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Climate Change Mitigation and Adaptation: The Role of Accountants, Challenges and Future Directions

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Abstract

As businesses encounter increasing disruptions and reputational risks due to evolving regulations and changing consumer preferences, effective climate change mitigation and adaptation strategies become essential. Accountants play a vital role in this process by integrating climate strategies into business planning, advancing sustainable practices, and evaluating climate-related risks. This paper examines the role of accountants in addressing climate change, particularly within environmentally sensitive organizations. It highlights how accountants support businesses in navigating new regulations, assessing climate risks, and developing mitigation strategies, while also enhancing climate-related disclosures to meet regulatory and stakeholder expectations. Major challenges include integrating Environmental, Social, and Governance (ESG) metrics into traditional financial reporting, the absence of standardized climate accounting frameworks, and adapting to evolving regulatory demands. Frameworks such as those from the International Sustainability Standards Board (ISSB) and the Task Force on Climate-related Financial Disclosures (TCFD) are essential for improving transparency and decision-making. Additionally, effectively communicating climate-related information requires tailoring content to the audience's understanding and using clear, accessible language. This paper explores these issues, identifies current challenges, and proposes future directions for accountants in climate change mitigation and adaptation, thereby enhancing organizational resilience and economic sustainability.

Keywords
Climate Change Mitigation, Role of accountants, Sustainability reporting, Environmental, Social and Governance (ESG)

1.0 Introduction

Climate change represents one of the most intricate and urgent global challenges of our time. Defined as a long-term alteration in temperature and weather patterns primarily driven by human activities, climate change is largely attributed to increased greenhouse gas emissions, such as carbon dioxide (CO_2) and methane (CH_4). These emissions result from practices including the burning of fossil fuels, deforestation, and various agricultural and industrial activities. Notably, carbon dioxide, the principal driver of contemporary global warming, has persisted in the atmosphere for thousands of years, ensuring that even a cessation of emissions today would not immediately halt climate change, thereby impacting future generations (NASA Science, 2024). The resultant climate alterations are manifesting through intensified weather phenomena, such as frequent heatwaves, rising sea levels, and altered precipitation patterns (IPCC, 2021a, 2021b). The trajectory of future climate change hinges on ongoing emissions and the climate

system's responsiveness. Consequently, addressing climate change necessitates both mitigation and adaptation efforts.

Mitigation involves efforts to reduce climate change by curbing greenhouse gas emissions and bolstering natural carbon sinks, such as oceans and forests. The primary objective is to minimize human impact on the climate, stabilize greenhouse gas levels, and foster ecosystem adaptation, which in turn supports food security and sustainable economic development (NASA Science, 2024). As mitigation becomes increasingly challenging, there is a growing emphasis on adaptation strategies to facilitate societal adjustment. These strategies encompass structural changes like infrastructure enhancements, ecosystem-based measures, and financial tools such as insurance to mitigate exposure and vulnerability to climate change (Noble et al., 2015).

The interplay between climate change and the surge in severe weather events has significant implications for businesses (Namdar et al., 2015). Climate change introduces both direct and indirect risks to business operations, manifesting through extreme weather events such as floods, heatwaves, and storms, which can disrupt supply chains, damage infrastructure, and lead to production delays and financial losses (Ali et al., 2023; Setiawan et al., 2023). Additionally, climate change encompasses transition risks associated with evolving regulations, shifting consumer preferences, and technological advancements. As societal expectations regarding ethical business practices evolve, companies may face reputational risks if perceived as inadequate in their climate action efforts (Monasterolo, 2020; Setiawan et al., 2023). Such reputational risks can undermine customer loyalty and brand value, as stakeholders increasingly support companies with robust environmental practices (Christensen et al., 2024; McLaughlin et al., 2019; O'Brien et al., 2023). Therefore, the implementation of effective mitigation and adaptation strategies is crucial across various sectors, influencing macroeconomic policies and market mechanisms where financial and accounting practices intersect (Setiawan et al., 2023).

In this evolving business landscape, accountants are assuming a pivotal role in addressing climate change. Their responsibilities have shifted from traditional financial oversight to active involvement in promoting sustainable business practices (Ghani, 2024). Integrating climate change strategies into overall business planning necessitates accountants' engagement beyond conventional financial roles, encompassing strategic planning and decision-making (Linnenluecke et al., 2015). Understanding the impact of emerging climate policies on accounting practices and reporting requirements is essential for devising effective strategies (Marlowe & Clarke, 2022). Accountants are uniquely positioned to contribute to the development of low-carbon business models and promote economic sustainability, given their expertise in assessing climate risks and evaluating the implications of risk reduction and adaptation from strategic, organizational, and financial perspectives (Ghani, 2024). This paper aims to explore the role of accountants in mitigating and adapting to climate change, focusing on environmentally sensitive organizations and identifying challenges and future directions.

This paper makes a significant contribution to the field by providing a detailed examination of the role of accountants in addressing climate change, an area that has received increasing attention but remains underexplored. By integrating a comprehensive literature review with an analysis of the practical challenges and opportunities faced by accountants, this study advances understanding of how accounting practices can support climate change mitigation and adaptation. Furthermore, the paper identifies critical gaps in current

research and offers actionable recommendations for enhancing climate change strategies within accounting frameworks. These insights not only enrich the academic discourse but also provide valuable guidance for practitioners and policymakers aiming to integrate climate considerations into financial management and reporting.

The remainder of the paper is organized as follows: Section 2 provides a comprehensive review of the existing literature on climate change, examining the current state of research and identifying key themes and trends. Section 3 explores the role of accountants in climate change mitigation and adaptation, addressing the key challenges faced in this area and outlining potential future directions for research and practice. Finally, Section 4 synthesizes the findings of the paper, offering conclusions and recommendations for enhancing climate change strategies and identifying areas for future research.

2.0 Literature Review

2.1 Current Studies on Climate Change

Climate change poses significant challenges and risks, impacting various aspects of society and business operations. Understanding these challenges is crucial for developing effective adaptation and mitigation strategies. This literature review synthesizes recent research on the impacts of climate change, adaptation measures, and the evolving role of accounting in managing climate-related risks. Abbass et al. (2022) provide a comprehensive review of the global impacts of climate change, highlighting the multifaceted nature of these effects. Their study emphasizes the urgency of implementing adaptation and mitigation strategies to address physical damage from extreme weather events, disruptions in supply chains, and reputational risks associated with evolving regulations and consumer preferences. The authors advocate for sustainable practices and effective adaptation measures as essential components of a robust climate response.

Building on this foundation, Sietsma et al. (2021) offer insights into the progress made in climate change adaptation research. Their analysis underscores advancements in understanding and implementing adaptation strategies, while also identifying critical research gaps and future directions. This review highlights the ongoing need for innovation in adaptation practices to effectively address the dynamic nature of climate risks. A significant shift in the focus of sustainability accounting is discussed by O'Dwyer and Unerman (2020). They explore how sustainability accounting has evolved from emphasizing impacts to addressing risks and dependencies, particularly through the lens of the Task Force on Climate-related Financial Disclosures (TCFD) reporting. Their research illustrates the transformative potential of TCFD reporting in enhancing the management and disclosure of climate-related risks, thus advancing sustainability accounting practices.

In a more focused examination, Toimil et al. (2020) address the unique challenges posed by climate change in coastal areas. Their review highlights the specific physical, environmental, and socio-economic risks faced by these regions and discusses strategies for effective risk management and adaptation. This study underscores the necessity of targeted approaches for managing climate risks in vulnerable coastal environments. The need for precise carbon accounting in evaluating nature-based solutions for climate mitigation and conservation is emphasized by Keith et al. (2021). Their paper argues that comprehensive carbon accounting is crucial for accurately assessing the benefits of nature-based solutions and ensuring

their effectiveness in mitigating climate change. This research contributes to a better understanding of how carbon accounting practices can enhance the evaluation of climate solutions.

In contrast, Sharifi (2020) explores the trade-offs and conflicts between urban climate change mitigation and adaptation measures. This literature review highlights the challenges and potential conflicts that arise when implementing both types of measures within urban settings. By addressing these conflicts, the study provides valuable insights into the complexities of urban climate planning. Conversely, Sharifi (2021) examines the co-benefits and synergies between urban climate change mitigation and adaptation measures. This review demonstrates how integrated approaches can enhance the effectiveness of climate measures and provide additional benefits. The study emphasizes the importance of harmonizing mitigation and adaptation efforts to achieve comprehensive urban climate resilience.

Fawzy et al. (2020) provide an extensive review of climate change mitigation strategies, presenting a broad array of approaches aimed at reducing greenhouse gas emissions and enhancing resilience. Their study offers valuable insights into the various strategies available for addressing climate change and assesses their potential impacts on both environmental and socio-economic systems.

Building on the importance of transparent reporting, Borghei (2021) explores carbon disclosure through a systematic literature review. This review critically analyzes current practices in carbon reporting, emphasizing the implications for transparency and corporate accountability. Borghei's study highlights the essential role of effective carbon disclosure in advancing corporate climate responsibility and ensuring that companies meet their climate-related obligations.

In the context of infrastructure, Wang et al. (2020) examine the impacts of climate change on transportation systems, focusing on risks, adaptation strategies, and planning considerations. Their review underscores how climate change affects transportation infrastructure and systems, advocating for adaptive planning measures to mitigate these impacts and enhance the resilience of transportation networks.

Lastly, Bella et al. (2023) investigate the role of technological advancements in improving financial management and accounting practices. Their study explores how technological innovations are transforming the role of accountants and enhancing financial management, particularly in relation to climate change. This research underscores the evolving nature of accounting practices and the integration of technology in addressing climate-related challenges. Collectively, these studies provide a comprehensive overview of the current state of research on climate change adaptation, mitigation, and accounting. They underscore the critical need for effective strategies and practices to manage climate-related risks and highlight the evolving role of accounting in supporting these efforts.

3.0 Results and Discussions

3.1 The Role of Accountants in Mitigation and Adaptation of Climate Change

Governments and regulators are increasingly recognizing the necessity to reduce greenhouse gas emissions and adapt to climate change. This has led to the introduction of new regulations and policies, including incentives for sustainable practices and carbon pricing (Haites, 2018). Companies must adhere to stricter environmental regulations and standards, which can be costly and complex to manage. Non-compliance can result in penalties and reputational damage (McLaughlin et al., 2019; O'Brien et al., 2023). Accountants

play a pivotal role in advising businesses on navigating environmental regulations and implementing sustainability practices. They ensure that organizations comply with relevant environmental laws and regulations, thereby mitigating the risk of non-compliance penalties related to climate issues (Chetan & Hong, 2023). Moreover, accountants possess the credibility to influence policy by providing insights into the effectiveness and challenges of carbon tax implementation. For instance, they assist regulators and policymakers in assessing the adequacy of current carbon tax reforms and in promoting public awareness of climate change (McLaughlin et al., 2019).

Accountants contribute significantly to identifying and assessing risks related to climate change, including regulatory changes, physical impacts on assets, and reputational risk. They aid organizations in developing strategies to mitigate these risks (Caliskan & Esen, 2016). By analyzing financial data, accountants can predict and mitigate the potential impact of climate change on business operations, emphasizing the importance of incorporating climate risk into traditional risk management frameworks (Gulluscio et al., 2020). The integration of climate-related metrics into financial statements and the use of scenario analysis to understand potential future impacts enhance organizational resilience (Linnenluecke et al., 2015). Accountants must engage in climate scenario analysis and risk assessment to quantify risks and opportunities, which is crucial for enabling companies to assess the financial impact and compare climate change with other enterprise risks, facilitating informed capital allocation decisions by investors (IFAC, 2021).

In addition to risk management, accountants assist organizations in developing and implementing climate strategies by providing insights into cost management and resource allocation. This includes evaluating the financial implications of climate risks and opportunities, as well as various climate action plans (Gulluscio et al., 2020). Accountants' perspectives are invaluable as businesses face increased costs due to investments in cleaner technologies and processes to reduce greenhouse gas (GHG) emissions. They analyze financial data to support investment decisions aligned with climate change, such as costs associated with upgrading equipment and implementing sustainable practices (McLaughlin et al., 2019; O'Brien et al., 2023). By examining costs related to energy use, waste management, and resource use, accountants can identify areas where companies can reduce their environmental impact while also reducing costs. This includes assessing the financial viability of projects and sustainable investments, such as waste reduction initiatives, energy-efficient technologies, and renewable energy projects.

Furthermore, accountants play a crucial role in enhancing climate change disclosures to meet regulatory requirements and stakeholder expectations. This involves preparing reports that outline an organization's climate-related risks, strategies, and performance using frameworks such as the Global Reporting Initiative (GRI) or the Sustainability Accounting Standards Board (SASB) (Gulluscio et al., 2020). Investors, regulators, and policymakers need climate-related financial information to make informed decisions (Huang et al., 2018). Accountants help integrate climate-related data into financial reporting and decision-making processes, ensuring that such information is transparent and accurate (Gulluscio et al., 2020). They also integrate ESG criteria into financial reporting, ensuring that climate change considerations are part of the organization's overall strategy and decision-making processes (Caliskan & Esen, 2016). Corporate reporting must align with internal planning and decision-making to ensure that senior management, boards of directors, and investors trust that both internal accounting and external reporting reflect the company's climate commitments, strategy, business model, and operations. Additionally, ensuring that climate-related

or other sustainability information is reliable for decision-making is essential, supported by robust data collection processes and associated controls, which also form the foundation for assurances (IFAC, 2021).

In short, accountants are integral to the enhancement of climate change disclosures and corporate reporting, meeting regulatory requirements and stakeholder expectations. Comprehensive sustainability reports prepared by accountants outline an organization's climate-related risks, strategies, and performance using established frameworks like GRI or SASB (Gulluscio et al., 2020). Establishing metrics and key performance indicators (KPIs) related to sustainability efforts helps organizations track their progress toward sustainability goals. Corporate reporting must align with internal planning and decision-making, ensuring that senior management, boards of directors, and investors believe that internal accounting and external reporting accurately reflect the company's climate commitments, strategy, business model, and operations. Accurate and transparent reporting of the financial impacts of climate risks and opportunities is crucial, as investors, regulators, and policymakers rely on this information for making informed decisions (Huang et al., 2018).

3.2 Key Challenges in Addressing Climate Change and Future Directions

Climate change issues have had a significant impact on business models, cash flow, financial performance, and resilience. As a result, the need for coherent, comparable, accurate, and useful data is increasing (Huang et al., 2018). One of the primary challenges is the difficulty in collecting and managing the vast amounts of climate-related data required for accurate accounting and reporting (Gulluscio et al., 2020). This involves the complexity of incorporating ESG measures into traditional financial reporting (Di Vaio et al., 2024). The lack of standardized frameworks and guidelines for climate accounting further complicates the process of integrating climate risks into financial reports and making consistent and comparable disclosures (Gulluscio et al., 2020). It is crucial to investigate how to integrate ESG metrics seamlessly into traditional financial reporting frameworks by creating standardized measures, frameworks, and reporting guidelines to enhance transparency and decision-making (Linnenluecke et al., 2015; Di Vaio et al., 2024). This requires significant expertise and new methodologies (Gupta et al., 2012).

Transparent reporting of climate-related financial information is vital for stakeholders, including investors, regulators, and the public. This transparency not only helps in assessing the organization's climate-related risks but also promotes accountability and trust (Linnenluecke et al., 2015). In the absence of a generally accepted definition of materiality by standard-setting bodies, companies must determine where and how to report on climate-related matters. Assessments should be undertaken based on the preferences of certain stakeholders regarding whether the information should be included in the financial reports or placed in other sections, such as the narrative parts of annual, integrated, or sustainability reports (Huang et al., 2018; IFAC, 2021). Accountants must ensure that climate-related reporting complies with existing accounting and reporting standards without material omissions or misstatements. Key questions to address include: Is climate-related risk material to financial performance, necessitating its inclusion under current standards and regulations? How should climate-related information be presented in a narrative discussion to avoid misleading or inconsistent statements with the financial reports? (IFAC, 2021).

Regulatory requirements for climate-related disclosures are evolving, and keeping up with these changes can be challenging for accountants (Gulluscio et al., 2020). Navigating and complying with evolving environmental regulations and standards can be particularly difficult as these regulations vary across

regions and industries (Linnenluecke et al., 2015). Accountants must stay updated with evolving climate-related regulations and ensure that their organizations comply with these standards, which can vary by region and industry (Chateau et al., 2023). Recent developments, such as the creation of the International Sustainability Standards Board (ISSB), the European Union's Corporate Sustainability Reporting Directive (CSRD), and the SEC's Climate Disclosure Rule, highlight the dynamic nature of regulatory environments (Christensen et al., 2024). Accountants contribute significantly to the global effort of improving sustainability reporting through these new sustainability disclosure standards (IFAC, 2021). The ISSB, for instance, developed IFRS Sustainability Disclosure Standards to enhance investor-company dialogue, ensuring that investors receive decision-useful, globally comparable sustainability-related disclosures that meet their information needs (IFAC, 2021; IFRS, 2023). By ensuring compliance with these standards, accountants help companies produce transparent and comparable sustainability reports, thereby improving the quality of climate-related and overall sustainability information for all stakeholders and ensuring businesses operate with greater environmental and social responsibility (IFAC, 2021).

Another significant challenge is the gap in the skills and training needed for accountants to effectively manage and report on climate-related financial information (Gulluscio et al., 2020). Continuous learning and development are required for accountants to stay current with best practices in climate-related financial reporting and sustainability measures (Ramadhan et al., 2023). Additionally, varying levels of understanding and interest influence the effectiveness of communicating the financial implications of climate change to stakeholders, including investors, regulators, and the public (Linnenluecke et al., 2015). The Task Force on Climate-Related Financial Disclosures (TCFD) has proposed recommendations to address such challenges. Firstly, accountants need to customize communication to match the audience's knowledge and interest level. Investors may need detailed financial data and risk assessments, while the general public might prefer simpler explanations and visual aids. Secondly, the disclosure information must be delivered using straightforward language and avoiding jargon, with key points summarized at the beginning and detailed information provided for those who want to delve deeper. Implementing frameworks like the TCFD ensures comprehensive and consistent reporting of climate-related risks and opportunities (https://www.fsb-tcfd.org/).

In conclusion, addressing climate change poses numerous challenges, particularly in the realm of accounting and financial reporting. Overcoming these challenges requires the development of standardized frameworks, continuous learning, and effective communication strategies to ensure transparent, accurate, and comparable climate-related financial information. This, in turn, promotes accountability, trust, and informed decision-making among stakeholders.

3.3 Future Directions in Climate-Related Financial Reporting

As the urgency of climate change continues to escalate, the future direction of climate-related financial reporting is poised to focus on the development and adoption of standardized frameworks and methodologies to ensure consistent, comparable, and transparent disclosures. There will be an increasing emphasis on the integration of advanced technologies, such as big data analytics and artificial intelligence, to enhance the accuracy and efficiency of climate data collection, analysis, and reporting. These technological advancements will enable organizations to process vast amounts of climate-related data, providing deeper insights into the financial impacts of climate risks and opportunities (Caliskan & Esen, 2016). Additionally, the establishment of universally accepted standards, spearheaded by international

regulatory bodies like the International Sustainability Standards Board (ISSB), will be crucial in harmonizing global practices and ensuring that climate-related financial information is both decision-useful and globally comparable (IFRS Foundation, 2021). The ISSB's efforts to develop IFRS Sustainability Disclosure Standards exemplify this move towards global harmonization, which is expected to facilitate a more coherent approach to climate reporting and enable stakeholders to make more informed decisions (Di Vaio et al., 2024). This harmonization will also foster greater accountability within organizations, ensuring that climate-related risks and opportunities are transparently reported and integrated into business strategies.

Moreover, the future will see a growing focus on capacity building within the accounting profession to ensure that accountants are equipped with the necessary skills and knowledge to effectively manage and report on climate-related financial information. This will involve continuous professional development and the incorporation of sustainability and climate-related topics into accounting education curricula (Ramadhan & Mujahidin, 2023). Collaboration between international regulatory bodies and regional entities will be essential to create a cohesive framework that supports the global alignment of sustainability reporting standards. Enhancing stakeholder engagement through clear, accessible, and reliable reporting will also be critical in fostering trust and driving informed decision-making (Task Force on Climate-Related Financial Disclosures, 2017). By aligning corporate strategies with sustainability goals and integrating robust and transparent financial reporting practices, businesses can contribute significantly to global efforts in mitigating and adapting to climate change. This integrated approach will not only improve organizational resilience but also ensure that businesses operate with greater environmental and social responsibility, ultimately supporting the transition to a more sustainable global economy (Huang et al., 2018; Gulluscio et al., 2020).

4.0 Conclusion, Recommendations and Future Research

Businesses are increasingly exposed to significant risks posed by climate change, including physical damage from extreme weather events, disruptions within supply chains, and reputational risks arising from evolving regulatory landscapes and shifting consumer preferences. These challenges underscore the urgent need for effective mitigation and adaptation strategies. Accountants are crucial in this context, as they integrate climate-related strategies into business planning, advocate for sustainable practices, and assess climate risks, thereby contributing to organizational resilience and economic sustainability. By facilitating compliance with emerging regulations and enhancing climate change disclosures, accountants support companies in navigating complex environmental challenges and aligning with stakeholder expectations.

To address the critical challenges faced by businesses in integrating climate change considerations into traditional financial reporting, it is essential to develop and adopt standardized frameworks for climate accounting. The frameworks provided by the International Sustainability Standards Board (ISSB) and the Task Force on Climate-Related Financial Disclosures (TCFD) offer valuable guidance for enhancing transparency and decision-making. Implementing these frameworks can improve the consistency and reliability of climate-related information reported by companies. Moreover, effective communication of climate risks and mitigation strategies requires tailoring information to the audience’s level of expertise and utilizing clear, accessible language. Businesses should also focus on incorporating ESG measures into their financial reporting to provide a holistic view of their climate-related impacts and strategies.

Future research should prioritize aligning accounting practices with the dynamic regulatory environment surrounding climate change. This includes studying the impact of varying regulatory frameworks on financial reporting and developing global standards that can harmonize climate-related disclosures across jurisdictions. Key areas for exploration involve enhancing carbon accounting methods to ensure accuracy and standardization, integrating climate-related risks into financial reports more comprehensively, and advancing education and training for professionals in climate change accounting. Additionally, leveraging big data and predictive analytics to refine risk assessment tools is vital for more effectively evaluating climate-related financial risks and enhancing organizational preparedness for climate impacts. Addressing these research areas will contribute to more robust and transparent climate-related financial reporting, supporting sustainable business practices and long-term economic stability.

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References

Abbass, K., Qasim, M. Z., Song, H., Murshed, M., Mahmood, H., & Younis, I. (2022). A review of the global climate change impacts, adaptation, and sustainable mitigation measures. *Environmental Science and Pollution Research*, 29(28), 42539-42559.

Ali I, Arslan A, Tarba S, & Mainela T. (2023). Supply chain resilience to climate change inflicted extreme events in agri-food industry: The role of social capital and network complexity. *International Journal of Production Economics*, 264. https://doi.org/https://doi.org/10.1016/j.jclepro.2018.08.091

Bella, S., Apriyanti, N., & Sriwijayanti, H. (2023). Enhancing financial management and accountant roles: A study on the role of technological advancements. *SEIKO: Journal of Management & Business*, 6(2), 435-446.

Borghei (2021). Carbon disclosure: A systematic literature review. *Accounting & Finance*, 61(4), 5255-5280.

Caliskan, A. O., & Esen, E. (2016). Inseparable parts of sustainability: Business, climate change, and integrated reporting. In *Advances in Sustainability and Environmental Justice* (Vol. 19, pp. 25–43). Emerald Group Publishing Ltd. https://doi.org/10.1108/S2051-503020160000019002

Chateau, J., Dang, G., Macdonald, M., Spray, J., & Thube, S. (2023). *A Framework for Climate Change Mitigation in India, WP/23/218, October 2023*.

Chetan, H., & Hong, T. W. (2023, December). *The financial reporting impact of climate change: challenges and opportunities*. https://www.grantthornton.sg/insights

Christensen, H., Hales, J., O'Dwyer, B., & Peecher, M. E. (2024). Accounting for sustainability and climate change: Special section overview. *Accounting, Organizations and Society*, *113*, 101568. https://doi.org/10.1016/j.aos.2024.101568

Di Vaio, A., Zaffar, A., Chhabra, M., & Balsalobre-Lorente, D. (2024). Carbon accounting and integrated reporting for net-zero business models towards sustainable development: A systematic literature review. *Business Strategy and the Environment*.

Fawzy, S., Osman, A. I., Doran, J., & Rooney, D. W. (2020). Strategies for mitigation of climate change: a review. *Environmental Chemistry Letters*, 18, 2069-2094.

Ghani, E. K. (2024). *"The nexus of climate change and financial reporting."* UiTM Press.

Gulluscio, C., Puntillo, P., Luciani, V., & Huisingh, D. (2020). Climate change accounting and reporting: A systematic literature review. In *Sustainability (Switzerland)* (Vol. 12, Issue 13). MDPI. https://doi.org/10.3390/su12135455

Gupta, A., Lövbrand, E., Turnhout, E., & Vijge, M. J. (2012). In pursuit of carbon accountability: The politics of REDD+ measuring, reporting and verification systems. In *Current Opinion in Environmental Sustainability* (Vol. 4, Issue 6, pp. 726–731). https://doi.org/10.1016/j.cosust.2012.10.004

Haites, E. (2018). Carbon taxes and greenhouse gas emissions trading systems: what have we learned? *Climate Policy*, *18*(8), 955–966. https://doi.org/10.1080/14693062.2018.1492897

Huang, H. H., Kerstein, J., & Wang, C. (2018). The impact of climate risk on firm performance and financing choices: An international comparison. *Journal of International Business Studies*, 633–656.

IFAC. (2021). *Corporate reporting: Climate change information and the 2021 reporting cycle*. https://www.ifac.org/knowledge-gateway/contributing-global-economy/discussion/corporate-reporting-climate-change-information-and-2021-reporting-cycle

IPCC. (2021a). *Climate Change 2021: The Physical Science Basis. Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. https://www.ipcc.ch/report/ar6/wg1

IPCC. (2021b). *Climate change is widespread, rapid, and intensifying-IPCC*. https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/

Keith, H., Vardon, M., Obst, C., Young, V., Houghton, R. A., & Mackey, B. (2021). Evaluating nature-based solutions for climate mitigation and conservation requires comprehensive carbon accounting. Science of the Total *Environment*, 769, 144341.

Linnenluecke, M. K., Birt, J., & Griffiths, A. (2015). The role of accounting in supporting adaptation to climate change. *Accounting and Finance*, *55*(3), 607–625. https://doi.org/10.1111/acfi.12120

Marlowe, J., & Clarke, A. (2022). Carbon Accounting: A Systematic Literature Review and Directions for Future Research. *Green Finance*, *4*(1), 71–87. https://doi.org/10.3934/GF.2022004

McLaughlin, C., Elamer, A. A., Glen, T., AlHares, A., & Gaber, H. R. (2019). Accounting society's acceptability of carbon taxes: Expectations and reality. *Energy Policy*, *131*, 302–311. https://doi.org/10.1016/j.enpol.2019.05.008

Monasterolo, I. (2020). Climate Change and the Financial System. *Annual Review of Resource Economics*, *12*, 299–320.

Namdar, J., Said, R. M., & Senik, R. (2015). *Sustainable Development & Environmental Protection: The accounting practices of GHG emission in Malaysia*. https://www.researchgate.net/publication/300491627

NASA Science. (2024). *Responding to Climate Change*. https://science.nasa.gov/climate-change/adaptation-mitigation/

Noble, I. R., Huq, S., Anokhin, Y. A., Carmin, J. A., Goudou, D., Lansigan, F. P., Osman-Elasha, B., Villamizar, A., Patt, A., Takeuchi, K., & Chu, E. (2015). Adaptation needs and options. In *Climate Change 2014 Impacts, Adaptation and Vulnerability: Part A: Global and Sectoral Aspects*. Cambridge University Press. https://doi.org/10.1017/CBO9781107415379.019

O'brien, P. E., Bakarich, K. M., & Baranek, D. (2023). The Current State and Future Implications of Environmental, Social, and Governance Assurance. *Current Issues in Auditing*, *17*(1), A1–A21. https://doi.org/10.2308/CIIA-2022-012

O'Dwyer, B., & Unerman, J. (2020). Shifting the focus of sustainability accounting from impacts to risks and dependencies: Researching the transformative potential of TCFD reporting. *Accounting, Auditing & Accountability Journal*, 33(5), 1113-1141.

Ramadhan, Y., Rifai, A., Septiani, D., Hananto Yasin, F., Widiawati, L., & Caroline, S. (2023). Could accountants be facilitators of zero-emission programs? *Journal Research of Social Science, Economics, and Management*, *03*(03), 655–669. https://doi.org/10.59141/jrssem.v3i02.564

Sharifi, A. (2020). Trade-offs and conflicts between urban climate change mitigation and adaptation measures: A literature review. *Journal of Cleaner Production*, 276, 122813.

Sharifi, A. (2021). Co-benefits and synergies between urban climate change mitigation and adaptation measures: A literature review. *Science of the Total Environment*, 750, 141642.

Setiawan, D., Rahmawati, I. P., & Santoso, A. (2023). A bibliometric analysis of evolving trends in climate change and accounting research. *Cogent Business and Management*, *10*(3). https://doi.org/10.1080/23311975.2023.2267233

Sietsma, A. J., Ford, J. D., Callaghan, M. W., & Minx, J. C. (2021). Progress in climate change adaptation research. *Environmental Research Letters*, 16(5), 054038.

Toimil, A., Losada, I. J., Nicholls, R. J., Dalrymple, R. A., & Stive, M. J. (2020). Addressing the challenges of climate change risks and adaptation in coastal areas: A review. *Coastal Engineering*, 156, 103611.

Wang, T., Qu, Z., Yang, Z., Nichol, T., Clarke, G., & Ge, Y. E. (2020). Climate change research on transportation systems: Climate risks, adaptation and planning. *Transportation Research Part D: Transport and Environment*, 88, 102553.

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