IJMSOR Vol. 7, Issue 1.
January - December, 2022

Proposal for the Implementation of Green Accounting in the Company Daicon Inmobiliaria y Constructora S.A.S.

Propuesta de Implementación de la Contabilidad Verde en la Empresa Daicon Inmobiliaria y Constructora S.A.S.

DOI: https://doi. org/10.17981/ijmsor.07.01.03

Article - Reception Date: March 10, 2022. Acceptance Date: June 10, 2022. Publication Date: July 7, 2022.

Edgar Rodríguez Alvarez[1], Meryoury Ballesteros[1] y Bardo Rangel[2]
Corp Univ Americana. Monteria (Colombia)[1], Universidad de Laval. (Canada)[2]
rodriguezedgar8643@americana.edu.co, mherrera@americana.edu.co, info@eldoradoedl.com

To reference this paper:
E. Rodríguez, M. Ballesteros & B. Rangel, "Propuesta de Implementación de la Contabilidad Verde en la Empresa Daicon Inmobiliaria y Constructora S.A.S.", *IJMSOR*, vol. 7, no. 1, pp. 14–24, 202. DOI: https://doi. org/10.17981/ijmsor.07.01.03

Abstract— This research focused on proposing the incorporation of environmental accounting practices in the company Daicon Inmobiliaria y Constructora S.A.S., located in the city of Monteria. The main objective is to analyze how the consumption of natural resources affects the environment, given the nature of its economic activity in the Construction Sector. The purpose is to achieve the established objectives and implement strategies that help reduce the negative impact on the environment, aligning with the principles of sustainable development. For this research, a descriptive methodology based on an inductive approach was used, which involved the analysis of previous studies, articles, bibliographies and similar research to reach an accurate conclusion about the case studied. Critical thinking was applied when considering the generalized concepts of environmental accounting. Based on the results, it is feasible to start implementing green accounting in the company, taking advantage of its social responsibility and, in the best case, adopting internal measures to minimize its impact on the natural environment.

Keywords— Environmental Accounting; Construction Sector; Natural Resources; Sustainable Development; decision making

Resumen— Esta investigación se enfocó en proponer la incorporación de prácticas de contabilidad ambiental en la empresa Daicon Inmobiliaria y Constructora S.A.S, ubicada en la ciudad de Montería. El objetivo principal es analizar cómo el consumo de recursos naturales afecta al medio ambiente, dada la naturaleza de su actividad económica en el Sector de la Construcción. El propósito es alcanzar los objetivos establecidos y ejecutar estrategias que ayuden a reducir el impacto negativo en el medio ambiente, alineándose con los principios de desarrollo sostenible. Para esta investigación, se utilizó una metodología descriptiva basada en un enfoque inductivo, que involucró el análisis de estudios previos, artículos, bibliografías e investigaciones similares para llegar a una conclusión precisa sobre el caso estudiado. Se aplicó un pensamiento crítico al considerar los conceptos generalizados de la contabilidad ambiental. En base a los resultados, es viable comenzar a implementar la contabilidad verde en la empresa, aprovechando su responsabilidad social y, en el mejor de los casos, adoptando medidas internas para minimizar su impacto en el entorno natural.

Palabras clave— Contabilidad ambiental; sector construcción; recursos Naturales; desarrollo sostenible; toma de decisiones.

I. Introduction

Accounting has undergone changes over time, and in this process, the need has arisen to incorporate Environmental Accounting in the financial record of entities and companies, in response to global demands due to the Environmental Crisis. This branch of accounting is crucial to evaluate the impact, whether positive or negative, of the use of natural resources, which are fundamental to regulate and control the environment. At present, the Environmental Crisis is largely manifested by the high pollution and excessive use of natural resources, such as water, trees, silver, iron, coal, petroleum, ceramic clays, phosphates, quartz sand, limestone and stone aggregates, which are essential in the construction sector. Biotic resources such as livestock, fish and forests are also being exploited. This problem represents a threat to future generations and has significant negative consequences for society, directly affecting human beings.

Environmental accounting is concerned with examining and evaluating the processes of measurement, valuation and control of natural resources and the environment, with the aim of expanding the scope of concepts related to environmental accounting of companies [1]. Given the problems arising from the environmental crisis, its objective is to provide information following the parameters of the Systems of Environmental and Economic Accounting (SCAE) in Colombia, which constitute a valuable source of data to address issues such as environmental sustainability and contribute to reducing the damage caused by companies.

This research is carried out with the interest of measuring the accounting use of natural resources and the feasibility of the application of environmental accounts in the accounting of the construction sector in the city of Monteria, in order to propose its implementation to the company Daicon Inmobiliaria y Constructora SAS and comply with the regulatory, economic and environmental framework on the construction sector in Colombia.

The present work is structured in four components in which general aspects are described to carry out this research, followed by the analysis and conclusions that give answers to the fulfillment of the general objective of the same.

II. Theoretical framework

For the purposes of this research, different research studies, theses, papers and technical articles were used as support, which helped to delve deeper into the deployment of the following variables: environmental accounting, construction sector, natural resources and sustainable development.

A. Theories

1) Environmental Satellite Account

Concern for the environment has acquired indisputable relevance in all nations. For this reason, environmental accounting has gained great importance in business, since it allows the evaluation of the effects of economic phenomena on policies related to the use of natural resources. This approach can be considered as a model that measures, values, quantifies and reports quantitative aspects related to the environment. The reason for the need for environmental accounting lies in the management of natural resources by industry, which is the main sector responsible for environmental damage and associated problems. In this way, the aim is to exercise financial control over the resources held by these various sectors in order to promote a sustainable world.

In view of the above, the inclusion of new systems of accounting accounts was implemented to record items that help companies improve their financial and environmental performance, taking into account the costs of environmental deterioration that occurred during the accounting cycle and constructing indicators of integrated management of accounting and environmental information. In accordance with the need to improve the measurement of negative environmental impacts worldwide, the ISO 14001 standard [2], was implemented with the purpose of providing companies (economic entities) with a frame of reference with which they can control more aspects related to the environment; this standard makes it easier for organizations to establish a new Environmental Management System (EMS) that is competitive worldwide. This standard gave rise to the implementation of new accounting systems, such as: Environmental and Economic Accounting System (SEAS), Environmental Satellite Account (ESA), Systems of National Accounts (SNA) as a way of determining information for environmental decision-making in organizations.

It is necessary to take into account that the use of environmental accounts arises from a proposal of the United Nations Organization (UNO) to industrialized countries, hence the complication of applying them in developing countries such as Colombia, given that the economic realities are totally different from the very interpretation to the application [3].

2) Environmental Education

When the concept of sustainable development is mentioned, it refers to the balance between economic progress, environmental protection and the wellbeing of society. The aim is to maintain the capacity of natural systems to provide resources and services in harmony with the economy and society.

The term "sustainable development" was first made official in 1987 by the United Nations World Commission on Environment and Development. Its objective was to address environmental changes and socio-economic needs, with the aim of meeting human needs and improving the quality of life, without depleting renewable natural resources or degrading the environment in the process. In this context, "Accounting, like Economics, must move away from the traditional approaches that have guided its work, if it aspires to achieve developments of greater complexity that go beyond the simplification of reality, including environmental reality" [4, p. 42].

To achieve sustainable development, it is essential to promote social inclusion and create opportunities to eradicate poverty and foster sustainable economic growth.

Environmental Education (EE) seeks to instill in people the importance of cultivating a culture of respect and appreciation for the environment that surrounds us, including decision-making and behavioral norms that protect the relationship between humanity and the environment [5]. The Tbilisi Conference, in this context, addressed the guidelines and goals for the global implementation of EA, since it is recognized that the main problem lies in the lack of knowledge in society, which is why it seeks to educate in this aspect [5].

In order to achieve an effective synchronization of all efforts, it is considered essential to educate the population, and this is where the Theory of Environmental Education arises. This is based on the integration of seventeen Sustainable Development Goals (SDGs) at the global level, focused on achieving environmental, economic and social sustainability. These goals aim to improve various aspects of the quality of human life as [6]. The ISO General Assembly in 2018 recognized sustainability as an essential focus and highlighted how approximately six hundred ISO standards are related to the seventeen UN SDGs. In this way, ISO has allied itself with the UN Age nda 2030 for Sustainable Development [7], [2].

This plan was created to transform our world and enable companies to develop or improve environmental policies that promote sustainability, aligning with governmental expectations. ISO 26000 provides guidance to organizations on applicable legislation and international performance standards, which helps to limit negative impacts on the environment [5].

3) Construction Quality

This sector is the one that has the greatest

influence on the development of countries worldwide, being an important pillar of economic activity and having the greatest negative impact on the environment due to the amount of natural resources it consumes, causing a deterioration in the quality of life of the society [8].

An analysis of the construction sector reveals a high degree of environmental responsibility, which is why it is necessary to implement adequate socioenvironmental management to ensure the economic sustainability of countries and their economic growth. Any development project to improve the quality of life has both positive and negative impacts.

The formulation of theories to facilitate the construction process, covering various fields of knowledge such as accounting to control costs and calculate the profitability of the works, as well as the legal area to ensure compliance with regulations in each country, is fundamental in the optimal development of projects. The theory of construction quality recognizes the importance of legislation, training and administration as pillars for the proper execution of the works [9].

All projects with a pro- gress-oriented approach to society should be designed to maximize the positive impacts and minimize the negative effects on the environment [10]. Considering the impact of industrial activities on the ecosystem, it is essential to establish basic policies and criteria that promote effective environmental management and sustainable growth. To ensure quality, safety and responsibility to the environment, many organizations in the construction sector adopt standards such as ISO 9001, 14001, 14006, which become standards to ensure service quality, reduce the consumption of natural resources and achieve effective objectives for the benefit of the ecosystem [2].

4) Environmental Economics

Natural resources are elements of nature that humans can use to improve their well-being and development. These resources are important for environmental protection and management. Entities in the construction sector should include in their financial statements the recording of natural resources consumed in their activities, following procedures such as recognition, valuation and measurement. This allows us to know the environmental cost of these resources, treating them as natural capital [11].

Theories such as *environmental economics*, which studies people's decisions and their impact on the environment, have emerged. This theory seeks to increase income and employability by using public and private funds to reduce pollution and use energy and natural resources more efficiently, thereby reducing financial problems related to climate change [12].

In the accounting field, recording the consumption of natural resources seeks to understand the impact of the inadequate use of these resources in an economic entity [13]. National and international development planning includes the protection and recovery of the environment and natural resources to prevent their deterioration. This registry provides greater control over the use of natural resources in today's society, where sustainable and equitable development is sought. The conservation and preservation of the environment are supported by the Colombian Political Constitution in articles 58, 63 and 95, which establish the duty to conserve the ecosystem for future generations [L1].

B. Conceptual Framework

1) Environmental Accounting

There are several types of accounting, all of them aim to record the economic facts that occur in the development of the commercial activity of companies. Environmental accounting is the branch that is in charge of recording these facts, but which occur around the consumption or deterioration of elements of nature in order to have elements of judgment and make the corresponding determinations; or as it could be defined: "Environmental accounting is an activity that is in charge of providing those data that highlight the contribution of all natural resources together with the good economic performance" [14, p. 8].

This refers to the data recorded in the entities that use natural resources in order to execute their corporate purpose. For the purposes of this proposal, environmental accounting refers to the commitment of the entity under study with the environment and control which is expected to begin to take in terms of its impact on the environment.

2) Sustainable Development

It is a relatively new term whose origin is given by the need to implement actions to protect nature and is defined as the ability of people to meet their basic needs by making use of the environment in the present without compromising those resources in the future to guarantee the same right to future generations [15].

Among other things, this proposal seeks to establish tools that will enable the entity under study to record how much it consumes from the environment in order to comply with the principle of sustainability and implement social responsibility policies with the future of the s next generations in mind [16].

3) Construction Sector

It is defined as the sector of the economy that designs, manufactures and builds public and/or private civil works. In Colombia, this sector is one of the most dynamic in the economy, helping to mobilize other sectors and generating employment, with a direct impact on the Gross Domestic Product (GDP) with percentages of up to 5.7% according to DANE records [16].

Daicon Inmobiliaria y Constructora SAS is a company that belongs to this sector since one of its main objectives is to provide housing solutions to all the people who require its services, therefore it is essential for this research to establish the section of the economy related to this entity.

Value Chain. It can be interpreted as a tool that allows entities to implement strategies that differentiate them from others of the same type, guaranteeing the satisfaction of the end customer and achieving to ndo the positioning of the business unit [17]. By implementing green accounting in the company in question, an added value is generated since it can make public that it is an eco-friendly entity and its financial statements would end up causing a greater acceptance by society.

4) Natural Resources

It is defined as everything that comes from the Earth and that has no human interference, including air, water, soil and other elements that humans need for their survival.

As far as this research proposal is concerned, natural resources refer to the raw material that serves as input to carry out the corporate purpose of the entity under study and are the elements to be measured on which the economic facts subject to recording are based and which would become an integral part of the accounting kept in the company.

C. Legal framework

In the development of the present research proposal of the entities of the construction sector, it is necessary to analyze the current regulations in the planning process or application of the policies of the system of environmental accounts for the improvement and supervision of the environment.

1) Political Constitution of Colombia of 1991

The Political Constitution of Colombia has several articles inherent to the function and care of the environment, in the following articles: article 79, article 80, article 95, article 267, article 268, Article 313, Article 317 and Article 339 [L1]. These articles speak of the rights of all people to enjoy a healthy environment, guaranteeing the participation of the community in decisions that may affect it, protecting the country's cultural and natural resources and ensuring the conservation of a healthy environment. The territorial entities shall create and adopt, in a concerted manner between them and the National Government, Development Plans with the objective of ensuring the efficient use of their resources, elaborating strategies to fight poverty, and the adequate performance of the functions assigned to them by the Constitution and the law [L1].

2) Laws

- *Law 23 of 1973*. This law speaks of the fundamental principles on prevention and control of air, water and soil pollution in order to prevent and control environmental pollution, seeking the improvement and restoration of renewable resources to defend the welfare of society [L2].
- *Law 491 of 1999*. This law defines ecological insurance and crimes against natural resources and the environment and modifies the Penal Code, seeking to improve the consequences of the extraction of natural resources [L3].
- *Law 43 of 1990*. Whereby Law 145 of 1960 regulating the profession of Public Accountant is added and other additional provisions are enacted [L4].

3) Decrees

- *Decree law 2811 of 1974*. A set of coherent, cohesive and harmonious norms that pursue a common goal; the preservation and care of the environment [L5].
- *Decree 632 of 1994*. Whereby the necessary provisions are issued for the institutional transition generated by the new legal structure under which the National Environmental System-SINA will operate [L6].
- *Decree 1865 of 1994*. This decree regulates the regional environmental plans of the Regional Autonomous Corporations and the Sustainable Development Corporations and their coordination with the territorial environmental management [L7].

III. Metodology

A. Type of Research

The following research work addresses the planning of the problem and the proposed objectives related to the contribution of accounting to the environment and its social responsibility in organizations that consume natural resources, especially in construction companies. To achieve this, a descriptive methodology is used, which seeks to collect relevant data and information through a scientific study. This methodology is defined as a process that describes the state, characteristics, factors and procedures present in natural phenomena and events.

The research is based on the observation of several variables to answer questions such as who, what, when and where, without focusing on the why. This allows the research topic to be approached with greater clarity and in an adequate and optimal manner.

As for the research method used, it is an inductive approach. The inductive method is applied by linking principles discovered with particular cases, deriving judgments from the analysis and exploration of articles, bibliographies and studies related to environmental accounting. This critical thinking approach helps to reach accurate conclusions in relation to the case under study.

In summary, the research work focuses on analyzing the relationship between accounting and the environment, using a descriptive methodology and an inductive approach to obtain clear and precise conclusions.

B. Focus of Research

The approach through which this research work is developed is qualitative, this approach is carried out through data collection without measurement quantitative, i.e., without numerical measurement with interpretative value, and aims to analyze, describe and exploit structured information on facts related to business management and the contribution of accounting to the environment, in order to improve the consumption of natural resources. In this order of ideas, the qualitative method or approach is "the study of the internal and subjective dimension of social reality as a source of knowledge" [18, p. 16]. Based on the above, this method seeks to conceptualize the relationship between the environment and accounting as a contribution to society, with the purpose of making a global approximation of the situations in the organizations that record the consumption of natural resources, considering it necessary to analyze perspectives and regulations on which the objectives of this research are base.

This method is applicable and adapts to the present research as it facilitates addressing new dimensions and provides through data collection empirical observation through sources and evidence [18], such as: theses, papers, technical articles and written documents, in a complementary way, to support the interpretation of information from data collected from previous studies that have been published in journals, websites and books.

The bibliographic exploration of the aforementioned sources is carried out with the purpose of describing the characteristics associated with environmental accounting and the positive contribution that it generates in the organizations that lead to the economic development of a country, thus ering the final formulation that seeks to obtain specific results of the research [19].

C. Population

In the progress of this research, it is essential to analyze the need to evaluate, record and quantify the environmental impacts caused by companies that increasingly use natural resources intensively. For this reason, a diagnostic study of the System of Environmental Accounts (SCAE) will be carried out. The population consists of a set of elements with common characteristics, on which significant conclusions will be obtained from this research [20]. This population, in this case study focused on the organization Daicon Inmo- biliaria y Constructora S.A.S., is considered as a broad collection of individuals or objects influenced by the problem and the objectives of the study.

D. Type of sampling

In this research, a specific type of sampling known as "purposive sampling" is used. This choice is due to the accessibility and convenient proximity of the subjects the researcher wishes to study deliberately moving forward according to the information needs identified [21]. Thus, to select the elements under study, sampling is used as a research tool to determine the part of the population to be analyzed, taking into account the ease for the researcher.

E. Unit d Sampling

The sample or sample unit of this research case study is obtained from the organization Daicon Inmobiliaria y Constructora S.A.S. as the only representative entity that gathers the most important characteristics of the population under study. For this sample, five participants from the accounting and management area of the organization who are related to the entire accounting system of the entity are chosen, since through these participants the sample unit of the organization can be evaluated, since they are related to the accounting system of the company.

F. Research Instruments

In order to carry out the current research, it is necessary to employ data collection techniques and instruments that allow us to obtain information on the phenomenon in question. In this context, the survey (knowledge tests) has been chosen as the main research instrument to collect relevant information.

The survey is a tool that is executed by means of a questionnaire addressed exclusively to individuals, with the purpose of obtaining information about their opinions, behaviors or perceptions. This technique can yield quantitative or qualitative results and is based on predefined questions with a logical order and a structured response system. Most of the data obtained are numerical in nature [22].

The use of the survey makes it possible to obtain and analyze data quickly and effectively, focusing the focus of the current investigation and obtaining a comprehensive understanding of the situation, with the possibility of clarifying any doubts that arise during the process.

G. Research Analysis Paradigm Employed

This study employs an interpretive approach typical of the postgraduate academic field, using clear and practical language. It addresses a paradigm that focuses on discovering and interacting with knowledge that deepens and explains the reason for a specific reality. In this sense, it seeks to analyze the interpretations and meanings that people attribute to their social interactions in diverse situations and in the context of the social reality in which they are involved [23]. The objective is to understand the sociocultural factors related to the object of study, maintaining its natural environment without modifying it. Therefore, all the information collected will be evaluated within the context in which this research is conducted.

IV. Results

In relation to the survey applied to the administrative personnel of Daicon Inmobiliaria y Constructora SAS, in questions 1, 2 and 3, with which it was intended to understand the level of knowledge of the respondents regarding the accounting area and the environmental branch within the entity and its competence, it is evident in the previous figure that for question 1, 100% of the respondents know of the existence of an accounting area in the company and its functions, so it is deduced that it is an important department in the organizational structure of the company, The above

figure shows that for question 1, 100% of the respondents know about the existence of an accounting area in the company and the functions it performs, so it can be deduced that it is an important department in the organizational structure of the entity for the achievement of its objectives (Fig. 1).

With regard to question 2, it can be seen that only 20% of the respondents have specific knowledge of environmental accounting and the vast majority do not know about the subject, inferring that the company did not previously contemplate the application of green accounting in its plans (Fig. 1). Question 3 shows that 40% of the participants in the survey know that the companies that are part of the competition do not apply green accounting, while 60% do not know if they do, so it can be deduced that the concept of environmental accounting in the construction sector in the city of Monteria is not yet implemented on a massive scale or is not being given the importance it should have (Fig. 1).

On the other hand, in Fig. 2 which corresponds to the tabu- lation of question 4, it is evident that 80%, which represents the great majority, are totally unaware of the norms, laws, decrees and the entire legal framework that governs environmental accounting in Colombia; only 20% have knowledge in this regard. With this it is possible to argue that the administrative personnel of the company does not have knowledge about updated regulations regarding this type of accounting.

On the other hand, questions 5 and 6 of the survey seek to inquire about the knowledge of the advantages and the possibility of implementing environmental accounting in the company. It is detailed in Fig. 3, question 5, that 40% of the respondents relate the advantages of green accounting with environmental conservation, while 60% do not know what advantages this type of accounting would have. However, in question 6, 60% of the respondents are open to the practice of green accounting in the company, while 40% do not agree with it.

Fig. 1. Knowledge level of Daicon staff on Green Accounting.
Source: Own elaboration.

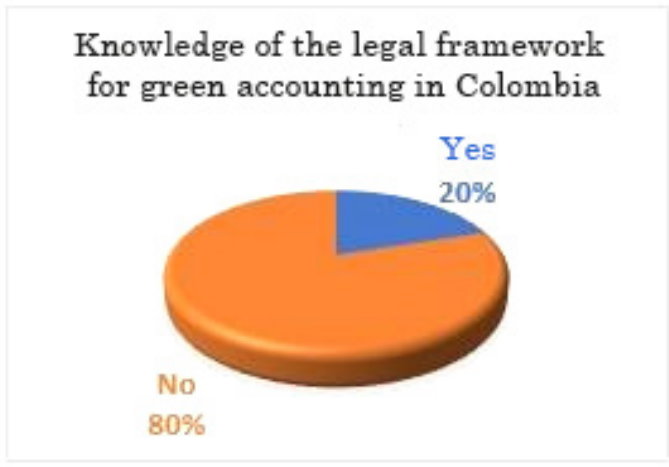

Fig. 2. Nivel level of knowledge of Daicon staff on Green Accounting.
Source: Own elaboration.

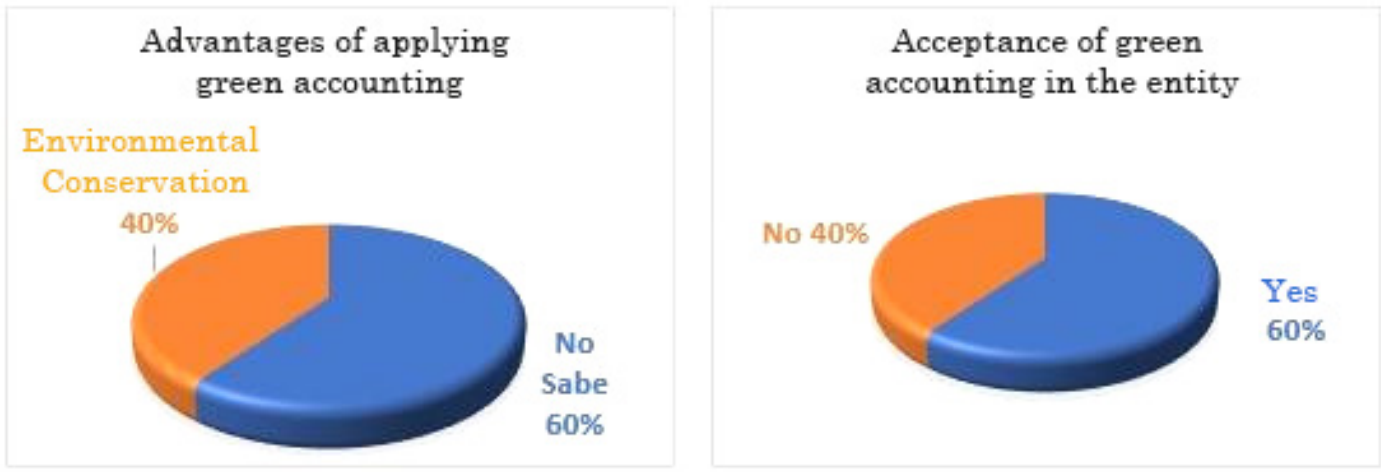

Fig. 3. Knowledge about the advantages of applying Green Accounting.
Source: Own elaboration..

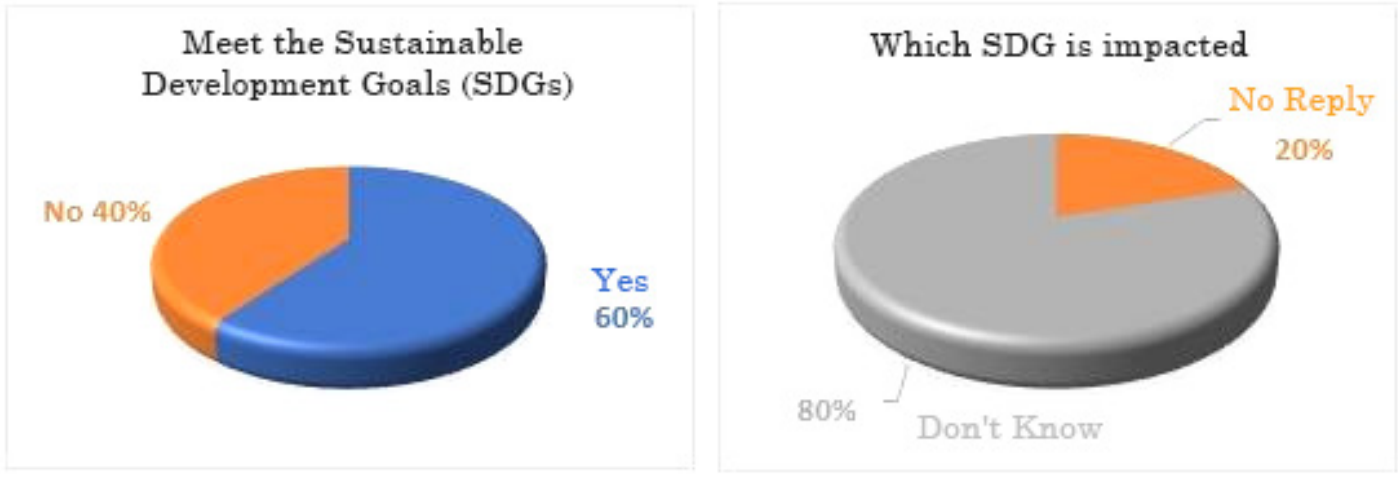

Fig. 4. Knowledge of Daicon's staff about Sustainable Development Goals.
Source: Own elaboration..

From the above it can be inferred that, in spite of not having solid knowledge about green accounting, perhaps due to the current trend, Daicon's administrative personnel reacts positively to this type of changes within the entity.

Through questions 7 and 8 of the survey that were applied, it was expected to measure the knowledge that the staff has about the SDGs and the impact t h e y have on them when applying environmental accounting (Fig. 4). In this regard, in question 7, it can be seen that 60% of the people surveyed are aware of the SDGs and their importance for the environment, while 40% are unaware of them. With regard to question 8, it can be seen that 80% of the entity's administrative personnel are unaware of the relationship between the SDGs and environmental accounting, which makes clear the relationship between the general lack of knowledge of this branch of accounting and the repercussions it has.

V. Discussion

Figure group number 1 should note the importance of accounting in any company seeking to grow its operations and remain in the marketplace over the long term. Accounting provides crucial information for making decisions to achieve these objectives. Unfortunately, many entities, especially small ones, view accounting simply as a government requirement or a tool for calculating taxes. With the advance of technological applications and specialized software, some entities tend to undervalue the role of the professional accountant and opt to keep accounting records empirically. However, this leads to the loss of advantages, such as accurate analysis and the opportunity to translate data s into real opportunities for business growt [24].

Like other areas of knowledge, accounting has evolved with the needs of society. This is how environmental accounting arose, due to the need to con-

trol natural resources and their deterioration due to human activity, especially in the industrial field. Green accounting becomes important by allowing the recording of this deterioration and making decisions to correct its negative impact. If certain companies depend on natural resources as raw materials, it is essential to take measures to minimize this deterioration and ensure the sustainability of the industry [25].

On the other hand, for group 2 (Fig. 2), it is crucial to understand that natural resources are the heritage of society as a whole, and the state must establish policies and regulations to guarantee their preservation. In Colombia, efforts have been made in this sense, such as the creation of the Satellite Environmental Accounts and decree 4444 of November 21, 1995, which incorporates group 18 called Natural Resources into the General Catalog of the Chart of Accounts. However, the implementation of these measures is not mandatory, leaving it up to each entity to decide whether or not to apply them. It is necessary to work on making their use mandatory, since many times companies record the exploitation of the environment as an expense or investment, instead of an environmental liability, which may distort the way environmental issues are addressed [26].

With regard to the group of figures number 3 (Fig. 3), it is essential to consider that making investments by companies whose destination is the environmental area represents tax advantages for them, since Article 125 of the tax statute provides that donations made for environmental items may be deductible from income tax. Similarly, purchases of machinery, which for legal entities is treated as property, plant and equipment obtained for environmental improvement, are not subject to sales tax, so the acquisition cost is much lower, and the deduction of expenses for investments made for environmental control is also applicable, so the amount payable as income tax is reduced. The above represent incentives for companies to benefit in economic terms from their commitment to the environment and to accelerate their growth without neglecting the contributions they can make to the environment [25].

But not all the advantages are economic; beyond the tax exemptions that can be applied, there are also other types of prerogatives that companies can take advantage of, such as the social impact that companies have on the environment that demonstrate to the population the implication that they have with the environment. Humanity has become aware of the importance of the environment that surrounds it, that is why it not only seeks to meet its needs but also intends to do so in a responsible manner, which is why environmentally sound practices generate added value for industries, achieving better positioning and recognition in the market, which leads to an increase in sales and therefore economic growth, which is the ultimate goal of every company [27].

With regard to the group of figures number 4 (Fig. 4), all SDGs are aimed at improving the economic, social and environmental conditions of this and future generations, so that each area of knowledge, depending on its field of action, will have more influence on some goals than on others [6].

In this sense, Architecture and Civil Engineering are two professions in the construction sector that have a direct and joint impact on the aforementioned conditions, since for the economy this is one of the items that contributes most to the Gross Domestic Product and also generates direct and indirect jobs in a considerable way; as for the social area, this sector is the one that meets the needs of decent housing, basic sanitation, infrastructure, among others; And from the environmental point of view, it must be taken into account that its raw material is natural resources, so it is there where building projects must be carried out in a sustainable manner to minimize negative impacts, and this is what gave rise to SDG 9 called Industry, Innovation and Infrastructure, whose main goal is to modernize industrial processes, including construction, to avoid or reduce the deterioration of the environment by using renewable energy and with self-sustainable projects over time, so that the infrastructure contributes to social development, This also has an impact on SDG 13 Climate Action, if we take into account the reduction of greenhouse gases by using clean energy and less consumption of natural resources if we innovate in highly resistant synthetic materials that allow us to replace the use of wood, for example; Another SDG that is addressed is SDG 11 Sustainable Cities and Communities, this is not possible without the application of tools that allow nature to be renewed and its impact to be reduced, and finally SDG 3 Health and Well-being, given that all of the aforementioned SDGs are addressed in their entirety, and that they are not possible without the application of tools that allow nature to be renewed and its impact to be reduced. The SDGs as a whole, each acting independently but as part of a whole, will have an impact on society, which is what the SDGs are all about [6].

VI. Conclusions

This study shows that in Colombia, despite the efforts made, the regulation of environmental accounting in companies is still insufficient. Currently, its implementation is optional, which allows entities to

decide whether to use it or not or not. This can lead to the fact that, due to a lack of initiative or ignorance of the subject, many companies choose not to use this valuable tool. In doing so, they lose not only the internal benefits it could bring to the company, but also the contributions they could make to society from an environmental perspective.

In addition, it was noted that existing laws are vague and general in their conception, without outlining a clear path for action. Instead, there is an appeal to the responsibility and commitment of companies to the environment to apply environmental accounting. On the other hand, it was found that the government has tried to incentivize the implementation of environmental accounting by offering economic benefits in tax matters. This includes 100 percent income tax deductions for companies that invest in environmental aspects and donations aimed at improving natural resources.

These incentives result in lower tax payable and, consequently, higher profitability. In addition, the costs of acquiring property, plant and equipment for environmental monitoring and improvement are also reduced, as they are not subject to sales tax. This allows companies to save and improve their competitiveness.

In contrast, it was determined that Green Accounting brings with it some disadvantages for the companies represented by the high costs of implementation if it is taken into account that it is necessary to hire experts in the subject for its application, since it is not a field of general knowledge; and obtaining technological accounting tools that comply with the parameters and that since they are not widely marketed, the costs for their acquisition increase.

Another of the findings of this exploration is that Green Accounting is deeply related to the SDGs, especially those that promote the improvement and safeguarding of natural resources, such is the case of numbers three, six, nine, eleven, twelve and thirteen, where it is so closely related to the SDGs.

If implemented, the entities would have in real time the facility to make decisions to correct the damage caused or enhance the activities that have a positive impact on the environment, particularly in the construction sector, knowing that they are some of the companies that pollute the most.

After analyzing the results of the data collected in the survey applied to Daicon's administrative personnel, it was possible to conclude that the nonapplication of environmental accounting in the entity derives from the lack of knowledge on the subject and everything related to it and that, although there is a certain acceptance, there is also a certain tendency to preserve traditional business practices. However, it should also be clarified that the implementation of this type of accounting implies a considerable investment for any company planning to use it, since specialized software and related tools have a high value commercial.

ACKNOWLEDGMENTS

To God for the opportunity to accomplish one of my goals, for blessing me and guiding me in moments of difficulty and discouragement, thanks to my family for believing and trusting in my abilities, for the values, advice and principles taught within this united group that we have managed to build, thanks to my friends for their support and for serving me as an example for wanting to move forward in the moments when I had doubts. I thank the American University Corporation and teachers for having shared their knowledge in my professional preparation, for their dedication and support for this project, for guiding me and giving me the confidence to respect my ideas and suggestions. Carlos Causil Lengua and MSc. Merjoury Ballesteros Herrera, who with their dedication and dedication guided me in the consultations for the development of this work..

References

[1] M. Gómez, "Avances de la contabilidad medioambiental empresarial: Evaluación y posturas críticas," *Rev. Intl. Legis Contab. Audit.*, vol. 18, pp. 87–119, 2012.

[2] L. Vaccaro, "Panorama de la ISO 9001 y de la ISO 14001," [*Presentación*], 2012. Disponible en https://www.fcad.uner.edu.ar/wp-content/uploads/file/proyectos%20extension/calidad%20nivel%20II/Conceptos-basicos-ISO-9001-y-14001.pdf

[3] C. Mejia, "La cuenta satélite ambiental como un parámetro de implementación del desarrollo sostenible en Antioquia," *Prod. + Limp.*, vol. 8, no. 1, pp. 28–47, 2013. Disponible en http://revistas.unilasallista.edu.co/index.php/pl/article/view/438

[4] D. Hernández, "Contabilidad ambiental: Fundamentos epistemológicos, humanistas y Legales," *EconCUC*, vol. 32, no. 1, pp. 35–44, 2011. https://revistascientificas.cuc.edu.co/economicascuc/article/view/1154

[5] J. Mateu, "La Teoría del Desarrollo Sostenible y La Educación Ambiental," *RIOP*, no. 23, pp. 53–64, 1995. https://dialnet.unirioja.es/descarga/articulo/117866.pdf

[6] C. Muñoz, "Importancia de la Ingeniería Civil en el Cumplimiento del ODS No. 9. ndustria, Innovación e Infraestructura", *Proyecto propio*, Fac. Ing. Civ., UMNG, ZIP, CO, 2020. Disponible en: http://hdl.handle.net/10654/36981

[7] J. García, "Cómo apoyan las normas a la Agenda 2030," *UNE*, no. 10, 2019. Disponible en https://revista.une.org/10/como-apoyan-las-normas-a-la-agenda-2030.html

[8] K. Ortega y V. Sarmiento, A. M. Villegas, "La construcción alrededor del mundo," *Est. Econ. CAMACOL*, no. 84, pp. 1–13, 2016.

[9] Á. García, "Para una Teoría de la Calidad en Construcción," *Infconstr*, vol. 34, no. 348, pp. 5–22, 2012. https://doi.org/10.3989/ic.1983.v34.i348.2042

[10] M. Kaur y S. Arora, "Environment impact assessment and environment management studies for an upcoming multiplex- a Case Study," *IOSRJMCE*, vol. 9, no. 6, pp. 18–22, 2012. https://iosrjournals.org/iosr-jmce/papers/vol1-issue4/D0142230.pdf

[11] J. Sánchez, R. Domínguez, M. León, J. Samaniego y O. Sunkel, *Recursos naturales, medio ambiente y sostenibilidad: 70 años de pensamiento de la CEPAL*. Santiago, CEPAL, 2019. Disponible en https://repositorio.cepal.org/bitstream/handle/11362/44785/8/S1900378_es.pdf

[12] M. Ávila-López y M. Pinkus-Rendón, "Teorías económico-ambientales y su vínculo con la dimensión social de la sustentabilidad en Áreas Naturales Protegidas," *Cienc. UAT*, vol. 13, no. 1, pp. 108–122, 2018. https://doi.org/10.29059/cienciauat.v13i1.960

[13] E. Loiseau, L. Saikku, R. Antikainen, N. Droste, B. Hansjrgens, K. Pitknen y M. Thomsen, "Green economy and related concepts: An overview," *J. Clean. Prod.*, vol. 112, no. 4, pp. 3391–3401, 2016. https://doi.org/10.1016/j.jclepro.2016.08.024

[14] M. Prada, La contabilidad ambiental, su contribución a la toma de decisiones en las pymes, *Ensayo*, FAEDIS, Prog. Cont, Púb., UMNG, BO, CO. http://hdl.handle.net/10654/16555

[15] J. Sachs, *La Era del Desarrollo Sostenible*. Deusto/Grupo Planeta, 2014.

[16] ANDI, *Colombia: Balance 2020 y Perspectivas 2021*. Mas País. Recuperado de https://www.andi.com.co/Uploads/Balance%202020%20y%20perspectivas%202021_637471684751039075.pdf

[17] E. Porter, *Ventaja Competitiva*. Free Press Rei, 1991.

[18] M. Galeano, *Diseño de proyectos en la investigación cualitativa*. Fondo Editorial Universidad EAFIT, 2014.

[19] R. Sampieri, C. Fernández y P. Baptista, *Metodología de la Investigación Científica*. Mac Graw Hill, 2006.

[20] W. Artigas y M. Robles, "Metodología de la investigación: Una discusión necesaria en Universidades Zulianas," *Rev. Dig. Universit.*, vol. 11, no. 11, pp. 1–15, 2010. Disponible en https://ru.tic.unam.mx/handle/123456789/1825

[21] C. Monje, *Metodología de la Investigación Cuantitativa y Cualitativa*. Universidad Surcolombiana, 2011.

[22] J. Arias, *Técnicas e Instrumentos de Investigación Científica*. Enfoques Consulting. http://repositorio.concytec.gob.pe/handle/20.500.12390/2238

[23] M. Martínez, "Fundación de las Metodologías Cuantitativa y Cualitativa," *ARJÉ*, vol. 8, no. 14, pp. 371–400, 2014 Recuperado de http://www.arje.bc.uc.edu.ve/arj14/art22.pdf

[24] L. Hernández y R. Moreno, "La importancia de la contabilidad y la responsabilidad del contador hacia el contribuyente," *Horizontes*, vol. 5, No. 9, pp. 69–78, 2018. Recuperado de https://www.uv.mx/iic/files/2018/12/Num09-Art06-165.pdf

[25] C. Rico, "Importancia de la Contabilidad Ambiental en el Contexto de las Empresas Industriales", *Trabajo Grado*, Fac. Cienc. Adm. Econ., TDEA, MED, CO, 2019. Disponible en https://dspace.tdea.edu.co/handle/tda/579

[26] C. Chamorro, "Estado Actual de la Contabilidad Verde en Colombia," *Saber Cienc. Lib.*, vol. 10, no. 2, pp. 53–62, 2015. https://doi.org/10.18041/2382-3240/saber.2015v10n2.782

[27] R. Amay, C. Narváez, y J. Erazo, "La contabilidad ambiental y su contribución en la responsabilidad social empresarial," *DC.*, vol. 6, no. 1, pp. 68-98, 2020. Disponible en https://dominiodelasciencias.com/ojs/index.php/es/article/view/1137

[L1] *Constitución Política de Colombia*, Gaceta Constitucional No. 116, de 20 de julio de 1991. Disponible en http://www.secretariasenado.gov.co/senado/basedoc/constitucion_politica_1991.html

[L2] *Ley 23*, DO. 34.001, enero 17 de 1974. Disponible en https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=9018l

[L3] *Ley 491*, DO. 43.477, enero 15 de 1999. Disponible en http://www.secretariasenado.gov.co/senado/basedoc/ley_0491_1999.html

[L4] *Ley 43*, DO. 40.735, febrero 1 de 1993. Disponible en http://www.secretariasenado.gov.co/senado/basedoc/ley_0043_1993.html

[L5] *Decreto 2811*, DO. 34.243, enero 27 de 1975. Disponible en http://www.secretariasenado.gov.co/senado/basedoc/decreto_2811_1974.html

[L6] *Decreto 632*, DO. 41.291, abril 4 de 1994. Disponible en https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=64909

[L7] Decreto 1865, DO. 41480, agosto 5 de 1994. Disponible en https://www.suin-juriscol.gov.co/viewDocument.asp?id=1363009