A NOVEL APPROACH TO ENVIRONMENTAL ACCOUNTING AND REPORTING

S. GOWRI ANTHERJANAM
Guest Lecturer, Dept. of Commerce,
Sree Sankara College, Kalady,
Kerala, India

***Abstract*—Environmental pollution is a worldwide phenomenon. Responsibility towards environment has become one of the most crucial areas of social responsibility. In present Scenario, density of population is a barrier for economic development, in spite of tremendous increase in population the responsibility is not up to the mark. Environmental pollution has already reached an alarming level due to liberalization, globalization and privatization. It spoils human health, reduces economic productivity and leads to loss of amenities. So in this article I am proposing a new approach for environmental accounting and reporting. It ensures the societal involvement with the industry and a check to current mechanism which leads to introduction of new holistic accounting. It reduces the environmental degradation which may increase the productivity with maintaining societal harmony.**

Keywords: Green accounting, Environmental accounting, Sustainability accounting, Conceptual model.

I. INTRODUCTION

Environmental accounting (green accounting) is a term with a variety of meanings. In many contexts, environmental accounting is taken to mean the identification and reporting of environment specific costs, such as liability costs or waste disposal costs [James Boyd 1998]. For the purposes of this analysis, a much more general definition is used. "Environmental accounting" is more than accounting for environmental benefits and costs. It is accounting for *any* costs and benefits that arise from changes to a firm's products or processes, where the change also involves a change in environmental impacts.

Green accounting is an accounting that attempts to include environmental costs into the financial results of operations. The need for environmental accounting can be inferred from the fact that gross domestic product ignores the environment and therefore decision makers need a revised model that incorporates green accounting. Green accounts are a vital part of corporate social responsibility and can help with decision making without compromising profitability. Essentially an organization needs to compare the costs of avoiding or preventing environmental damage against the cost of remedial activities.

A framework of green accounting would mean that investment decisions are made by comparing the overall private and social costs against the private and social benefits. A lifecycle assessment means that organizations can make decisions based on calculating environmental impacts at every stage of a product's life, from raw materials, through production, distribution and final disposal or recycling.

There is an urgent need for environment protection all over the world. Various initiatives include the introduction of SEEA- The System of Environmental-Economic Accounting. It contains the internationally agreed standard concepts, definitions, classifications, accounting rules and tables for producing internationally comparable statistics on the environment and its relationship with the economy. Developing nations like India is beginning to recognize that protecting biodiversity and ecosystems is a critical national priority. As a sign of its commitment, India hosted the most important meeting relating to the United Nations Convention on Biological Diversity (CBD) — the 11th Conference of Parties (COP-11) — in Hyderabad, during October 8-19, 2012.

The Rio Earth Summit of 1992 has led to the emergence of CBD framework which is the most comprehensive international agreement that aims to help protect and sustain biodiversity and ecosystems worldwide of which India is a signatory.

According to [Sherine Farouk 2012] Green accounting is considered to be an important tool for understanding the influential aspects of natural environment with respect to the economy. The data and information provided by environmental accounts are determined to be in relation to the involvement of natural resources in economic development and costs occurred due to pollution or resource degradation. The advantage of corporate environmental accounting initiative is identified as the ability to determine and create awareness regarding costs related to environment, which in turn helps in identifying the techniques for reducing and avoiding costs of such type. Due to this advantageous feature, the performance of the environment has also been improved. The environmental costs that occur due to the financial outcomes of the firm's operation can be determined by means of a green accounting tool. The operational performance of the organization can be determined with the help of certain process like documentation and reporting the emissions of green house gases (GHG). However, the conventional accounting system is determined not to be considered for new or existing demands for natural resources. This demand on natural resources may destabilize sustainability of economic performance and growth, depletion of natural capital, environmental degradation as a social cost of economic activity and also the account of nonmarket goods in gross domestic product (GDP)

Environmental accounting (EA) is seen by corporate managers and environmental advocates alike as a necessary complement to improved environmental decision-making within the private sector. Whether the goal is pollution prevention, or some broader notion of "corporate sustainability," there is a widespread belief that sound environmental accounting will help firms identify and implement financially desirable environmental innovations. Moreover, environmental regulation is evolving toward public policies that rely to a much greater extent on the collection and reporting of environmental information.

Aronson and Lokfgren (1999) state the recommendation made by the society for the environmental responsibility and its behavior from both government and business concerns by examining the ecological disasters and degradation of earth's ecosystem. It is a general fact that expected results will be obtained when the business managers problems by considering either promoting their profit or preserving the environment. Hence there should be standardized and quantitative measures in order to control the business activities polluting the environment before implementing a condition in which the business organization extent in the upcoming years.

Businesses have become increasingly aware of the environmental implications of their operations, products and services Poor environmental behaviour may have a real adverse impact on the business and its finances. Punishment includes fines, increased liability to environmental taxes, loss in value of land, destruction of brand values, loss of sales, consumer boycotts, inability to secure finance, loss of insurance cover, contingent liabilities, law suits, and damage to corporate image.

A. Objectives

The main objective of the paper is to study the literatures that deals with Environmental accounting or green accounting and sustainability. The work also makes an attempt to understand how green accounting has been considered and evaluated by different authors who have done researches in the same field. Based on different studies considered, a procedural model suitable for most of the developing countries is to be selected.

II. LITERATURE REVIEW

The section reviews the various studies that are dealt at international and national levels with respect to Green Accounting.

Gary Otte (2008) Commented in the article of 'GHG Emission Accounting' that the certain internal and external benefits of an organization by means of implementing green accounting system. He declares that GHG accounting emission involves, tracking emissions, accounting and reporting. The communication process between suppliers and firms may be developed by implementing GHG accounting which would lead to reduction of costs.. It has been declared that green accounting also involves certain limitations and barriers. Certain solutions have been provided by the author in order to compensate for the barriers. The author's point of view is that the organization can reduce the costs and experience certain beneficiary factors related to environment.

Harazain and Horváth (2011), in the article 'Relation between Environmental Accounting and Pillars of Sustainability' explained four challenges related to sustainable development. The objective was to find out whether social and integration point of view is outside of the concept environmental accounting. With various studies, the author was able to conclude that the environmental accounting is not beyond the social and integration challenges of sustainability.

In the article 'Green accounting methodology for India and its states' Haripriya(2008),explained the importance of green accounting. They opined that the existing GDP accounting system will result in unsustainable development because the existing GDP developments reduce the measure of economic growth rather than measuring national wealth. The current paper also tends to differentiate the traditional GDP and green accounting apart from the demerits of existing GDP can be compensated by green accounting methodology. A balance set of financial and nonfinancial measures are essential for the managers in order to make successful

Heba Y M & Yousuf (2010) analysed the concepts of environmental accounting by developing the techniques in environmental reporting. It enables the government to utilize and making businesses more aware of their corporate responsibilities. They also viewed that as the need for environmental accounting increases, there is a parallel increase in measuring the environment performance

(Yajhou and Doreweiler, 2004). In this study the relationship of environmental and business policy has been considered . The main objective of the study are government led incentive based regulation and public's consideration for the environmental accounting. Shortly, the companies including big corporate should have to frame business strategies that are concerned with environmental accounting.

International Union for Conservation of Nature (IUCN) (2003) explained the introduction of environmental accounting in brief in their booklet 'Environment Accounting: What's it all about'. The environment and system of National Accounts and the advantages of Environmental accounting with respect to the existing system of National Accounts have been declared in the section.

A report was published by United Nations Division for Sustainable Development (UNDSD) (2001). It was titled as 'Improving the Role of Government in the Promotion of Environmental Management Accounting (EMA)'. The objective of this report was to describe certain principles and procedures related to Environmental Management Accounting, find techniques to quantify environmental costs for the development of national EMA guidelines and framework. The report give equal importance to both conventional cost

management of the organization has underestimated the development and extent of such cost The work of Lehman (2011) viewed that management accounting to be a way to think about the natural world. The main objective of Interpretive Accounting Research (IAR) was to understand how accounting disciplines like management accounting are related to existing issues like global warming, carbon emissions and sustainability considerations. The interpretation highlights responsibilities to our shareholders and the natural world.

Bailey (1995), in his case study reported that the developing process of Green Accounting in AT&T's is based upon the definition provided by AT&T in July, 1995. According to AT&T, Green Accounting is defined to be "identifying and measuring AT&T's costs of environmental materials and activities, and using this information for environmental management decisions." The perspective of AT&T is represented by concepts, terms and approach and the perspectives of the US Environmental Protection

Lansiluto and Jarvenpaa (2010) examined the importance of "Performance Measurement Systems" including balanced cards. In their article on Greening the Balanced Score Card, they discuss how the performance measurement systems can incorporate metrics to identify with better environmental measures. It should be in a manner that the culture of the company is not questioned. They also opined that with the implementation of balanced score cards, environmental challenges in the performance measurement systems can be identified in a better manner

Jones (2010) presented a theoretical framework to identify the measures related to accounting of environmental issues and issuing reports in a manner, to ensure in terms of corporate responsibility, associating it between the type of industry and environment, impact of industry on the environment and voluntary disclosure.

The drive towards sustainable reporting was identified by Ambe (2009). He reported the legislative conventions which govern the internal decisions taken by a company in terms of generation and documentation of energy output from material, its resultant flow; the generation of waste from the end product was quite evident. In contrast when monetary issues were considered in terms of environmental accounting it was observed that the cost, profit and the savings of the company were together. The legislations as presented by Monetary Environmental Management Accounting (MEMA) in association with rehabilitation, decommission, restorations and petrochemical industries. The examined case study in this regard presents the evidence of information on environmental management.

An effective environmental management accounting system presents the concepts of sustainable accounting with regards to cost measurement, d social aspects and its ultimate value in addition to the corporation was identified by Cullen (2010) in his conceptual model; Sustainability Management Accounting System (SMAS). This model presented efficient cost allocation measures to create better measures of cost accounting which would ultimately enable the management to arrive at decisions and present better disclosure. In his paper titled Theoretical Framework for Environmental Accounting- Application on the Egyptian Petroleum Sector'. Hamid (2002) identified a framework of environmental accounting which covered issues relating to environment, ecology, natural resources and green accounting. His paper presented the latest concepts and definitions related to green accounting as well as identified the need for environmental accounting measures. Further, his study concludes on the idea that traditional measures of accounting do not take into account sustainable development measures and policies required for promoting better environment safety but delves into economic aspects only.and production costs were observed in the mining .

III CONCEPTUAL MODEL

Fig 1.1 A conceptual model is proposed in the figure1.1 which shows the relevance of the proposed idea.

An industrial development in the long run cannot be made unless it is eco-friendly. A conceptual model has been made to make rules and regulations and to checkout the impact of a particular industry on society and environment. The literature review presents a number of models. There are a number of aspects that a model has to incorporate in its framework. Some of these aspects are the responsibility of the firms towards the environment, the degradation caused to environment the relationship and impact of the industries on the society & environment and the measurement of the impact of industries on the environment. The impact should be studied and check whether the current accounting is adequate. If it is inadequate, the conceptual model will be effective only if it is continued by a correction mechanism that is new holistic accounting should be made which will in turn find ways for reducing environmental degradation. This cycle continues till the particular industry poses no danger to environment. The conceptual model can include aspects of other models that have previously been researched by various authors. For example Heba Y M and Yousuf (2010), examined the concepts of environmental accounting. In their study they explored the techniques to develop the environmental reporting concept that would enable the government to utilize the concept and make businesses more responsible for their externalities. The techniques they used would be beneficial when it comes to measuring the environmental impact. Cullen's (2010) model presented efficient cost allocation measures to create better measures of cost accounting which would ultimately enable the management to arrive at decisions and present better disclosure. Some of these models were used as a base for developing a proper model that is presented in the next section.

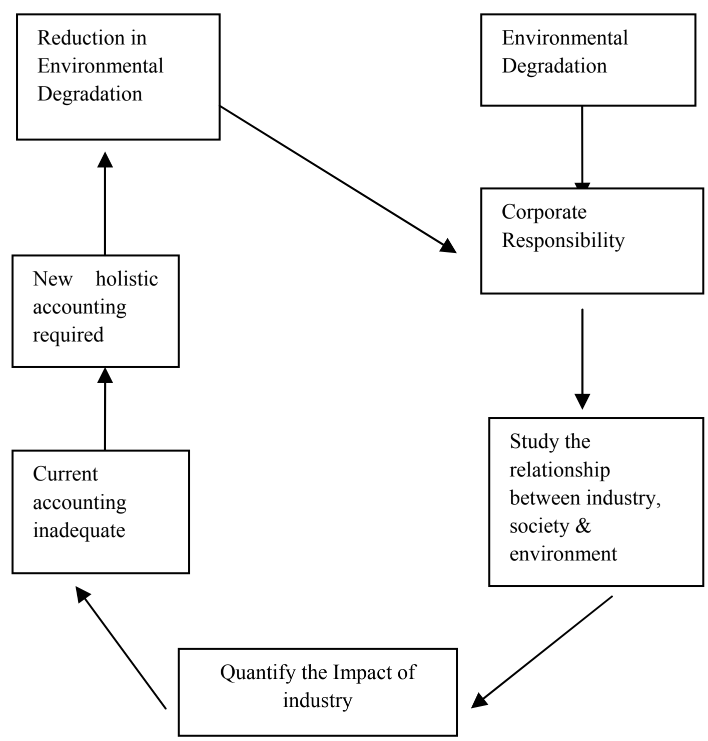

Figure1.1Conceptual model for Green Accounting

IV. CONCLUSION

With the implementation of environmental accounting, organizations will concentrate on cost reduction and cost control of pollution factors .This will lead to reduction in environmental degradation. In this paper a novel concept for reduction of environmental degradation is proposed .Different researchers have carried out their respective researches in relation to environment accountability and sustainability. The current mechanism should be checked out and new measures should be taken, if required to reduce the impact of industry on environment and society. The proposed model would increase corporate responsibility which will help to build an eco friendly organization. the productivity of the firm can be raised in hand with good relationship with the society.

REFERENCES

[1] Sherine Farouk, Jacob Cherian & Jolly Jacob "Green Accounting and Management for Sustainable Manufacturing in Developing Countries" International Journal of Business and Management; Vol. 7, No. 20; 2012

[2] Abdel-Rahim, Heba Y. M., & Yousef M. Abdel-Rahim. (2010). Green accounting – a proposition for EA/ER conceptual implementation methodology. *Journal of Sustainability and Green Business, 5*(1), 27-33.

[3] Adams, C. A. (2002). Internal organisational factors influencing corporate social and ethical reporting: beyond current theorising. *Accounting, Auditing & Accountability Journal, 15*(2), 223-50. http://dx.doi.org/10.1108/09513570210418905

[4] Adams, Carol, A., & Patty McNicholas. (2006). Making a difference Sustainability reporting, accountability and organisational change. *Accounting, Auditing & Accountability Journal, 20*(3), 382-402. http://dx.doi.org/10.1108/09513570710748553

[5] Ambe, Cosmas, M. (2009). Linkages of Sustainability and Environmental Management Accounting. *Innovation for Sustainability in a Changing World, 2*, 73-84.

[5] Arroyo, Paulina. (2006). The Three Dimensions of A Sustainable Management Accounting System. *Journal of Management Accounting Research, 13*, 47-90.

[6] Asheim, G. B. (1997). *Adjusting green NNP to measure sustainability.* The Scandinavian Journal of Economics,forthcoming. http://dx.doi.org/10.1111/1467-9442.00068

[7] Bailey, Paul. (1995). *Environmental accounting case Studies: Green accounting At AT&T'* (3rd ed.). Los Angeles: SAGE Publications, Inc.

[8] Bennett, M., & James, P. (1997). Environmental-related management accounting: current practice and future trends. *Greener Management International, 17,* 33-51.

[10] Bețianu, L. (2009). *Calitate totală în contabilitatea mediului*. Universității, Alexandru Ioan Cuza, Publishing House, Iași.

[9] Burnett, Royce, D., & Don R. H. (2008). Ecoefficiency: Defining a role for environmental cost management. *Accounting, Organizations and Society, 33*, 551-581. http://dx.doi.org/10.1016/j.aos.2007.06.002 www.ccsenet.org/ijbm International Journal of Business and Management Vol. 7, No. 20; 201242

[10] Cullen, D. (2010). Sustainability Management Accounting System (SMAS): Towards a Conceptual Design for the Manufacturing Industry. *Journal of Business & Economics Research, 4*(10), 1-4. Daniel Blake Rubenstein. (1992). Bridging the gap between green accounting and black ink. *Accounting. Organizations and Society, 17*(5), 501-508. http://dx.doi.org/10.1016/0361-3682(92)90044-S

[12] Gray, R., Javad, M., Power, D. M., & C. Sinclair, D. (2001). Social and Environmental Disclosure and Corporate Characteristics: A Research Note and Extension. *Journal of Business Finance & Accounting, 28*(3), 327-56. http://dx.doi.org/10.1111/1468-5957.00376

[12] Gundimeda, Haripriya et al. (2008). Green Accounting Methodology for India and its States. *Green India States Trust, 6,* 23-42.

[13] Hamid, Mohamed, A., & Raouf, A. (2002). *Theoretical Framework for Environmental Accounting- Application on the Egyptian Petroleum Sector.* Ninth Annual Conference of the Economic Research Forum (ERF), Cairo,Egypt.

[14] Harazin, P., & Horváth, Gy. (2011). *Relation between Environmental Accounting and Pillars of Sustainability.* World Academy of Science, Engineering and Technology. Hecht, Joy E. (2000). Lessons Learned from Environmental Accounting: Findings from Nine Case Studies. *IUCN – The World Conservation Union, 42*, 1-48.

[15] Hopwood, Anthony, G. (2009). Accounting and the environment. *Accounting, Organizations and Society, 34,* 433-439. http://dx.doi.org/10.1016/j.aos.2009.03.002 International Federation of Accounts. (2005). Environmental Management Accounting. *International Guidance Document, 3*, 1-92.

[16] Jasch, C., & Zaneta S. (2005). From Environmental Management Accounting to Sustainability Management Accounting. *Environmental research, engineering and management, 4*(34), 77-88.

[17] Jones, Michael John. (2010). Accounting for the environment: Towards a theoretical perspective for environmental accounting and reporting. *Accounting Forum, 34,* 123-138, http://dx.doi.org/10.1016/j.accfor.2010.03.001

[18] Lafontaine, J. P. (2002). *Enseignement et management de l'information: le cas de la comptabilite environnementale.* XXIII congres de l' AFC, Toulouse. Lansiluoto, A., & Marko J. (2010). Greening the balanced scorecard. Science Direct. *Business Horizons, 53,* 385-395. http://dx.doi.org/10.1016/j.bushor.2010.03.003

[19] Lehman, Glen. (2011). The Management of Sustainability: The Art of Interpretation. *JAMAR, 9*(1), 23-37.

[20] Linyu X., Bing Yu., & Wencong Y. (2010). A method of green GDP accounting based on eco-service and a casestudy of Wuyishan, China. *Procedia Environmental Sciences, 2*, 1865-1872. http://dx.doi.org/10.1016/j.proenv.2010.10.198

[21] Milne, Markus J. (1996). On sustainability; the environment and management accounting. *Management Accounting Research, 7*, 135-161. http://dx.doi.org/10.1006/mare.1996.0007

[22] Moller, A., & Stefan S. (2008). The Sustainability Balanced Scorecard as a Framework for Eco-efficiency Analysis. *Journal of Industrial Ecology, 9*(4), 73-83. http://dx.doi.org/10.1162/108819805775247927

[23] Otte, G. (2008). GHG Emissions Accounting. *Accounting, Organizations and Society, 27,* 687-708.

[24] Parker, L. (2005). Social and environmental accountability research: a view from the commentary

box.*Accounting, Auditing & Accountability Journal, 18*(6), 842-60, http://dx.doi.org/10.1108/09513570510627739

[25] Perez, Esther A. (2007). Environmental management systems as an embedding mechanism: a research note. *Accounting, Auditing & Accountability Journal, 20*(3), 403-422,http://dx.doi.org/10.1108/09513570710748562

[26] Persson, A. (2004). *Environmental Policy Integration: An Introduction*. Stockholm Environment Institute, Stockholm.

[27] Stanojevic, M., Vranes, S., & Go¨kalp, I. (2010). Green accounting for greener energy. *Renewable and Sustainable Energy Reviews, 14*(2010), 2473-2491. http://dx.doi.org/10.1016/j.rser.2010.06.020

[28] Thomas A., & Karl-Gustaf L. (1999). Pollution tax design and & Green national accounting. *European* www.ccsenet.org/ijbm International Journal of Business and Management Vol. 7, No. 20; 2012
43 *Economic Review, 43*(1457), 1474.
United Nations Division for Sustainable Development. (2001). *Environmental Management AccountingProcedures and Principles.* New York.

[29] Yakhou, M., & Vernon P, D. (2004). Environmental Accounting: an essential Component of business Strategy.*Business Strategy and the Environment, 13*, 65-77. http://dx.doi.org/10.1002/bse.

AUTHOR'S PROFILE

S.GOWRI ANTHERJANAM completed M.Com from M.G University, Kerala in the year 2011 and B.Com from M.G University in the year 2009. She is CA Final Scholar and currently working at Sree Sankara College, Kalady as Guest Lecturer.