

Research Article

THE NECESSITY OF IMPLEMENTING ENVIRONMENTAL ACCOUNTING IN ACTIVE INDUSTRIAL COMPANIES OF IRAN

Fereydoun Veisi¹ and *Dalar Naserabadi²

¹*Department of Accounting, Technical and Vocational University of Sanandaj*

²*Department of Accounting, Islamic Azad University of Sanandaj*

**Author for correspondence*

ABSTRACT

This paper, through addressing Environmental Accounting, which is a new and emerging issue in the field of accounting, and approaches toward it in the developed countries, tries to investigate the relationship between accounting, environment, environmental information, challenges, and reporting in the field of environment. Also, this paper has tried to address the formation of this type of accounting in different countries and also issues and problems associated with voluntary disclosure. Also, due to the fact that in recent years, especially the current year, pollution has experienced a growing trend in Iran and industries have a significant role in producing harmful pollutants and since prevention is always better than cure, we decided to show the role of accounting in order to help reduce pollution through impact of expenses, financial disclosure and provide information to the management, and take positive steps in this field. Finally, we tried to examine its reporting form by comparison, in developed countries.

Keywords: *Environmental Accounting; Environmental Information; Environmental Costs; Environmental Reporting*

INTRODUCTION

Green accounting (environment), submits environmental benefits and resources and decline in international performance of common accounts and generally is used to describe accounting regarding environment and natural resources. Nowadays, new deficiencies observed in natural resources have weakened performance sustainability and threaten the economic growth. Old international accountants do not pay much attention to this issue.

Due to the existence of some environmental restrictions, particularly in international sectors, managers of business units are under increasing pressure. Not only they have to decrease operational expenses, but also must minimize environmental impact of their operational activities. This pressure is imposed from groups like shareholders, government, media, consumers, investors, and other organizations.

Environmental accounting system is based on the idea of the evolution and completion of classic accounting. To this end, costs of pollution and its removal should be calculated as a function of the production or service. Environmental accounting can create a communication link between environmental managers and accountants and encourage both groups to move toward better financial and environmental performance in the company.

Currently a new attitude towards environmental impacts from industrial activities of profit institutions have emerged which has changed the perspective of these companies in many aspects from product and process design to after sales services. However, the actual value of natural resources such as air, land, water and etc. which are spent in order to produce various products, is not reflected properly in the cost of production. Despite having high internal environmental costs compared to the similar non-green industries, Green Industries produce products with the same level of quality and application. Therefore, managers are not only responsible for the efficiency and effectiveness of institute activities under their supervision, but also are responsible for environmental problems arise due to their activities. In addition to economic responsibilities, a profit unit has to accept environmental and social responsibilities too.

Problem Statement

In the current era, considering the increasing development of human society and industries, and also restriction in available natural and environmental resources, the problem of protection and preservation of

Research Article

the environment has raised as one of the main issues by the international community. Some of the limitations of natural resources cause manufacturing companies to accept environmental costs in order to stay in global markets and competition, achieve high income, and popularity of business on the one hand, and require them to reduce these costs on the other hand.

Passing the threshold of environmental degradation, causes global crisis and dealing with it requires effort, assistance, and preparation of instructions and broader environmental regulations in every nation. Relevant organizations and institutions have passed laws and regulations which were unable to solve these problems due to their inherit weaknesses and flaws. Therefore, individuals and organizations searched for new approaches to address these issues. One of these approaches is environmental accounting, which as an information system alongside economic and management sciences, provides grounds for effectiveness of resources.

Since the industry is one of the major environmental pollutants, proper understanding of environmental costs in industries, leads to accurate evaluation and pricing of products and in some cases, through better business decisions and investment in environmentally friendly technologies, leads to reduction or elimination in expenses that do not create any value added to the product system.

The Theoretical Concept of Environmental Accounting

An investigation was conducted by Dr. Joy Hatchet In October 2000 in the U.S. In this study nine countries were considered, namely Norway, Sweden, Netherlands, France, Canada, Philippines, Namibia, Germany, and the United States.

The study concluded that there is no universal agreement on the definition of environmental accounting. Some of the definitions used in different countries is as follows:

- Economic measurements of physical contaminants.
- Identification and measurement of side expenditures (what is called the cost of maintaining).
- Taxes, fines, and environmental subsidies.
- Asset accounts related to natural resources, such as forests, mines, energy resources, fish, soil, etc. overall inventory lists and changes in them.
- The monetary value of non-market goods and services provided by the environment.
- and ...

The common points shared by all these definitions used in different countries are:

First, all these definitions provide means to establish a link between the environment and the economy. Second, most of them offer detailed and often limited information; they cover a wide range of information which includes universal concepts. This means, instead of in a project or local level, the data have been used for macroeconomic policies and regional analysis.

Third, they include data generated based on the time they took place and collecting them on a regular basis which provides the possibility to analysis.

Due to the sensitivity of environmental issues, either as an outside or inside requirement in organizations, environmental accounting is defined with the intention of costing environmental activities. The subject of cost, due to its actual impact on the economic performance of the firm's profit, is very important. Effects of environmental costs of economic activity will be noticeable when it involves positive aspects in the future performance of the profit firms.

The purpose of environmental accounting is to provide information that can help directors in performance evaluation, decision making, monitoring and reporting.

Environmental Costs

By reviewing environmental accounting literature, various categories of environmental costs can be seen:

- Direct, indirect, potential, and social costs (Gale and Stokoe, 1997).
- Conventional, hidden, potential, and social/ external costs (United states environmental protection agency, 1995).
- Waste management and disposal practices, environmental management and protection, Material Purchase value of non-product output, and processing costs of non-productive output (UNSD, 2001).

Research Article

- Costs associated with conservation activities, discovery, internal and external defects (Hansen and Mowen, 2005).

These differences make it difficult for any company that wants to enter the field of environmental accounting. The purpose of statement of international IFAC 2005 guideline is to solve this problem through standardization of concepts and classification of environmental costs.

Table 1: Classification of environmental costs

1. Expenses of manufacturing output: Including purchase costs of natural resources such as water and other substances which are converted to byproducts.
2. Expenses of non-manufacturing output: Including purchasing expenses (sometimes the processing or processes) energy, water, and other resources that have turned into non-productive output (waste).
3. Control and waste disposal costs: Including administration, management, waste disposal, and compensatory and remedial expenses Associated with environmental damage and any related control rules
4. Protection and other environmental management expenses: Including costs of environmental protection and management activities, such as cleaner production projects, and costs associated with other environmental work, such as systems and environmental planning, environmental assessment, environmental communication, and other related activities.
5. Research and development costs: Including expenditure on research and development projects related to environmental issues
6. Less evident costs: Including internal and external costs associated with less evident items. Examples of this case include liability, future regulations, productivity, company reputation, relations of beneficiaries and people outside the organization

Source: IFAC 2005, P .38

Since the classification is provided by the IFAC, it can be used as a source of reference.

The Impact of Environmental Issues on Financial Statements

There are two accounting basis (cash and accrual) in order to identify income and expenditure. Thus, according to the two accounting basis, the impact of environmental issues on each of the two bases is summarized as follows:

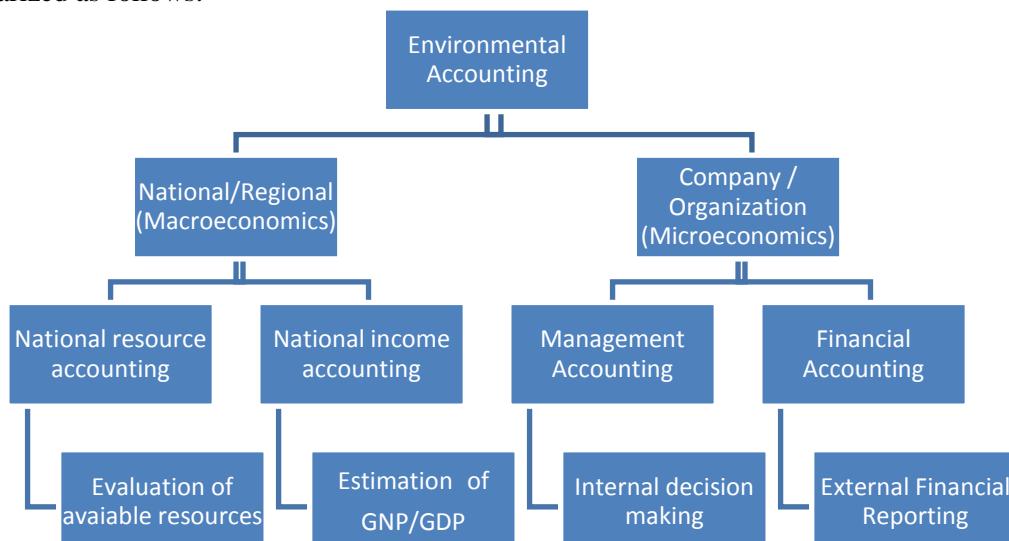


Figure 1: Environmental accounting umbrella

Research Article

Environmental Reports

From the mid 70's industrial companies faced with the concept of reporting of environmental liabilities. In fact, the first environmental report was made by the Norway and slowly adopted by other countries. At first, the companies were not willing to disclose damages they inflict upon the environment in their financial statements. But over time and due to increasing damages, companies were forced to comply with these matters.

Giving the fact that environmental accounting also contains environmental reporting, and environmental performance is important from the perspective of users of financial reports, but purposes of economic performance reporting does not completely match with the environmental reporting purposes. Therefore, due to restrictions in the interests of users, the need to establish special reporting requirements seems necessary.

Disclosure of environmental costs in order to preserve shareholder wealth increases the value of the profit firm. Although these costs and benefits are not measurable in Rails, yet they lead to differentiating profit-firms as a green industry and despite the advantages in maintaining a competitive market among similar non-green industries through the creation of social popularity, it will have effective and beneficial effects on the stock prices of such firms in the Stock Market. Therefore, managers of economic units should take a closer look into environmental reporting, especially units that endure great environmental expenses.

Regarding environmental financial reporting, there has been no codified standard issued by National Accounting Standards Board. In this paper we necessarily refer to international standards that have pointed out the practice of accounting and financial reporting related to environmental accounting. Table 2, demonstrates examples of related standards which are used in environmental reporting.

Table 2: Financial reporting standards related to the environment

IFRS / IAS Number	Description / Title	Related Paragraph(s) Paragraph numbers are in parentheses	Comments / Remarks
Theoretical Framework	A framework for the preparation of financial statements	Accountability (14); Relevance (26); importance (29 & 30); Precaution (37); Integrity (39); Obligations and Liabilities (60); Maintenance of Capital (81); Possibilities (85); Reliable Measurement (83); Identification of Liabilities (91)	A statement, to bring stability into theoretical framework boundaries of IFRS and IAS
IAS 41	Specific Industries		Sensitivity towards the environment; Refer to ISO classification.
IFRS 6	Exploration and evaluation of mineral resources	Paragraph (11): Requirements for the provision and possibilities	Referring to the statistics on greenhouse gas emissions, production of pollutants, toxic waste disposal systems, ground water pollution and land degradation, poverty, industrial accidents, environmental impact studies.
IFRIC3 (deleted)	Publishing Rights and Permissions	Several paragraphs that check whether or not the government has allocated rights, and accounting behavior at the	Kyoto agreement, Copenhagen summit; Agreement to the treaty; The efficiency of the allocation of national and international systems;

Research Article

			beginning of the publishing and the abandonment of logistics.	Speculation and transferability of rights; Changes in Climate; The market for equity and equal rights and their derivatives; Sovereignty; Common global bases (REA).
IAS 20	Government Grants		The outcome of the initial publication of rights and allowances and contributions recorded as assets	State aid policy is influenced by everyday policies. Government can provide greater or lesser certified payroll. Endemic corruption in the public sector may destroy the system.
IFRS 8	Accounting policies, Changes in accounting estimates and errors		Accounting policy (10); Retrospective application (22); Warranty obligations (32 & 33); Errors (41); Previous period errors (49); Impracticability of the last statement settings (51, 52, & 53).	The extent to which there is a need for a restatement of past earnings, and how this happened in the past, present, and future financial statements, Ex post and Ex ante adjustments.
IAS 1	Presentation of Financial Statements		Omissions (7); The objective of Financial Statements (9); Fair presentation (15); Modification of accounting policies (18); Assumption of continuity (25); Reserve (54); Estimation of uncertainty (125).	The minimum set of information that must be included in the Comprehensive Financial Statements of environmentally friendly sensitive firms.
IFRS 1	The first adoption of accounting policy of 97	Fair		The fair value of the environment
IFRS			Value (16); The combination of financial instrument (23), main, subsidiary, joint ventures and partnerships (24); Changes in startup, restoration of similar liabilities (E25), non-IFRS comparative information (36), settlement of re-conflicts (39).	Related to the assets, liabilities, and reserves.
IFRS 7, IAS 37 & IAS 39, IFRS 9, IAS 38	Financial instruments Disclosure; Presentation, recognition, and measurement; Intangibles and impairment			Disclosure of past and present risks associated with environment; Effective and non-effective qualitative and quantitative descriptions regarding hedging strategies; The fair value of derivatives of carbon and other assets and liabilities related to the environment

Research Article

Disclosure of environmental costs and benefits can be reported in any way possible. This can be disclosed in the text of financial statements (if it is important), in the associated explanatory notes, and in the form of special reports.

CONCLUSION

The obtained results can be stated as follows:

Formulation and planning of laws and regulations regarding different areas of the environment, is a fundamental and effective step towards dealing with environmental pollution and prosecution and punishment of perpetrator of the crimes against the environment. Due to the transformation, growth of the industry, and development of various pollutants in Iran, it is essential to develop, enact, and enforce various environmental laws and regulations in different areas.

Also, some of the laws and regulations concerning the environment require revision and correction. Enacting and modifying regulations will lead to more attention and consideration from companies to avoid or reduce their pollutants and also makes reporting about their performance regarding how they deal with pollution and the methods used to prevent or reduce pollution, more frequent.

The real reason behind underdevelopment of this type of accounting is lack of commitment and obligation of industries and companies in dealing with environmental costs. It is necessary that authorities who are responsible for producing guidelines on accounting do as is required in providing proper schemes and instructions in utilizing environmental accounting system and also determine how organizations should cope with environmental spending.

The foundations of ISO 14000 standards are the commitment and belief of senior management in the necessity of preserving the environment and the duty to keep it for the next generations, and this will not be realized unless the managers be educated in order to get to know the pollutions caused by industries, their destructive effects on the environment, the way to decrease pollution, and the rules and regulations and standards.

If the managers consider pollution restriction and environment preservations system, they will be willing to spend to repair the damages done to the environment, and will try to expose their way of dealing with the pollution and preserving the environment to the public, and this will be done through accounting information system as a proper tool for this task.

Ultimately, it can be stated so that during the recent years, environment pollution has had a considerable growth in Iran as one of the main dilemmas of human populations. One of the main reasons for this is the improper use of natural resources, which are considered as the most vulnerable of the resources. This has caused considerations in the environment and created the concept of non-sustainable development, therefore the attention that must be paid to environmental accounting is evermore necessary and important.

In other countries of the world, concepts of environmental accounting, environmental expense survey and environmental expenses reporting have been initiated and attempted from some decades ago and many studies have been attempted in this field.

Unfortunately, in Iran, not only numerous damages are done by some industries and companies to the environment and various kinds of pollutions are caused, there have also yet been no proper and dependable study and no rules and regulations have been put in place regarding this matter.

Theoretical Suggestions

In order to reach a better conclusion it is suggested that points below be considered:

1- Considering that putting in place of environmental standards requires environmental management, and it is not possible to carry out this task without expenses in order to reduce environmental pollutions. We can provide the background and the situation for performing environmental accounting tasks in real life and clarify the expenses and environmental advantages of this in the outline by presenting to the accountants the environmental policy and environmental plans regulated in the organization.

Therefore it is suggested, that first, professional and trusted sources attempt to clarify definitions and aspects of environmental accounting, and secondly, that the ISO 14000 organization managers create a

Research Article

close bond and affinity between accountants and environmental committee in order to identify and measure the environmental costs and advantages.

2- It is also suggested that accountants and financial managers identify environmental investments specifically by analyzing long-term belongings, and consider it in the financial reports alongside the expenses and environmental advantages.

Practical Recommendations

A successful environmental management system must possess a systematic and properly defined strategy to identify and account for environmental expenses, a systematic study which is alongside a correct and specific environmental classification. This classification can be suggested by professional gatherings such as auditing organization, professional accountants' committee, and exchange market.

This classification and systematic strategy can cause an effective and definite synthesis of environmental expenses in processes such as budgeting, expenses allocation, product designing, processes and future decisions.

The companies are able, in order to improve environmental accounting, to start from the initial and basic steps and in limited aspects and gradually expand their field of function. Companies can, initially, investigate and control simpler and more obvious environmental expenses (direct expenses) and gradually move towards more complicated and vaguer costs and expenses.

In the next stages, the company management must attempt to purchase and install equipment and technologies compatible with the environment and "green technologies", and make use of findings related to environmental expenses in processes such as decision making, budgeting and product designing.

It is suggested that the pattern of effective environmental accounting, accounting system and proper outlining of accounts that are extensive from the operational aspect be adjusted to the current structure of accounting, and be presented by professional staff and related companies (True environmental expense finding and shaping inter-company reports).

It is suggested that the matter of educating the personnel be done with the goal of realization of environmental accounting goals.

It is suggested that proper measuring indexes be presented by the environment organization or other related organizations to the companies and the society of accountants, so that they can express and measure the social and environmental expenses and interests and announce it in their sustainability reports.

REFERENCES

- Anne MA, Johan AL, Margolis N and Ralph CD (1998).** A method for valuing global ecosystem service, *Ecological Economics*.
- Bebbington J, Gray R, Thomson I and Walters D (1994).** Accountants' attitudes and environmentally-sensitive accounting. *Accounting and Business Research* **24**(94) 109-121.
- Benett M, Bouma J and Wolters T (2002).** *Environmental Management Accounting: Informational and Institutional Developments* (Ulwer Academic Publisher) London.
- European Environmental Agency (2006).** Topic Centre on Resource and Waste Management [Online]. Available: <http://waste.eionet.europa.eu/definitions/waste>.
- Fresner JC (1998).** Production as a means for effective environmental management. *Journal of Cleaner Production* **6** 171-9.
- Ghanbari J (2010).** Environment Accounting, Accessible through Hesab-Dari Weblog <http://accounting.blogfa.com>.
- Joshua GC, Scott LS, Williams B, Young B and David AW (2009).** Accounting Program research Rankings by Topical Area and Methodology 1-29.
- Kamrani R and Skafi F (2005).** *ISO 14001 Standard 2004 Edition* (Kianaghsh-e-Tehran Publication).
- Kazem-ZadeArasi N (2003).** *Environment Accounting* (Tadbir Magazine) 135.
- Khosh-Tinat M and Mir-Samiei M (2002).** Environment Accounting, *Hesab-Ras Magazine*, 17th edition 16-21.

Research Article

- Khosh-Tinat M (1994).** Social responsibility Accounting, *Accounting Studies Journal* **3**(10) 18-34.
- Mirzayi GH (2006).** Environment Accounting and Auditing, *Hesabdar Magazine* **134** 76-84.
- Molanazari M (2003).** Environmental Management Accounting, *Humanitarian and Social Sciences Journal* **3**(8) 141-159.
- Nasir-Zade F (2005).** Environmental Accounting, *Hesabdar Magazine* **183** 24-32.
- Sajadi SH (2001).** Environmental Accounting, *Hesab-dar Magazine* **186** 19-25.
- Seyed-Nezhad F and Seyed-Reza (2004).** Environmental Accounting Necessity, *Exchange Magazine* **42** 15-22.
- Shah-Veisi F (2010).** Environmental Accounting, Expenses and Functions in Decision-Making, *Hesabdar Magazine* **185** 31-42.
- Yuma RP and McGilray J (2006).** *Environment Economy and Natural Resources Book*, translated by HamdArbab.