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ENVIRONMENTAL MANAGEMENT ACCOUNTING – A DECISION MAKING TOOLS

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ABSTRACT

There is an increasing awareness among all the stakeholders about the importance of the Corporate Social Responsibility of the firms, especially in green concepts. The Environmental Accounting deals with the assessment and disclosure of environment related information. The environment related information helps to take both internal and external decision making of the organization. Environmental Management Accounting (EMA) deals with the internal decision making related to the environmental performance of the organization. This paper reviews the internal decision making tools in taking business decision regarding environmental consideration.

Key words: Environmental Management Accounting, Environmental Performance and Evaluation, Tools for Decision, Internal Decision Making.

1. INTRODUCTION

Awareness about the Green has been considerably increasing over time (Medley,1997). Environmental reporting choices may influence stakeholders' interpretation of firms' financial performance and enhance investor confidence, leading to a lower cost of capital and resulting in a rise in stock valuation multiples together with enhancement in stock liquidity and an increase in the interest of institutional investors (Cormier and Magnan, 2003).

Environmental Accounting includes the data relating to Environmental Conservation Cost, Environmental Conservation Benefit, Economic Benefit associated with environmental conservation activities etc. The Environmental Accounting extends its scope in Financial Accounting and Management Accounting. Environmental Management Accounting deals with the internal Decision of the Company (IFAC,2005). For the internal decision, environmental cost can be identified and controlled by the appropriate decision making tools (Newell et al,1994). There are different EMA tools popularly used by corporate for effective decision making. This paper reviews those tools.

2. REVIEW OF LITERATURE

The concept of Environmental Accounting and its importance in decision making are analyzed by few earlier studies and they are briefly reviewed here.

Masanet-Llodra 2006 explained larger amount of environmental accounting information for internal use than for external use. Pradeepta Kumar et. al (2005) highlighted the importance of Environmental Accounting and the method associated with it. Also, the study found that Environmental Accounting reveals the environmental conservation activities undertaken by a company. Selvam and Vanitha,. 2004 discussed the needs of Environmental Accounting and suggested appropriate measures to implement the Environmental Accounting by corporate sector in India. Durairaj et al., 2002 outlined a practical framework that provides a new tool for evaluating all these eco – costs and developing a cost effective eco-design for any product. Rajaraman 2001 observed that Activity Based Costing is significant and it has wide ranging potential as the basis for effective cost management. Janet and Daryl, 1996 found that there was a shift inevitably from the society to firms by stricter regulations and a trend toward greater self-regulation, market-based mechanisms and green consumerism.

It is to be noted that the literature on Environmental Management Accounting is at still an infancy stage and remains to be developed for further study. There is no comprehensive study in India, on EMA and the tools for the corporate decision making. Hence this study

3. STATEMENT OF THE PROBLEM

It is true that decades ago the environmental costs were not taken into account by Indian corporate. When the Environmental Costs are ignored in the general accounting system, it fails to reveal the true and correct cost of the production and product pricing. It is the right time to identify the appropriate tools to evaluate costs of environmental activities to enable green business decisions. Hence this study.

4. NEED OF THE STUDY

This study helps to examine the environmental activities to be carried out by Indian corporate sector. It helps to identify the hidden cost in the general accounting system and discuss the methods to evaluate environmental cost. The company can evaluate the true cost of production and product pricing only after calculating the cost of environment for business decision. This study also helps the companies to use environmental related information for business decisions.

5. OBJECTIVES OF THE STUDY

This study aims to discuss the importance of environmental consideration in business decision making and to identify the appropriate tools available to evaluate environmental cost incurred by corporate in India.

6. SCHEME OF THE DISCUSSION

For the purpose of understanding the discussions, the study is classified into the following sub sections:

- A. Concepts of Environmental Accounting (EA) and Environmental Management Accounting (EMA)
- B. EMA Techniques in Internal Decision Making.

Section – A: Concepts of Environmental Accounting (EA) and Environmental Management Accounting (EMA)

This section deals with the basic concepts about Environmental Accounting and Environmental Management. It also discusses the importance of business decision making by considering environmental activities.

i) Environmental Accounting (EA)

Environmental Accounting is the process of identification, measurement and allocation of environmental costs and their integration into business decision (Ansari 2001). In other words, it is accounting for the disclosure of environmental related information to assess both the physical and monetary benefits to consider environmental decision making.

ii) Environmental Management Accounting (EMA)

EMA is the process of collection and analysis of the information relating to environmental cost for taking internal decision making. The examples of internal decisions are Product Design, Process Design, Product Pricing etc.

Every firm is expected to have Management of Environmental and Economic Performance through the development and implementation of appropriate environment related accounting systems and practices. It involves Life Cycle Costing, Full Cost Accounting, Benefit Assessment and Strategic Planning for Environmental Management (IFAC, 2005). Both the EMA and Management Accounting consider the accounting data for decision making. But, the sustainability of the management accounting can be attained only by considering Environmental Cost in decision making.

iii) Role of EMA in Internal Decision Making

The internal decision making of the firms that considers the environmental activities are discussed below,

a) Product / Process related Decision Making

The correct costing of products is a pre-condition for making sound business decisions. The accurate product pricing is needed for strategic decisions regarding the volume and choices of products to be produced. EMA converts many environmental overhead costs into direct costs and allocates them to the products that are responsible for their incurrence. The results of improved costing by EMA may include;

- Different pricing of products as a result of re-calculated costs;
- Re-evaluation of the profit margins of products;
- Phasing-out certain products when the change is dramatic;
- Re-designing processes or products in order to reduce environmental costs and
- Improving housekeeping and monitoring of environmental performance.

b) Investment Projects and Decision-Making

The investment project decision-making requires the calculation of different profitability indicators like Net Present Value (NPV), Payback Periods (PBP) and Internal Rates of Return (IRR) or Benefit-Cost Ratios. Recognizing and quantifying environmental costs and benefits is invaluable and necessary for calculating the profitability of environment-related projects. Without these calculations, management may arrive at a false and environment – degrading conclusion.

Section – B: EMA Techniques in Internal Decision Making

This section explains the various tools available for internal decision making by considering the environmental activities in business. The techniques of decision making are categorized under the three main groups, namely, Cost Analysis, Investment Appraisal and Performance Management (Wahyuni 2009).

i) EMA Tools for Cost Analysis

Cost Analysis includes Life Cycle Assessment (LCA), Activity Based Costing (ABC) and Material Flow Cost Accounting.

a) Life Cycle Assessment (LCA)

Environment professionals have acknowledged that the production activities may affect supplies of natural resources and the environment quality; the adverse environmental impacts may occur at each stage in product life cycle (Newell et al., 1994). A means to examine the environmental impacts of a product or activity across its entire life cycle from raw materials until disposal is called Life Cycle Analysis (LCA). LCA is a systematic process for evaluating the life cycle costs of a product or service by identifying environmental consequences and assigning measures of monetary value to those consequences. The LCA includes identifying and quantifying energy and materials used and wastes released to the environment, assessing their environmental impact, and evaluating opportunities for improvement. The LCA will generate data on environmental releases and their effects which in turn enable entities to identify pollution prevention opportunities.

b) Activity Based Costing (ABC)

The Activity Based Costing enables firms to allocate all cost, including environmental cost, to the Cost Centers and Cost Drivers based on the activities (Newell et al., 1994). Five main allocation is considered in the ABC and they include volume of emissions or waste, toxicity of emission and waste treated, environmental impact added (volume x input per unit of volume), volume of the emissions treated and relative costs for treating different kinds of

emissions. The ABC will create more accurate cost information not only for better product pricing but also for reducing entire cost and supporting pollution prevention projects.

c) Flow Cost Accounting (FCA)

Material Flow Analysis is basically intended to define the material and energy flows moving through a value creating system (such as business) over a certain period. Incorporating EMA perspective, the flow cost accounting includes evaluation of cleaner production potential at the plant level, preliminary estimate of waste generation costs and in-depth analysis of selected assessment of quantification of the volume and composition of various waste and energy streams and emissions as well as a detailed understanding of the causes of these waste and energy streams and emissions.

ii) EMA Tools for Investment Appraisal

An EMA tool for investment appraisal is the Total Cost Assessment (TCA) which is basically an analysis based on capital budgeting.

a) Total Cost Assessment (TCA)

The Total Cost Assessment includes environmental costs into capital budgeting analysis. It identifies economic cost and areas of cost savings from pollution prevention in traditional costing analysis. The US Environment Protection Agency defines the TCA as the long-term, comprehensive financial analysis of the full range of costs and savings of an investment experienced by the organization making the investment. The TCA is beneficial in assessing an investment project and conducting budgeting analysis.

iii) EMA Tool for Performance Management

Balanced Scorecard assists entities to measure comprehensively, including environmental concerns, in terms of performance management or evaluation.

Environmental Balanced Scorecard (EBS)

Environmental perspectives can be incorporated into balanced scorecard (Scavone,2006). EBS can act as a comprehensive performance management tool in an organisation. EBS is a set of measurements that give top managers a fast but comprehensive view of the business, including the effects of operational and environmental measures on different company perspectives such as customer satisfaction, internal improvement, research and training, and financial and other perspectives related to business strategy. The EBS integrates environmental specific indicators into each of the four aspects of balanced scorecard.

7. CONCLUSION

EMA is a relatively new tool in India. In Europe, the Pollution Prevention Pays programme of 3M played a crucial role in the spread of the EMA concept while in the United States, the high level of potential liabilities pushed companies to better evaluate their environmental costs. Now, especially the Transition Economies are going through a fast change that will impose a requirement for more accurate control of production inputs and outputs. Environmental costs are no longer a minor cost item that can be pooled together with other costs. The use of EMA saves money and improves control. Still, many companies, partly in India, need external help in creating or improving their EMA, since those skills are not widespread and rarely available internally. EMA has to be tailored to the special needs of the company rather than be applied as a generic system. The costs and benefits of building such a system have to be considered and the scope of the EMA properly selected. Building of EMA incrementally is a common implementation strategy among companies.

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