set out to examine the feasibility of physical and monetary accounting in the area of natural resources and the environment and to develop alternative macro indicators of environmentally adjusted and sustainable income and product.

Parallel to this revision, the statistical division of the United Nations (UNSTAT) has developed methodologies for a system of Integrated Environmental and Economic Accounting (SEEA), issued as an SNA handbook on Integrated Environmental and Economic 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. It is accounting for any costs and benefits that arise from change to a firm's, products and processes where the change also involves a change in environmental impact.

Corporate enterprises are facing the challenges to determine their true profits, which are environmentally sustainable ones. For this, companies need to account for the environment. They should take account of its most significant external environmental impacts and in effect, to determine what profit level would be left (if any) if they attempted to leave the planet in the same state at the end of the accounting period as it was in the beginning.

Forms of Environmental Accounting

1. Environmental Management Accounting (EMA):

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 subsystems:

a. 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 certain period.

b. Eco Balance Environmental Accounting: This is an internal environmental accounting tool to support PDCA for sustainable environmental management activities.

c. Corporate Environmental Accounting: This is a tool to inform the public of relevant information compiled in accordance with the Environmental Accounting. It should be called as Corporate Environmental Reporting. For this purpose the cost and effect (in quantity and monetary value) of its environmental conservation activities are used.

2. Environmental Financial Accounting (EFA):

Financial Accounting with a particular focus on reporting environmental liability costs and other significant environmental costs.

3. Environmental National Accounting (ENA):

National Level Accounting with a particular focus on natural resources stocks & flows, environmental costs & externality costs etc.

Need of Environmental Accounting at Corporate Level:

It helps to know whether corporation has been discharging its responsibilities towards environment or not. Basically, a company has to fulfill following environmental responsibilities.

a. Meeting regulatory requirements or exceeding that expectation.

b. Cleaning up pollution that already exists and properly disposing of the hazardous material.

c. Disclosing to the investors both potential & current, the amount and nature of the preventative measures taken by the management (disclosure required if the estimated liability is greater than a certain percent say 10 per cent of the companies net worth).

d. Operating in a way that those environmental damages does not occur.

e. Promoting a company having wide environmental attitude.

f Control over operational & material efficiency gains driven by the competitive global market.

g. Control over increases in costs for raw materials, waste management and potential liability

Scope of Environment Accounting

The scope of Environmental Accounting (hereinafter called as EA) is very wide. It includes corporate level, national & international level. As far as this article is concerned the emphasis is given on the corporate level accounting. The following aspects are included in EA:

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/devices. This type of accounting is easy as money measurement is possible.
2. From external point of view all types of loss r indirectly due to business operation/activities. It mainly includes:
   a. Degradation and destruction like soil erosion, loss of bio diversity, air pollution, water pollution, voice pollution, problem of solid waste, coastal & marine pollution.
   b. Depletion of non-renewable natural resources i.e. loss emerged due to over exploitation of non-renewable natural resources like minerals, water, gas, etc.
   c. Deforestation and Land uses.

This type of accounting is not easy, as losses to environment cannot be measured exactly in monetary value. Further, it is very hard to decide that how much loss was occurred to the environment due to a particular industry. For this purpose approx idea can be given or other measurement of loss like quantity of non-renewable natural re-

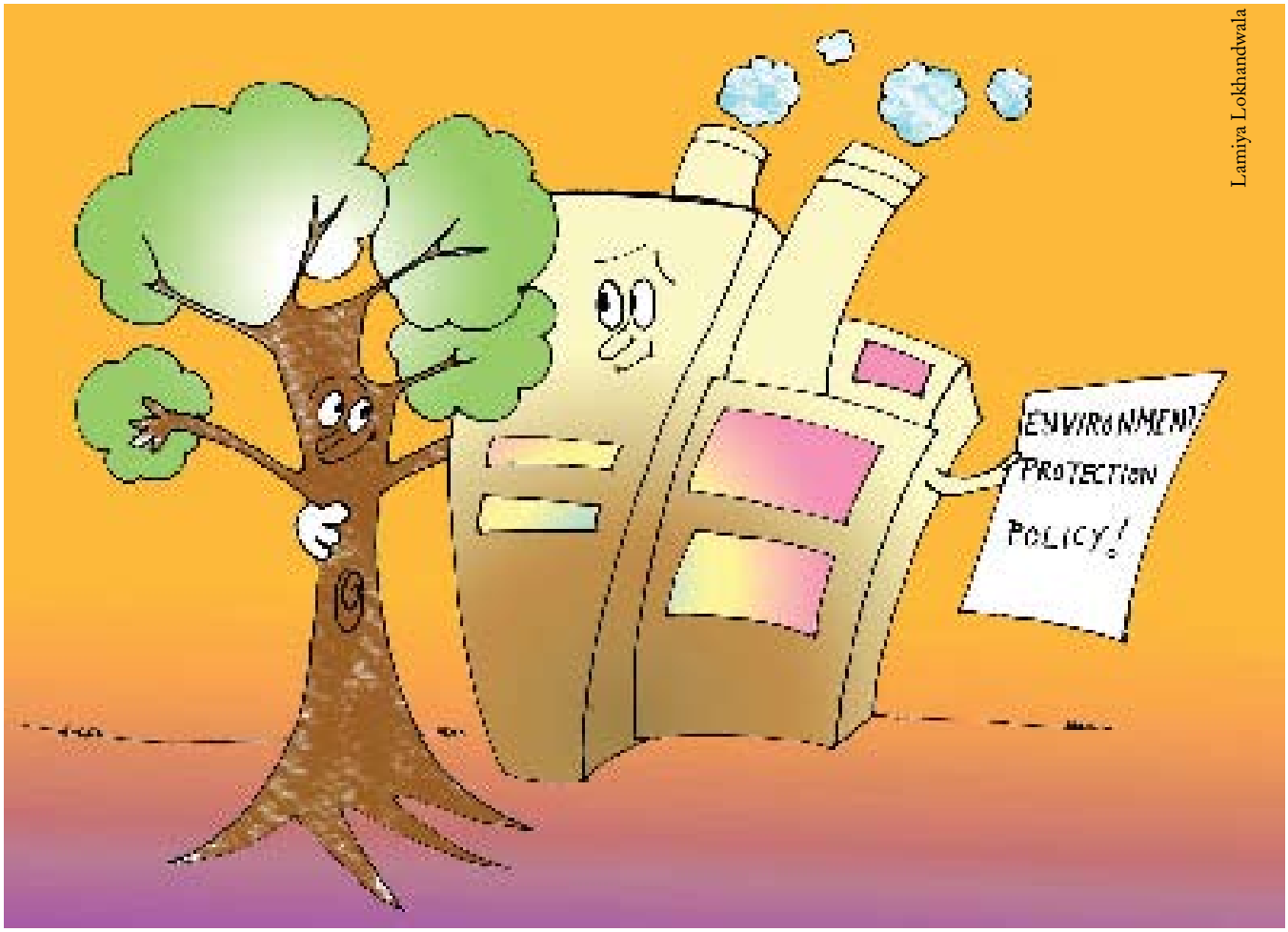
Environmental accounting needs to work as a tool to measure the economic efficiency of environmental conservation activities and the environmental efficiency of the business activities of the company as a whole

sources used, how much Sq. meter area deforested and total area used for business purpose including residential quarters area for employees etc., how much solid waste produced by the factory, how much wasteful air pass through chimney in air and what types of elements are included in a standard quantity of wasteful air, type and degree of noise made by the factory, etc. can be used.

Limitations of Environmental Accounting

EA suffers from various serious limitations as follows:

1. There is no standard accounting method.
2. Comparison between two firms or countries is not possible if method of accounting is different which is quite obvious.
3. Input for EA is not easily available because costs and benefits relevant to the environment are not easily measurable.
4. 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. Many organisations, therefore, significantly underestimate the cost of poor environment performance to their organization.
5. It mainly considers the cost internal to the company and excludes cost to society.
6. EA is a long-term process. Therefore, to draw a conclusion with help of it is not easy.
7. EA cannot work independently. It should be integrated with the financial accounting, which is not easy.
8. EA must be analysed 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.
9. 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.



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Legal Framework for Environmental Accounting in India

While industrial licensing has been abolished for all practical purposes, environmental clearance from various Government authorities has now taken the centrestage. With increasing global concern over the protection of the environment, India too has set up a Union Ministry of Environment with the object of coordinating among the states and the various ministries, the environmental protection and anti-pollution measures. Necessary legislation has also been passed.

The various laws relevant to environmental protection are as under:

(a) 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.

(b) Indirectly related to environment protection:
   - vi. Constitutional provision (Article 51A).
   - vii. The Factories Act, 1948.
   - viii. Hazardous Waste (Management & Handling) Rules, 1989.
   - ix. Public Liability Insurance Act, 1991.
   - x. Motor Vehicle Act, 1991.
   - xi. Indian Fisheries Act, 1987.
   - xii. Merchant of shipping Act, 1958.
   - xiii. Indian Port Act.
   - xiv. Indian Penal Code.
   - xv. The National Environment Tribunal Act, 1995.

It is important to note that all new projects require 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 set up.

A Central Pollution Control Board (CPCB) has also been set up. Wherever cases of violating of standards of water or air pollution have been detected, show cause notices have been issued to industrial units and all such units are be-

ing kept under constant surveillance.

According to the Annual Report of the Ministry 1997-98, out of 1551 large and medium industries identified in the 17 categories of highly polluting industries, 1261 have installed the requisite pollution control facilities and 165 units are in the process of installing such facilities. 125 units have been closed down.

As a result of notices issued by the Central Board 2137 units which did not have requisite effluents treatment systems, 480 units have been closed down and 1457 units are about to be closed. 106 units have set up such systems and 94 units have been granted extension of time.

There is some variety in disclosure over time, between countries and between industries. Social disclosure in general and environmental disclosure in particulars reflects the changing business climate and social, economic and political environment in which they occur

During the year 1997-98 around 680 complaints regarding various types of pollution-air, water, noise and soil have been received and attended to. The concern of the Ministry for protecting the environment in the coastal waters and the coastal belt has led to the imposition of a no-construction belt of 300 meters beyond 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 construction of the environment, the concern for the management of hazardous substances for the protection of the forest wealth and wild life and for preventing biological degradation have also brought about some restrictions which the existing industrial units and also entrepreneurs wishing to set up new plants and factories should keep in view.

Accounting Requirement

a. 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. The Environmental Statements enable the units to take a comprehensive look at the industrial operations, facilitate the understanding of material flows and help them to focus on areas where waste reduction and consequently saving in material cost, is possible.

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

c. Cost Accounting Record Rules for various industries made by the Central Government also require disclosing monetary and quantitative values in Cost Accounting.

Practice of Environmental Accounting in India

1. Very few corporations give adequate information regarding environmental issue. If as per requirement of applicable law they have to prepare and submit any information relevant to environment they do so. 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) Step taken for waste water and production process waste.
   (v) Step taken for improvement of quality of product and services, process of production, etc.
2. A study was conducted among 80 executives of different industries by Dr. B.B. Padhan and Dr. R.K. Bal which revealed that corporate world is fully aware of the requirements of environmental reporting. They are also aware of the environmental issue. The corporate executives have also expressed their views in favour of environment reporting by the industries. Despite their awareness and consent over environmental reporting by industries is it very poor. It is so inadequate that very little information is found in the annual report.
3. In the words of Jong Seo Choi, research studies have examined the extent to which companies produce social information, of which environmental information would be part. A number of general themes that emerge from this include the following:
   (i) The proportion of companies disclosing and extent of that disclosure are small and the quan-

tity is low.

(ii) There is some variety in disclosure over time, between countries and between industries. Social disclosure in general and environmental disclosure in particulars reflects the changing business climate and social, economic and political environment in which they occur. However, the total amount of voluntary disclosure stays fairly constant over time and what changes is the subject addresses in the disclosure.

(iii) There is a very definite size effects in those larger companies are more likely to disclose than smaller companies.

(vi) Very little disclosure would qualify as information under any normal criteria and very little of it indeed will contain numbers, financial or otherwise.

4. Environmental reports as contained in the Directors Report of three Indian Companies are as under:

(I) Asian Paints (India) Ltd, (1993-94):

"Ecology and Safety:

Samples of treated effluents are periodically checked for Compliance with standards"

(II) Goodlass Nerolac Paints Limited (1993-94):

" Pollution:

The company regularly monitors measures in force in accordance with the Pollution Control Act for the protection of environment and for ensuring industrial safety. The company carries out improvements regularly to ensure full compliance with the statutory requirements."

(III) Maruti Udyog Limited (1993-94):

"Environment:

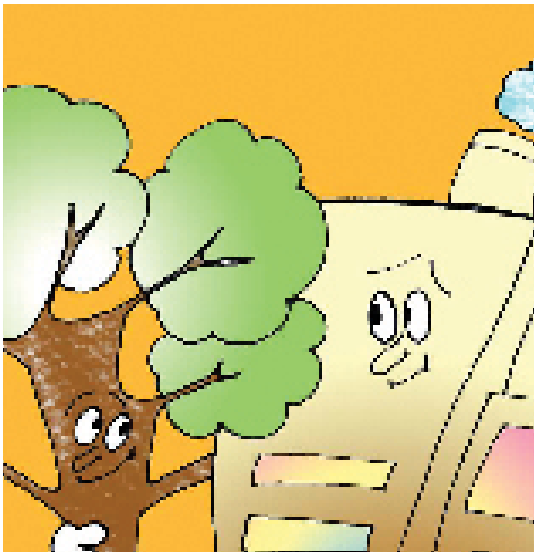
Modification of the existing effluent treatment plant was undertaken to take care of additional effluents generated due to capacity expansion. Data on non–methane hydrocarbons in Paint Shop and Engine Testing shop, ambient air quality, stack emissions and effluents are being regularly monitored and the parameters are maintained well within prescribed limits. Development of green belt around gas turbine and R&D areas was further augmented by plantation of 3000 additional saplings.

5. It was also revealed that most of the companies disclose the environment information in descriptive manner rather than to financial type i.e. no account is made for the degradation of natural capital when calculating corporate profits.

Suggested Framework

Environmental accounting will remain as compliance of applicable rules and regulations unless it is not planned and approved from top to bottom. To make the environmental accounting an integral part of the overall accounting system at corporate level, the following outlines are suggested:

1. Study the various Acts applicable to the company, analyze the rules and regulations regarding environment applicable to the company.
2. Briefly analyze the requirement of various laws regarding environmental issue. Also analyze the various impacts on



environment due to the working of organization. Prepare a environmental policy accordingly.
3. Preparation of short term as well as long-term environmental budget for both revenue and capital nature.
4. Prepare list of various elements causing for pollution of various types and show what types of action have been taken for control over the same. This type of statement should be an integral part of annual accounts.
5. A separate statement should be prepared showing investment in the various equipment for pollution control along with benefits to the environment from such equipment. Such a benefits should be measured either in quantity or money.
6. The financial or operational effect of environmental protection measures on the capital expenditures and earnings of the enterprise for the current period and any specific impact on future periods.
7. When material, the actual amount charged to operations in the current

Environmental indicators should be calculated for evaluation of environmental aspects and the same should be disclosed properly in annual accounts

period, together with a description of the environmental measures to which they relate. This amount might be sub-divided into the following general ledger accounts:-

i. Liquid effluent treatment.
ii. Waste gas and air treatment.
iii. Solid waste treatment.
iv. Analysis, control and compliance.
v. Remediation.
vi. Recycling.
vii. Other (for example- accidents, safety, etc.)

8. In case where it is not possible to segregate the amount that relates to environmental protection measures, this fact should be stated.
9. When material, the actual amount capitalized during the current period, the accumulated amount capitalised to date, and the period for amortising, or writing off such amounts, together with a description of the environmental measures to which they relate. This amount might be sub-divided into categories. In case where it is not possible to segregate the amount that relates to environmental measures, this fact could be stated.
10. Contingent liabilities arise due to environmental related issue should be shown clearly either in the descriptive manner or quantitative manner or both.
11. Environmental accounting should be a part of management accounting. Therefore, environmental management accounting information system should be developed.
12. Environmental responsibility centers should be decided so that actions can be taken against defaulter managers if their are deviation form standard pollution limits
13. Environmental indicators should be calculated for evaluation of environmental aspects and the same should be disclosed properly in annual accounts.
14. Incentive and punishment policy should be linked with environmental issue.
15. Government should make it compulsory for every polluter to submit environmental audit report being done by a certified environmental auditor. Government may prescribe qualifications and experience for issue such a certificate. Such a report will provide a great help to control over pollution.

Finally it is suggested that management should follow the policy of "prevention is better than cure".

Conclusion

Environmental accounting is in preliminary stage in India and whatever shows in the accounts in this regard is more or less compliance of relevant rules and regulation in the Act. Actually, unless common people of India are not made aware towards environmental safety, development of accounting in this regard is a little bit doubtful.

It is the call of the time that corporates prepare a firm environmental policy, take steps for pollution control, comply with the related rules and regulations, mention adequate details of environmental aspects in the annual statements. For sustainable development of country, a well-defined environmental policy as well as proper follow up and proper accounting procedure is a must. ❐