



Article

Environmental Accounting: A Global and National Perspective in the Context of the Sustainable Development

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Abstract

It will not be an exaggeration to say that the biggest challenge which the humanity faces in modern times is the sustainable development. Environmental accounting has emerged as an area which is closely related with the sustainable development. Environmental accounting is also referred to as the green accounting. The deeds of modern men have left no stone unturned to harm the environment and this loss to environment has almost taken an irreversible pattern. Environmental accounting will help in deciding the environmental liabilities and also unearthing the factors responsible for environmental degradation with their quantification also. Environmental assets are our mutual responsibility and the combined effort of entire humanity is needed to see to it that the human environment remains intact and its current stage of rampant degradation can be reversed. There is need for global awakening and efforts to ensure proper environmental accounting and various countries have taken steps in this regard. The progress is more visible in case of developed nations and the mass awareness about environmental issues has played a vital role in these countries in this regard. Among the notable of such initiatives on global levels are United Nations frameworks like the System of Environmental-Economic Accounting (SEEA) and the Global Reporting Initiative (GRI). On national level also there is increased thrust on environmental accounting but still a lot needs to be done. It will not be unfair to say that the environmental accounting efforts in India at present are passing through the nascent stage and these are not as pronounced as in the developed countries. This paper presented by the author attempts to explore the aspect of environmental accounting and associated developments from a national and global perspective.

Keywords: *Environmental Accounting, Sustainable Development, Global Perspective, National Perspective, Global reporting Initiative.*

1.0 Introduction:

The environmental issues have gained great importance world over. It will not be unfair to say that rapid industrialisation and rampant expansion of the manufacturing sector ever since the advent of industrial revolution has caused serious concerns about the environment. It has brought to fore the relevance and significance of the environmental accounting. The world community has witnessed an increase in the environmental degradation, resource depletion along with the threats from climate change in recent decades. It has also necessitated the focus on sustainable development making them an integral part of the modern economic growth models. Traditional accounting has not been able to capture the consequences of the environmental degradation due to the production and economic activities. All these developments have led to the emergence of the environmental accounting as a means to bridge the gap between economic performance and the environmental sustainability.

Environment accounting is often referred to as the green accounting and it aims at the

integration of the environmental assets and associated costs into the conventional financial accounting frame work. It involves the identification, measurement and reporting of the data related to the environment which may include the indicators like pollution levels, resource usage rate, environmental liabilities and expenditures related to the protection of the environment. By internalizing environmental externalities, it enables policymakers, corporations, and stakeholders to make informed decisions that align economic objectives with ecological imperatives. At global level the major initiatives include the United Nations and frameworks like the System of Environmental-Economic Accounting (SEEA) and the Global Reporting Initiative (GRI). They are playing a crucial role in standardising and promoting the environmental accounting practices. Developed economies have taken steps to integrate the environmental concerns with their national accounting systems. There are regulatory compulsions on the corporate disclosures on environmental issues and sustainability goals.

When it comes to national perspective particular in the context of the environmental accounting, we find that still the things are passing through a nascent stage. In India though the initiatives like the Business Responsibility and Sustainability Reporting (BRSR) and natural capital accounting have been taken but still there are many hinderances due to inadequate data availability, poor awareness coupled with very weak regulatory enforcement. This reflects a clear gap between the global and national environmental accounting scenario.

2.0 Review of Literature:

In this section of the paper, the review of the past studies in the context of the current paper is being presented. Sharma, P., et al (2020)¹ in their study focused on ESG disclosure among Indian firms during (2013–2016). The study revealed the stronger financial and market performance promotes disclosure on one hand on the other hand foreign ownership and leverage tends to adversely affect the disclosures. Ekundayo, G., & Odhigu, F. (2021)² in this review-based study focused on various definitions of the environmental accounting, its theoretical foundations, empirical findings across developed and emerging economies and discussed about the gaps present in the context of the profitability, leverage and contextual consistency. The study emphasised on the International Financial Reporting Standards (IFRS) for coherent cooperate sustainability. Holmes, C., & Yarrow, D. (2023)³ in their study focused on the role of System of Environmental-Economic Accounting (SEEA) in the context of its role in integrating the environmental values in the mainstream macroeconomic framework by extending the boundaries of nation al accounting. Tsang, A., Frost, T., & Cao, H. (2023)⁴ in their study conducted a literature review on Environmental, Social, and Governance (ESG) disclosure and their study highlighted the motivations, outcomes and disclosure characteristics and emphasized the growing relevance of nonfinancial rating agencies. The study pointed towards the need for work in future on intermediaries and

comparative effects. Kumaresan, P. R., et al (2023)⁵ in their study highlighted the progress made in international environmental agreements and pointed towards the policy and implementation gaps. The study suggested for the shift towards ecosystem restoration and the increased role of human-rights frameworks in sustainability efforts. Sundarasan, S., et al (2024)⁶ in their study focused on the environmental accounting research from 1995–2024 through meta-synthesis. The study focused on four main themes namely audits, green accounting, CSR, and protection and revealed a significant growth since 2022 in unified reporting. Ahmad, T., & Pandey, S. (2024)⁷ in their study focused on the environmental accounting and reporting practices in Indian firms. The study discussed about early green accounting adoption and regulatory framework in this regard like SEBI and MoEF guidelines. The study pointed towards limited reporting which is due to the costs, standards and implementation gaps.

3.0 Objective of the Study:

The main objective of the study are as follows:

1. To study the conceptual linkage between the environmental accounting and sustainable development.
2. To present a comparative view of the global and national perspective of the environmental accounting.

4.0 Hypotheses of the Study:

1. Sustainable development is the global necessity in present times and environmental accounting is a means to achieve it.
2. There are comparatively more concrete steps taken by developed nations to enforce environmental accounting in comparison to India.

5.0 Research Methodology:

The study is exploratory in nature and it is predominantly based on the secondary data and information. The study attempts to explore the conceptual linkages. On the basis of the facts and information collected from the secondary sources, the acceptance and rejection of the hypotheses of the study is decided.

6.0 Discussion:

In this section of the study certain observations from the secondary sources particularly some published reports and other observations are being presented in order to draw some conceptual support to test the hypotheses of the study.

6.1 Need for Environmental Accounting

The ongoing debates world over regarding sustainable development is a clear testimony for the relevance and significance of the environmental accounting. During the days of less population on earth, earth's environment had its happiest days but as the number of human beings on earth increased, it became almost sure that happy day of earth's environment are

over. Developmental economists in the past least bothered to consider environment as a valuable input in overall decision making in relation to socio- economic development of mankind. In modern times the cost of product is not merely the cost involved in its production and supervision but also the cost of environmental degradation, it has contributed to. If an unbiased evaluation of world's balance sheet and income statement is carried out then the head of environmental degradation alone will tilt the readings towards irreparable and irreversible losses. Nature has its own tolerance limit and man has already crossed it. The presumption that nature has infinite capacity to zero in the misdeeds of human beings is based on false notions. Even if nature attempts to achieve it, the day may come when population of human beings on earth will become zero.⁸

This rampant exploitation has sent alarming signals and it will not be an exaggeration to say that the entire humanity is now in the danger of getting extinguished. The corporates will have to share a great responsibility by resorting to the ecofriendly production techniques and they need to keep a constant eye on their production from the lenses of environment and sincerely move towards environmental accounting of their businesses.

6.2 From “Limits to Growth” to “Beyond the Limit”

“Limits to growth” and “Beyond the Limit” are two classical global studies conducted on environmental issues in two different intervals of time and their outcomes have lot to tell and suggest the entire humanity. It was in the year 1968 that a group of seventy-five persons belonging to different strata of society founded the club of Rome. This group was of the opinion that the possibilities of continuous growth had exhausted and if timely action was not taken then it would be difficult to avoid a planetary collapse. In the year 1970, its foundational concept paper “The predicament of Mankind”⁹ was presented by Aurelio Peccei and Alexander King, co- founder of Club of Rome. It was a warning call which served the purpose of establishing that global problems are deeply interconnected and the solutions need to be holistic and global in nature. The ideas put forth in this report remain contextual even today considering the problems like climate change and sustainability. This concept paper was followed by the publication of “Limits to Growth”¹⁰ in 1972 by Donella Meadows, Dennis Meadows, Jørgen Randers, and William Behrens commissioned by the Club of Rome. The authors of the book stimulated the global population trends, industrial output, resource utilisation and environmental pollution. The report strictly warned that in case, the present trends of population growth and industrial isation are not checked timely then it may lead to planetary collapse within the 21st century. This report sparked global debates for a shift towards sustainable approaches. The “Limits to Growth” report was a clear signal for a potential collapse of the eco-system if the prevailing problems are not addressed. It is interesting to point out here that in the year 1992 after twenty years of the publication of “Limits to Growth”, three out of the four MIT scientists who published it, another report this

time with the title- “Beyond the Limits”¹¹ was published. It was authored by Donella and Dennis Meadows along with Jorgen Randers. This report pointed towards some irreversible damage already done but still a window of opportunity remained open to prevent further damage to avoid societal and ecological collapse. Here, it is worth mentioning here that the things have come to “Beyond the Limits” in 1992 from the “Limits to Growth” in the year 1972. These reports give serious lessons to mankind and the urgent need to address the environmental concerns. These developments have ignited the need of environmental accounting so that the timely corrective actions can be taken.

This report was further updated as a follow up report titled- “Limits to Growth: The 30-Year Update” in 2004, authored by Meadows, D. H., Randers, J., & Meadows, D. L. Processing the updated data coupled with the improved modelling techniques, the authors reaffirmed that many of the original projections remain valid even today. The authors warned that the planet has already crossed critical environmental thresholds in areas such as climate change, biodiversity loss, and resource depletion. The report underscored the urgency of a shift towards sustainable development approach and firmly suggested to change the mindset of "business-as-usual" model otherwise it may result in socio-ecological collapse. However, the authors expressed their optimism also that with timely action, technological innovation, change in human values and mindset towards environment, these damaging trends can be reversed and checked. The author of the paper is of the view point that “Environmental Accounting” can act as guide and tool to help foster sustainable development.

6.3 Environmental Accounting: Global and National Perspectives:

Environmental Accounting is also known as Green Accounting. In the discourse of sustainable development, it has emerged as an important area. Author is of the opinion that there is time to revamp the traditional business accounting as it has failed to capture and record the vital aspect of environmental degradation which is closely associated with the deeds of modern-day corporates. Conventional system of accounting is all set to undergo sea change in coming times. In fact, the business accounting has already started to experience the pressure of widening its horizons to encompass the changes of far-reaching impact taking place in the way modern business is being conducted across the globe. “Virtually all commercial enterprises have some form of accounting function. Accounting has become the universally adopted system of communicating economic information relating to an organization and its activities. The notion of accounting however is far from being a new phenomenon. Accounting records dating back to ancient civilizations have been located, including building accounts for the Parthenon in Athens which have been found on marbles tablets. Similarly, ancient Greeks records exist illustrating an early form of stewardship accounting known as ‘charge and discharge accounting’: charge representing the amounts received and discharge being the amount expended (de Ste Croix 1956). This system was

further developed in Italy throughout the thirteenth and fourteenth centuries. The development included the practice of distinguishing between debt and credit entries and the use of two-sided accounting entries. The origins of double entry book keeping system thus began to take form.”¹³

Here is an excerpt from one paper of author which speaks volumes of the changes needed in the modern-day business accounting. “It is often said that business cannot be earned in moral vacuum. Morality and ethics are a must to label an earning as profit. In present circumstances, the issue of ethics and morality has gained significant importance in corporate world because number of variables governing the function of morality and ethics in business has surpassed all limits of the past. Business accounting techniques were developed at a time when no one gave a heed to the aspects of environmental conservation as it was not as serious a concern as it is today. Today we cannot think of overlooking these issues in business accounting”.¹⁴

Environmental accounting started gaining significance since 1970s with the rise in environmental consciousness. However, it saw the real impetus form the 1992 Rio Earth Summit. It aims at identifying, measuring, and communicating environmental costs incurred due to economic activities and integrating these into conventional accounting practices. The goal is to provide a more comprehensive view of an organization's performance, beyond financial profits to include ecological impacts.

6.3.1 Environmental Accounting: Global Perspectives:

Following are the major initiatives at global level in the context of environmental accounting.

System of Environmental- Economic Accounting (SWEEA)

It is developed by United Nations as a framework aimed at integrating the environmental data with economic accounts. This facilitates the countries to report the interactions between economy and environment so that the sustainability indicators like carbon emissions, energy usage, and natural capital can be monitored.

ISO 14000 Series

The International Organization for Standardization (ISO) developed this series. It provides guidelines regarding the environment management systems including the environmental cost metrics. This acts as an encouragement for businesses to adopt environmentally friendly processes and integrate environmental considerations into decision-making.

Global Reporting Initiative (GRI)

These standards are widely accepted for sustainability reporting. These standards are used by the organisations to disclose their environmental performance on the parameters like water wastage, biodiversity impact, and waste management. Environmental accounting data feeds into such sustainability reports.

IFRS and SASB Integration

In recent years, the International Financial Reporting Standards (IFRS) Foundation and Sustainability Accounting Standards Board (SASB) have collaborated to create consistent environmental and climate-related disclosure norms. This marks a shift toward mainstreaming environmental risks in financial statements.

6.3.2 Environmental Accounting: National Perspectives:

In India the developments with regard to environmental accounting are passing through nascent stage. In comparison to the initiatives taken by the developed nations to inculcate environmental accounting, India lags behind. Various factors hinder the progress of India in this context like vast population and lack of awareness among masses. The Ministry of Statistics and Programme Implementation (MoSPI), with the support of the United Nations, has begun developing Natural Resource Accounts. Another noteworthy step is the Business Responsibility and Sustainability Reporting (BRSR) framework for top-listed companies by SEBI. Some Indian companies like Infosys, Wipro, and Tata Steel have voluntarily started environmental cost disclosures. To bring maturity and direction to the India's efforts to promote environmental accounting, there is need for government making the environmental disclosures as the mandatory requirement particularly for the large organisations. There is a need for institutionalising the National Green Accounting frameworks with clear enforcement mechanisms. Educational institutions and professional bodies must introduce environmental accounting modules in accounting, economics, and business courses. Specialized training programs for corporate accountants should also be introduced. Investing in R&D to develop scientific methods for valuing natural resources and ecological services is essential. This will help in more accurate and standardized reporting.

7.0 Conclusion:

It can be seen from the discussions presented in the paper that both the hypotheses of the study stand accepted. No one can deny sustainability is the most pressing global need at present time. Various reports published by the scientists of MIT ranging from "Limits to Growth" to "Beyond the Limits" are clear alarms to the mankind that the world's environment is in severe danger of planetary collapse. The sincere realisation of the environmental concerns in modern times can be cited back to the "The Predicament of Mankind" in 1970 and in particular to the Stockholm convention in 1972. However, the first and most widely used definition of the sustainable development came to light during the Brundtland commission. It was- "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (World Commission on Environment and Development, 1987). This commission is commonly known as the Brundtland Commission, named after its chairperson, Gro Harlem Brundtland, former Prime Minister of Norway. The definition appears in the commission's landmark report titled "Our Common

Future”¹⁶, published in 1987. All these developments are clear indicators of the growing realisation of the necessity of adopting the sustainable development practices.

Environmental Accounting is also known as Green Accounting and it aims at the integration of the environmental assets and associated costs into the conventional financial accounting frame work. It is not very difficult to imagine the vital role of environmental accounting in the efforts towards sustainable development. The realisation of environmental accounting both as a concept and in practice is more profound in the developed countries. India has also taken certain steps in this direction but still a lot needs to be done.

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