ACCOUNTING MECHANISM TO MEASURE THE ENVIRONMENTAL IMPACT OF INDUSTRIES IN THE ABURRÁ VALLEY AND ITS APPLICATION OF THE GENERAL DISCLOSURE REQUIREMENTS RELATED TO FINANCIAL INFORMATION ON SUSTAINABILITY (IFRS S1) AND CLIMATE-RELATED DISCLOSURES (IFRS S2)

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ABSTRACT

Objective: In the research work carried out, an accounting mechanism is proposed to measure the environmental impact generated by the industries that perform their economy in the Aburra Valley, and to determine what are the effects on the application of IFRS S1 General disclosure requirements related to sustainability financial information and IFRS S2 Climate-related disclosures (ISSB), in the disclosures of the financial statements, in which it seeks to incorporate sustainability information, for the analysis and interpretation of the users of the information, starting from the need to bridge the gap between accounting and the environment as an influence of the fact that environmental responsibility concerns any professional area.

Theoretical framework: The research is based on the measurement of environmental impact and sustainability disclosures in financial statements.

Method: The method is qualitative, surveys were made to companies located in the Aburrá valley, one industrial company was selected for each of the six municipalities evaluated.

Results and Conclusions: Through the survey instrument and analysis of IFRS S1 and S2, it was possible to identify in the industries evaluated that there are no control mechanisms, opening the way to recreate indicators that allow the valuation of the economic activities of the industry and propose the creation of accounting accounts in the assets among the resources used in environmental management.

Repercussions of the research: Medium and small organizations do not take into account in their financial statements recorded the economic impact associated with business activity, the implementation of indicators and information reporting in the disclosures will help users of the information to determine the administrative and economic efforts of senior management to contribute to the environment.

Originality/value: This paper proposes indicators and analysis of environmental reporting in financial information in organizations.

Keywords: Environmental Accounting, Environmental Financial Indicators, Sustainability, Pollution, Accounting Valuation, Sustainability Standards.

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MECANISMO CONTÁBIL PARA MEDIR O IMPACTO AMBIENTAL DAS INDÚSTRIAS NO VALE DO ABURRÁ E SUA APLICAÇÃO DOS REQUISITOS GERAIS DE DIVULGAÇÃO DE INFORMAÇÕES FINANCEIRAS SOBRE SUSTENTABILIDADE (IFRS S1) E DIVULGAÇÕES RELACIONADAS AO CLIMA (IFRS S2)

RESUMO

Objetivo: No trabalho de pesquisa realizado, propõe-se um mecanismo contábil para medir o impacto ambiental gerado pelas indústrias que realizam sua economia no Vale do Aburrá, e determinar quais são os efeitos sobre a aplicação da IFRS S1 Requisitos gerais de divulgação relacionados a informações financeiras de sustentabilidade e IFRS S2 Divulgações relacionadas ao clima (ISSB), nas divulgações das demonstrações financeiras, nas quais se busca incorporar informações de sustentabilidade, para a análise e interpretação dos usuários das informações, a partir da necessidade de preencher a lacuna entre a contabilidade e o meio ambiente como uma influência do fato de que a responsabilidade ambiental diz respeito a qualquer área profissional.

Estrutura teórica: A pesquisa baseia-se na mensuração do impacto ambiental e nas divulgações de sustentabilidade nas demonstrações financeiras.

Método: O método é qualitativo, foram realizadas pesquisas com empresas localizadas no vale do Aburrá, sendo selecionada uma empresa industrial para cada um dos seis municípios avaliados.

Resultados e conclusões: Por meio do instrumento de pesquisa e análise das IFRS S1 e S2, foi possível identificar nas indústrias avaliadas que não existem mecanismos de controle, abrindo caminho para recratar indicadores que permitam a valorização das atividades econômicas da indústria e propor a criação de contas contábeis no ativo entre os recursos utilizados na gestão ambiental.

Repercussões da pesquisa: As organizações de médio e pequeno porte não levam em conta em suas demonstrações financeiras registradas o impacto econômico associado à atividade empresarial; a implementação de indicadores e o relato de informações nas divulgações ajudarão os usuários das informações a determinar os esforços administrativos e econômicos da alta administração para contribuir com o meio ambiente.

Originalidade/valor: Este artigo propõe indicadores e análise de relatórios ambientais nas informações financeiras das organizações.


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1 INTRODUCTION

At the United Nations (UN) framework conference on climate change held in 2021, the International Federation of Accountants (IFAC), announced the creation of the International Council of Sustainability Standards (ISSB), This new body has as its main mandate to develop a high quality disclosure standards on corporate sustainability of global acceptance, taking into account the needs of the capital markets and the request of the leaders of the G20 and the International Organization of Securities Commissions (IOSCO), before the new global sustainable economic model, therefore the new guidelines determined by the board of sustainability standards will have a significant impact on the development of companies in their business activities and the preparation and presentation of financial statements for decision making for users of information. Since the implications of sustainability and climate have not previously been considered in financial reporting. According to the PWC (2022) the
Accounting Mechanism to Measure the Environmental Impact of Industries in the Aburrá Valley and its Application of the General Disclosure Requirements Related to Financial Information on Sustainability (IFRS S1) and Climate-Related Disclosures (IFRS S2)

Sustainability rules cover the current international capital market precautions: (1) Climate-related impacts and sustainability. These are not being considered in the financial information that is used for decision making of investors, and these impacts could have significant effects on future flows, business model, strategies, access to financing and the cost of capital of companies in the short, medium and long term. (2) Focus sustainability/ESG reports on the needs of investors and capital markets. Even though there are many frameworks and metrics currently used by companies in the world to report sustainability/ESG information, inconsistencies in the information disclosed by companies can be noted that make comparability and measurement of these impacts difficult.

The Financial Reporting Standards on Sustainability (IFRS S1 and S2), have already been discussed with the accounting profession and their approval is lacking. So its implementation is imminent. It is recommended that entities carry out a diagnostic evaluation of the state of the company in terms of ESG, what should consider for the implementation of these sustainability standards and what would be the main impacts on their financial reports. This research deals with environmental accounting, where it is shown that the industries of the Aburrá valley do not incorporate accounting with the environmental area, regardless of their evasive reasons for not executing it. Environmental management is a commitment of each citizen and the business field. Therefore, by focusing on public accounting professionals, we can prove that there are also ways to contribute to a sustainable development of the environment.

The financial information must be timely and accurate for the users of it, in a globalized context, the adequate financial and economic analysis of companies, influences the correct presentation of the financial statements more in the interpretation of the figures in a qualitative way, supported in the notes of the financial statements and the financial indicators, which are opportune to determine the financial behavior, the International Accounting Standards Board (IASB), has made many efforts to issue the pronouncements in the changes of the IAS and in the issuance of the International Financial Reporting Standards (IFRS).

The incorporation of the integrated sustainability report in the presentation of the financial statements in qualitative, quantitative and measurement aspects requires an analysis both in the final approval of IFRS S1 and IFRS S2 and follow-up in the implementation and analysis of improvement of standards once applied.

Throughout the research, it is demonstrated the possibility that both economic and administrative science, as environmental science, can be reflected in the financial statements of organizations jointly. That is why the initiative arises to propose an accounting mechanism, with a focus on the industries of the valley of Aburrá, where financial indicators can be incorporated in the state of the financial situation of industrial organizations.

According to Arcila et al.,(2023) and Reinoso,(2009), companies must measure the environmental impact of the social object of organizations against productive activity. On the other hand, Rodrígues, et al., (2023). It establishes that Environmental Management Accounting should be taken into account in the integral planning, which impacts the organizational and financial processes.

It is shown that it is possible to make investments for the environment, and to obtain profits through it; such consideration will be expressed in the results of that document, where the benefits obtained through indicators will be reflected, which will be reflected in the increase of assets.

It should be noted that, although the service providers do not generate noise or high solid waste, they are not far from incorporating an accounting measurement with environmental purpose.
It is essential to know the environmental regulations implemented in Colombia, and the international financial reporting standards (IFRS), applied with inference in the environmental activities of organizations, to then glimpse their relationship and be able to provide information in a simple and understandable way of an accounting mechanism that allows generating practicality of environmental accounting in companies.

For the last 10 years, society has been concerned about the environment and the actors involved in the economy on sustainable development. The definition of sustainability has been explained by several authors, for Hart and Milstein (2003), it cannot be solved with a single corporate action. Businesses face the challenge of minimizing waste from ongoing operations and preventing pollution, together with reorienting their skills portfolio towards more sustainable technologies and technologically clean skills.

Accounting, as well as other branches of knowledge, has different paradigmatic approaches with respect to its object of study and the scope of its application. In the accounting case, traditional paradigms can generate limitations when incorporating different aspects to economic ones. However, nowadays, various perspectives highlight the role of accounting as an instrument that contributes in an integral way to the sustainability of wealth in all its dimensions, as stated by Mejía et al. (2015), cited by Rivera and Henao (2021). Mejía (2014), describes accounting as a social science, on which is defined what corresponds to the concept of Three-Dimensional Accounting Theory (T3C), which integrates in a qualitative and quantitative way social, environmental and economic wealth. From these concepts derives three more, associated to each of them (socio-accounting, bio-accounting and economic accounting).

As described by Rivera and Henao (2021), the limitations to respond to environmental and social crises must be combated from research, and in the particular case of accounting, providing optimal environmental and social accounting standards that can be applied in the globalized world.

With regard to the approach to economic, social and environmental issues, from the perspective of sustainable development. Seventeen paradigms demonstrate a purely economic approach and the remaining four, a multidimensional interest, however, the latter also respond to a mainly economic reality, because its foundation is classical accounting theory.

Based on the above, the discussion between classical accounting theory and the emerging three-dimensional theory, described by Mejía et al. (2015), is mentioned in the same study, according to which: the current accounting conception recognizes a purely economic orientation widely accepted by the scientific accounting community and responds to financial information needs, while accounting from the T3C proposal recognizes an orientation for the interaction of the three dimensions of sustainable development: environment, society and economy, which meets the need for comprehensive accounting information, useful for the integral sustainability of wealth and decision-making in the three realities.

In response to the above, and in adherence to the concept of accounting as a discipline that can contribute to sustainable development, by breaking paradigms that only report economic and financial aspects; the line of research, organization, society and environmental accounting integrates in its scope concepts that are part of the new integrating paradigm, which recently has been proposed to the scientific accounting community, under a three-dimensional orientation, namely: corporate governance, organizational management, strategic management, business development (industrial - social), entrepreneurship, costs - budgets, ethics in organizations, economy and social accounting, environmental accounting, ecological accounting, economic valuation, economic, social and environmental sustainability, sustainable development, and sustainability and sustainable management.

Therefore, the new proposals for sustainability financial disclosure rules in the incorporation of economic activity of companies and financial information should be analyzed...
in accordance with IFRS S 1 (General requirements for the disclosure of financial information related to sustainability) and IFRS S 2, (.Climate related disclosures). A comparative analysis of the proposal under investigation is detailed below.

Table N.1 Financial sustainability rules

<table>
<thead>
<tr>
<th>IFRS S1</th>
<th>IFRS S2</th>
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<tbody>
<tr>
<td>Primary Objective</td>
<td>Primary Objective</td>
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<tr>
<td>Provide a framework of general principles for the disclosure of material information on all significant sustainability risks and opportunities to which a company is exposed and that enables investors to assess the value of institutions</td>
<td>Establish disclosures of information about a company's exposure to significant risks and opportunities associated with climate, enabling “primary users” to assess the impact on the company's financial position, results, cash flows, strategy, business model, and value</td>
</tr>
<tr>
<td>Relevant considerations (selection)</td>
<td>Relevant considerations (selection)</td>
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<td>It states that the information to be disclosed should be useful to “primary users” of the financial report (current and potential investors, lenders and other creditors), who decide on the resources to be provided to the company. It requires a company to disclose information on four fundamental pillars, taken from the TCFD, adapted to sustainability disclosures: Governance: processes, controls and procedures of corporate governance that are used to monitor and manage risks and opportunities that affect the sustainability of the company. Information should be disclosed on who has the role to identify and monitor these risks and opportunities, what are their technical capabilities to do so, aspects of remuneration associated with ESG, among others. Strategy: the approach to address sustainability-related risks and opportunities, which could affect the business model in the short, medium and long term. Risk management: processes, controls and procedures of the entity to identify, assess and manage risks. Metrics and objectives: Information used to evaluate, manage and monitor the performance of the institution over time, with respect to the risks and opportunities it has identified and objectives set. The sustainability rules aim to facilitate the assessment of the ‘value of the company’, defined as the sum of the capital of a company (market capitalization) and the value of its net debt, also considering the impact and dependencies of the entity on people, the planet and the economy.</td>
<td>It is the first IFRS S thematic standard (addressing the “E” of ESG), focused on the environmental. It is based on the four pillars included in IFRS S1: governance, strategy, risk management and metrics and objectives. Includes an appendix that provides requirements by sector, based on SASB standards.</td>
</tr>
<tr>
<td>Fair Presentation</td>
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<tr>
<td>The information should be: relevant (should make the difference to investors), complete, error-free, neutral, verifiable (verifiable, auditable), comparable (with prior periods and with other companies), timely, clear and concise.</td>
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Source: IFRS S1, IFRS S2, International Sustainability Standards Board (2022)

The entrepreneurial development generated by capitalism has allowed communities to industrialize needing to use natural resources to meet the demand of the markets, however, this excessive consumption of raw material has caused a high pollution.

Just being a manufacturing company, regardless of the size of society or the amount of production generated for sale, makes it an organization that generates pollution. It should be
emphasized that the country's economy needs to have industries that are sustained in the market and that its growth is continuous, but it is also the right of society to live in an ecosystem without polluting alterations that affect health and the environment as such.

This does not mean that it is in disagreement with the way to undertake, on the contrary, it seeks to find an optimal and accessible solution, where the actions carried out in favor of environmental improvement are unveiled.

For reasons of budget in many industries environmental investment is not generated, because it is taken more as an expense than as an increase in assets, thus causing a relevant importance of environmental responsibilities in the company. That is why we are looking for a solution that contributes to the benefit of all, in an economic and consenting way.

If the INDUSTRIES in the valley of aburra will have a mechanism to measure the environmental impact so that it is reflected in the financial situation of the company, through financial indicators, they could learn that environmental investment not only contributes to the improvement of the environment of Medellín, but that the company generates an income for environmental investment. Environmental awareness belongs to everyone. This is why organizations must record and measure the impact they are generating on the environment to find solutions to this problem.

In this regard, it seeks to resolve the problem question: is it possible to measure the environmental impact through a mechanism that is reflected in the accounting presented by the company?

Many professionals in the economic and administrative area believe that it is not their responsibility to ensure the benefit of the environment, and therefore do not identify the environmental participation they have in companies.

Public Accountants have a social responsibility, which they take only as a transparent disclosure of the tax and / or financial activities of the companies to whom they provide the service, taking away the environmental work in which they can incur.

Productive industries in the Aburrá Valley must contribute with “their grain of sand” in favor of a sustainable ecosystem. Accounting disclosures are a good way to raise the awareness of the entrepreneur so that the work on this subject, as reflected in the financial statements, allows him to identify the contributions or the effects that his industry generates to the environment.

That's why creating an accounting mechanism that reflects environmental activities in financial statements is a big step to show that administrative and financial officials also take part in sustainable development.

For the development of this research, the following objectives were raised:

• To propose an accounting mechanism to measure the environmental impact generated by the industries that perform their economy in the Aburra Valley.
• To evaluate the models proposed by other authors identifying current needs in this field.
• Identify how accounting can measure the environmental impact generated by companies
• Make a proposal from the accounting register to measure environmental problems.

The climatic changes, the erosion of the flora and the extinction of the fauna make us an urgent call for attention through the behavior of nature; that is why, from any science, technique, or professional art should enhance the research with the objective of environmental improvement. Focusing on environmental accounting, Colombian authors, such as (Luna, 2016) it mentions that “further research on this relationship (accounting and environment) should be considered, and a further step can be taken to ensure that environmental and financial issues are not exclusive. In a deeper way (Leonardo & Martin, 2008) They quote, “It is necessary to establish new ways of relating accounting to nature, going beyond traditional environmental accounting. Ecological accounting that recognizes the symbolic, material and
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social multiplicity that nature quantitatively and qualitatively implies and that does not reduce it to one-dimensional measures”. Although the above is of great contribution and motivation, it is necessary to carry out in conjunction with research, accounting models that provide information and demonstrate the accounting-environmental relationship, as inferred (Rodríguez Jiménez, 2011): The way accounting is represented is not correct to describe environmental aspects, it is necessary to have systems, models and conceptual frameworks that incorporate social reflections in the discipline, since existing schemes have a traditional financial structure that does not manage to transparently disclose information to third parties in general.

With regard to the above, it is necessary to recreate accounting and environmental definitions, in order to create a unanimity called: environmental accounting.

2 FRAMEWORK

International treaties and conventions are cooperative links for the development of a country, but at the same time it is a commitment to society that, when broken, can harm the stability of traffickers.

According to the Ministry of the Environment of Colombia, it states that international environmental conventions, treaties and laws have been ratified, which are: the CITES Convention (Convention on International Trade in Endangered Species of Wild Fauna and Flora) and RAMSAR Convention; the Stockholm Declaration, the Bariloche Declaration and the Rio Declaration, which is considered the Declaration of Environment and Development; the Kyoto Protocol; the National Biodiversity Policy; and LAW 74 OF 1979, LAW 464 OF 1998 and LAW 807 OF 2003.

At the domestic level, the Ministry of the Environment sets forth as the primary law for the protection of the environment in Colombia, Act No. 99 of 1993, which consolidates the Ministry of the Environment as the lead agency for regulating and enforcing policies that lead the Nation to sustainable development; this Act opens the way to the management and conservation of the environment and renewable resources and organizes the SINA (National Environmental System) as a protector of the general principles to be sustainable and to take care of the environment.

With regard to Law 99 of 1993, which mandates and encourages public and private companies to develop their business with environmental awareness. And how good is this, because looking at the environmental problems that are experienced today, it can be said that the highest percentage as a cause of unsustainability is the business sector. “The social and political dynamics assigned the State its persuasive and sanctioning intermediation to the company identified as responsible for a significant percentage of environmental unrest” Ariza Buenaventura, 2013. However, it is found that many of the companies obliged to control their environmental impact do not fulfill their responsibilities and the control bodies are insufficient since they do not guarantee compliance with Law 99 of 1993.

The development of environmental accounting has occurred since 1970 Ariza Buenaventura, 2013. But even in the present era, the degree of importance that deserves has not been given, since there is still the division between economic science and environmental science, as if social responsibility does not go so far and is something more superficial. However, IFRS as an international standard and recently adopted by Colombia for the disclosure of financial information of companies does not ignore environmental responsibility, since it has issued standards that relate to environmental issues, not in a direct way but if taking into account such factor, as for example when in IAS 16 property, plant and equipment, mentions that “Some elements of property, plant and equipment may be acquired for safety or environmental reasons”. (IFRS, 2005) since there are companies that must comply with
environmental regulations in order to continue their economic activity, depreciation of these assets can also be taken as an influence of analysis since a revaluation of assets that meet their useful life is allowed and named; also in IAS 37 Provisions, Contingent Liabilities and Contingent Assets, it takes into account the environmental responsibility of the company when seeking to ensure proper recognition of obligations implied primarily from past events or independent provisions from future actions.

Examples of such obligations are environmental fines or costs of remediating environmental damage caused against the law or the issuance of financial statements because the purpose of the law is to present information for general purpose. (IAS 37, paragraph 19) “environmental issues involve the interrelation of different perspectives and social and natural disciplines” (Leonardo & Martin, 2008). Although, it is known that accounting development goes hand in hand with the development of capitalism, where the latter has caused a positive social evolution, but at the same time an environmental destruction, because the pollution and degradation of the environment has been given by industrialization, consumerism and the lack of ethical awareness with nature. That is why, when looking more deeply at the complexity of the problem, one can see that the economy dominates the world because what it asks for to increase capital is granted and accepted. “It is worrying that the dominant perspective of the economy seeks to map out - and transcend - the property rights of nature and the environment.” (Mart, 2009). Any resource that nature provides us has been given a monetary value and a reason to exploit it; on the other hand, according to business behavior regarding environmental improvement, the meter is not alien to such activity, since they are professionals who have a social responsibility and should be an example of complying with the laws and regulations that are applied to companies; both tax, fiscal and financial, as environmental.

Therefore, it can be said that accounting goes hand in hand with social responsibility and economic development, as well as with environmental responsibility and conservation; Ariza Buenaventura, 2013 points out that “environmental accounting (...) has been characterized by the commodification of nature and the invisibility of the basic problem that threatens the sustainability of biodiversity and its eco-existence with humanity”

The International Financial Reporting Standards (IFRS) promote the disclosure of financial statements (statement of financial position, statement of profit or loss, statement of changes in equity, statement of cash flow and financial notes), where general and other financial information is reported in a clear and reliable manner to ensure that tax information is also more accurately disclosed.

Emphasizing the financial situation, the consumption of assets in companies, have their respective life cycle, and during this time there is a depreciation of the asset, until its total deterioration. As assets deteriorate, they become solid waste that is not reused unless they are revalued by a certified expert.

On the other hand, when analyzing IAS 1, presentation of financial statements, in paragraph 9, it explains that the objective of the financial statements is to provide information about the financial position, financial performance and cash flows of an entity and also to show the results of the management performed by managers with the resources entrusted to them. Taking this as the “anchor” of support to reflect environmental investments. Although in paragraph 14 of such IAS it accepts the presentation of financial statements with reports and environmental factors significant to some industry sectors presented in addition to the financial statements, they are outside the scope of IFRSs.
3 METHODOLOGY

To achieve the objective of the research, surveys were conducted to companies located in the valley of Aburrá, an industrial company was selected for each of the six municipalities evaluated. The municipalities and the type of company evaluated were:

- Medellin with a company in the industrial chemical sector.
- Caldas with a company in the textile sector.
- Barbosa with an agribusiness company.
- La Estrella with a company in the metallurgical sector.
- Beautiful with a manufacturing company.
- Girardota with a company in the household goods production sector.

This sample was chosen in order to cover various economic sectors in industrial activities, these types of companies were taken in order to evaluate the organizations that in theory generate higher levels of pollution by waste generated in production.

It is considered with a qualitative approach because from the information collected it interprets the evaluated situation, interprets and describes the current management of environmental accounting information in the companies evaluated. The research is based on measurements with analysis of the information collected from the surveys, but its main purpose is to analyze the environmental accounting management and propose an accounting mechanism to measure the environmental impact in the industries of the Aburrá Valley.

It is considered an investigation - action since it is intended to be a trigger for a phase 2 of the research to put this proposal into practice and evaluate the feasibility of implementation in the organizational accounting of industries not only of the Aburrá Valley but also at the departmental or national level.

It includes the description, analysis and interpretation of the current reality in the management of environmental accounting in the Aburrá Valley. The analysis of this research was performed under the interpretation of the dominant conclusions in the research.

4 RESULTS AND DISCUSSION

According to the above, studies that monitor air pollution, water, noise and waste of solid waste in the valley of aburrá that contaminate Medellín, state that companies bury their solid waste as they would generate less expenses in their accounting, as stated Marta Lucía Londoño, engineer of EPM, in a study carried out by the metropolitan environmental management: “although EPM reviewed multiple business options, for the company it is more profitable currently to bury the solid waste than to take advantage” (Municipality of Medellin, 2019)

According to (El Colombiano, 2019) in 2018, 6,976 legal companies were consolidated in Medellín, 31.47% of these, or 2,196, are in the insurance and finance sector and 21.86%, which would be 1,525, are in the trade, restaurants and hotels sector. With this information, it is possible to conclude that 46.67%, or 3255 companies, are from the industrial sector.

The more companies, it is to be expected, the more pollution. How many of them care about and ensure that they contribute to the environment?

For example, in 2015, (Medellin Como Come, 2018), mentions that there are entities using fleet and transport equipment that do not modernize such assets in time, thus contributing to the addition of more reasons why air quality is more complex to control.

The reason why many of them are not transparent with eco-environmental revelations or are sanctioned is because their solution becomes difficult to face.
A survey of 6 industries in the Aburrá Valley responds that one of the most difficult factors to face is measuring the impact and solving the damage caused. (Figure 1)

![Diagram](image1)

**Figure 1** - Own elaboration based on a survey carried out.

**Source:** Own production

It can be identified that 100% of the industries evaluated present difficulties in various scales when facing environmental responsibility, this situation shows on the one hand the lack of resources to work for the environment or a lack of environmental awareness, which allows solutions to contribute to the improvement of the social environment, when reviewing the responses of the surveys carried out it is found that companies know their environmental responsibility but leave aside the financial information and do not report in the accounts the expenses or benefits linked to such responsibility. (Figure 2)

![Diagram](image2)

**Figure 2** - Own elaboration based on a survey carried out.

**Source:** Own production

50% of the evaluated organizations claim to have practices of recovery of the environment affected by production, which is positive, generates a degree of environmental awareness that allows motivating these practices to be taken to accounting records having clarity of the significant contribution to the environment. (Figure 3)
Although environmental practices are carried out, it is identified that none of the industries has an accounting mechanism to measure the environmental impact. This situation gives rise to the development of the proposal to propose environmental indicators in accounting that allow diagnosing and assessing environmental management. (Figure 4)

Industries in their production process, it is intuited that materials (used, in production, finished, dangerous, reused); energy consumed in the production process; equipment for production; waste generated; emissions to air and / or discharges to water, are pollutants of the environment. But in these same areas, investments can be made where a low-pollution and reusable product is obtained, for example, investing in inventories that have an environmental benefit; property, plant and equipment used in production, that is, where it does not consume a large amount of energy or water in its absence; another idea of investment is to source renewable energies; sell or find a product idea, through the reuse of surplus of the main production; among others.

In this way you can see that it is possible to find return on investments made with environmental objectivity.

Taking the idea put forward by the (Fundación Forum Ambiental, 1999), which mentions financial indicators to perform a process that facilitates management decisions regarding the environmental performance of the organization (ISO 14031)
The financial indicators mentioned there are for environmental purposes, in which activities are made on costs for production; return on investments; savings obtained; the amount of sales for new products; research and development funds; and obligations and responsibilities that impact the financial status of the company.

Environmental investments can be seen as a disadvantage to competition as it generates higher costs and can be affected in its profits and therefore have fewer resources to supply some economic sacrifice not controlled by the company (losses); but in reality environmental investments, have long-term benefits and with better views, by way of example we can consider that with climate changes and the alarming extinction life of several species of fauna or flora, it causes work for the environment from government decisions and leading such situation, to legislative changes that require greater environmental protection, therefore an organization that is working for ecological purposes is prepared for such circumstances and gains advantage to future changes, avoiding light and greater costs to be coupled. It should be noted that the organization would also take a better image, since future societies, due to the exhaustive incorporation of environmental awareness, aim at the reasoning of ecological consumption.

Therefore, the following indicators are proposed as a mechanism to begin accounting for environmental management in industries:

4.1 Environmental Investments Related to Company Production or Operation

The objective of this indicator is to carry environmental costs, which facilitate decision making for the benefit of the environment. Integrating into this the amounts for reduction of raw material waste; reduction of energy consumption, such as the implementation of renewable energies; among other costs that can be reduced not only as a benefit of the company, but also reflect the contribution of the organization to the environment.

It should be noted that investing in environmental costs can result in sales attributable to a product where better environmental performance is achieved.

4.2 Environmental Capital Investments Related to Administration

Expenditures on environmental investments, such as expenditure on sustainable assets; expenditure on environmental research; expenditure on environmental restoration; among other factors leading to economic sacrifices managed by the administration, would be collected.

4.3 Income Received for Environmental Prevention and Care

This revenue is provided by a public sector regulator. For the borra valley, the metropolitan area in its Tax Statute Agreement 066 of 2017, mentions certain incentives for environmental prevention and care.

4.4 Savings from Environmental Prevention and Care

Likewise, by reducing production costs or any consumption expenditure (energy, stationery, reuse and / or waste treatment, etc.), it would contribute to saving resources. This would be reflected in the financial statements.

Based again on IAS 1, presentation of financial statements, an incorporation of environmental disclosures in the statement of financial position is created in accordance with the model required by that standard. Although the entity may use different designations, an example basis for the collection of environmental indicators would be:

- Assets
• Current assets
• Cash and Cash Equivalents
• Other current financial assets
• Other Non-Financial Assets, Current
• Commercial debtors and other current receivables
• Receivables to Related Entities, Current
• Inventories
• Environmental Benefit Inventory
• Non-environmental current tax assets
• Environmental current tax assets
• Non-current assets or groups of disposable assets classified as held for sale
• Non-current assets or pools of disposable assets classified as held for distribution to owners
• Total current assets
• Non-current assets
• Other non-current financial assets
• Other non-current financial assets
• Non-current receivables
• Receivables from Related Entities, Non-Current
• Environmental Investments
• Investments accounted for using equity method
• Intangible assets other than capital gains
• Capital gain
• Property, Plant and Equipment (ordinary)
• Property, Plant and Equipment with environmental benefit
• Investment Property
• Deferred tax assets
• Total non-current assets
• Insurance Assets
• Cash and cash equivalents
• Settlement transactions in progress
• Instruments for trading
• Repurchase agreements and securities lending
• Financial derivatives contracts
• Owed by banks
• Credits and receivables to customers
• Investment instruments available for sale
• Investment instruments to maturity
• Investments in companies
• Intangibles
• Fixed assets
• Current Taxes
• Deferred Tax
• Remaining assets
• Insurance Assets, Total
4.5 Total assets

Asset accounts with environmental accounts: Own production.

The research ends its phase 1 but continues with phase 2 in which it is intended not only to propose the mechanism of environmental accounting valuation but also to apply it in the industries of the Aburrá Valley seeking to evaluate the effectiveness of this for the control and administration of the expenditure and benefit received by environmental practices.

Finally, the revision of the notes to the financial statements of the companies reviewed did not observe the incorporation of an accounting note on the subject of environmental sustainability, which detailed in a quantitative or qualitative way on the actions and implications that the environmental issue has on the financial statements, as in the management report of senior management, which proposes a challenge for the professions of economic, accounting and administrative sciences, and law.

It has been discussed at academic events and within academies about the competitiveness of companies by integrating the environmental part in financial information, behavior shows that environmental aspects generate a favorable impact on the Net Profit Margin, in the long term generates a benefit for organizations, this due to increased sales by introducing into new markets where the issue of environmental care becomes a guideline to comply.” (Martinez, S. S. 2022).

5 CONCLUSIONS

The industries located in the Aburrá Valley know the environmental responsibilities they have, but they do not have accounting controls of the expenses or benefits obtained with their practices.

The implementation of an accounting mechanism that allows measuring the environmental impact will allow organizations to have registered in their assets items such as inventory with environmental benefit, fixed assets with environmental benefit or other items that clearly show the social contribution generated by the company to the community.

The proposal of financial indicators and the recording in the statement of financial situation, specifically in its assets, becomes a starting point to implement in the industries, a valuation mechanism that can be important not only for shareholders but also for the state who may have in these accounting figures a control and audit mechanism.

The results of the research will help the academy to continue contributing to the improvement of accounting standards for the fair presentation of financial statements, new research can analyze the perception of users of financial information on sustainability regulations applied in the interpretation of accounting figures, with respect to the business field to the awareness of the correct incorporation of standards for decision makers such as the preparation of new consultants in environmental and financial sustainability, which will require an immediate future international certification against this emphasis.

REFERENCES


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