Araştırma Makalesi/Research Article

Evaluation of Environmental Accounting in Terms of Turkish Accounting Standards (TAS)

Çevre Muhasebesinin Türkiye Muhasebe Standartları (TMS) Açısından Değerlendirilmesi

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Abstract

As a result of economic, social, and technologic developments, issues such as rapid population growth, urbanization, industrialization, excessive pollution related to air, water, earth, and noise have brought together the environment problems. With increasing environment consciousness against environment problems, important developments emerged in environment accounting. Environmental performance has been an important success criterion for the enterprises; in this context, environment accounting is used as a means of management accounting in internal decision making of the enterprises. While functioning, the enterprises think that it is necessary to establish an environment accounting system in order to make decisions in favor of the environment. The basic objective of environment accounting is to minimize the damage of the environment caused by the enterprises as a result of their environmental activities, and to present this information to the users by means of financial statements. The objective of this research study is to examine and evaluate environment accounting in terms of Turkish Accounting Standards (TAS) by determining a theoretical framework about environment accounting. When the accounting standards were examined in terms of environment accounting, it was determined that there was no standard directly relevant to environment accounting within the existing TAS / TFRS (Turkey Financial Reporting Standards) set.

Keywords: Environment Accounting, Environmental Accounting, Turkish Accounting Standards, Environment Accounting and TAS / TFRS Relationship.

Öz

Ekonomik, sosyal ve teknolojik gelişmelerin bir sonucu olarak; hızlı nüfus artışı, kentleşme, sanayileşme, hava, su, toprak ve gürültü ile ilgili aşırı kirlilik gibi konular çevre sorunlarını da beraberinde getirmiştir. Çevre sorunlarına karşı çevre bilincinin artmasıyla birlikte, çevre muhasebesi alanında önemli gelişmeler ortaya çıkmıştır. İşletmeler için çevresel performans, önemli bir başarı kriteri olup bu bağlamda çevre muhasebesi, işletme içi kararların alınmasında bir yönetim muhasebesi aracı olarak kullanılmaktadır. İşletmeler, faaliyetlerini yerine getirirken çevre lehine kararlar alabilmek için etkin bir çevre muhasebesi sistemi kurulması gerektiğini düşünmektedirler. Çevre muhasebesinin temel amacı, işletmelerin çevresel faaliyetleri sonucu çevreye verdikleri zararı en aza indirmek ve bu bilgileri finansal tablolar aracılığıyla kullanıcılara sunmaktır. Bu çalışmanın amacı; çevre muhasebesi hakkında teorik bir çerçeve çizerek, çevre

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muhasebesini Türkiye Muhasebe Standartları (TMS) açısından incelemek ve değerlendirmektir. Muhasebe standartları çevre muhasebesi açısından incelendiğinde, mevcut TMS / TFRS seti içerisinde doğrudan çevre muhasebesiyle ilgili bir standardın olmadığı tespit edilmiştir.

Anahtar Kelimeler: Çevre Muhasebesi, Çevresel Muhasebe, Türkiye Muhasebe Standartları, Çevre Muhasebesi ve TMS/TFRS İlişkisi.

INTRODUCTION

Technological developments, urbanization, the rapid growth of the world population, strong competition environment created by the free market model, the continuous product development and renewal obligation, attempts to increase employment, the society leading to overconsumption, wars, accidents, and similar events brought in environmental problems with them. There are important reasons for rapid increase in the interest about the environment. Since environmental pollution and degradation have gained importance in recent years and its harmful results are revealed, the importance of environment has increased. Due to continuous damage and pollution of the environment numerous species of plants and animals go extinct, and human health has been negatively influenced (Haftacı & Soylu, 2008: 92).

One of the important issues that the enterprises have to dwell on for an economic and ecologically sustainable development is the environment. Environment and environmental assets directly or indirectly take part in production processes. In the production processes, the environment appears as an element that has to be shaped or a cost that has to be included in the product. This, in turn, necessitates the existence of a follow-up mechanism concerning environmental assets. Not only the follow-up of various environmental assets and document order, but also benefiting from the information technologies during accounting applications concerning these assets supports reporting processes to be healthier and provides more reliable information for the decision-making mechanisms (Güney & Can, 2015: 324).

In order to solve all of the environmental problems on the earth and increase the quality of the environment all of the science branches act together. It cannot be possible for accounting science to be away from these activities. Therefore, accounting scientists brought forward the term "Environment Accounting" to handle the environment problems (Kırlıoğlu & Can, 1998: 15). Each passing day, enterprises understand more the importance of environment accounting, and they make an effort to increase the expected benefit at decision-making, planning and control phases for the information users within or outside the enterprise by attempting to solve the problems encountered during the implementation of the environment accounting (Korukoğlu, 2011: 81).

The objective of this study is to examine and evaluate the environment accounting in terms of Turkish Accounting Standards (TAS). Within this scope, firstly a vast literature review and general information about the environment and environment accounting were given. Subsequently, environmental accounting was examined by Turkish Accounting Standards. The study was finalized with the conclusion part.

LITERATURE REVIEW

Numerous theoretical and empirical studies were encountered in domestic and foreign literature. Some of the studies in the literature are as follows:

Alagöz and Yılmaz (2001), reported that with the increasing environmental consciousness against the environment problems, important developments appeared in environmental costs and environment accounting issues, and in this context, they handled environmental costs and environment accounting issues in a theoretical framework. *Çetin et al., (2004),* mentioned that the traditional accounting system was insufficient in distributing the environmental costs to the products and therefore, the environment accounting information system was needed for determining the environmental costs correctly and for distributing them to the products accurately. *Kurşunel et al., (2006),* made a research in Konya province for determining the views of the members of the accounting profession. *Aslanertik and Özgen (2007),* handled the different dimensions of environment accounting and emphasized the importance of environment accounting for the hotel enterprises. *Haftacı and Soylu (2007),* touched on the importance of environment accounting concerning the environment pollution and environment protection. *Mutlu (2007),* stressed that environment accounting was a tangible means in the implementation of sustainable development and that it should be implemented as fast as possible. *Haftacı and Soylu (2008),* within the scope of accounting and reporting of the environmental information, and by force of the necessity to show the precautions taken against environment pollution in the economical values, mentioned about the economic values that are relevant to the environment in terms of environment accounting to be demonstrated in the investments, operating expenses, and cost accounts. *Lazol et al., (2008),* handled environment accounting for a sustainable environment and conducted a survey-based research concerning SMEs. *Esmeray and Güngör Tanç (2009),* examined the analytical hierarchy method in selecting the distribution keys that were used in distributing the environmental costs to the products, in an industrial enterprise functioning in Kayseri province through applied research. *Memiş (2009),* handled the environment accounting as a means of management accounting, and reported that environment accounting should function in integration with environmental management accounting and environmental cost accounting. *Soylu and İleri (2009),* touched on environmental accounting, searching for the effects of environmental costs on the production costs. *Yıldıztekin (2009),* handled the effects of environmental accounting in sustainable development, reported that the environmental costs should be reflected to the costs and running expenses based on their functions, the price indices should be created supporting the environmental accounting, and environmental costs should be calculated during the investment decision-making. *Jones (2010),* examined the environment accounting and reporting in a thoretical framework. A multi-layered theoretical model was developed in the study concerning the protection of the environment. It was reported that the enterprise should provide information to its shareholders about environmental performance. *Otlu and Kaya (2010),* conducted a research on accounting profession members actively working in Elazığ province in order to determine their opinions about the environment issue and environment accounting. *Kırlıoğlu and Erol Fidan (2011),* examined the sensitivity of the enterprises concerning the environment costs and attempted to determine the differences concerning this issue among the enterprises functioning both inside and outside the Organized Industrial Site (OIS). Handling environmental accounting in the context of accounting standards, *Aktürk et al., (2012),* reported that, as a means, environmental accounting is a service provided by the

accounting department for the application of the environment management of the enterprise. Considering the social responsibility, *Beller et al., (2012),* examined the environment accounting issue that needs to be applied by the enterprises, and by means of case study method, demonstrated the environment accounting system that should be implemented in the enterprises. *Alagöz and İrdiren (2013),* handled the cost and management of environment issue from the cost accounting point of view. In this study, in order for the enterprises to minimize the environment costs and the damage to the environment during their activities, the strategic solutions as a part of the cost accounting were examined in the context of environment accounting. In a study conducted on the recognition of the environmental costs, *Çalış (2013),* demonstrated how the recognition of the environmental costs was made by means of numerical examples, handling the environment accounting from the cost accounting point of view. *Beredugo (2014),* examined the environment accounting and social responsibility activities of the production enterprises in Nigeria and the effects of these activities on the enterprise performance. *Gönen and Güven (2014),* emphasized the terms environment accounting and environmental costs, and in the application phase studying on an enterprise functioning in ceramic sector, they examined the process of recognition of the environmental costs of this enterprise. Studying on independent auditors and financial advisors in Yalova province, *Kızıl et al., (2014),* emphasized the importance of environment accounting. *Saremi and Nezgad (2014),* examined the role of the environment accounting in the enterprises, in this context, they handled the importance, costs, role, implementations, and requirements of environment accounting. *Aydın and Gözütok (2015),* conducted a survey on accounting profession members in Sivas province to examine their perceptions about environment accounting, and they determined that most of the professional accountants had information about environment accounting. *Fındık (2015),* examined environment accounting based on enterprises, demonstrated the determination of the environment accounting and recognition of it in the coal fired thermal power plants. By drawing a theoretical framework about the information technologies to be used in the environment accounting applications, *Güney and Can (2015),* from a theoretical point of view, examined the information technologies according to their qualifications, costs, and chronology rankings. *Korukoğlu (2015),* examined how the environment accounting was applied and the problems in its application in some enterprises functioning in Izmir province in various sectors. By conducting a survey-based research study in enterprises actively functioning in the industrial sector in Diyarbakır province, *Bilen and Seyitoğulları (2016),* examined the perceptions of the enterprises concerning the environmental issues and environment accounting. In a study conducted on the recognition of the environment accounting in the hospitality business, *Dalğar and Yıldırım (2016),* explained how the environment accounting is classified and recognized in the hospitality enterprises. *Kaya and Akdeniz (2016),* studied the relation between the environment accounting and Turkish Accounting and Finacial Reporting Standards (TAS/TFRS). *Orhan and Ağ (2017),* within the framework of social responsibility, attempted to determine the level of importance given to the environment accounting by the production enterprises actively functioning in the TRA1 Region (Erzurum, Erzincan, and Bayburt provinces). *Yuliarini et al. (2017),* examined the environment accounting applications from regulations and internal control point of view, and reported that environment accounting, as a part of the environmental improvement, was related with integrated, sustainable and accountable environment activities, and that it influenced legal and environment friendly products. Conducting a research in the marble production enterprises functioning in Bucak district of Burdur province, *Apalı (2018),*

examined the attitudes of the enterprises towards the environment and environment accounting, within the context of social responsibility concept. Examining the importance given to the environment in the accounting information systems of the enterprises actively functioning in the Organized Industrial Zone of Malatya province, *Bulut Deniz and Çukacı (2018),* evaluated their environmental accountings in terms of TAS/TFRS. *Özkol (2018),* studied the use of water, which is consumed during the production of sugar from the sugar beet, in different production settings and examined the calculation of the environmental costs of the waste water.

GENERAL INFORMATION ABOUT THE ENVIRONMENT

According to the Law of Environment numbered 2872, the environment is described as the biological, physical, social, economic, and cultural setting, where all living beings interact and continue relations during their lifetimes (Law of Environment, art.2). The most apparent feature of the environment is that human beings and all other living creatures are involved in interaction and relation. The elements of the environment are physical, biological, social, economic, and cultural settings. In general, the environment is the total of the external factors that affect living beings. In detail, the environment is divided into two, as the natural environment and artificial environment. The natural environment is the total of all natural assets, which are created by natural impacts/powers and are not changed by the influence of man. As per the artificial environment, it is the total of all of the values and assets created by man. The basic of the environment concept is the natural environment (Durman & Önder, 2016: 156).

According to the Law of Environment, numbered 2872, environmental pollution is defined as all of the negative effects, in the environment, that can damage the health of living beings, environmental values, and ecological balance (Law of Environment, art.2). Environmental pollution is a process, which influences and decreases the characteristics of the world as a livable setting (Durman & Önder, 2016: 157). There are three main elements causing environmental pollution. These are, respectively, population increase, urbanization, and industrialization as a result of technological developments. Main environment pollution types are air pollution, water pollution, soil pollution, and noise pollution. Comprising of gases and particles such as dust and smog emanating from the factories, houses, and cars, air pollution emerges when the amounts of these substances in the air rise above the determined standards. Water pollution is the decrease of water quality, limitation of its use, and its becoming unlivable due to the organical, inorganical, biological, chemical, and radioactive wastes. Soil pollution is the physical, chemical, and geological degradation of the soil due to the reasons such as assignment of lands for urbanization and industry, sodification due to fertilization, pesticide application and irrigation as part of agricultural activities, and lastly, solid and liquid waste generating from the production and consumption processes. Noise pollution is the noise that disturbs people, and its main sources are entertainment centers, traffic, and industrial production (Durman & Önder, 2016: 160-161).

THE RELATION BETWEEN BUSINESS AND ENVIRONMENT

Particularly in recent years, the notion of sustainable development and environmental consciousness have gained importance in the businesses. In this respect, business

managements have been highly sensitive in particular issues such as effective use of resources, minimizing the waste, recycling, and environment friendly designs (Alagöz & İrdiren, 2013: 429). Environment friendly business management is a notion that is embraced by enterprises, which are acting socially responsible for the society by considering ecological environment as an important element in decision-making processes, aiming to minimize or prevent the damage given to the environment due to their activities, in this respect, changing the design and packing of the products, changing their production processes, and attempting to establish environmental protection philosophy to the business culture (Nemli, 2000: 69).

Enterprises are the entities, which are in continuous interaction with their environments while they are functioning for the production of goods and services. As a natural outcome of their activities, enterprises consume natural resources in certain ways, using many natural substances as raw materials. During the consumption of these sources, the nature is negatively influenced and harmful wastes emerge, which create the environment problems (Kırlıoğlu & Can, 1998: 38). In this process, the enterprises present their goods and services, which are produced through the consumption of environmental sources, to the same environment (Alagöz & İrdiren, 2013: 427). Polluting the environment through solid, liquid, or gas wastes emerged during the production processes of enterprises are the main source of environmental problems (Alagöz & Yılmaz, 2001: 149).

There is pressure from numerous different groups concerning decreasing the negative effects of enterprises on the environment. Social pressure, consumer demands, some organizations about the environment, and legal regulations lead the enterprises to be more sensitive about the environment and to consider environmental factors, as well, in decision making processes (Aydın, 2012: 100).

Enterprises, which attempt to implement environment accounting, initially use environment accounting to accurately monitor particularly the environmental investment and operating costs. Thus, the enterprises have the opportunity to monitor their investments particularly concerning environment. In this context, they have the ability to take more efficient decisions since they have the chance to know the costs of the environmental effects in the decision-making processes, and being able to observe their costs better, they can perform the cost-benefit analysis accurately (Erol Fidan, 2009: 88).

THE RELATION BETWEEN ACCOUNTING AND ENVIRONMENT

As an open information system, accounting is continuously involved in an interaction with its environment. From the social responsibility perspective, accounting has to look after the rights of all of the society rather than a certain individual or group. As a continuum of social responsibility, social responsibility accounting has emerged. Being a sub-branch of social responsibility accounting, environment accounting is an accounting branch, which grows with the proper information demands of the relevant groups, and it involves functions such as documentation, reporting, and auditing of the expenses concerning environment (Alagöz & Yılmaz, 2001: 150).

Enterprises exist as an economical unit within the environment, using natural sources as the raw materials. They dump wastes to the environment including both the solid, liquid, and gas wastes emerged during the production process and the wastes of the production after the consumption such as the packages etc. Environment pollution is

emerged due to all of these reasons. Therefore, it is required for the enterprises to pay attention to environmental issues during the entire process from the very beginning, the raw material procurement, until the consumption. This requirement is reflected to the fields of activity and the management strategies of the enterprises. These changes in the fields of activity influence the accounting process as well. As a result of this, the environment accounting concept is emerged, which ensures reflection of the environmental effects of the enterprise activities to the accounting process (Gönen & Güven, 2014: 41).

Environment accounting is also a means for determination and measurement of environmental costs in order for providing an appropriate environmental performance. Therefore, environmental accounting provides service to the external information users by monitoring environmental data in the financial statements, by determining the net present value, which considers the consumption of the natural sources, and by providing the preparation of annual activity report or a certain environment report (Stanciu et al., 2011:269). Environment accounting provides information concerning the use of environmental resources, positive or negative effects in these natural resources as a result of this using, and how to use the resources more efficiently (Akcanlı, 2010:13).

THE CONCEPT OF ENVIRONMENT ACCOUNTING

Numerous definitions were made concerning environment accounting. Some of the environment accounting definitions in the literature are as follows: environment accounting "can be defined as an information system which produces and presents information to the relevant individuals and organizations about the emergence of the environmental resources, the usages of these resources, increases or decreases in these resources as a result of the activities of the enterprises, and the environmental status of the enterprises" (Özbirecikli, 2002: 24). Being named also as "Environmental Accounting", "Green Accounting", "Ecological Accounting", and "Natural Resources Accounting", environment accounting is "the use of environmental resources and recognition of these emerging effects as a result of the usage" (Deniz & Türker, 2012: 116).

European Environment Agency defined the environment accounting as "the systematical presentation of supply and flow data that are important for the environment and which accompany the traditional economical accounts" (TUSİAD, 2005: 22). According to another definition, environment accounting is the planning and implementation of environment factors in particularly cost and benefit analyses of the existing accounting system (Güvemli & Gökdeniz, 1996: 24). According to a different definition, environment accounting is related to monitoring and reporting of the information of a fiscal nature related to environmental facts (Haftacı & Soylu, 2008: 94). In another definition, environment accounting is the recognition of the events in a fiscal nature and presentation of them on the financial statements (Aslan, 1995: 22).

It is possible to examine the environment accounting concept at the enterprise level in five different perspectives. In this context, environment accounting concept can be examined as the financial accounting in terms of recognition of the environmental effects of the enterprise; as the cost accounting since it makes the cost information accessible and controllable about some issues such as environmental performance, control costs, investing in cleaner technologies, developing environment friendly products and processes, product mix, product life extension, and product pricing; as the management accounting in terms

of presenting the abovementioned information to the managerial decision making processes; it is the environment report concerning the reporting process of the environmental activities and performance; and as a means of auditing in terms of approval and public announcement of the environmental performance (Özbirecikli & Melek, 2002: 26).

OBJECTIVES OF ENVIRONMENT ACCOUNTING

The main objective of environment accounting for the decision makers is to produce information. The costs that the enterprise bears regarding the environment can be observed through the information produced by the environment accounting. The environmental activities should be stated in financial terms. In order for the financial activities of an enterprise concerning the environment to be observed, it is necessary that the accounts related with environment be placed into the accounting system (Bulut Deniz, 2018: 44). The main objectives of environment accounting are as follows (Cited from Baltacı 2009 by Orhan & Ağ, 2017: 4):

- Information production,
- Taking inventory of the resources,
- Helping the accurate calculation of the product costs,
- Helping the calculation of the real costs and benefits,
- Ensuring compliance with the competitive conditions of the global markets,
- Helping enterprises to increase their environmental performances.

As is understood from the abovementioned objectives, environment accounting has both micro-economic and macro-economic objectives. The macro-economic objective of the environment accounting is to ensure the presentation of the utilized environmental resources among the national income accounts by stating their values in financial terms, thus, to bring together the environmental data and economical data under the same roof. Its micro-economic objective is bringing the environmental issues into a financial characteristic, and in that way, ensuring the inclusion of the environment into the accounting system by displaying the environmental activities in the financial statements (Kırlıoğlu & Can, 1998: 56).

ENVIRONMENT ACCOUNTING IN TERMS OF TURKISH ACCOUNTING STANDARDS (TAS)

In order to provide a unity of procedures in the field of accounting for all the enterprises, accounting standards are comprised of binding rules, which are determined according to the universal principles, rules, terms, laws, theories, and methods, such as uniform chart of accounts, accounting framework, inventory procedures, relevant legal regulations, and statements; it also consists of principles such as organizing, presenting, and evaluating the consistent financial statements, which provide integrity in the accounting transactions, for certain objectives (Yazıcı, 2003: 35). Accounting standards create a body of rules by determining what kinds of procedures and events recorded and classified by which values, and presented in which report (Marşap and Kurt, 1997: 229). Basically, originating from

IAS / IFRS and being a translation of them, TAS / TFRS will ensure the organization and presentation of financial statements, which are needs-based, reliable, understandable, and comparable, in Turkey (Ulusan, 2010: 78).

As is in the asset, debt, income, and expenses, the conceptual framework of the Turkish Accounting Standards Committee (TASC) will be based-on in the recognition and reporting of the environmental costs and debts as well. Additionally, within the existing TAS / TFRS set, the TAS / TFRS are listed below that will be based-on in environmental assets, environmental expenses, waste origination costs, environmental debt provisions, and the recognition and reporting of contingent environmental debts (Ulusan, 2010: 88-89).

- TAS 1 Presentation of the Financial Statements,
- TAS 2 Stocks,
- TAS 16 Tangible Fixed Assets,
- TAS 36 Impairment of Assets,
- TAS 37 Provisions, Contingent Debts, and Contingent Assets,
- TAS 38 Intangible Fixed Assets.

TAS 2 waste origination costs, TAS 16 environmental tangible fixed assets, TAS 38 environmental intangible fixed assets, TAS 36 impairment of assets in environmental tangible and intangible fixed assets, and TAS 37 environmental debt provisions and recognition of contingent environmental debts are the standards that should be based-on in any explanations to be made about these. TAS 1 Presentation of the Financial Statements standard is taken into consideration in reporting to relevant users the environmental assets, environmental expenses, environmental debt provisions, and contingent environmental debts. In addition to the abovementioned standards, the issues concerning how to implement the recognition and reporting of some issues related with the assets and debts that are investigated in the TAS 2, TAS 16, TAS 37, and TAS 38 are within the other TAS / TFRS (Bulut Deniz, 2018: 75). It is obviously stated in the TAS 2, TAS 16, TAS 37, and TAS 38 that relevant standards will be based-on in procedures of relevant issues. The TAS / TFRS in this status are listed below (Ulusan, 2010: 89):

- TAS 8 Accounting Policies, Changes and Errors in Accounting Estimates,
- TAS 12 Income Taxes,
- TAS 17 Leasing Procedures,
- TAS 18 Revenues,
- TAS 20 Recognition of the Government Promotions, and Announcement of the Government Grants,
- TAS 21 Impacts of Changes in Exchange Rates,
- TAS 23 Borrowing Costs,
- TFRS 5 Held for Sale Fixed Assets and Discontinuing Operations.

TASC Conceptual Framework and Environment Accounting

The issues that are determined to be relevant between TASC Conceptual Framework and environment accounting are listed below (Ulusan, 2010: 90-91):

• Whether the costs related with the environment will be announced as environmental expenses in the individual or comprehensive income statement or they will be capitalized and reported in the balance-sheet as environmental assets (TASC Conceptual Framework, paragraph 49 (a), 51, 53-59, 70 (b), 78-80, 83 (a) (b), 85-90,94-98),

• How will the environmental cost, which is capitalized to environmental asset, be recorded as an expense (TASC Conceptual Framework, paragraph 96),

• The procedures and principles of the TASC Conceptual Framework will be applied in issues whether the environmental debts will be presented as environmental debt provision in the balance-sheet, or contingent environmental debt in the postscripts of the balance-sheet (TASC Conceptual Framework, paragraph 49 (b),60-64, 83 (a) (b), 85-88, 91).

In addition to the abovementioned information, the materiality concept stated in the 29th and 30th paragraphs of the TASC Conceptual Framework will be based-on in deciding whether the environmental assets, expenses, and debt provisions are meeting the necessary conditions for realizing, and in case they meet the conditions, whether they will be presented in the financial statements (Ulusan, 2010: 91).

TAS 1 Financial Statement Presentation Standard and Environment Accounting

TAS 1 Financial Statement Presentation Standard is not directly prepared for the implementations of the environment accounting. However, though limited, there are regulations that can dominate the implementations of the environment accounting in this standard (Akdeniz, 2015: 39). The issues that are determined to be relevant between TAS 1 and environment accounting are listed below (Ulusan, 2010: 91):

• Whether the environmental assets, expenses, and debt provisions will be presented in the financial statements under different titles (TAS 1, paragraph 29),

• Whether the environmental asset/debt provisions and environmental expenses/incomes will be set off with each other or separately (TAS 1, paragraph 32-35),

• Whether the environmental assets, expenses and debt provisions will be comparatively presented with the amounts in the previous financial statements (TAS 1, paragraph 38-44) and what the conditions are that these comparative presentations might change (TAS 1, paragraph 45-46),

• In which conditions renewals will be applied in presentation and classification of the environmental assets, expenses, and debt provisions (TAS 1, paragraph 45-46),

• Displaying the environmental assets in the balance-sheet as the fixed or circulating assets (TAS 1, paragraph 66-68),

• Whether the environmental debt provisions will be presented in the balance-sheet as short or long term (TAS 1, paragraph 69-76),

• How the environmental debt provisions are presented in the income statement (TAS 1, paragraphs 87, 97-105), whether or not to present in the postscripts the information concerning the main sources of the uncertainty in the estimates and assumptions for the future, which have grand risks like causing significant adjustments in the book values of the environmental assets, expenses, and debt provisions of the following fiscal year, and of the accounting policies relevant to the environmental assets, expenses, and debt provisions (TAS 1, paragraph 11-133).

In brief, there is information concerning how to present the environmental assets and debts, environmental income and expenses within the accounting implementations in the TAS 1 Financial Statement Presentation standard (Akdeniz, 2015:40).

TAS 16 Tangible Fixed Assets Standard and Environment Accounting

Since this standard is not directly prepared for the implementations of the environment accounting, there are limited regulations concerning the environment accounting in this standard. The issues that are determined to be relevant between TAS 16 and environment accounting are listed below (Ulusan, 2010: 92-93):

• In which cases the costs of the environmental tangible fixed assets are reflected to the financial statements as assets (TAS 16, paragraph 7 (a) (b) -10),

• How the expenses made after capitalization of the environmental tangible fixed assets are involved in the record of the accounting (TAS 16, paragraph 12-14),

• That the recognition will be conducted over its cost value in the first stage, in which the environmental tangible fixed assets are included in the accounting record (TAS 16, paragraph 15),

• What the costs of environmental tangible fixed assets are comprised from and how these costs will be measured (TAS 16, paragraph 16-28),

• After the first stage, in which the environmental tangible fixed assets are included in the accounting record, with which value it will be presented to the relevant people, how this value is determined, and how it is included in the accounting reports (TAS 16, paragraph 29-42),

• Since the environmental tangible fixed assets will wear off with each passing year, how to implement the relevant depreciation procedures, how much an amount is subject to depreciation while including them into the depreciation records, determining its useful life, and determining the depreciation method to be used (TAS 16, paragraph 43-62),

• For the lost, depreciated, or abandoned environmental tangible fixed assets, how to include the compensation amounts received from the third parties in the accounting records (TAS 16, paragraph 65-66),

• Excluding the environmental tangible fixed assets from the balance-sheet (TAS 16, paragraph 67-72),

• What the explanations should be in the postscripts of the financial statements concerning the environmental tangible fixed assets (TAS 16, paragraph 73-79).

TAS 38 Intangible Fixed Assets Standard and Environment Accounting

TAS 38 Intangible Fixed Assets Standard is not a standard that is directly prepared for the implementations of the environment accounting. In addition, since this standard has some parallels with the regulations of the TAS 16, its relation with the environment accounting is similar. However, it is not possible to encounter regulations that can be apparently and directly be related similarly to those of the TAS 16 (Akdeniz, 2015: 53). The issues that are determined to be relevant between TAS 38 and environment accounting are listed below (Ulusan, 2010: 93-94):

• In which cases the costs of the environmental intangible fixed assets are reflected to the financial statements as assets (TAS 38, paragraph 8-23),

• In which cases the R&D expenses concerning the environment are included in the accounting records as an expense or an asset (TAS 38, paragraph 54-55, 57),

• That the recognition will be conducted over its cost value in the first stage, in which the environmental intangible fixed assets are included in the accounting record (TAS 38, paragraph 24),

• What the costs of environmental intangible fixed assets are comprised from, and how to measure the fair value of these assets, which comprise the costs, of the time they are obtained (TAS 38, paragraph 25-67),

• How to include the expenses concerning the environmental intangible fixed assets into the accounting records (TAS 38, paragraph 68-71),

• The value to be presented after the first recognition of the environmental intangible fixed assets in the financial statements, how to determine this value, and how to include it in the accounting records (TAS 38, paragraph 72-87),

• Determining and reviewing the useful life, amortization method and duration, and the residual value of the environmental intangible fixed assets (TAS 38, paragraph 88-110),

• Excluding the environmental intangible fixed assets from the balance-sheet (TAS 16, paragraph 112-117),

• Which explanations should be made in the postscripts of the financial statements concerning the environmental intangible fixed assets (TAS 38, paragraph 118-127).

TAS 36 Impairment of Assets Standard and Environment Accounting

TAS 36 Impairment of Assets Standard is not directly prepared for the implementations of the environment accounting. The issues that are determined to be relevant between TAS 36 and environment accounting are listed below (Ulusan, 2010: 94):

• Determining whether there is an impairment in the environmental asset (TAS 36, paragraph 8-17),

• Measuring the recoverable amount concerning the environmental asset (TAS 36, paragraph 18-57),

• Measuring the impairment loss concerning the environmental asset and its recognition (TAS 36, paragraph 58-108),

• Determining whether an impairment, which is included into the accounting records in previous periods, is fully or partially removed or not, and cancellation and recognition of the loss concerning the impairment that is convinced to be removed (TAS 36, paragraph 109-116),

• Information needed to be publicly announced concerning the impairment losses of the environmental assets and their cancellation (TAS 36, paragraph 126-133).

TAS 2 Stocks Standard and Environment Accounting

There is not apparent information in the TAS 2 Stocks standard concerning the recognition of the wastes and a public announcement about this issue. However, in TAS 2 paragraph 16 (a) (b) (d), it was stated that, the primary materials and supplies over the normal levels (including the losses), the employment and other production costs, storage costs alluding those necessary for the next phase of the production, and the selling expenses will be accepted as the expenses of the period that they are observed, without including into the costs of the stocks. Considering that the losses mentioned in this paragraph include the wastes as well, the waste origination costs in a normal range will be added to the production costs and the waste origination costs over the normal level will be directly recorded as the period cost. The recognition of the expenses concerning the storage and selling of the wastes will be realized as the period costs. Moreover, according to the explanations in the TAS 2 paragraph 38, the waste origination costs, which are over the normal level, in other words, which are recorded as an expense, will be explained in the postscripts of the financial statements (Ulusan, 2010: 94-95).

TAS 37 Provisions, Contingent Debts, and Contingent Assets Standard and Environment Accounting

There is a strong relation between the TAS 37 and the environment accounting. In our day, the enterprises not only encounter legal regulations such as penalties and compensations for environment protection, but also become responsible for some obligations concerning social responsibility concept. In both of the cases, the regulations of the TAS 37 are taken into consideration (Akdeniz, 2015: 54-55). The issues that are determined to be relevant between TAS 37 and environment accounting are listed below (Ulusan, 2010:95):

• In which cases the debts about the environment is reflected to the financial statements as environmental debt provision, or whether it will be explained in the postscripts as contingent environmental debt (TAS 37, paragraph 14-30),

• Measuring the amount that is included in the accounting records as environmental debt provision (TAS 37, paragraph 36-51),

• The inclusion of the incomes from the disposal of the assets, which are environmentally damaged, into the accounting records (TAS 37, paragraph 52),

• While expecting the other party to pay for the expenses, partially or fully, necessary for the fulfillment of the obligations relevant to an environmental debt provision, how and when the relevant compensation is taken into the accounting records (TAS 37, paragraph 53-58),

• Reviewing and correction of the environmental debt provisions as of the balance-sheet date, cancellation of the confusions and usage (TAS 37, paragraph 59-62),

• Necessary public announcements concerning the environmental debt provisions, and contingent environmental debts (TAS 37, paragraph 84-92).

TAS 20 Recognition of the Government Promotions and Announcement of the Government Grants Standard, and Environment Accounting

Since TAS 20 is not directly prepared for the implementations of the environment accounting, as is in other standards, there are limited regulations concerning the environment accounting in this standard. The TAS 20 regulations will be taken into consideration in the recognition of the environmental promotions to be given to enterprises by the state in return for continuing their productions considering the environmental sensitivities such as environment protection, causing less environmental pollution, and waste control; thus, the relation between the TAS 20 and the environment will come to the fore. Because the states, which promote the use of clean technology and clean energy, provide economical benefits to these enterprises by rewarding them. Concerning the inclusion of these mentioned economical benefits into the accounting records, the principles of the relevant standard will be taken into consideration (Akdeniz, 2015: 63).

CONCLUSION

The issues such as rapid population growth, urbanization, industrialization, air, water, earth, and noise pollutions at extreme levels have brought together the environment problems. The ecological balance started to be upset as a result of rapid consumption and pollution of the natural resources, concomitantly, important environmental problems appeared such as environment pollution, which influenced all of the living beings negatively.

As a result of the interaction between the enterprises and the environment, environment problems araise, and due to all of these reasons, it has been important and required for the enterprises to embrace the environmental consciousness and the concept of sustainable development. In our day, besides their objective of gaining profit, the enterprises have begun to care about the protection of a livable environment in terms of social responsibility principle. The interaction between the enterprises and the environment, the environmental damages that the enterprises cause, and the activities for preventing or decreasing these damages have created the environment accounting for the businesses. However, since the environment accounting is voluntarily implemented, and since there is no strict regulation for this issue, the environmental sensitivity of the enterprises can decrease.

In this study, when the environment accounting was examined in terms of accounting standards, it was observed that there is no standard directly related with the environment accounting in the TAS / TFRS set. Moreover, it was determined in this study that new account titles are needed in the TAS. When the TAS / TFRS set was examined concerning the recognition of the environmental activities and environmental impacts, the main standards that can be based-on were determined as TAS 1 Presentation of the Financial Statements, TAS 2 Stocks, TAS 16 Tangible Fixed Assets, TAS 36 Impairment

of Assets, TAS 37 Provisions, Contingent Debts, and Contingent Assets, and TAS 38 Intangible Fixed Assets.

As a conclusion, in order to decrease or prevent the environmental problems, the enterprises should be encouraged to concern environment accounting and environmental reporting, and this accounting sub-branch and reporting type should find the field of application. Therefore, it is now important and required to make necessary regulations by taking into consideration the international accounting standards and complying with the global standards, and to develop a standard directly related to the environmental activities as the "Environment Accounting Standard".

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