

Hasan Şenol, Hakan Özçelik

Süleyman Demirel University, Isparta, Turkey

E-mails: hasansenol@sdu.edu.tr, hakanozcelik@sdu.edu.tr

Abstract

Nowadays, companies cause a lot of environmental problems because of profit maximization, the endless needs, rapidly advancing technological developments, unconscious consumption of natural resources, as they execute their operations. At first glance, these efforts in order to remove environmental pollution means additional cost to companies in the short term nevertheless they can have a chance of cost minimization in medium and long term and even additional income in this process.

To meet the needs of business management and related people about the environment, environmental accounting has started up. The study of TAS/TFRS accounting in the context of the enterprises is focused on environmental accounting and its importance, reflecting the financial progress on environmental sensitivity reports and sharing those info with the community. There is no relevant TAS/TFRS on the accounting for and the reporting of environmental costs within the existing set of TAS/TFRS. Because, the accounting principles set out in the existing set of TAS/TFRS are already adequate to deal with the accounting for and the reporting of environmental costs. Also, in our study various suggestions were made for the healthy functioning of environmental accounting.

Keywords: Turkish Accounting Standards, Turkish Financial Reporting Standards, Environmental Accounting,

1.INTRODUCTION

The main goal of economic development and welfare, environmental balance and sustainable development model has led to awareness of nature should be protected. Optimum use of resources being wasted, the effectiveness of natural resources, environmental protection and economic growth and environmental quality of the flood to provide a working model of integration. Sustainable development, social, ecological, economic, spatial and cultural dimensions of a concept (Yıldıztekin, 2009:368).

When environmental problems that appeared together with industrialization process have reached serious levels round the world, preventative or decremental solutions for these problems have been sought by developed countries. These environmental problems experienced with industrialization caused a better understanding of importance of sustainable

development concept with time. As a result of increased sensitiveness about environment, environmental accounting approach appeared.

Although the environmental pollution is a common problem of all countries, the importance of environment has been understood in recent years. Industries are becoming progressively more aware of the environmental and social liabilities pertaining to their operations and products. In addition to social pressure, accounting and especially environmental costs are critically important to form this environmental awareness. In the 1970s, environmental accounting has gained increasing significance, particularly in Western countries. The Environmental Accounting research has focused on "Sustainable Development" and aimed to provide balance between economy and ecology (Lazol& Muğal&Yücel, 2008:56).

2.SUSTAINABLE DEVELOPMENT

The concept of sustainable development was stated at first in the report of Our Common Future prepared by Commission on Environment And Development of United Nations in the year of 1987 and has become prevalent. "Sustainable Development" a development model that tries to ensure integration between the economy and the environment. Sustainable development, the present generation without compromising the ability of future generations to meet their own needs to meet the needs identified as a development approach. In other words, without a reduction of the natural capital stock of today's generations to future generations that they have the same welfare level (Çetin, 2006:2). In realizing sustainable development governments, NGO's and all other economic actors have important roles in an international scope. Sustainable development has the following historical processes.

- 1972 Stockholm: The United Nations Conference on the Human Environment
- 1976 Habitat-1 Meeting
- 1987 Brundtland Report, Our Common Future (defined sustainable development)
- 1992 The United Nations Rio Conference
- 1997 Rio+5 Summit
- 2002 Johannesburg Summit (Rio+10)

The concept of sustainable development, business decision-making over the last decade of planning, social justice, environmental protection and economic development have expanded by including the importance of real-time (Rondinelli& Bery, 2000).

3.ENVIRONMENTAL ACCOUNTING

The importance of environmental accounting is increasing because of increasing of environment problems, economic, social and technological developments. Environmental accounting which is for sustainable development is required.

The term environmental accounting has many meanings and uses. Environmental accounting can support national income accounting, financial accounting, or internal business managerial accounting (EPA, 1995:1).

Environmental accounting system as include both national and business accounting, and deals with both financial and non-financial information (Schaltegger, 1997:87). Environmental accounting, accounting and demonstration of financial statements events related to the environment of financial qualities.

Environmental accounting defines as the process of environment-based categorization of business activities, collecting, analyzing and then monitoring this environment-related

activities, then put all these information into business balance sheet to help an organization's decision making (Tüsiad, 2005:18).

EA is a broad term which can be used in various contexts such as (IFAC 2005):

- The evaluation and disclosure of environment-related financial information for financial accounting and reporting purposes;
- The evaluation and use of environment-related monetary and physical information, that is, EMA;
- Full Cost Accounting (FCA) which involves the estimation of external environmental impacts;
- Natural Resource Accounting (NRA) which is accounting for the monetary and physical flows and stocks of natural resources;
- The aggregation and reporting of accounting information, including natural resource accounting and other information, at the organization-level for natural accounting purposes;
- In the broader context of sustainability accounting which requires consideration of environment-related monetary and physical information.

3.1.Scope of Environmental Accounting

The scope of Environmental Accounting is very broad . It includes corporate level, national & international level. The following aspects are included in EA (Chauhan, 2005:721):

1. From Internal point of view investment made by the business 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 indirectly due to business operation/activities. It mainly includes:
 - Degradation and destruction like soil erosion, loss of bio diversity, air pollution, water pollution, noise pollution, problem of solid waste, coastal & marine pollution.
 - Depletion of nonrenewable natural resources i.e. loss emerged due to over exploitation of nonrenewable natural resources like minerals, water, gas,etc
 - Deforestation and Land uses. This type of accounting is not easy, as losses to environment cannot be measured exactly in monetary value.

3.2. Forms of Environmental Accounting

There are four form of environmental accounting. These are; Environmental Financial Accounting (EFA), Environmental Cost Accounting (ECA), Environmental Management Accounting (EMA), and Environmental Nation Accounting (ENA). EFA, ECA, and EMA are related to corporate (business) accounting.

3.2.1 Environmental Financial Accounting (EFA)

Environmental financial accounting (EFA), data about financial events collects, analyzes, records and reports. Data of EFA make up generally environmental cost. Environmental information of business is shown in financial statements by means of EFA.

Financial Accounting with a particular focus on reporting environmental liability costs and other significant environmental costs (Chauhan, 2005:721). Environmental accounting, financial accounting measurement procedures to apply carefully (Gray&Bebbington &Walters, 1993:7).

3.2.2 Environmental Cost Accounting (ECA)

An advanced step of development of environmental accounting is development of environmental cost accounting (ECA). Cost accounting is defined as use of the accounting record to directly assess costs to products and processes. In this approach, costs are accounted for by their specific causes. Environmental cost accounting directly places a cost on every environmental aspect, and determines the cost of all types of related action. Environmental actions include pollution prevention, environmental design and environmental management. Past approaches on environmental impacts were based mainly on environmental cleanup costs and past product disposal (Yakhou & Dorweiler, 2004:68).

Environmental costs comprise both internal and external costs and relate to all costs occurred in relation to environmental damage and protection. Environmental protection costs include costs for prevention, disposal, planning, control, shifting actions and damage repair that can occur at companies and affect governments or people (United Nations, 2001:11).

The IFAC (2005) categorized environment-related costs into four types as follows, claiming that this categorization is based on widely accepted international practice and best practice (IFAC, 2005:12-13):

Environmental activity type costs such as waste prevention and control;

Costs that represent traditional accounting such as labour and materials;

Environmental domain type costs such as land, air or water; and

Costs which reflect data visibility in the accounting records such as hidden and obvious costs.

3.2.3 Environmental Management Accounting (EMA)

Environmental management accounting (EMA) is defined as the generation, analysis and use of financial and related non-financial information, to support management within a company or business . EMA integrates corporate environmental and business policies, and thereby provides guidance on building a sustainable business (Yakhou&Dorweiler, 2004:68).

EMA is broadly defined to be the identification, collection, analysis and use of two types of information for internal decision making (UN, 2001:7-10):

- Physical information on the use, flows and destinies of energy, water and materials (including wastes) and
- Monetary information on environment-related costs, earnings and savings.

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 (Chauhan, 2005:720):

- 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.

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

3.2.4 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 Business Level: It helps to know whether business has been discharging its responsibilities towards environment or not (Chauhan, 2005:721).

Evaluation of the Environmental Accounting In the Framework of TFRS

IAS / IFRS, preparers of financial information in the information recording and reporting process and set of standards published in order to create a common language between users. The new Turkish Commercial Law (TCL), according to Small and Medium Scale Enterprises (SME) commercial books of business while remaining on the quality of individual and consolidated financial statements of the editing, Turkey Accounting Standards Board (TASB), issued by Accounting Standards in Turkey, the accounting conceptual framework which is an integral part of these interpretations and principles and apply them must comply exactly. In small and medium sized enterprises SME / TFRS subject. Large-scale enterprises involving TAS / TFRS in terms of environmental accounting, environmental accounting in many places, although the referral to be seen whether a standard is specifically designed for environmental accounting. Businesses related to the accounting standards that may be relevant, the following is stated on the environment (Aktürk, Akcanlı, Şenol, Akyüz, 2011:818-819).

- Conceptual Framework of Financial Reporting, according to the standard required by business information users can produce all kinds of information are emphasized. Accordingly; TAS/ IFRS in preparation of any report regarding environmental accounting, although there is no obligation to prepare such a report does not seem an obstacle.
- IAS 1 Presentation of Financial Statements; according to the standard of management can prepare a report describing the company financial performance. Especially in industries where environmental factors are important, environmental factors described in the various reports issued emphasized.
- IAS 16 Property, Plant and Equipment; environmental reasons obtain it focuses on items of tangible assets. In this context it considers appropriate in relation to a business environment to acquire tangible fixed assets and depreciation reserve seem an obstacle.
- IAS 36 Impairment of Asset; according to the standard as a business accessible to the environment-related impairment of tangible and intangible fixed assets if the asset's carrying amount is reduced to its recoverable amount. The impairment loss is treated as a demotion.
- IAS 37 Provisions, Contingent Liabilities and Contingent Assets; according to the standard, as a result of damage to the environment is stated to leave provision for fines and cleanup costs.
- IAS 38 Intangible Assets, according to the standard in line with IAS 16 in respect of a business environment, allowing acquire the intangible assets.

Businesses, which will come into force in July 2012 according to the provisions of the new TCL, environmental accounting, including accounting practices of all TAS / IFRS in accordance with will.

Table 1: Environment related financial reporting standards

IFRS/IAS number	Title and/ or description	Relevant paragraph(s). Paragraph numbers in parenthesis	Remarks
Framework	Framework for preparation & presentation of financial statements	Accountability (14), relevance (26), materiality (29 &30), substance (35), neutrality (36), prudence (37), completeness (38), liabilities & obligation (60), capital maintenance (81), probability (85), measurement reliability (86), recognition of liabilities (91)	Statement to the effect that sustainability is within the bounds of the conceptual framework of IASB and FASB
IAS 41;	Specialized industries		Sector's sensitivity to the environment. See ISO classification and Wiseman's disclosure scores.
IFRS 6	Exploration & evaluation of mineral resources	Paragraph (11): requirement for provision and contingencies	Refer to statistics about emissions; production of pollutants; toxic waste disposal systems, ground water pollution & land degradation; depletion, industrial accidents; environmental impact studies.
IFRIC 3 (withdrawn)	Emission rights and allowances	Several paragraphs deal with whether government allocated rights; and the accounting treatment at the start of emission, and the setting aside of provisions.	Kyoto Agreement, Copenhagen Summit; Agreement versus treaty; efficiency of national and global allocation systems, speculation and transferability of emission rights; whether climate change has o boundaries; markets for trading emission and similar rights and their derivatives; sovereign rights; global shared databases (REA).
IAS 20	Government Grants	Initial acquisitions of emission rights & allowances recorded as assets whose valuations are subject to impairment tests.	Government grants could be influenced by the politics of the day. Government can over/under supply the rights certificates; endemic corruptions in the public sector might frustrate the system.
IFRIC 5 Jan 2006	Decommissioning, restoration & environmental rehabilitation funds	Purpose of fund (1), voluntary & required contribution to the fund (2), geographically dispersed sites (2), independent trustees, accounting for interest in the fund (7), obligations to make additional contributions (10), contingent liability (10), reimbursement rights	Disclosure of the size of the fund; arms length of the trustees; plans for additional contributions; responsibility for past degradations; adequacy of the fund.

		(BC 12)	
IFRS 8	Operating segments	Core principle (1), nature of an operating segment (5), aggregation criteria (12), quantitative thresholds (13), disclosure (20), profit/loss/assets and liabilities (23), measurement (25), geographical information (33)	For a global company whether its branches and subsidiaries are operating in environmentally sensitive sectors; and whether the segment meets the quantitative threshold, or whether it is required to prepare consolidated financial statements, and whether its segments meet international standards.
IAS 27, IFRS 3, IAS 28 and IAS 31, SIC 12	Consolidation, investments in mergers and acquisitions, interests in joint ventures and associates; consolidation of special purpose entities	Several paragraphs relate to ownership, risk, reward, and significant influence.	Group & consolidated statements are prepared for listed legal entities. Listed and unlisted companies might be sued for violating environmental standards in countries where their segments operate/operated in the past. This in turn might trigger an unbundling wave.
IAS 37	Provisions, contingent liabilities & contingent assets	Several paragraph that require charging current earnings for setting aside normal provisions and contingent liabilities.	Absence and inadequacy of provisions suggests earnings inflation which in turn affects intrinsic (fundamental) values of equities.
IAS 8	Accounting policies, changes in accounting estimates and errors	Accounting policies (10), retrospective application (22), warranty obligations (32 &33), errors (41), prior period errors (49),, impracticability of retrospective adjustments (51, 52&53)	The extent to which past earnings require restatement, and how this is going to be shown in past, present and future financial statements (retrospective & prospective adjustments).
IAS 1	Presentation of financial statements	Material omissions (7); purpose of financial statements (9), fair presentation (15), rectification of accounting policies (18), going concern (25), provisions (54), estimation uncertainty (125)	Minimum set of information that must be included in the comprehensive financial statements of environmentally sensitive companies.
IFRS 1	First time adoption of IFRS	Accounting policy 97), fair value (16), compound financial instruments (23), parents, subsidiaries, joint ventures & associates (24), changes in decommissioning, restoration and similar liabilities (25E), non IFRS comparative information (36), reconciliations (39)	Fair value of environment related assets, liabilities and provisions.
IFRS 7, IAS 37 & IAS 39, IFRS 9, IAS 38	Financial instruments disclosure, presentation and recognition and measurement, intangibles & impairment		Disclosure of past and present environment related risk(s); qualitative and quantitative description of the effective and non effective hedging strategy; fair value of carbon derivatives and other environment related assets and liabilities.

Source: Negash M., IFRS and Environmental Accounting, (December 1, 2009)

Available http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1516837

4.CONCLUSION

Environmental accounting is a tangible tool in the application of sustainable development. Environmental accounting to be called as “green accounting” is also requirement of social responsibility of the enterprises.

The importance of environmental accounting is increasing because of increasing of environment problems, economic, social and technological developments. Environmental accounting is a tangible tool in the application of sustainable development. Environmental accounting to be called as “green accounting” is also requirement of social responsibility of the enterprises.

Reporting of financial transactions have been recorded and concerned about environmental activities has become a necessity. This reporting process is accomplished through environmental accounting.

Environmental accounting practice between businesses and the public production form communications about environmental aspects. This will provide an important contribution to sustainable development.

The most important element of environmental accounting environmental costs. Focus on the environmental costs, environmental costs will be controlled facility. According to the types of environmental costs should be included in the accounting information system. Environmental costs (Environmental activity type costs, Costs that represent traditional accounting, Environmental domain type costs, Costs which reflect data visibility in the accounting records) have been recorded according to the types of expenses according to their functions should be reflected in costs and expenses of the period.

REFERENCES

Aktürk A. & Akcanlı F. & Şenol, H. & Akyüz, Y. (2011). The Importance Of Environmental Accounting in Hotel Companies in TAS/IFRS Context, 1.Uluslararası 4.Ulusal Turizm sempozyumu, Isparta-Türkiye, p. 815-824.

Chauhan M., (2005). Concept of Environmental Accounting and Practice in India”, The Chartered Accountant, p.720-726.

Çetin M. (2006). Teori Ve Uygulamada Bölgesel Sürdürülebilir Kalkınma, Cumhuriyet Üniversitesi, İktisadi ve İdari Bilimler Dergisi, Cilt 7, Sayı 1, p.1-20.

EPA: An Introduction To Environmental Accounting as a Business Management Tool: Key Concepts And Terms, Washington, (1995).

Gray R. & Bebbington J. & Walters D. (1993). Accounting For The Environment, Founded by the Chartered Association Of Certified Accountants, England.

International Federation of Accountants (IFAC) (2005). Environmental Management Accounting. Available:

<http://www.ifac.org/news/lastestreleases.tmpl?nid=1124902574170148> (20 April 2012).

Lazol İ.&Muğal E. &Yücel Y. (2008). Sürdürülebilir Bir Çevre İçin Çevre Muhasebesi Ve Kobi'lere Yönelik Bir Araştırma, Muhasebe ve Finansman Dergisi, Sayı: 38, s. 56-69.

Negash M., IFRS and Environmental Accounting, (December 1, 2009)

Available http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1516837

Rondinelli, D.A.& Bery, M. A. (2000). Environmental Citizenship in Multi-national Corporations: Social Responsibility and Sustainable Development, *European Management Journal*, Vol.18, No:1, p:70-84.

Schaltegger S. (1997). Information Costs, Quality of Information and Stakeholder Involvement-The Necessity of International Standards of Ecological Accounting, *Eco-Management and Auditing*, Vol. 4 (3), 87-97.

Tüsiad, (2005). Şirketlerin Yeni Yönetim Aracı: Çevresel Muhasebe, Yayın No. -T/2005-06/404, Haziran.

United Nations Division for Sustainable Development, (2001). *Environmental Management Accounting, Procedures and Principles*.

Yakhou M., Dorweiler V.P. (2004). *Environmental Accounting: An Essential Component of Business Strategy, Business Strategy and the Environment*, Volume 13, p.65-77.

Yıldıztekin, İ. (2009). Sürdürülebilir Kalkınmada Çevre Muhasebesinin Etkileri, *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, Sayı:13 (1): 367-390.