

ENVIRONMENTAL ACCOUNTING DEVELOPMENT FOR ORGANIZATIONS IN MEXICO

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Abstract: *The environment has gained significant relevance on a global scale, owing to research by scientists and environmental movements that have been able to place global environmental problems such as earth warming and pollution. Social and environmental aspects are related to organizations and are being transcendental for various international institutions and organizations. The accounting has been present in humanity for several years now, as a result of the need that man has had to control and quantify the information generated from the economic activities that he has developed in the course of history. Today, accounting is required to report how organizations harm nature and its environment, because traditional accounting does not clearly reflect social and environmental costs. The accounting area must make efforts so that the environmental accounting is developed and provides useful, clear and relevant information for the interested parties. In this research, a documentary review of the proposals on environmental accounts and the current state of environmental accounting was made. This research is descriptive with a qualitative approach and the design applied is non-experimental. Its objective is to analyse the elements of environmental accounts and show the efforts of the accounting area in terms of environmental impact. As a result, environmental accounts are conceptualized differently by each author depending on the reference on which they are based. It is concluded that there are great advances in environmental accounting and in the conceptualization of environmental accounts, however, further development is required for its uniformity and application. It is required that at the level of undergraduate studies are taught more subjects of corporate social responsibility for the graduates to develop an early awareness of the social and environmental aspects related to the organizations with the objective of establishing better accounting practices in order to reduce the impact of the current environmental damage and that could have been part of the regular accounting procedures that are carried out within organizations.*

Keywords: *Environment; environmental accounting; social responsibility; sustainability; organizations.*

JEL Classification: F61; F63.

1. Introduction

In the years 70 the first indications of protection to the environment were presented in response to the environmental problems that were arising from the irrational exploitation of resources by the organizations (DE-la-Rosa, 2011).

At present, environmental problems have been recognized before well-known summits, starting with the Earth Summit of 1992, where for the first time the governments proposed to reflect on the actions against the climatic changes and the relation that this Situation is facing the economic development of the countries. From that moment, various programs, changes in policies and tactics to promote habits and customs that seek to carry out commercial activities in a more sustainable way, emerge. Accounting, is not alien to this problem and is exploring the various possibilities that exist between the environment and accounting (Rodriguez, 2011). Therefore, Governments pay special attention in the productive sectors as support for action to combat this situation. From this concern the accounting area is making efforts through environmental accounting to establish an accounting model that allows companies to have relevant information about their environmental performance, and thus prevent and control the damage that their Productive activities can cause the environment (DA-Rosa and Col., 2013).

In this work are analyzed elements of environmental accounts proposed by different authors and show how in the accounting area efforts are being made to contribute to the reduction of environmental impact by companies, as it is a task that is not only of a certain sector, market or people if it is not a work that involves the whole society and the environment that surrounds it. Within the environment surrounding society are economic entities who should seek to contribute to the reduction of pollution to the environment. It is worth mentioning that the primary economy referring to management accounting, seeks through economic theory to mention the internalization of externalities, which is considered as a way by which the company is responsible Of the negative effects generated by the environment and society in general (Vásquez and Gonzales, 2009; Salgado-Castillo, 2014).

Therefore, the objective of the research was to analyze the elements of the environmental accounts and to show the efforts of the accounting area in matters of environmental impact.

2. Background of Enviromental Accounting

The accounting began its progress, because of the different cultures and peoples that appeared, one had to find a way to capture the legacy of relevant facts of the history with arithmetic projection, which occurred frequently and were very complex as for to be preserved by memory. Kings and priests had the need to define the distribution of taxes and settle their payment in some way or another. Lastly, traders have always been the part of society more committed to all kinds of new developments for data logging.

Old pieces were found in ancient times that were later considered as part of the beginnings of accounting, the clay splints are within those pieces, the system of

weights and measurements, the cuneiform script, the position and Settlement of the quantities, the mathematical operations, the pictographic and hieroglyphic writing, the coin and the papyrus. In the Middle Ages the Arabic numerical system was established, at that time the Crusades began where new mercantile routes arose, which gave rise to the establishment of some form to register the mercantile transactions that were carried out (Guajardo and Andrade, 2008). Accounting has evolved and structured as new needs are emerging in organizations and productive systems (Palacios and Suarez, 2015). At present, accounting has expanded to encompass through financial accounting and tax accounting, besides administrative situations that organizations are suffering as globalization progresses, and in recent years we work on a Environmental accounting in order to obtain the arguments and norms that allow an adequate development of the same one in the organizations because of the relevance that has obtained the environment.

The importance of environmental accounting lies in the objectives that the accounting-environmental information has according to the authors Vega and Ricárdez (2011), which describe below:

- 1) from the accounting perspective, it is important to study and analyse the Processes of valuation, measurement and control of the environmental processes.
2. To renew the regulations of registration and accounting management.
3. To improve the accounting contribution to the management practices of the environmental issue in the companies.

3. Accounting relationship with management

The book of Industrial and General Management of Fayol (1961), establishes six groups of operations or essential functions that exist in the company; One of these groups has the function of carrying out the accounting, which is defined as the instrument of vision of the company that must allow to know at any moment the current situation of the company and its plans forward. It must give a clear, accurate, concise and precise report on the economic situation of the company. A good accounting, which is simple and clear, allows you to have a clear idea of the company's conditions, is a powerful tool for management and decision making, so accounting is the fundamental support of every administrator.

With regard to the principles of social responsibility that goes very close to environmental accounting, it is interesting to know that for more than 2 decades have appeared within the business postulates when Taylor (1994) raised it as the progress Employee's and employer's share, in which the employer intends to get the maximum benefit and the employee to get a higher income. Friedman (1970), says, "responsibility is to earn as much money as possible by adjusting to the basic standards of society. Both in those embodied in the laws and in those embodied in the Ethical Customs "(1970:1).

The systems theory proposed by Von (1986), is the basis for the accounting system because it studies the totalities, defined as systems composed of interrelated parts or subsystems, that constantly interact with their environment, where each Part is related to a common purpose or objective of the system. The theory can be seen from the point of view of the Organization as a whole where the accounting system

plays a predictable role to achieve the objectives of the Organization or also from the focus of the accounting system which requires information from the other areas to be able to feed properly and provide important information for management decision making. The theory of systems requires an excellent attitude to examine the phenomena and to see the reality with their interrelations, the environmental accounting is a system that requires an integral vision of the environment where the organization operates to have a inputs and outputs That can have a feedback or can be modified to enhance benefits of the stakeholders.

Another point that must be highlighted when talking about environmental accounting is that the theory of value is present, and this is because it is perceived to value as something that pleases people to those objects or services that somehow satisfy their needs, some have perceived it erroneously as something additional to goods or services. The value (Ramirez, 2008) is much more than a property of the object, the value increases if the effort improves or if the cost is reduced.

Value-based management is aimed at providing enormous value to customers, shareholders, members of the company and the community in general. Value management must be played by all companies that want to maintain their competitiveness in the future.

In the commercial activities, like life itself, the goods compete, and only the most suitable ones persist (according to the theory of the value, those that have more value). The goods must be valued according to the advantages and disadvantages that each one presents in front of other equivalent goods that satisfy the same necessity. To create sustainable competitive advantages, organizations need to learn to unite social, economic, environmental and political factors in their processes and in the different links of the value chain (Ramirez, 2017).

The organizations that implement a management system established in the value, will develop a differentiator to compete in terms of the quality of products and corporative image that will show to the client and therefore the manufacture of its products maintain A high intrinsic quality, optimizing costs and performing the processes in a sustainable way (Ramirez, 2008).

4. Environmental accounts in the accounting system

The current economic model has placed individual economic needs over life conservation needs, by placing environmental care in the private sector, those who consider environmental damage as externalities of organizations, where they do not have the obligation to take responsibility for these damages (Terreos, 2014). In this type of model, capitalism manifests its triumph, as organizations have acquired some power because they are in charge of promoting consumption, production and innovation, but also with the acquisition of that power comes responsibility (Raufflet, 2010); And they have as a challenge to optimize productivity to be competitive in the market, which brings as a result that they contribute actively to the social, economic and environmental improvement, so they require tools that allow advances not only in the economic, But in the social and environmental (Alturo, 2014).

Currently, models that evaluate sustainability are characterized by multidisciplinary approaches that show the demand to manage with the most evolved styles of

decision and responsibility. The sustainable economy is the one where the social, economic and environmental area interact and is identified by the ecological benefit, where the best financial results and the best ecological positioning will be obtained (Dascalu, and Col., 2010). There are differences in the development of the social responsibility of the organizations between the different countries and, therefore, a greater impetus is necessary of the hand of the Governments and of the civil society (Alonso-Almeida and Col., 2015).

Today, accounting is required to report how organizations harm nature and its environment, because traditional accounting does not clearly reflect social and environmental costs because they are hidden within the general accounts, showing themselves as clearly financial costs, which means that companies are unable to show the impact of their activities on the environment in which they develop (Sánchez-Vásquez and Rodríguez-Jiménez, 2014; Vergara and Col., 2016). It is necessary for the accounting to play a definitive role as a tool for information and control of the operations that are carried out in the organizations, it is required to strengthen the environmental management with appropriate instruments, as well as the qualities Techniques and knowledge of professionals to solve the requirements that the environment imposes; The incorporation of the environmental dimension into the accounting system is essential as an element to refine the methods of planning and business decision making (Salas and Col., 2015). The monetary value of the amount of money directed to environmental problems is not adequate, because it is considered that it is through the market that this situation is to be resolved, so that accounting should show monetary and non-monetary data, Qualitative and quantitative environmental impact, strategies to reduce, remedy and maintain the environment surrounding the activities of organizations (Quinche, 2008). And it is required that the organization identify appropriately its stakeholders, that is to say, clearly determine who are the people who are interested in accounting for the situation of the Organization including environmental and social issues, not Making an adequate determination of the stakeholders will hardly obtain transparent, credible and verifiable reports (Palacios and Coppa, 2015).

The International Federation of Accountants (IFAC) considers the Environmental Management Accounting (EMA) the way where accounting systems and practices are established, EMA not only encompasses the monetary calculus commonly handled in accounting, but encompasses the calculation of materials (Lorea, 2008). Panario (2010), mentions that, from the economic-Financial perspective, the absence of accounting records of liabilities, costs and environmental expenses make it reflect unreal profits to the owners of the organizations and places them in an economic position that is not Consistent with the actual situation of the Organization; It is therefore necessary that environmental events be recorded in a detailed account, so that there is greater transparency in the relationship between the organization and the environment, in order to contribute through accounting With truthful and timely information for decision making.

Recently environmental costs have become significant in the decision making of the organizations, this is because the prices of goods and services that show the traditional production costs are no longer available, it is necessary to include The actual environmental costs of the use, recycling and disposition of goods and

services (Taleo-Cabrejo, 2008). Therefore, environmental costs are divided into different categories among which are the conventional environmental costs are those related to the use of raw materials, capital goods, inputs and services; Potentially hidden environmental costs are those related to responsible management of the working environment and waste generated by business activities, also the author mentions that there are environmental contingency costs which are those where the organization may incur in the future, are fines or penalties, personal injury; The costs of image and environmental relations are those where there is a decrease in income due to loss of image due to inadequate environmental management, and to end the author points out the existence of social environmental costs or externalities that are they relate to the environmental impacts of business, society or community (Taleo-Cabrejo, 2008).

For the authors Dascalu and Col. (2010), the environmental accounting system has as its main component the environmental costs for which it takes those established by the Environmental Protection Agency. The types of environmental costs that the Environmental Protection Agency classifies are internal and external; Within the internal are the conventional costs, hidden costs, contingent costs, image and relationship costs. Within the external costs are the costs of environmental degradation and human impact costs.

De-la-Rosa (2007), establishes that in the accounting system the environmental costs are classified in recurrent and non-recurrent costs. Within the recurrent are a) costs generated by the environmental information obtained; B. Costs from the development of an environmental management plan; C. Costs deducted from technological implementations in favour of the environment; (d) Costs caused by logistics of final disposal of waste, emissions into the atmosphere and discharges to water bodies and soils; Costs resulting from the final product and its management; F. Additional costs arising from administrative policies, and g) extra costs from environmental audits. Non-recurrent environmental costs are found to be a) cost-generated by information systems and environmental care; (b) Costs of facilities and investments for improvement; C. Costs arising from the company's annual maintenance and conservation; D. Costs caused by interruption in the operation; e) costs resulting from accidents; (f) Costs arising from the new needs of the environment; G. Costs deducted from the improvement of corporate image and the environment; h) Costs derived from monitoring and control systems; i) Non-disbursed costs; J. Legal costs, and k) other costs arising from specific actions.

For Braga (2009), the environmental accounting system is integrated by a new environmental position where the organization assumes a position of conservation, preservation or repair of nature, this situation is directly related to the costs of environmental expenses made by the organization and where it reflects on the life cycle of the products that the organization provides, through recycling, thus generating environmental income and where the new technologies play an important role. Through environmental assets, all of this results in a lower level of pollution, higher productivity and a better image for the organization.

Perera and Zicari (2009), propose a fourth financial statement to complement financial accounting, which would form part of the 3 traditional accounting states (Balance sheet, statement of income and cash flow) where social information and

Environment that aims to show the generation and distribution of wealth. Regarding the generation of wealth, sales are considered less the total direct costs to determine the value added obtained by the company. With the distribution of wealth is taken into account how the value generated between the various stakeholders is distributed. One of the advantages of this model is that it clearly shows the contributions the Organization makes to society in terms of job creation, investment, supplier development, environmental care and management, and tax payment. Corporate reports should be deeper and show appropriate and beneficial information as complicated and questionable. The fourth proposed financial statement includes job creation, investment, supplier development, care and management of environmental variables and tax payments, these points are the first part of the report because it carries the notes of the fourth State where the minimum requirements for corporate governance issues, code of ethics, consumer protection, among other points are embodied.

Salas and Col. (2015), establish a procedure on how to integrate the environmental dimension into the accounting system. It considers that the financial statements are the instrument for the environmental information has been presented in a clear, timely and relevant way, in addition to having the least permissible subjective influence. Manage environmental accounts such as environmental revenues, environmental expenditures, environmental costs, environmental assets, active environmental assets, tangible fixed asset, intangible assets Environmental and environmental liabilities.

Environmental costs are also considered as impacts caused by the company or organization and as a result of activities that affect environmental quality. It is important to mention that these impacts may be monetary or non-monetary (Becerra and Col., 2011).

5. Materials and Methods

In this research the design applied is non-experimental, the scope of the research is descriptive with a qualitative approach. It is a documentary research where the method used to carry out the review was done by different stages: the search for primary articles in the different closed and open databases such as Emerald, Conricyt, EBSCO, Elsevier, Scielo and REDALYC related to the subject of research, then the reading and the collection of information, and finally the information was synthesized through a content analysis to be able to interpret the results.

6. Results

After the review carried out in the investigation on the environmental accounts it was found that the accounts are named differently depending on the author, as for the conceptualization it was observed that the authors Taleo-Cabrejo (2008) and Dascalu and Col. (2010) Agree to take the definitions issued by the Environmental Protection Agency, while Salas and Col. (2015) establishes its definitions with the help of other authors about environmental incomes, environmental expenses, costs, assets and liabilities and explains through stages a procedure to integrate the environmental dimension into the financial information system. Braga (2009), presents several environmental accounts reflecting the new position that considers pertinent of the accounting in relation to the environment, constitutes in which consists each one of the accounts coinciding in general terms with the authors Salas and Col. (2015).

Mejia and Col. (2010) found that financial accounting is not adequate to express social aspects, as non-monetary measurements are required to demonstrate the effects of protection, conservation and care of resources Environmental, both complement each other.

During the review of the literature it was noted that in the accounting discipline as established by Larrán and Andrades (2015) It is required that at the level of undergraduate studies are taught more subjects of corporate social responsibility for the graduates to develop a Early awareness of the social and environmental aspects related to the organizations, only in postgraduate studies is where the subjects of environmental nature predominate.

7. Conclusions

The environmental accounting has obtained in recent years great advances in the establishment of accounting accounts and in which each one consists, advances in the non-monetary physical records that are required as complement to be integral, although some Authors consider that non-financial physical information should be handled separately from environmental accounting; However, if the environmental accounting focuses on only financial and monetary records, it is limited to only economic measurements, and the social and environmental aspects are not susceptible to being only economically measurable, because It requires the physical non-financial part to control and decrease environmental years. It is important to recognize that further development is still required for its application in a clear and precise manner in organizations, because the normative framework that will support its implementation is not specifically determined because the criteria Established International Accounting Standards Board (IASB) are not adequate enough to represent the environmental aspect within them, it has much to work still in that part to have the foundation to support the application of the Environmental accounting. It must be the priority of economic entities and society to care for and protect our planet in order to make development sustainable and lasting, so that it has something to inherit to future generations for its growth and development.

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