

Developing an Environmental Accounting Model with an Emphasis on Social Responsibility (Case Study: Iraq)

Mohammadreza Mehrabanpour

mehrabanpour@ut.ac.ir

**, PhD Associate Professor in Accounting, University of
Tehran, Farabi College, Qom, Iran**

Hayder ABDULZAHRA ABBAS

haydaraldami5@gmail.com

**PhD student, Accounting; University of Tehran, Farabi
College, Qom, Iran**

Abstract

An environmentally friendly organization often relies on social responsibility to ultimately gain competitive advantage for organizations. These processes, with the direction of environmental social responsibility at the global level, require the participation of corporate individuals, whose planning process can adapt corporate strategy to environmental problems. In this regard, the aim of the present study is to develop an environmental accounting model with an emphasis on social responsibility in Iraq. The research method was cross-sectional in terms of library-field environment in terms of applied purpose, in terms of time, and in terms of research implementation method, descriptive-survey. The present study was conducted using the grounded data method. The statistical community of the research includes knowledgeable experts from the academic staff in the field of environmental accounting and managers of organizations who are proficient in this field. 11 people were selected as experts through interviews. The results obtained from the coding were categorized into the categories of intervening conditions, context, causal conditions, actions and consequences. Government regulations and legislation were categorized as intervening conditions, organizational structures and education and awareness and knowledge of managers and employees as context and background, healthy and safe society, efficient organizations and efficiency and performance as consequences, corporate

system, optimal financial reports and stakeholder confidence as strategies and environmental cost control as causal conditions.

Introduction

The purpose of environmental accounting is to compile information to assist managers in assessing performance, controlling, making decisions, being accountable, and reporting for an organization or company (Ma et al., 2020). Environmental accounting is measured based on environmental and economic concepts, criteria, and performance. To achieve this goal, changes in culture and management are needed (Gao et al., 2021), some of which are achieved through accounting and reporting (Bennett et al., 2018). Environmental accounting provides reports that assist managers in measuring performance, controlling, reporting, and being accountable. Environmental accounting is based on economic and environmental concepts, and since it uses functions that do not arise from the market (Cai et al., 2016), its use requires a change in the culture of the organization (Cooper et al., 2019). Environmental accounting reflects some of these developments in the organization and more broadly in society. By providing more systematic understanding and participation in daily work practices, it helps to set continuous development goals as a specific approach (Dewi & I Putu., 2022). The environmental performance of an organization is of great importance to internal and external stakeholders of that organization, which makes managers accountable for how it performs environmentally. Achieving an appropriate environmental performance requires that the management of that organization be accountable for creating a systematic environmental accounting method and its continuous improvement (Dong et al., 2020). Environmental accounting has received much attention in research related to organizations. This is because stakeholders have put pressure on managers to focus more on assessing environmental performance and environmental issues (Mao wt al., 2023). To achieve better environmental performance, the implementation of environmental accounting is one of the most important benefits of the organization for the social responsibility of managers (Yermolenko et al., 2024). In this way, the concept of social responsibility is very important for companies, as business units are expected to not only think about increasing their profits but also be socially responsible and useful to the society with which they interact (Odhiambo., 2015). Social responsibility is the company's considerations and response to issues beyond the economic, technical and legal constraints of the company to achieve

social benefits along with the traditional economic profit that the company seeks (Mohammed., 2018). The company must consider the interests of all stakeholders in making decisions and carrying out its activities and operations (Zhou et al., 2021). Considering the interest of stakeholders and society in general is essential for the company, companies have responsibilities to all stakeholders.

Environmental uncertainty is a challenge for any company, and the lack of information regarding green accounting and the speed of environmental information are factors that limit actions. In conditions of high uncertainty, complex information can help managers improve the quality of decisions and reduce their environmental impacts and increase social responsibility. In this regard, the present study seeks to answer the question of how to develop an environmental accounting model with an emphasis on social responsibility in Iraq?

Review of theoretical foundations and research background

Wang et al. (2010) in their definition of environmental accounting emphasized the issue of reporting and providing necessary information to individuals. In their opinion, environmental accounting deals with the preparation of reports for internal use, to assist managers and to disclose environmental information to society and to financial organizations. Adediran & Alade (2015) also stated that environmental accounting is a fundamental tool for understanding the role that the environment plays in the economy. Environmental accounting, which is often called green accounting or environmental accounting, refers to the adjustment of the general accounting system in the use or depletion of natural resources.

Environmental accounting is a national mass information that links the environment to the economy and has long-term consequences on planning and economic and environmental policies (Bhattacharyya., 2016). Environmental accounting is a fundamental tool that can be used to encourage groups and organizations to behave environmentally friendly. This tool, if connected to the organizational reward mechanism, will attract employee participation in environmental protection. Therefore, environmental revenues and costs resulting from various necessary functions are included in the profit and loss accounts (Che-Ahmad et al., 2017). Today, the world is facing two issues: economic development on the one hand and environmental protection on the other.

Accounting information system, as an important component of the management information system, can play a significant role in helping to protect the environment by polluting manufacturing companies. Environmental costs are one

of the thousands of costs that occur in a business unit to produce goods or services. Environmental accounting provides appropriate information to management by properly disclosing how environmental assets and liabilities are presented and how the expenses spent on the environment are reflected. Environmental accounting is national mass data that links the environment to the economy and has long-term effects on economic and environmental decision-making policies, which is possible through the preparation of environmental satellite accounts. Therefore, proper environmental accounting will have a significant impact on economic development and is a prerequisite for having sustainable development (Dong et al., 2021).

Babalola (2014) defined social responsibility as a set of activities related to measuring the performance of business organizations and their role in maintaining and protecting the environment to their local communities directly or indirectly and reporting these results in a way that the community is able to evaluate the social performance of the organization. Odhiambo (2015) defines social responsibility of the organization in terms of the compatibility of the activities and also the income of the organization with the expectations and values of the society. In another definition, social responsibility is defined as a set of duties and obligations, which organizations have to maintain and care for as well as contribute to the society in which they operate. Business success through respect for ethical values, people, society and the environment is defined as social responsibility. Rounaghi (2019) defined social responsibility as actions to improve the well-being of society, beyond the interests of the company and legal requirements. Corporate social responsibility deals with the relationship between companies and society, specifically examining the effects of companies' activities on individuals and society. The concept has many applications in political and social fields. It is a familiar term for organizations, but despite this, agreement on its specific meaning and the ways in which it is applied remains, like many other social science concepts, vague. Corporate social responsibility or social responsibility of organizations is a topic of "business ethics" that deals with the role of companies in society (Qu et al., 2021). Corporate social responsibility is a set of duties and obligations that a company must fulfill in order to preserve, care for, and contribute to the society in which it operates. Corporate social responsibility is related to the company's responsibility towards society, people, and the environment in which the company operates, and this responsibility goes beyond economic and financial considerations (Ran et al., 2018). Corporate social

responsibility is defined in Huang's (2016) definition as follows: "Corporate social responsibility is activities that promote social profit and benefit and go beyond the interests of the organization and what the law requires." The demand for organizations to "act responsibly" towards society is an issue that has intensified in the final decades of the twentieth century with the increasing expansion of their influence on the axes that constitute sustainable development, namely "economy", "society" and "environment", and has led to the emergence of a concept called corporate social responsibility in the world of management (Usman et al., 2022). In a simple definition, social responsibility means that organizations are responsible to the society in which they operate; because they use its human, natural and economic resources. Contrary to the traditional view of management and business, organizations are no longer responsible only to their shareholders and should not only think about increasing the short-term profits of their shareholders (Yang et al., 2023). Thus, organizations that are also in contact with other stakeholders are expected to take their legitimate demands into account. In any business, including companies that are created to generate wealth and business, they must take one hundred percent responsibility for all their work that has a social aspect. In ordinary business, this responsibility is the responsibility of its owner and in companies, the responsibility of the board of directors and the CEO of that company. Also, the social responsibility or social obligations of the company have been divided into four aspects: environmental social responsibility, human capital, philanthropic and ethical, the most important of which is environmental social responsibility (Setiawan., 2022).

Research Method

Given that this study is based on a qualitative method and specifically uses the grounded theory strategy, sampling has also been subject to the rules of this method and has been carried out in a purposeful and theoretical manner. Sampling in the grounded theory method is snowball sampling. For this purpose, accountants and knowledgeable individuals were surveyed and the most relevant person in the aforementioned centers was identified in terms of information and knowledge in terms of position. After identification, they were asked to agree to an in-depth interview. After obtaining consent and arranging the time and place, the interviews were conducted, in the order of the time of agreement. In this research, a semi-structured interview was used in order to discover in-depth information in order to identify the indicators of the present components. In this type of interview, the questions are designed in advance and the aim is to obtain

in-depth information from the interviewee. The reason for using a semi-structured interview was that in this method, there is a possibility of exchanging views and guiding the discussion and topic of the interview in order to achieve the research objectives, and also to explore and better understand the information, other questions can be asked. In the process of sampling the participants, the researcher analyzed the data so that the incomplete cases could be completed by receiving new information from the new participant. After conducting 11 interviews, the main and secondary factors were repeated in the previous interviews and the researcher reached saturation.

Research findings

The implementation of the grounded theory method began with conducting interviews, collecting and coding data, so that the researcher gained more skills in conducting interviews by conducting initial exploratory interviews, which was very important for the research; also, the recorded records of the interviews were named and stored in a database, which was organized based on the name of the interviewee, the audio file of the interview, and the date of the interviews. After storing them, the researcher listened to them and implemented them to conduct the research. In this study, the main source of data was interviews, so that the initial interviews were exploratory and descriptive, and gradually after each interview, the data obtained from the interviews were coded interview by interview, and by means of the constant comparison of data, theoretical codes emerged through open coding, and in this way, 11 interviews were coded, and concepts and subcategories and main categories emerged.

In the first stage, the main and subcategories were categorized according to the initial codes, which were presented in the form of three coding stages. The conceptual structure of the present study model was based on the findings from the analysis of the interviews, as shown in Table 1.

Table 1. Developing an environmental accounting model with an emphasis on social responsibility in Iraq

Initial codes	Subcategory	Main category
Uniformity in observing laws. Establishing preventive laws. Observing environmental issues. Enforcing environmental laws. Creating laws and regulations to protect the environment.	Environmental laws and regulations	Organizational Structures

Table 1. Developing an environmental accounting model with an emphasis on social responsibility in Iraq

Initial codes	Subcategory	Main category
Environmentally friendly technologies. Use of modern and efficient equipment. Renovation of machinery.	Technology compatibility	
Increasing public trust. Achieving the My Good City model. Increasing loyal customers.	Assurance	Healthy and Safe Society
Consumption pattern standards. Public opinion. Culture building in society. Environmental social education. Consumer use of low-polluting goods. Concerns of stakeholders about environmental issues.	Social acceptance	
Increasing the quality of life of the community. Community health. Cleanliness and beauty of the environment. Community satisfaction. Community support for the environment. Increasing life expectancy across generations.	Healthy communities	
Encouragement and improvement of business by the government. Allocating appropriate budget for procurement and equipment of necessary systems from the government. Providing tax incentives to non-polluting organizations. Providing facilities to non-polluting organizations.	Government encouragement and support	Government regulations and legislation
Government oversight. Government policymaking. Government performance. Reducing government spending.	Government monitoring and evaluation	
Economic decision-making policies. International pollution reduction strategies. Macro-environmental policy-making.	Government policies	
Greater oversight of quality control. No use of non-biodegradable materials. Efficiency of production. Reducing the organization's production costs.	Increasing product quality	Controlling environmental costs

Table 1. Developing an environmental accounting model with an emphasis on social responsibility in Iraq

Initial codes	Subcategory	Main category
Tracking environmental costs. Reducing environmental costs. Environmental opportunity costs. Prioritizing environmental costs.	Reducing production costs	
Excess of benefits over costs. Optimal use of resources. Production ideas to reduce pollution. Transformation in production.	Reducing emissions	
Correct pricing of products. Correct costing. Cost management. Reduction of poor quality products. Reduction of the cost price of products.	Correct costing	
Company advertising for being environmentally friendly. International exchange of environmental information. More investment opportunities internationally.	Organization al efficiency	Efficient Organizations
Healthy geographical environment of the company. Environmental satisfaction. Healthy organizational environment. Job improvement.	Company health	Awareness and Knowledge of Managers and Employees
Awareness of organizational employees. Training of managers. Organizational culture. Holding conferences for organizational training. Training of employees and managers.	Individual training and awareness	
Inefficiency of employees. Lack of expertise of employees. Inattention of employees to the production of products.	Employee expertise and skills	
Review of internal control systems. Increasing social responsibility.	Healthy systems	Corporate System
Alignment of managers with environmental plans. The presence of efficient managers. The presence of expert managers.	Proper management	
Correct decision-making by managers. Optimal management. Attention of managers to environmental issues. Decision-making by managers.	Optimum decision-making	

Table 1. Developing an environmental accounting model with an emphasis on social responsibility in Iraq

Initial codes	Subcategory	Main category
Managers' responsibility. Increasing managers' ability. Managers' accountability. Not hiding costs by managers.	Responsibility	
The existence of social accounting reports. Creating new social accounting methods. Changes in social environmental accounting methods.	Increase social responsibility reporting	Optimized Financial Reporting
Using online systems for financial reports. Implementing environmental audit activities. Existence of inspections for reporting environmental activities. Eliminating reporting activities without added value. Transparency of environmental accounting.	Increase optimal accounting reports	
Organizational performance assessment. Environmental performance assessment. Optimal environmental performance.	Accountability	Stakeholder Assurance
Disclosure of environmental costs. Correct disclosure of information. Disclosure of environmental activities in financial reports. Transparency.	Transparency	
Increasing shareholder wealth. Increasing the share price. Increasing shareholder trust in the company. Stakeholder satisfaction. More reliable profits. Attracting shareholders. Shareholders' decision-making.	Trust	
Increasing customer satisfaction. Increasing the quality level of products and services. Increasing the quality of services. Increasing sales and profitability. Earning more profits. Selling more products. Quality of products and services. Selling products. More diverse products.	Increase customer satisfaction	Optimized Financial Reporting
Competitive market. Competitive power. Competitive advantage. Business growth.	Competition and Business	

Table 1. Developing an environmental accounting model with an emphasis on social responsibility in Iraq

Initial codes	Subcategory	Main category
Competitive power.	Growth	
Company success. Sustainable organizations. Increasing production. Sustainable development.	Company Success	

Since the aim of the present study was to develop an environmental accounting model with an emphasis on social responsibility in Iraq, the paradigmatic model is shown in Figure 1.

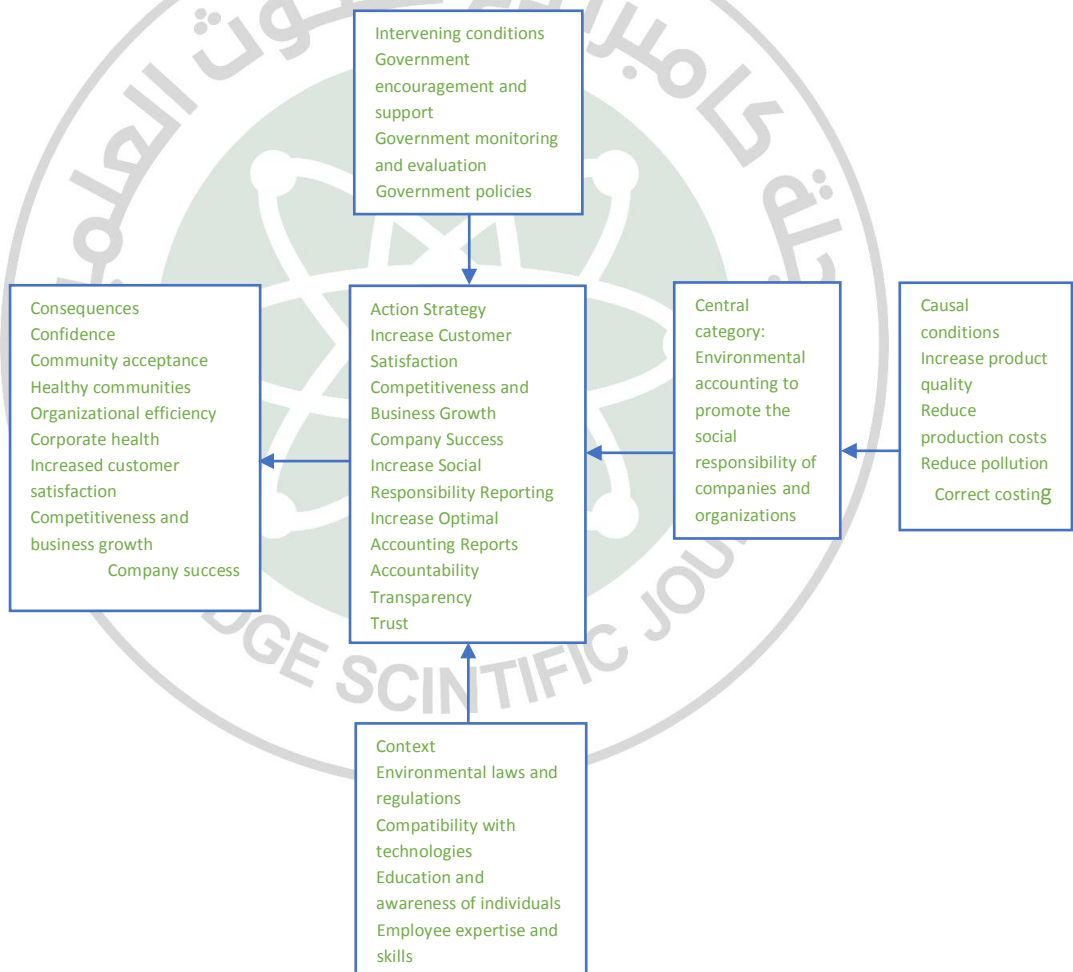


Figure 1. Paradigmatic model of environmental accounting with emphasis on social responsibility in Iraq

Categories of Intervening Conditions

Based on the results of the secondary coding of the research, government regulations and legislation were classified as the main category, and government encouragement and support, government monitoring and evaluation, and government policies were classified as subcategories as categories of intervening conditions.

Table 2. Categories of Intervening Conditions

Initial codes	Subcategory	Main category
Encouragement and improvement of business by the government. Allocating appropriate budget for procurement and equipment of necessary systems from the government. Giving tax incentives to non-polluting organizations. Giving facilities to non-polluting organizations.	Government encouragement and support	Government regulations and legislation
Government supervision. Government policy-making. Government performance. Reducing government costs.	Government monitoring and evaluation	
Economic decision-making policies. International strategies for reducing pollution. Macro-environmental policy-making.	Government policies	

Context and background categories

Based on secondary coding, organizational structures, and training, awareness, and knowledge of managers and employees were categorized into main categories and environmental laws and regulations, adaptation to technologies, training and awareness of individuals, and employee expertise and skills under the heading of context conditions categories.

Table 3. Context conditions categories

Initial codes	Subcategory	Main category
Uniformity in observing the laws. Establishing preventive laws. Observing environmental issues. Enforcing environmental laws. Creating laws and regulations for environmental protection.	Environmental laws and regulations	Organizational Structures
Environmentally friendly technologies. Using modern and efficient equipment. Renovating machinery.	Compatibility with technologies	
Awareness of organizational staff. Training managers. Organizational culture. Holding conferences for organizational training. Training employees and managers.	Employee training and awareness	Awareness and Knowledge of Managers and Employees
Inefficiency of employees. Lack of expertise of employees. Inattention of employees to the production of products.	Employee expertise and skills	

Outcome categories

Based on secondary coding, healthy and safe society, efficient organizations, and efficiency and performance were categorized as main categories and public trust, culture building in society, healthy society, organizational growth, healthy organizational environment, product quality, competitiveness, and organizational sustainability were categorized as subcategories and as outcome categories.

Table 4. Outcome categories

Initial codes	Subcategory	Main category
Increasing public trust. Achieving the My Good City model. Increasing loyal customers.	Confidence	Healthy and Safe Society
Consumption pattern standards. Public opinion. Building culture in society. Environmental social education. Consumers' use of low-polluting goods. Concerns of stakeholders about environmental issues.	Community Acceptance	
Increasing the quality of life of the community. Community health. Cleanliness and beauty of the environment. Community satisfaction. Community support for the environment.	Healthy Communities	

Increasing life expectancy in generations.		
Company advertising for environmental friendliness. International exchange of environmental information. More investment opportunities at the international level.	Organizational Effectiveness	Healthy and Safe Society
Healthy geographical environment of the company. Environmental satisfaction. Healthy organizational environment. Job improvement.	Corporate Health	
Increasing customer satisfaction. Increasing the quality level of products and services. Increasing the quality of services. Increasing sales and profitability. Earning more profits. Selling more products. Quality of products and services. Selling products. More diverse products.	Increasing Customer Satisfaction	Efficiency and performance
Competitive market. Competitive power. Competitive advantage. Business growth. Competitive power.	Competition and Business Growth	
Company success. Sustainable organizations. Increasing production. Sustainable development.	Company Success	

The categories of strategies were categorized based on secondary codings: corporate system, optimal financial reporting, and stakeholder confidence in the main categories, and organizational systems, managerial efficiency, optimal management, management ability, social trends, changes in accounting reports, performance evaluation, transparency, and shareholder trust in the subcategories and under the heading of strategy categories.

Table 5. Strategy categories

Initial codes	Subcategory	Main category
Review of internal control systems. Increasing social responsibility.	Increasing customer satisfaction	Corporate system
Alignment of managers with environmental plans. The presence of	Competition and business growth	

efficient managers. The presence of expert managers.		
Correct decision-making by managers. Optimal management. Attention of managers to environmental issues. Decision-making by managers.	Company success	
Managers' responsibility. Increasing managers' ability. Managers' accountability. Not hiding costs by managers.	Increasing customer satisfaction	
Existence of social accounting reports. Creation of new social accounting methods. Changes in social environmental accounting methods.	Increasing social responsibility reporting	Optimized Financial Reporting
Use of online systems for financial reports. Implementation of environmental audit activities. Existence of inspection for reporting environmental activities. Elimination of reporting activities without added value. Transparency of environmental accounting.	Increasing optimal accounting reports	
Organizational performance assessment. Environmental performance assessment. Optimal environmental performance.	Accountability	Stakeholder Assurance
Disclosure of environmental costs. Correct disclosure of information. Disclosure of environmental activities in financial reports. Transparency.	Transparency	
Increasing shareholder wealth. Increasing the third day. Increasing shareholder trust in the company. Stakeholder satisfaction. More reliable profits. Attracting shareholders. Shareholders' decision-making.	Trust	

The categories of causal conditions

Based on secondary coding, environmental cost control was categorized in the main category and product quality control, production cost reduction, optimal production, and optimal management were categorized in the subcategory and under the title of causal conditions.

Table 6. Categories of causal conditions

Initial codes	Subcategory	Main category
More monitoring of quality control. No use of non-biodegradable materials. Efficiency of production. Reducing the organization's production costs.	Increasing product quality	<i>Controlling</i> environmental costs
Tracking environmental costs. Reducing environmental costs. Environmental opportunity costs. Prioritizing environmental costs.	Reducing production costs	
Increasing benefits over costs. Optimal use of resources. Production ideas to reduce pollution. Transformation in production.	Reducing pollution	
Correct pricing of products. Correct costing. Cost management. Reducing poor quality products. Reducing the cost price of products.	Correct costing	

Conclusion

The aim of the present study is to develop an environmental accounting model with an emphasis on social responsibility in Iraq. The results showed that greater supervision over the control of production in the organization can lead to a reduction in environmental costs, and if companies have better and higher quality products so that environmental issues can be considered in the control of production, this will undoubtedly lead to a reduction in environmental costs and

an increase in social responsibility. On the one hand, managers of organizations and companies must have more control over the quality of products in order to achieve the goals of social responsibility. If companies have integrated and unified rules that all units and all employees adhere to, it can be effective in reducing environmental costs. The application of these rules requires the cooperation of all individuals in companies, and on the other hand, managers and employees must have the necessary knowledge so that they can help increase their expertise and skills while applying the rules and regulations, and in this way, they can help increase social responsibility. The government can also help reduce environmental costs by monitoring companies and making policies that separate polluting companies from polluting ones, and in this way, it should consider special incentives for polluting companies. The results showed that managers are one of the main pillars in organizations that help reduce environmental costs. Managers in an organization or company must be accountable to all stakeholders or the entire society. Stakeholders demand transparency and accountability and want to know the assessment of their company's environmental performance, and it is these managers who must announce the results of the environmental assessment to stakeholders. In order to refer to the reduction of environmental costs in their actions, they need structured administrative systems and capable managers. If companies reduce pollution and reduce environmental costs and on the one hand, managers are responsible for this with their optimal management, then we will have successful and sustainable companies that will be popular in society, which will lead to greater customer satisfaction, and companies with greater commercial growth and increased sales, and on the other hand, social responsibility will increase. According to the results of the present study, the following suggestions are made, which are that the secret to the success of any organization is its managers and employees. Therefore, every organization needs capable, specialized, knowledgeable, and committed managers and employees to achieve this success. The presence of accountable managers allows organizations to have employees with greater commitment. In this regard, it is suggested that organizations organize training courses for all employees so that, while recognizing responsibility and accountability, they can also train in groups so that we can have more knowledgeable people in the organization. It is also suggested that accountants in organizations become familiar with environmental accounting methods and techniques by participating in group classes so that they can explain the need to use environmental accounting to other marketers, so that not only

managers but also other employees are familiar with and accountable for environmental issues. It is also suggested that managers and planners in organizations consider uniform rules and procedures for environmental reports and use modern environmental accounting techniques so that they can be accountable for financial statements, especially environmental reports, based on standards and rules in financial reports, and using uniform rules helps reduce emissions and increase social responsibility of organizations.

Resources

- Adediran, S. A., & Alade, S. O. (2015). The Impact Of Environmental Accounting On Corporate Performance In Nigeria. *European Journal of Business and Management*, 5(23), 141–152.
- Adeyemi, S. B. & Ayanlola, O. S. (2017). Regulatory perspective of the deepening of CSR disclosure practice in Nigeria. *African Journal of Business Management*, 9(6), 270–287.
- Ahmad, A. (2012). Environmental accounting and reporting practices: significance and issues a case from Bangladeshi companies. *Global Journal of Management and Business Research*, 12(14), 1–8.
- Akinlo, O. O. & Iredele, O. O. (2014). Corporate environmental disclosure and market value of quoted companies in Nigeria. *The Business and Management Review*, 5(3), 171–184.
- Alan-Willis, C. A. (2003). The role of the global reporting initiative's sustainability reporting guidelines in the social screening of investments. *Journal of Business Ethics*, 43, 233–237.
- Alhassan, A.R.M., Ma, W., Li, G., Jiang, Z., Wu, J., and Chen, G. (2020), Response of soil organic carbon to vegetation degradation along a moisture gradient in a wet meadow on the Qinghai–Tibet Plateau, *Ecol & Evol*, 8(23), 11999-12010.
- Babalola, Y. A. (2014). The impact of corporate social responsibility on firms' profitability in Nigeria. *European Journal of Economics, Finance and Administrative Sciences*, 45, pp. 39-50.
- Bennett, E.M., Cramer, W., Begossi, A., Cundill, G., D'iaz, S., Egoh, B.N., and Lebel, L. (2018), Linking biodiversity, ecosystem services, and human well-being: three challenges for designing research for sustainability, *Curr Opin Env Sust*, 14, 76-85.

Bhattacharyya, A. (2016). Factors associated with the social and environmental reporting of Australian companies. *Australasian Accounting, Business and Finance Journal*, 8(1), 25-50.

Cai, H., Yang, X., and Xu, X. (2016), Human-induced grassland degradation/restoration in the central Tibetan Plateau: The effects of ecological protection and restoration projects, *Ecol. Eng.*, 83, 112.

Cao, J.J., Holden, N.M., Adamowski, J.F., Deo, R.C., Xu, X.Y., and Feng, Q. (2020), Can individual land ownership reduce grassland degradation and favor socioeconomic sustainability on the Qinghai-Tibetan Plateau? *Environ Sci Policy*, 89, 192-197.

Che-Ahmad, A.; Osazuwa, N. P. & Mgbame, C. O. (2017). Environmental accounting and firm profitability in Nigeria: Do firm-specific effects matter? *The IUP Journal of Accounting Research & Audit Practices*, 14(1), pp. 43-54.

Cooper, D.J., Kaczynski, K.M., Sueltenfuss, J., et al., (2019), Mountain wetland restoration: the role of hydrologic regime and plant introductions after 15 years in the Colorado Rocky Mountains, USA, *Ecol Eng.* 101, 46-59.

Deng, B., Li, Z., Zhang, L., Ma, Y., Li, Z., Zhang, W., and Siemann, E. (2018), Increases in soil CO₂ and N₂O emissions with warming depend on plant species in restored alpine meadows of Wugong Mountain, China. *J Soil Sediment*, 16(3), 777-784.

Dewi, P., & I Putu, E. (2022). Implementation of Green Accounting, Profitability and Corporate Social Responsibility for Corporate Values. *E-Jurnal Akuntansi*, 30(12), 3252-3262.

Dong, S., Shang, Z., Gao, J., and Boone, R.B. (2021), Enhancing sustainability of grassland ecosystems through ecological restoration and grazing management in an era of climate change on Qinghai-Tibetan Plateau, *Agriculture, Ecosystems & Environment*, 287, 106684.

Dong, S., Xu, L., & McIver, R. (2020). China's financial sector sustainability and "green finance" disclosures. *Sustainability Accounting, Management and Policy Journal*, 12(2), 353-384.

Ezeagba, C. E., John-Akamelu, C. R. & Umeoduagu, C. (2018). Environmental accounting disclosures and financial performance: a study of selected food and beverage companies in Nigeria (2006-2015). *International Journal of Academic Research in Business and Social Sciences*, 7(9), 162-174.

Fauzi, N., & Chandra, N. (2018). Green Accounting dan Efektifitas Peraturan Pemerintah No 47 tahun 2012 pada Perusahaan di Indonesia. *National Conference*

of Applied Sciences, Engineering, Business and Information Technology.

Politeknik Negeri Padang, 47, 15-16.

Fonseca, L. M., & Domingues, J. P. (2019). How to succeed in the digital age? Monitor the organizational context, identify risks and opportunities, and manage change effectively. *Management and Marketing*, 12(3), 443-455.

Ganda, F. (2018). The effect of carbon performance on corporate financial performance in a growing economy. *Social Responsibility Journal*, 14(4), 895-916.

Gao, X., Dong, S., Xu, Y., Wu, S., Wu, X., Zhang, X., and Shang, Z. (2021), Resilience of revegetated grassland for restoring severely degraded alpine meadows is driven by plant and soil quality along restoration time: A case study from the Three-river Headwater Area of Qinghai-Tibetan Plateau. *AGEE*.

Georg, S., & Justesen, L. (2019). Counting to zero: accounting for a green building. *Accounting, Auditing and Accountability Journal*, 30(5), 1065-1081.

Gu, Y., Bai, Y., Xiang, Q., Yu, X., Zhao, K., Zhang, X., and Chen, Q. (2018), Degradation shaped bacterial and archaeal communities with predictable taxa and their association patterns in Zoige wetland at Tibet plateau, *Scientific reports*, 8(1), 3884.

Guo, B., Zhou, Y., Zhu, J., Liu, W., Wang, F., Wang, L., and Jiang, L. (2018), Spatial patterns of ecosystem vulnerability changes during 2001-2011 in the three-river source region of the Qinghai-Tibetan Plateau, China, *Journal Arid Land*, 8(1), 23-35.

Guo, W., Bi, S., Kang, J., Zhang, Y., Long, R., Huang, X., and Anderson, R.C. (2020), Bacterial communities related to 3-nitro-1-propionic acid degradation in the rumen of grazing ruminants in the Qinghai-Tibetan Plateau, *Anaerobe*, 54, 42-54.

Huang, L., Shao, Q., Liu, J., and Lu, Q. (2019), Improving ecological conservation and restoration through payment for ecosystem services in Northeastern Tibetan Plateau, China, *Ecosyst Serv.*, 31, 181-193.

Huang, W., Bruemmer, B., and Huntsinger, L. (2016), Incorporating measures of grassland productivity into efficiency estimates for livestock grazing on the Qinghai-Tibetan Plateau in China, *Ecol Econ*, 122, 1-11.

Jose, A. & Lee, S. M. (2007). Environmental reporting of global corporations: a content analysis based on website disclosures. *Journal of Business Ethics*, 72, 307-321.

- Latan, H., Jabbour, C., Jabbour. D., Wamba, S., Shahbaz. M. (2020). Effects of environmental strategy, environmental uncertainty and top management's commitment on corporate environmental performance: The role of environmental management accounting. *Journal of Cleaner Production*, 180 (11), 297-306
- Li, W., Cao, W., Wang, J., Li, X., Xu, C., and Shi, S. (2019), Effects of grazing regime on vegetation structure, productivity, soil quality, carbon and nitrogen storage of alpine meadow on the Qinghai-Tibetan Plateau. *Ecol Eng.*, 98, 123-133.
- Li, W., Liu, Y., Wang, J., Shi, S., and Cao, W. (2019), Six years of grazing exclusion is the optimum duration in the alpine meadow-steppe of the north-eastern Qinghai-Tibetan Plateau. *Scientific reports*, 8(1), 17269.
- Li, Y., Dong, S., Liu, S., Zhou, H., Gao, Q., Cao, G., and Zhao, H. (2015), Seasonal changes of CO₂, CH₄ and N₂O fluxes in different types of alpine grassland in the Qinghai-Tibetan Plateau of China, *Soil BiolBiochem*, 80, 306-314.
- Liu, X.J., Mao, X.F., Wei, X.Y., et al, (2018), Ecological Restoration Assessment Based on the PSRS Model: A Case Study of Huangshui National Wetland Park, *Journal of Environmental Accounting and Management*, 5(4), 281-297.
- Lu, X., Kelsey, K.C., Yan, Y., Sun, J., Wang, X., Cheng, G., and Neff, J.C. (2017), Effects of grazing on ecosystem structure and function of alpine grasslands in Qinghai-Tibetan Plateau: a synthesis, *Ecosphere*, 8(1)
- Luo, J., Liu, X., Yang, J., Liu, Y., and Zhou, J. (2020), Variation in plant functional groups indicates land degradation on the Tibetan Plateau, *Sci. Rep.*, 8(1), 17606.
- Ma, L., Yao, Z., Zheng, X., Zhang, H., Wang, K., Zhu, B., and Liu, C. (2020), Increasing grassland degradation stimulates the non-growing season CO₂ emissions from an alpine meadow on the Qinghai-Tibetan Plateau. *Environ Sci Pollut R*, 25(26), 26576-26591.
- Mao, X.F., Wei, X.Y., Bernard, E., Wei, X.j., Tao, Y.Q., and Zhang Z.F. (2023), Network-based Perspective on Waterair Interface GHGs Flux on a Cascade Surface-flow Constructed Wetland in Qinghai-Tibet Plateau, China, *Ecological Engineering*, 151, 105862.
- Mao, X.F., Wei, X.Y., Jin, X., Tao, Y.Q., and Zhang, Z.F. (2019), Monitoring Urban Wetlands Restoration in Qinghai Plateau: Integrated Performance from Ecological Characters, Ecological Processes to Ecosystem Services, *Ecol Indic*, 101, 623-631.

- Mohammed, S. D. (2018). Mandatory social and environmental disclosure: a performance evaluation of listed Nigerian oil and gas companies pre- and post-mandatory disclosure requirements. *Journal of Finance and Accounting*, 6(2), 56–68.
- Odhiambo, O. A. (2015). The effect of social and environmental accounting and reporting on the financial performance of companies listed on the Nairobi Securities Exchange (Unpublished MBA Project). University of Nairobi, Nairobi, Kenya.
- Ohgushi, T., Wurst, S., and Johnson, S.N. (Eds.) (2018), *Aboveground–Belowground Community Ecology* (Vol. 234). Springer Press.
- Olander, L.P., Johnston, R.J., Tallis, H., Kagan, J., Maguire, L.A., and Polasky, S. (2019), Palmer, M. Benefit relevant indicators: Ecosystem services measures that link ecological and social outcomes, *Ecol Indic*, 85, 1262-1272.
- Qu, B., Zhang, Y., Kang, S., and Sillanpää, M. (2021), Water quality in the Tibetan Plateau: Major ions and trace elements “ in rivers of the “Water Tower of Asia”, *Sci Total Environ.*, 649, 571-581.
- Ran, Y., Li, X., and Cheng, G. (2018), Climate warming over the past half century has led to thermal degradation of permafrost on the Qinghai-Tibet Plateau, *Cryosphere*, 12(2).
- Rounaghi, M. M. (2019). Economic analysis of using green accounting and environmental accounting to identify environmental costs and sustainability indicators. *International Journal of Ethics and Systems*, 35(4), 504–512.
- Setiawan, H. (2022). Is the Environmental Performance, Environmental Accounting, Agency Cost Impact on Company Performance? (Case Study of Regional Water Companies in Indonesia). *International Journal of Contemporary Accounting*, 2(1), 39. <https://doi.org/10.25105/ijca.v2i1.6319>
- Su, X.K., Wu, Y., Dong, S.K., Wen, L., Li, Y.Y., and Wang, X.X. (2019), Effects of grassland degradation and re-vegetation on carbon and nitrogen storage in the soils of the Headwater Area Nature Reserve on the Qinghai-Tibetan Plateau, China, *JMS*, 12(3), 582-591.
- Suryati Adelina. (2018). Dampak penerapan ISO 9001:2008 dan Good Corporate Governance terhadap Kinerja Perusahaan. *Jurnal Kajian Ilmiah UBJ*, 16(1), 33–56.
- Usman. O, Alola. A, Sarkodie. S. (2022). Assessment of the role of renewable energy consumption and trade policy on environmental degradation using

innovation accounting. Renewable Energy.

<http://creativecommons.org/licenses/by-nc-nd/4.0/>.

Wang, J., Wang, G., Hu, H., and Wu, Q. (2010), The influence of degradation of the swamp and alpine meadows on CH₄ and CO₂ fluxes on the Qinghai-Tibetan Plateau, Environ Earth Sci., 60(3), 537-548.

Wen, L., Jinlan, W., Xiaojiao, Z., Shangli, S., and Wenxia, C. (2018), Effect of degradation and rebuilding of artificial grasslands on soil respiration and carbon and nitrogen pools on an alpine meadow of the Qinghai-Tibetan Plateau, Ecol Eng., 111, 134-142.

Xue, Z., Lyu, X., Chen, Z., Zhang, Z., Jiang, M., Zhang, K., and Lyu, Y. (2019), Spatial and Temporal Changes of Wetlands on the Qinghai-Tibetan Plateau from the 1970s to 2010s, Chinese Geogr S, 28(6), 935-945.

Yang, D.X., Mao, X.F., Wei, X.Y., et al. (2024), Water-air interface greenhouse gas emissions CO₂, CH₄ and N₂O were amplified by continuous dams in an urban river in Qinghai-Tibet Plateau, China. Water. 2020.12.759.

Yermolenko. V, Gafurova. O, Krasnova. M. (2024). Legal Principles of Environmental Accounting as Means of Identifying Sustainable Development Indicators in Ukraine. European Journal of Sustainable Development.

Yusuf .J, Hussaini. B, Muhammed. A. (2023). Determinants of Corporate Environmental Accounting Disclosure of Oil and Gas Firms in Nigeria. Global Business Management Review.

Zhao, Y., Wang, X., Ou, Y., Jia, H., Li, J., Shi, C., and Liu, Y. (2021), Variations in soil $\delta^{13}\text{C}$ with alpine meadow degradation on the eastern Qinghai-Tibet Plateau, Geoderma, 338, 178-186.

Zhen, L., Du, B., Wei, Y., Xiao, Y., and Sheng, W. (2020), Assessing the effects of ecological restoration approaches in the alpine rangelands of the Qinghai-Tibetan Plateau, Environ Res Lett, 13(9), 905-924.

Zhou, Y., Jiao, S., Li, N., Grace, J., Yang, M., Lu, C., and Lei, G. (2021), Impact of plateau pikas (*Ochotona curzoniae*) on soil properties and nitrous oxide fluxes on the Qinghai-Tibetan Plateau, PloS one, 13(9), e0203691.