

Green Cost Accounting, Environmental Economics and Auditing Concepts: Efficient and Effective Utilisation of Natural Resources via Corporate Sustainability and Responsibility Approach

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Abstract

The paper explored green accounting, environmental economics and auditing: efficient and effective utilisation of natural resources via corporate economic sustainability and responsibility approach. It is discovered that businesses and academics worldwide agree regarding the benefits of sustainable development (SD). Improving reputation and branding and increasing revenues by reducing costs are the primary strategic objectives of any entity. The content analysis showed that the requirements of green accounting include: expanding corporate social responsibility, production cannot be exempted from environmental protection, the manufacturing of clean products can generate pollution, the external production cost should be internalized, the redesign to improve the product production process and packaging, reducing resource waste and implementing the (Reduce, Recycle, Reuse) 3R policy, lifecycle assessment for all assessments and developing environmentally-friendly products. Green accounting initiatives and strategies for SD comprise the results of a decade research work within an interdisciplinary team of academics, with all concerned about the global crises. Environmental accounting is a comprehensive tool for introducing environmental considerations into business decisions. the introduction of internal environmental costs in the accounting system will help companies make decisions that, in addition to increasing long-term profitability, will improve the environmental performance and, by introducing themselves as the green industry to the capital market, will increase the shareholder's wealth and will provide an environmental accounting system based on the idea of classical accounting evolution. In this regard, the costs of pollution and their elimination as a function of production or services, along with the profit and the cost of goods and services themselves, are calculated.

Keywords: *Green cost accounting, environmental economics, environmental auditing and utilisation of natural resources: corporate sustainability and responsibility approach.*

1.0 Introduction

Green or environmental accounting is one of the modern concepts in accounting thought, which has attracted great interest among many researchers, scientific bodies, and government agencies. This concern is the result of pressure exerted by government agencies and associations that care about the well-being of society as well as not harming the environment. Human activities have led to damages to the environment, including depletion of natural resources, environmental pollution and abnormal climates. The global consensus at present is to promote sustainable development, among which corporate social responsibility (CSR) is most closely associated with business. Many countries around the world have mandated enterprises to establish green accounting and to disclose environmental information for the reference of interested parties.

Global warming and climate change are the most crucial environmental issues facing the business world (Menike, 2020). Human activities have led to damaging the environment, by depleting natural resources, and polluting the environment. Susanto and Meiryani (2019) suggest that the reaction of the organization towards environmental issues is pivotal not only to the environment but to the organization itself in developing corporate image, sustainable practices and certifications that enhance organization repute and managers understanding of the environmental need along with improved societal commitments. Bouarar et al. (2022) argue that "the green economy helps in overcoming environmental problems, depletion of natural resources, and ensuring the well-being of people at the lower position of the economic pyramid".

Waste recovery has become one of the most important strategies to reduce environmental issues and improve economic performance in an industry. Thus, different systematic approaches have been developed for waste recovery. With increasing resource scarcity and environmental impacts resulting from inefficient resource utilization, accounting for resource consumption along the life cycle of a product or service becomes critical for designing production–consumption systems. Many environmental costs can be significantly reduced by making better business decisions for investing in more environment-friendly technologies (green industries) and re-designing processes and products because some of these costs may not add value to the system or product (Leung Pah Hang et al., 2016; Özokcu & Özdemir, 2017).

Green accounting is a key part of corporate social responsibility and can help improve decision making and convince business leaders about the value of its implementation.

Green accounting is one of the options that gauge the environmental impact of human activity on the earth's ecological systems and resources (Byzzanthi & Ermawati, 2021). As green accounting has become more important nowadays, investors and consumers need more information on a company's environmental and social performance (Hossain, 2019). By environmental accounting and reporting, valuable information related to the impact of activities of companies on the environment are identified and disclosed (Üçoğlu, 2022).

Green accounting will help organizations in identifying the use of resources and the costs spent (Singh et al., 2019). Therefore, as a key step towards a sustainable economy, green accounting aims to incorporate environmental factors into the financial results of its activities.

2.0 CORPORATE SUSTAINABILITY AND RESPONSIBILITY COSTING APPROACH

The business environment is rapidly changing, and organizations are becoming increasingly competitive. How to make the firm prosper, it must sustain short-term success while also considering the organization's long-term viability. Furthermore, corporate stakeholders, such as investors and customers, have placed a higher emphasis on sustainable development methods to achieve economic, environmental, and social sustainability (Chabowski et al., 2011). Sustainability has become a strategic direction, as well as a strategic role in the orientation of the industry as it identifies consistent trends across all human and corporate activities. Corporate sustainable development is viewed at the micro-level as a new management paradigm that recognizes a company's growth and profitability while also requiring businesses to include and pursue unfavorable social goals, especially those related to sustainability issues such as environmental protection (Tien et al., 2020).

According to the proposals presented in diverse models (Craig & Glasser, 1994; Cortes, 2016; Cairns, 2009; Mason & Simmons, 2014; Rodríguez, 2015), the characteristics that identify the integration of green accounting in a company are (A) implementation of environmental policy, (B) development of environmental strategies, (C) establishment of environmental financial reports, (D) introduction of environmental accounts, and (E) presentation of environmental reports that document the processes for reducing environmental impact. Other models stress that green accounting must be established as a socioeconomic tool to facilitate company adaptation of principles and activities. This is vital to mitigate the environmental impact of their organizations through business processes and accounting recognition of the different environmental activities (Novillo & Hachi, 2014). According to Vasallo et al. (2017), the implementation of environmental accounting is established as a competitive process that points towards new strategies such as the decrease of risks to environmental reputation, strategic innovation, entry into international markets, adaptation to the global market, among other benefits that contribute towards human and social development at companies.

Companies must go beyond the financial baseline to achieve development sustainability, which also stresses a company's performance on social and environmental challenges. Three basic values guide him in this endeavor: environmental purity, social justice, and economic prosperity (Elkington, 1997). Sustainable development is an important idea in the application of business sustainability. Sustainable development is a subset of business activities that are involved in achieving good strategy and performance outcomes. They also recommend that sustainable development should concentrate on enhancing one or more of three major strategic areas: long-term stakeholder support, market development, and financial performance contributions.

There is a need for green accounting at the corporate level, according to (Riyadh et al., 2020). Green accounting, for example, at the corporate level assists management in determining if the organization is on track to being responsible for sustainable development while still reaching business objectives. Environmental hazards, on the other hand, might have an impact on financial statements prepared on an accrual basis. Environmental accounting is critical at the corporate level, according to (Riyadh et al., 2020) for example, to assist management in

determining if the responsibility for sustainable development is aligned with the organization's business goals.

Sustainable development (SD) is a widely accepted objective of economic policy making. In order to make decisions in accordance with this criterion there is great need for integrated indicators that provide a measure of sustainability in economic development. In the economic theoretical literature much attention has been given to the construction of such indicators related to national income accounting. In this article a survey will be given of this literature. Another objective is to report on the progress made in the practice of national income accounting.

Sustainability contains three pillars; they are environmental, social and economic parts.

These three pillars of sustainability overlap and are interconnected (Hamoud Ismail et al., 2018). Environmental accounting is a wide area of accounting science. This approach provides reports for internal use that is called environmental management accounting; this helps management to decide about pricing, fixed costs control and capital budgeting, and its external function is to disclose environmental information favored by public and financial communities. Environmental accounting includes production, analysis and the use of information related to financial matters in the environment regarding the economic and environmental performances of a company. It is aimed to create a better relationship between financial and environmental performances, including environmental constancy in the organization's culture and performance by providing needed information for decision-makers to reduce commercial costs and risks, thereby adding value. Economic savings only constitute part of the business for sustainable development (SD). The higher value relates to non-obvious advantages that are related to the social and environmental responsibilities of the company.

Green accounting is to use lifecycle assessment to measure the environmental impacts of corporate activities, promote the use of clean production, adopt total cost assessment and combine traditional accounting to disclose the environmental financial information of the enterprises. The purpose is to urge enterprises to implement effective and efficient environmental activities, so as to achieve sustainable development.

SD rests upon three pillars: economic, social and environmental sustainability. After its first appearance on the international scene in the 1980s, the SD concept gradually gained more space in public discussions. SD requires that the development programmes should not only focus on economic sustainability but it should also take into account the complex and dynamic interactions among economic growth, environmental degradation and intra/inter-generational equity in the society (Chen et al., 2014; Nasreen et al., 2017; Cucchiella et al., 2017; Atılsarı, 2015).

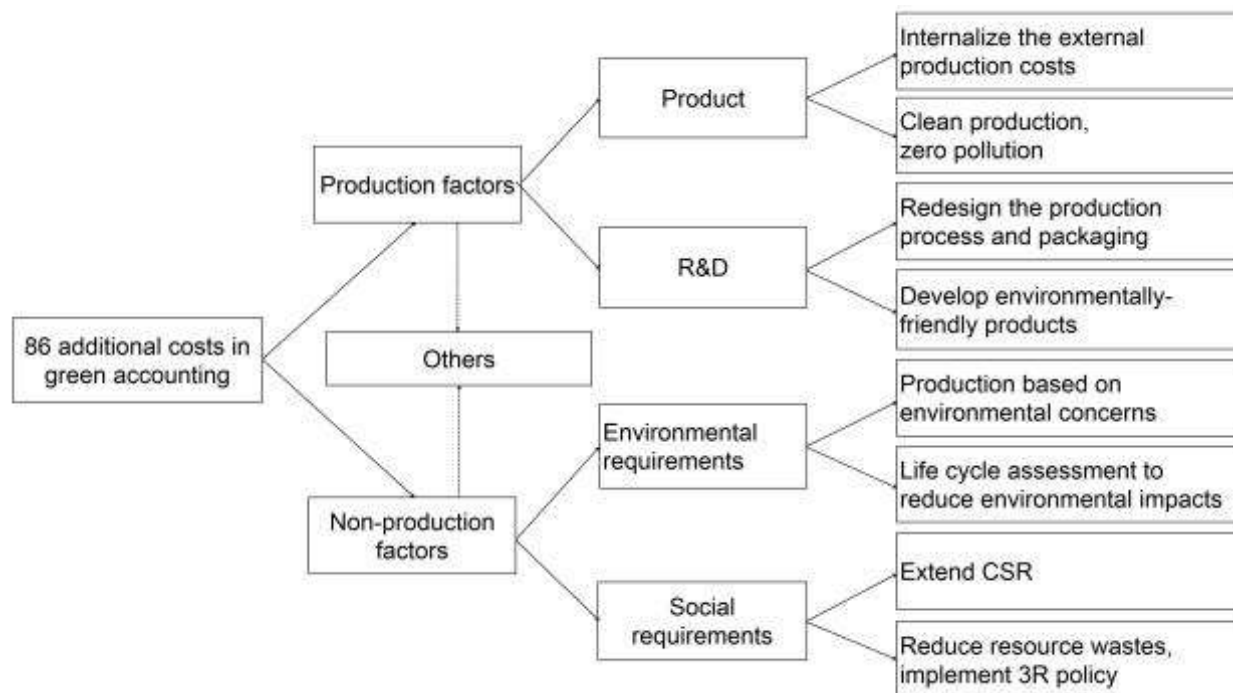


Fig 5: CSR, corporate social responsibility on additional cost in green accounting

Source: Jui-Che & Hsieh-Shan (2015).

2.1 Identification and revelation of environmental costs

Environmental accounting identifies and measures the use of resources, their impact, and cost, which include cleanup of contaminated areas, environmental fines, taxes, purchase of green technology, waste treatment, and the integration of environmental externalities. An environmental accounting system consists of an ecological account and an adapted conventional account. The adapted conventional account measures impacts on the environment in monetary terms. The ecological account measures the impact that a company has on the environment in physical terms; kilograms of waste produced, kilojoules of energy consumed (Cabello, 2016; Banguat, Url & Iarna, 2009), etc. In other words, it measures how much it costs a company to take care of (or not take care of) the environment. Environmental costs may be divided into the following categories: Costs of prevention; Costs of detection; Costs of internal failures and Costs due to external failures.

These costs will provide the parameters to examine the outlays made for each cost. Environmental costs that are not included in a company's accounting ledgers are called externalities and are costs supported by the rest of the society. Businesses can obtain exact numbers for various environmental costs through company-implemented measurement processes or purchase price diagnostics. However, this is a process that all companies normally do according to their internal policies or processes, which can also be applied for environmental costs.

2.2 Eight Six (86) Additional Costs Arising from Green Cost Accounting

Monitoring or testing cost; Research or simulation cost ;Planning cost ;Training cost; Testing cost; Environmental insurance cost; Pollution control cost; Waste fluid detection cost; Waste management cost; Environmental tax; Research and Development (R&D) cost in the initial stage; Retirement or closing cost when discarded; Recovery cost after closing; Voluntary addition of cost to strength community relations; Voluntary addition of cost to strength monitoring or testing ; Voluntary addition of cost to increase auditing or training; Voluntary addition of cost to find green suppliers; Voluntary addition of cost to make improvements; Voluntary addition of cost to strengthen recycling; Voluntary R&D cost; Cost to establish environmental groups or research institutes; Cost to follow new regulations; Loss from damaging natural resources; Cost of maintaining corporate image; Penalty or compensation cost; Cost to prevent air pollution ; Cost to prevent water pollution; Cost to prevent soil pollution; Cost to prevent noise pollution; Cost to prevent vibration pollution; Cost to prevent ozone pollution; Cost to prevent land subsidence; Cost to prevent other pollutions; Cost to prevent global warming; Cost to develop energy-saving production.

Cost to effectively use resources; Cost to recycle industrial wastes; Cost to dispose industrial wastes; Cost to supplement recycling; Additional cost for adopting green procurement; Additional cost for producing environmentally-friendly products; Additional cost for reducing packaging ; Cost of recycling discarded products; Cost of disposing discarded products; Cost to maintain environmental management; Cost to monitor environmental impacts; Cost to provide employee training on environmental management; Cost of environmental improvement activities; R&D cost on environmentally-friendly products; R&D cost on reducing environmental impacts during production; R&D cost on reducing environmental impacts during marketing; Donations to environmental groups; Donations to support community environmental activities; Cost of environmental recovery; Litigation cost on environmental protection; Environmental insurance cost; Cost of air pollution prevention; Water pollution prevention; Soil and groundwater pollution prevention; Noise pollution prevention; Vibration pollution prevention; Odor pollution prevention

Land subsidence prevention; Climate change prevention; Ozone damage prevention; Effective use of resources; Reduce and recycle general wastes; Reduce and recycle hazardous wastes; Treatment and final disposal of general wastes; Treatment and final disposal of hazardous wastes; Additional cost of procuring raw materials with low environmental impact; Cost of 3R and modification for product; Cost of 3R and modification for container and packaging; Cost of environmental education; Cost of implementation and maintenance of environmental management system; Cost of environmental monitoring; R&D of products with low environmental impact; R&D of production process with low environmental impact; R&D of sales method with low environmental impact; Cost of improving external environment; Donations to environmental protection; Cost of soil recovery; Insurance cost on environmental protection; Settlement or compensation cost on environmental disputes; Penalty and litigation cost on environmental matters and Energy tax.

3.0 Theoretical Review

3.1 Stakeholder Theory

Stakeholder theory is a theory that focuses on the well-being of corporate stakeholders. Organizational management should take significant action for stakeholders and then report those activities to those stakeholders. According to this understanding, all stakeholders are entitled to receive information about how the company's organizational activities impact the environment (Deegan, 2016). Employees, communities, countries, capital markets, and others are all stakeholders in the organization. This theory assumes that the company conducts its business activities not only for the benefit of the company itself but also for the benefit of stakeholders. Therefore, this stakeholder theory is a strategy made by the company to maintain its relationship with stakeholders (Oktariani, 2013).

According to Oktariani (2013), it focuses not only on improving well-being but also on improving the well-being of stakeholders. According to this understanding, the company must pay attention to the welfare of stakeholders who have an impact on the survival of the company. Established businesses don't just focus on how they can increase their profits by growing profits. Companies should consider how they can benefit their stakeholders. As a result, companies, and stakeholders have a mutually influential relationship.

3.2 Legitimacy Theory

Legitimacy Theory states that the organization strives to ensure that its operations adhere to the boundaries and standards of the communities in which they operate. The theory of legitimacy is based on the phenomena of social contact between organizations and society, in which an organization's goals must be compatible with societal ideals. Organizational actions, according to this notion, must have socially acceptable activities and performance. There is a threat to society's legitimacy when there is a disparity (incompatibility) between the two systems. To run the company well, managers must meet the expectations of society, to create a legitimized company status (Deegan, 2019).

Green accounting is a concept in which businesses focus on efficiency and effectiveness in the long-term use of resources in their manufacturing processes to integrate corporate growth with environmental functions and deliver societal benefits. The implementation of Green Accounting in this circumstance places a high emphasis on the concept of savings, namely material and energy savings (land saving, material saving, and energy saving). It is based on the ecological notion. Green Accounting aims to increase environmental management efficiency by conducting operations from the perspectives of cost (environmental cost) and benefits or impacts (economic benefits), resulting in environmental protection effects. In brief, green accounting can reveal how much a firm or organization contributes, both positively and negatively, to the quality of human life and the environment.

Green accounting has a goal of continuous improvement and environmental control (Mowen et al., 2018). Well-implemented green accounting will improve environmental performance, cost control, environmental use of technology, and the use and manufacture of environmentally friendly products. Green accounting is very useful because there are costs for better environmental management, business strategies that pay attention to the environment, calculate production costs more accurately and find opportunities to reduce environmental costs.

4.0 Concept of Environmental Accounting

Environmental accounting can be applied to large and small companies in various industries, as well as in manufacturing or service sectors. Environmental accounting can be applied on a large and a smaller scale in a systematic manner or based on the required bases. The form of environmental accounting selection by companies reflects the purposes and reasons for using it. In each company, the organization's top management support is essential for the success of environmental accounting, because it may create a fresh look at environmental costs, performance and company's decisions in this regard. Disciplinary investigation of environmental problems by both economists and ecologists is at least two-century old (Turner & Tschirhart, 2017). Environmental accounting, also known as green accounting, is to measure, record and disclose the impacts of corporate environmental activities on its financial status through a set of accounting systems.

International Federation of Accountants (IFAC) defined green accounting as a process of identification, collection, analysis, and use of physical information on the use, flow, and destinies of energy, water, and materials and monetary information on environment-related costs, earnings, and savings. Also, the IFAC definition focused on the accountant and auditor roles in tracking or verifying environment-related information in financial and other reports (IFAC, 2005). While the Environmental Protection Agency (EPA) was more specific in its definition of environmental accounting concept to include: (1) National income accounting, (2) Financial accounting, (3) Internal business managerial accounting (EPA, 1995). In this context, the United Nations (UN) referred to green accounting as an economic and environmental information system used to measure the contribution of the environment to the economy, and the impact of the economy on the environment (UN, 2014).

Environmental management accounting manages environmental and economic performance by development and execution of a proper environmental accounting system, including reports and auditing of corporate information and environmental management accounting. Generally speaking, it includes lifecycle accounting, total cost accounting, an effective process and strategic planning of environmental management.

Green accounting is a quantitative assessment of the cost and effectiveness of enterprises in environmental protection activities. Enterprises are required to have systematic records and reports and are guided to maintain a positive relationship with ecological environment to implement effective and efficient environment.

A new system of sustainable accounting known as green accounting has emerged. It permits the computation of income for a nation by taking into account the economic damage and depletion in the natural resource base of an economy. 'Green accounting' is the popular term for environmental and natural resource accounting, which incorporates environmental assets and their source, and sink functions into national and corporate accounts. The United Nations first issued a handbook on a System of Integrated Environmental and Economic Accounting (SEEA) in 1993. SEEA introduces nature's environmental and economic assets and the "environmental cost" of their degradation and depletion into the System of National Accounts (SNA) (United Nations, 2014).

Industries are becoming progressively more aware of the environmental and social liabilities pertaining to their operations and products, with associated financial effects. Environmental accounting is a wide area of accounting science. This approach provides reports for internal use

that is called environmental management accounting; this helps the management to decide about pricing, fixed costs control and capital budgeting, and its external function is to disclose environmental information favoured by public and financial communities.

According to the Global Reporting Initiative (GRI), the environmental dimension concerns an organization's impacts on living and non-living natural systems, including land, air, water, and ecosystems (GRI, 2016). Besides, the environmental dimension can be measured using the following aspects:

- i. **Materials:** Consists of all raw materials used in the manufacturing and packaging process. In this regard, the organization's contribution to resource conservation can be indicated by its approach to recycling, reusing, and reclaiming materials, products, and packaging.
- ii. **Energy:** Consists of all energy consumed by an organization such as fuel, electricity, heating, cooling, or steam. The organization's contribution to energy conservation can be indicated by using energy more efficiently and opting for renewable energy sources are essential for combating climate change and for lowering an organization's overall environmental impact.
- iii. **Water and Effluents:** Deals with how an organization is concerned with water consumption how and where water is withdrawn, consumed, and discharged linked to the organization's activities, products, or services as a shared resource.
- iv. **Biodiversity** are all operational activities of companies or organization are adverse effects directly or indirectly on biodiversities, such as construction, or use of manufacturing plants, mines, and transport infrastructure.
- v. **Emissions:** Consists of all emissions have significant adverse impacts on ecosystems, air quality, agriculture, and human and animal health. Including greenhouse gas (GHG), ozone-depleting Substances (ODS), and Nitrogen oxides (NOX) and sulfur oxides (SOX). The organization's contribution to this matter can be indicated by any efforts toward emission reduction.
- vi. **Effluents and Waste:** This includes water discharges; the generation, treatment and disposal of waste; and spills of chemicals, oils, fuels, and other substances that can to human health and the environment. the organization's contribution in this matter can be indicated by efforts to effluents and waste reduction such as waste minimization strategies emphasize prioritizing options for reuse, recycling, and then recovery over other disposal options to minimize ecological impacts.
- vii. **Environmental compliance:** Is the extent of the organization's compliance with environmental laws and regulations, including international declarations, conventions, and treaties, as well as national, sub-national, regional, and local regulations.

Considering the growing population and the limited availability of natural resources, the issue of environmental protection has been raised as one of the most important issues of human society today. Knowledge of "environmental economics" or "green accounting" is, in fact, a science that helps to develop the sustainable use of natural resources. Knowledge of the environment explores how to manage and develop environmental resources. This science tries to help humans achieve SD and environmental considerations in advancing technological and socio-economic development. The goal of environmental economists is to better understand the relationship between economic activities and nature and make us more informed about environmental issues

Rounaghi, 2019). The basic point in this science is that the economy and the environment are not separate from each other, there is no economic decision that does not have an effect on the environment and there is no environmental change in which there is no economic impact. The environmental economist tries to reconcile “environmental protection” and “economic activity” with the help of tools and economic theories. Therefore, the issue of environmental protection requires an environmental management system that is integrated with other management systems. The environmental management system is a tool that enables the organization to achieve the level of environmental performance it requires and to control it systematically. The accounting information system, as an integral part of the management information system, can play a significant role in helping to protect the environment from polluting manufacturing companies.

Green accounting is a system to create costs and obtain environmental benefits (environmental). It provides information that helps managers in evaluating, operating, controlling, deciding, reporting and protecting the environment. At the beginning of the emergence of accounting issues, environment companies did not want to disclose environmental damages in their financial statements, but companies were forced to comply with these issues because of time lapse and increased damage (Rounaghi, 2019). Recognizing the environmental costs associated with the products of a company or organization is very important for a good management decision. The use of environmental accounting in issues such as costing, investment analysis and strategic management decisions has increased.

Today, many companies are facing environmental issues and are looking for an appropriate way to report and disclose information to the general public and use this information in the direction of developing and protecting the environment. As a result, the use of environmental accounting is an effort to protect the environment.

4.1 Environmental Accounting

Environmental accounting includes a set of activities that increase the power of accounting systems to identify, record and report the effects of environmental degradation and pollution. Environmental accounting is based on environmental integration as a source of capital and the inclusion of environmental costs as one of the acceptable costs in the economic and computational processes (Rounaghi, 2019). The objective of environmental accounting is to provide information that helps managers evaluate performance, decision-making, control and reporting.

Environmental accounting is based on economic and environmental concepts, and the use of market-based values requires the creation of a change in culture. Environmental accounting delivers some of these changes to the organization and its wider community and contributes to the determination of the goal of continuous development as a specific approach by providing more basic knowledge and engaging in day-to-day activities. Companies to run environmental accounting needs, operating teams, including system designers, chemists, engineers, production managers, operators, employees, purchasing circles and accountants (those who may have never worked together before), have to work together to implement environmental accounting, because environmental accounting is not a controversial issue solely in the field of accounting and requires the collection of information from all the groups. People of various groups need to talk to each other to achieve a common vision and understanding of environmental accounting

and to realize this vision. Companies with an official environmental management system may also want to recognize environmental accounting because it is a supportive tool for making reasonable decisions on these companies. How companies define environmental costs depends on who wants to use this information. Although profit companies bear costs for the environmental issue, it is difficult to provide an illustration of the environmental performance of the benefits of bearing these costs, given the existing accounting structure.

4.2 Application of Green Accounting

According to Molaie-Birgani et al (2022), an environmental accounting system's strategic applications of green accounting are a set of activities that improve the system's ability to identify, record, and report the impact of environmental deterioration and pollution. It may be used at many scales in large and small businesses and various industries, using a systematic method or based on desired principles. The method of green accounting chosen by the businesses explains their goals and why they choose it. Dong (2022) opines that the application of green accounting includes the following two processes; Green technology's planning approach for analytic design and organizational structure The second step is to put the plan into action. This phase involves green technology's direction processes, such as the information, transfer, and finance processes, and finally Dong (2022) concludes that the application of green accounting involves expertise of behavioral science, engineering, sociology, and even biology on a multidisciplinary level. Green accounting is based on the idea that businesses should internalize environmental expenses. Currently, these costs are externalized, and because the environment is a "public good," society suffers the brunt of an organization's negative environmental operations.

4.3 Categories of Green Information

According to Dong, L., 2022 there are twelve (12) categories of green information as itemized below:

- a. Identification of environmental impacts.
- b. Quantifiable commitments to reduce renewable/non-renewable resources.
- c. Accounting for waste and pollution from operations.
- d. Disclosure of primary source of energy.
- e. Disclosure of secondary and other energy sources.
- f. Sources of raw materials and other inputs disclosed.
- g. Initiatives to provide energy-efficient or renewable energy.
- h. Steps to moderate environmental impacts of products and services.
- i. Information on waste discharge and recycling.
- j. Significant fines and non-monetary.
- k. Environmental protection expenditures and investments.
- l. Audit report on environmental and social activities.

Green information should add value to the reader's comprehension of the firm's environmental operations, performance, and relationships with the environment, not only to raise the total degree of disclosure. A strong pattern emerges from the foregoing study and debate. It demonstrates that the type, Environmental data amount and quality included in annual reports are influenced by the industry in which a company operates.

Companies are increasingly recognizing the need to incorporate green information disclosures in to their annual financial statement in order to satisfy their varied stakeholders and also to justify their legitimacy in the eyes of all stakeholders especially those without direct financial commitment to the firms.

The threat of global warming on the quality of life of citizens being highlighted by many scientist communities are now demanding environmental accountability from firms that operate in their environment. Many firms in their bid to limit future confrontation with the communities they operate are now incorporating green information into their annual reports to justify steps they are taking to limit their negative impact on the environment.

According to Dong (2022), companies should elicit the views of their major stakeholders on the environmental and social data that they can publish and include these opinions in their yearly reports. This can assist businesses in establishing a stronger relationship with their major stakeholders. According to the findings few companies do not have sufficient reporting knowledge on green information reporting, it is therefore proposed that various institutions with sufficient reporting knowledge should prepare annual reports by integrating their institutions' environmental and social activities.

4.4 Environmental auditing

Rounaghi (2019) opined that environmental audit has a decisive role, and the reliability of environmental audit is very important. In principle, first, environmental scientists conduct the audit process. This kind of audit specifies the amount of adherence to regulations and then it is guided to a higher level and promotes adherence to environmental controls of management. To promote regulations, environmental auditors' training should be considered apart from financial auditors. Assets and liabilities are reliable criteria about environmental impacts; in this way, auditing relies on the accounting report to provide a clear picture of environmental performance. Environmental audit types include: Observance audit: guarantees that the company observes all environmental regulations;

Systems' audit: considers the issue that how these systems are used internally to manage environmental risks; Estates' exchange and transfer audit: this is used for buying estates and identifies or reduces the potential risks interfering in these deals in terms of environmental risk;

4.5 Efficient and Efficient Utilisation of Natural resources

Green accounting is a concept in which businesses focus on efficiency and effectiveness in the long-term use of resources in their manufacturing processes to integrate corporate growth with environmental functions and deliver societal benefits. According to (Marota, 2017), the green notion has a significant impact on the sustainability factor. Because the corporate framework is established in combination with the efficiency of the resources formed, (Nakajima, 2015) highlighted the necessity to promote environmental awareness in information exchange.

The consequence of the exploitation of a non-renewable resource is that its stock decreases implying that less future income can be extracted. Hence, a high value of present national income goes at the expense of future national income. A similar phenomenon occurs in the case of renewable natural resources such as forests when the rate of exploitation exceeds the natural

regeneration. Other examples relate to pollution. Suppose two countries have the same annual national income.

Green accounting alters the objective of the policy maker: not just national income is the criterion for success of policy making but green national income which takes environmental aspects into account as well. In other words, growth of national income is only an appropriate indicator of economic success if it incorporates environmental aspects to a reasonable degree. Another current trend is to find an appropriate measure for sustainability. The data comprised now in the national accounts cannot be deemed to give insight in the long run into sustainable growth. It is sometimes argued that there are opportunities to correct conventional national income in order to achieve this goal.

5.0 Conclusion and Recommendations

The paper explored green accounting, environmental economics and auditing: efficient and effective utilisation of natural resources via corporate economic sustainability and responsibility approach. It is discovered that businesses and academics worldwide agree regarding the benefits of sustainable development (SD). Improving reputation and branding and increasing revenues by reducing costs are the primary strategic objectives of any entity.

The content analysis showed that the requirements of green accounting include: expanding corporate social responsibility, production cannot be exempted from environmental protection, the manufacturing of clean products can generate pollution, the external production cost should be internalized, the redesign to improve the product production process and packaging, reducing resource waste and implementing the (Reduce, Recycle, Reuse) 3R policy, lifecycle assessment for all assessments and developing environmentally-friendly products. Green accounting initiatives and strategies for SD comprise the results of a decade research work within an interdisciplinary team of academics, with all concerned about the global crises.

Environmental accounting is a comprehensive tool for introducing environmental considerations into business decisions. the introduction of internal environmental costs in the accounting system will help companies make decisions that, in addition to increasing long-term profitability, will improve the environmental performance and, by introducing themselves as the green industry to the capital market, will increase the shareholder's wealth and will provide an environmental accounting system based on the idea of classical accounting evolution. In this regard, the costs of pollution and their elimination as a function of production or services, along with the profit and the cost of goods and services themselves, are calculated.

Green accounting and reporting have several advantages, such as providing a reference for more sound decision-making processes, optimization of company value, better corporate image, and high customer loyalty and investor trust (Üçoğlu, 2022). Shah & Bhatt (2022) found that the adoption of green accounting is positively influenced by environmental knowledge, environmental concern, and perceived benefit. Fogarassy et al. (2018) concluded that green accounting has value or worth, as it is able to: (1) implement general accounting systems; (2) connect to controlling mechanisms; (3) link to corporate social responsibility (CSR); (4) strengthen decisions and financial outcomes through its feedback; (5) disclose structural components and technical details of environmental finances and costs, both in money and nature; (6) make cost assessments both of inputs, such as secondary raw materials and the output structure of products or waste; (7) provide information, not just at company level but

for specialized sectors; (8) represent a marketing and decision maker support role; (9) stimulate stakeholders to obtain environmentally friendly products; and (10) bring about positive financial performance (net income) in the long run. Green accounting involves saving resources, green products, clean production and environmental production. This study explored the drivers behind the cost units and found that each factor contributes to the additional production or operational cost.

The impact of green accounting on enterprises: Due to the CSR of enterprises, green accounting is the unavoidable trend. Production should not neglect environmental production and the production of low-cost and low-pollution products. Production and product design will be impacted. Based on the green accounting guidelines, the results of the content analysis are as follows: (1) internalize the external production costs; (2) clean production, zero pollution; (3) redesign the production process and packaging; (4) develop environmentally-friendly products; (5) production based on environmental concerns; (6) lifecycle assessment to reduce environmental impacts; (7) extend CSR; and (8) reduce resource wastes and implement 3R policy. Thus, Factor 8 should be adopted as a measure of environmental awareness and pollution alleviation. The necessity of implementing the 3R (Reduce, Recycle, Reuse) policy and stimulate corporation (especially those with high level of pollution) to gradually adopted greening strategy, through carrot and stick policy, by combining between granting tax concessions for corporations with green activities and imposing tax fines on polluting ones.

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