In Light of Climate Change Threat: Does Increased Funding of Meteorological Services Offer a Solution? An Accounting Perspective

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Abstract. This study explores the interplay between climate change, land degradation, and the potential of increased funding for meteorological services to enhance global climate resilience, framed within an accounting perspective. Land degradation due to climate change has far-reaching ecological and economic implications. This research investigates the relationship between monetary investments in meteorological services and their efficacy in predicting and mitigating climate-related hazards. Employing a comprehensive methodology, the study analyses existing literature gathers data from national meteorological agencies and uses quantitative research methods to assess the impact of funding on meteorological services. The findings bear implications for policymakers, offering insights into the benefits of heightened financing for meteorological infrastructure. By providing an innovative examination of climate change through the accounting lens and addressing a crucial gap in knowledge, this study contributes to the discourse on climate resilience and sustainable practices, advocating for a more resilient future.

Keywords: accounting perspective; climate change; meteorological services.

INTRODUCTION

In the wake of a harrowing announcement by President Joe Biden on Thursday, July 27, 2023, the urgency of addressing climate change and its devastating consequences has reached a tipping point. Addressing the mayors of Phoenix and San Antonio in a virtual summit, President Biden articulated deep concern over the dangerous heatwaves plaguing vast regions of the United States. This dire situation has prompted the unveiling of strategies to assist communities in managing the extreme temperatures. The undeniable and alarming reach of climate change's impact becomes evident through the unprecedented triple-digit temperatures experienced by cities like Phoenix and San Antonio and the recent surge in severe flooding and pervasive wildfire smoke that engulfs the nation. As global scientists predict July to become the hottest month ever recorded, an astonishing 174 million Americans now contend with heat-related alerts spanning 35 states. President Biden's emphasis on the gravity of the scenario resonates as heat supersedes floods, hurricanes, and tornadoes as the leading cause of weather-related fatalities. In response to this mounting crisis, this study stands as an unequivocal retort to President Biden's call to action, and it earnestly engages with the pivotal inquiry: "Does Increased Funding of Meteorological Services Offer a Solution? An Accounting Perspective." Amidst the relentless spectre of climate change and its profound effects on communities, economies, and ecosystems, the urgency to uncover viable solutions has never been more compelling. From an accounting perspec-

tive, this research delves into the ramifications of amplified funding for meteorological services in projecting and mitigating the alarming threats climate change poses. With a focus on accounting methodologies for evaluating climate-related risks, valuing carbon assets, and fostering sustainable practices, this study seeks to illuminate crucial insights for informed decision-making, thus guiding policymakers and stakeholders towards effective strategies in the global battle against climate change.

Climate change is one of the most formidable and intricate challenges confronting humanity in the 21st century [1]. The relentless surge in greenhouse gas emissions, propelled predominantly by human activities encompassing industrialisation, deforestation, and fossil fuel consumption, has catalysed unprecedented shifts within the Earth's climate systems. These reverberations span ecosystems, societies, and economies, engendering profound threats and reshaping the fabric of our planet's environmental and social domains [2]. The intensification of extreme weather occurrences, escalating sea levels, and ecological disruptions underscores the necessity for a holistic grasp of the intricate interplay of variables that collectively sculpt the complex tapestry of the climate change threat. In academia, this research carries paramount significance by contributing to the ever-expanding reservoir of knowledge concerning climate change.

This study advances the frontiers of existing scholarship in this pivotal arena by delving into the intricate dance between various variables and the looming climate change threat. The research artfully dissects the complicated interactions spanning environmental, economic, and social facets, thereby facilitating a comprehensive comprehension of the nuanced dimensions underpinning the climate crisis. Global warming, attributed predominantly to greenhouse gas emissions from fossil fuel combustion, has engendered progressive Earth warming, a phenomenon renowned as the greenhouse effect. This thermal shift has ushered in a rapid escalation of global temperatures and an array of interconnected climate-driven consequences. The pronounced severity and heightened frequency of severe climatic patterns notably punctuate the most palpable repercussions of climate change. Prolonged heat waves, surging in intensity, have precipitated an uptick in heat-related ailments and fatalities, particularly among marginalised populations. The onslaught of fierce storms and hurricanes has wreaked havoc on coastal people, while protracted droughts have precipitated water scarcity, agricultural failures, and food insecurity across diverse global locales [3]. Furthermore, the immediacy of rising sea levels imperils coastal regions and small island nations, obliging communities to confront displacement while erasing invaluable ecosystems.

This study's heart lies in an empirical investigation, grounding its robust, evidence-based conclusions. The research aims to assess the influence of pivotal variables on the gamut of climate change hazards. This research seeks to decipher the impact of these factors, bolstering the accuracy and credibility of its conclusions. Moreover, a series of extraordinary climate-related calamities in recent years serves as poignant reminders of the imperative for action to combat climate change. The aftermath of extreme flooding, catastrophic wildfires, unprecedented heatwaves, and violent hurricanes are indelible testaments to the tangible toll climate change exacts on humanity and ecosystems. These profound real-world events are harnessed as benchmarks within the research, underscoring the imperative for swift global action in the face of climate change. A monumental international endeavour, the 2015 Paris Agreement embodies a collective commitment to combat climate change. With nations universally pledging to curtail global warming beneath the 2-degree Celsius threshold above pre-industrial levels and with a more ambitious aspiration of 1.5 degrees Celsius, this accord crystallises global determination to mitigate the repercussions of environmental degradation.

This research contributes to realising the lofty climate targets articulated within the Paris Agreement, striving to unravel pragmatic solutions and strategies. Embracing the opportunities for innovation, adaptability, and collaborative action that climate change affords, global endeavours to transition to low-carbon economies, champion sustainable energy sources, and embrace cutting-edge carbon capture and storage technologies are imperative in the drive to curtail climate change. Simultaneously, investment in climate-resilient infrastructure and ecosystems bolsters the capacity to navigate evolving environmental paradigms. The role of governments, international organisations, and civil society in orchestrating a response to climate change cannot be overstated. Policies endorsing sustainable practices, mechanisms for carbon pricing, and the infusion of investments into renewable ener-

gy constitute foundational pillars of a comprehensive response to climate change [4]. Equally pivotal are campaigns aimed at heightening public awareness, engendering behavioural shifts, and fostering individual and collective accountability for reducing carbon footprints. In these endeavours, climate change's far-reaching and profound consequences for human existence become starkly evident. As global temperatures ascend and climatic patterns devolve into an increasing quagmire of unpredictability, communities worldwide confront the grim realities of intensified weather events. Escalating heatwaves, distinguished by their frequency and intensity, jeopardise human well-being, particularly among the most vulnerable strata of society.

The encroaching rise of sea levels menaces coastal regions and low-lying islands, triggering the displacement of entire communities and the obliteration of cherished livelihoods. Additionally, shifts in precipitation patterns beget heightened instances of catastrophic floods and prolonged droughts, posing an existential threat to agriculture, potable water supplies, and food security. The more frequent occurrence of fierce storms and hurricanes lays waste on infrastructure, disrupts economic equilibrium, and imparts peril to human lives. Moreover, the shifting climate propels the proliferation of infectious diseases, compounding the burden on human health and overburdened healthcare systems. In the face of these formidable challenges, the imperative for immediate action to mitigate climate change and adapt to its cascading effects looms large. This underscores the pivotal significance of deciphering the complex interplay of variables undergirding this multifaceted menace. As climate change casts its ominous shadow, it is evident that a decisive, global, and collaborative response is imperative.

The increasing intricacy and interconnectedness of climate change variables accentuate the urgency of research scrutinising their ramifications on the climate crisis. This study's academic gravitas, empirical rigour, and mindful consideration of real-world occurrences within a global context coalesce to erect a robust foundation for prudent decision-making and the formulation of policies. Embracing the manifold challenges and opportunities posed by climate change, it becomes our shared obligation to rally as a global collective, effectuating impactful solutions, safeguarding our planet's fragile ecosystems, and forging a future that is both sustainable and resilient for all. Rooted in the pivotal role of an accounting perspective in comprehending the threats posed by climate change, the methodology of this study pivots around a comprehensive literature review and an astute analysis of secondary data gleaned from esteemed sources.

The study emphasises the esteemed Financial Stability Board (FSB) Task Force on Climate-related Financial Disclosures (TCFD) and prominent peer-reviewed academic journals, scientific reports, policy papers, and publications from reputable international organisations. Through this comprehensive exploration, the study delves into the gamut of accounting methodologies, discerning their capacity to measure, disclose, and grapple with climate-related risks and the attendant environmental costs. Interpretive and qualitative scrutiny of select studies and reports constitutes the bedrock of the data analysis, illuminating pivotal accounting principles, standards, and practices that bear pertinence to climate change. By anchoring this research in an accounting perspective, the aim is to germinate a coherent theoretical framework that enriches our understanding of the symbiosis between financial dimensions and the threats imposed by climate change. This methodological trajectory crystallises valuable insights into the indispensable role played by the accounting profession in the valuation of climate risks, the estimation of carbon assets, and the bolstering of transparency and accountability within the ambit of climate-related financial disclosures. Cognizant of the constraints inherent in relying solely upon existing literature, the study exercises meticulous discernment in data curation and analysis, thereby upholding the robustness, integrity, and credibility of the research's findings. Through its profound emphasis on an accounting perspective, this study bequeaths invaluable insights into the strategies for mitigating and adapting to climate change from an economic and accounting standpoint, advancing our comprehension of the mechanism to address the urgent challenges precipitated by climate change on a global scale.

However, this study critically explores the intricate web linking climate change, land degradation, and meteorological services funding. Through the accounting lens, our research endeavours to unravel the potential of increased financing for meteorological services as a formidable solution to the mounting threats posed by climate change. This study aims to contribute to informed decision-making, policy formulation,

and sustainable practices by dissecting the multifaceted interplay of financial aspects and environmental challenges. Through rigorous analysis, empirical investigation, and an unwavering commitment to unveiling new perspectives, we seek to equip stakeholders, policymakers, and communities with the tools to forge a path toward a more resilient, climate-conscious, and prosperous future.

Theoretical basis

Climate change is a complex and urgent global issue that necessitates a thorough comprehension of the factors determining its dangers. In this section, we analyse the effects of numerous independent variables on climate change threats by presenting a rigorous literature review that draws from a wide range of fields. We also look at publications on the dependent variable to better understand the intricate interaction of causes causing the climate issue. Combining these results, we create a theoretical framework that guides the study's hypotheses regarding greenhouse gas emissions influence. Researchers have investigated and demonstrated that greenhouse gas emissions significantly contribute to climate change. The Intergovernmental Panel on Climate Change (IPCC) reports have consistently emphasised the critical link between increasing concentrations of greenhouse gases, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N2O), and global warming. Burning fossil fuels for energy production and industrial processes is the most significant contributor to CO_2 emissions [5].

Studies [6] show that these emissions lead to heat retention in the atmosphere, resulting in temperature rise and myriad climate impacts, including extreme weather events, sea-level rise, and ecosystem shifts. Moreover, authors [7] warn that surpassing specific global warming thresholds could trigger irreversible damage to coral reefs, polar ice sheets, and global food security. Given the profound impact of greenhouse gas emissions on climate change, we hypothesise that higher greenhouse gas emissions will be positively associated with increased climate change threats. Land Use and Deforestation: Land use change, mainly deforestation, significantly contributes to climate change threats. Deforestation releases stored carbon into the atmosphere, reducing the planet's capacity to sequester CO_2 and intensifying the greenhouse effect. The conversion of forests into agricultural land, urban areas, and other uses diminishes biodiversity and disrupts local and regional climate patterns. As authors [8] mentioned, such things might lead to not addressing the security risks from the possible environmental and climate change degradation challenges. Research [9] highlights that deforestation in tropical regions, such as the Amazon and Indonesia, has vast implications for climate change, affecting precipitation patterns and exacerbating the frequency and intensity of droughts and heat waves.

Additionally, deforestation contributes to the loss of critical ecosystem services, such as water regulation, soil protection, and carbon sequestration [10]. We hypothesise that increased land use change and deforestation will positively correlate with higher climate change threats. Also, Socioeconomic Factors and Carbon Intensity have notable influence, where the climate change impacts are not evenly distributed, and social and economic factors play a significant role in shaping vulnerabilities. Research [11] reveals that nations with higher carbon intensity, measured as higher CO_2 emissions per unit of economic output, experience more significant climate-related risks and vulnerabilities.

Socioeconomic disparities also influence climate change threats. Especially in developing countries, they bear a disproportionate burden of climate change impacts due to limited access to resources, infrastructure, and adaptive technologies [12]. Moreover, rising sea levels and extreme weather events exacerbate inequalities, increasing migration and conflicts over scarce resources [13]. Based on this research, we hypothesise that higher carbon intensity and socioeconomic disparities will be positively associated with increased climate change threats. There should be adaptation Mitigation Strategies, where various adaptation and mitigation strategies have been proposed and implemented in response to climate change. Adaptation strategies aim to enhance resilience to climate change impacts, while mitigation efforts focus on reducing greenhouse gas emissions to limit global warming. Research [14] emphasises the importance of proactive adaptation, such as building climate-resilient infrastructure, implementing disaster preparedness plans, and enhancing early warning systems. These measures can reduce vulnerability and improve coping with climate-related challenges. Mitigation efforts encompass transitioning to renewable energy sources, promoting energy effi-

ciency, and implementing carbon pricing mechanisms [15]. Every country is pledging to limit global warming to below 2 degrees Celsius above pre-industrial levels [16]. We hypothesise that more significant investment in adaptation and mitigation strategies will negatively affect climate change threats. In addition, the impact of land degradation and biodiversity loss is a matter where land degradation, driven by unsustainable land use, overexploitation, and climate change, exacerbates climate change threats. Research [17] indicates that land degradation reduces the land's capacity to sequester carbon and increases vulnerability to extreme weather events, such as droughts and floods.

Moreover, biodiversity loss is intricately linked to climate change. Studies [18] demonstrate that biodiversity loss can disrupt ecosystems, reducing their resilience to climate impacts and hindering their ability to provide essential services, such as carbon sequestration and water purification. We hypothesise that increased land degradation and biodiversity loss will positively correlate with higher climate change threats.

Further, the role of technology and innovation in mitigating and adapting to climate change is a significant area of research [19]. Technological advancements, such as renewable energy technologies and carbon capture and storage, can potentially reduce greenhouse gas emissions and promote sustainable practices [20]. Previous studies emphasised the importance of innovation in driving the transition to a low-carbon economy. Authors [21] mentioned that technological breakthroughs in energy storage, smart grids, and electric mobility are crucial in decarbonising energy systems and reducing dependency on fossil fuels. Furthermore, Authors [22] show that digital technologies, such as artificial intelligence and big data analytics, play a vital role in enhancing climate modelling, early warning systems, and disaster management. These technological advancements can strengthen adaptation strategies and improve climate resilience. We hypothesise that greater utilisation of technology and innovation will be negatively correlated with climate change threats.

Social and Behavioral Aspects: Understanding human behaviour and societal responses to climate change is essential in shaping effective policy interventions. A study [23] explored the role of individual attitudes, values, and social norms in influencing pro-environmental behaviours. Moreover, research [24] highlights the significance of public perception and media representation of climate change in shaping public opinion and motivating climate action. Such a concept underscores the importance of effective messaging and framing to engage the public in climate-related issues. We hypothesise that positive social and behavioural shifts, such as pro-environmental attitudes and effective climate change communication, will negatively correlate with climate change threats.

This study aims to provide essential insights into interpreting the complex dynamics of this worldwide challenge by investigating the interaction of these variables and their influence on climate change concerns. These hypotheses will direct our empirical study and help us create well-informed policy proposals to combat climate change effectively. The thorough literature analysis offers a strong foundation for our research, leveraging the accumulated knowledge of earlier studies to increase the rigour and importance of our findings. It is essential to emphasise the critical and frequently underappreciated significance of the accounting approach in understanding the complex effects of climate change in the context of this research review. The accounting discipline's assessment, measurement, and disclosure of climate-related risks and their financial ramifications are critical tasks [25]. This study aims to close the knowledge gap between financial reporting and climate change science by adopting an accounting approach, allowing for a more thorough understanding of the economic effects of climate change. Organisations can assess their greenhouse gas emissions and environmental footprints using accounting approaches like carbon accounting and ecological cost analysis, which can help them make more informed decisions and advance sustainability initiatives.

Furthermore, corporations have a framework to use when disclosing climate-related information in their financial reports thanks to the rules and suggestions made by illustrious organisations like the Financial Stability Board (FSB) Task Force on Climate-related Financial Disclosures (TCFD). This improves transparency and accountability. By incorporating accounting methods and concepts into evaluating climate change risks, firms, investors, and politicians will be better equipped to create efficient plans for reducing and adapting climate risk. The need to incorporate climate factors into business financial evalu-

ations is further highlighted by accounting's role in valuing carbon assets and understanding their financial repercussions. Understanding the accounting viewpoint on climate change is essential for making educated decisions, managing risks, and conducting ethical business. This literature review aims to shed light on the symbiotic link between accounting and climate change, stressing the crucial role accounting plays in tackling climate change challenges. It integrates pertinent material from multiple disciplines, particularly accounting and climate science. The research aims to enhance ethical company behaviour and incorporate climate issues into financial choices through this thorough examination, ultimately advancing the development of a more robust and environmentally conscious world economy.

The multidimensional threat of climate change hangs over humanity and necessitates immediate action and international cooperation. Rising greenhouse gas emissions, deforestation, land degradation, and socioeconomic disparities contribute to climate change threats. In this discussion, we explore the pivotal role of awareness in understanding and mitigating these threats. Heightened awareness of climate change and its implications is crucial for fostering informed decision-making, driving behavioural changes, and shaping policy responses [26]. Understanding climate change is a wake-up call for individuals, communities, and governments alike. As awareness spreads, people become increasingly aware of the dire consequences of unabated greenhouse gas emissions. Understanding the link between human activities and global warming motivates individuals to adopt more sustainable lifestyles, reducing their carbon footprints and supporting eco-friendly practices. Additionally, businesses must assess and minimise their environmental impacts, embracing green technologies and eco-conscious production methods.

One of the primary benefits of climate change awareness lies in its influence on policymaking and governance [27, 28, 29, 30, 31, 32, 33, 34, 35]. As the public becomes more informed about the severity of climate change threats, they demand decisive action from policymakers. In response to public pressure and growing awareness, governments are more inclined to implement robust climate policies, set emission reduction targets, and support renewable energy initiatives.

Climate change awareness also contributes to international cooperation and commitments, as nations recognise the need for collective efforts to combat a global challenge that transcends borders. Furthermore, attention plays a critical role in addressing deforestation and land degradation, both significant drivers of climate change. Individuals and organisations support conservation efforts and reforestation programs by understanding the ecological importance of forests and the consequences of their destruction. Heightened awareness of the link between land use and climate change drives sustainable land management practices, protecting natural ecosystems and preserving biodiversity. Socioeconomic factors intersect with climate change awareness, creating opportunities for positive change. As people become more conscious of the socioeconomic disparities climate change exacerbates, they advocate for policies prioritising vulnerable communities' needs and enhancing climate resilience. Climate change awareness fosters ethical consumerism, as individuals increasingly seek products and services from companies committed to sustainability and social responsibility [36].

Adaptation and mitigation strategies receive a significant boost from climate change awareness. As individuals and communities become more aware of the climate change impacts already affecting their lives, there is more substantial support for adaptation measures that enhance resilience to extreme weather events and rising sea levels. Moreover, awareness fosters investment in innovative mitigation technologies, such as renewable energy sources and carbon capture technologies, accelerating the transition to a low-carbon economy. Social and behavioural aspects are deeply intertwined with climate change awareness. The more informed individuals are about the consequences of inaction, the more likely they are to mobilise for change. Climate change attention drives public engagement, from local environmental initiatives to global climate protests, amplifying the call for urgent action. Behavioural changes such as reducing energy consumption and advocating for sustainable policies gain momentum as awareness empowers individuals to become agents of change in their communities. Based on the above, it is clear that understanding and knowledge of climate change stand as a critical catalyst in confronting the threats posed by global environmental degradation. Attention drives transformative action at

individual, societal, and policy levels by fostering a deeper understanding of the interconnectedness between human activities and climate change. As individuals and communities embrace climate-conscious practices and demand effective policies, the world stands a better chance of mitigating the impact of climate change and securing a sustainable future for generations to come.

This theoretical framework functions as the conceptual cornerstone of the research, providing a structured and systematic approach to comprehending the interrelationships among the variables under scrutiny. It guides the research design, data collection, and analysis by aligning the research objectives with established theories and the existing body of knowledge. The theoretical underpinning for our investigation into the impacts of heightened funding for meteorological services as a defence against climate change threats is elucidated in this section. The framework delves into the intricate interplay among greenhouse gas emissions, land use changes, socioeconomic factors, mitigation and adaptation strategies, land degradation, biodiversity loss, technological advancements, and cultural and behavioural elements in shaping climate change threats. It integrates environmental science, social sciences, economics, and policy research concepts.

This structure will direct our empirical investigations and contribute to developing well-informed policy advice to combat global climate change.

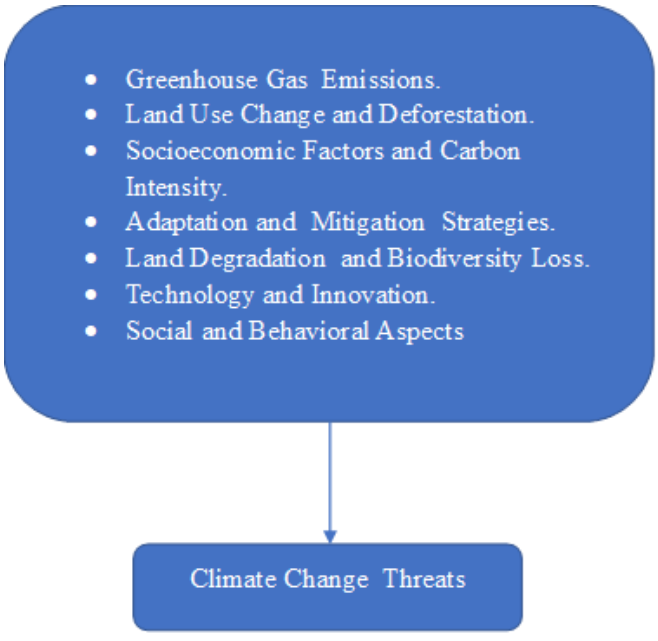

Figure 1 – Global Climate Change Threats

Drawing from the extensive literature review and related studies, we develop the following conceptual hypotheses for our research:

Hypothesis 1: Higher levels of greenhouse gas emissions will be positively associated with increased climate change threats.

Hypothesis 2: Increased land use change and deforestation will positively correlate with higher climate change threats.

Hypothesis 3: Higher carbon intensity and socioeconomic disparities will be positively associated with increased climate change threats.

Hypothesis 4: Greater adaptation and mitigation strategies investment will negatively affect climate change threats.

Hypothesis 5: The hazard of climate change is expected to be associated positively with a more significant loss of biodiversity and degradation of land.

Hypothesis 6: Climate change threats will be negatively correlated to increased use of technology and innovation.

Hypothesis 7: Threats from climate change will be inversely associated with improvements in social and behavioural characteristics.

METHODS

The methodology section of this theoretical work outlines the study's approach to investigating the connections between variables from an accounting perspective, along with the data collection strategies and analytical methodologies that support the theoretical hypotheses. Given the conceptual nature of this study from an accounting standpoint, the research relies on an extensive literature review and secondary data analysis from reputable sources rather than primary data collection. The research design, data sources, and analytical techniques employed in this study are detailed in the following sections.

Research Design. This research strategy approached with an accounting perspective, adopts a qualitative methodology centred on a comprehensive review of existing literature and synthesising data from prior studies. The project's primary objective is to examine and discuss accounting practices associated with climate change thoroughly. This includes financial reporting of greenhouse gas emissions, carbon accounting, and the role of accounting in evaluating

adaptation and mitigation measures. The study aims to construct a coherent theoretical framework from an accounting standpoint, drawing insights from other disciplines and applying an accounting lens to formulate fundamental hypotheses.

Data Sources. This research's principal sources of information comprise peer-reviewed academic journals, scientific research, policy papers, and publications from reputable global organisations. A specific focus is placed on the accounting literature relevant to climate change. These sources offer information on accounting methodologies for quantifying and disclosing climate-related risks, environmental costs, and corporate sustainability performance. Documents from entities such as the Financial Stability Board (FSB) Working Group on Climate-related Financial Disclosures (TCFD) and other pertinent accounting and climate-related authorities contribute valuable insights and perspectives.

Data Analysis. The data analysis in this conceptual study is predominantly qualitative and interpretive, with a particular emphasis on accounting-related aspects. The research team meticulously analyses selected studies and papers to identify accounting standards, practices, and principles applicable to climate change. Methodologies for assessing carbon assets, analysing climate-related risks, and disclosing relevant information in financial statements are given special consideration. The comprehensive examination of accounting literature aims to validate the conceptual framework and assumptions from an accounting standpoint, seeking relevant themes, patterns, and trends. Through this analysis, the study aims to synthesise existing accounting knowledge related to climate change while contributing novel insights to the field of climate change accounting.

The methodology employed in this conceptual study, grounded in an accounting perspective, involves a qualitative research design that draws from diverse data sources. The systematic review of literature and data analysis, viewed through an accounting lens, culminate in the formulation of conceptual hypotheses. These hypotheses will guide empirical research and inform policy recommendations, all from an accounting standpoint, to effectively address the threats posed by climate change.

RESULTS AND DISCUSSION

The results of this study underscore the critical role of accounting in addressing the threat of climate change through increased funding for meteorological services. As the study delves into this accounting perspective, it reveals various promising ways to combat the increasing dangers posed by climate change. Given the relentless impacts of climate change on societies, economies, and ecosystems, the need for urgent and effective solutions is critical. The following are highlights of how accounting can contribute to efforts to advocate for increased funding for meteorological services as a powerful solution:

Enhancing Climate-Related Financial Reporting: Amplifying the funding for meteorological services paves the way for more accurate climate data collection and analysis. This improved data can then be seamlessly incorporated into financial statements, enabling investors and company owners to gain deeper insights into both the opportunities and threats linked to climate change. By adhering to robust climate-related financial disclosure standards set by entities such as the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), stakeholders can allocate resources wisely. This, in turn, supports efforts in climate resilience and implementing sustainable practices.

Valuing Carbon Assets and Emission Reduction Strategies: Adequate financing for meteorological services is instrumental in assessing carbon assets and gauging the financial benefits of emission reduction plans. The availability of accurate climate data, made possible by increased funding, helps organisations and governments value their carbon assets and comprehend the financial advantages associated with adopting low-carbon technologies. This encourages the transition towards a low-carbon economy and incentivises investments in climate-friendly projects like renewable energy.

Incorporating Climate Risk Assessments in Business Strategies: Advancing forecasting abilities within meteorological agencies equips businesses to assess and manage climate-related risks more effectively. Accounting frameworks can facilitate the incorporation of climate risk assessments into corporate strategies. This ensures that organisations are well-prepared to navigate the physical, regulatory, and reputational hazards brought about by climate change. Enhanced risk management practices mitigate potential fi-

nancial losses and foster long-term sustainability and resilience.

Driving Sustainable Supply Chains: Increased funding for meteorological services empowers supply chains to more comprehensively evaluate climate-related risks and vulnerabilities. Integrating this information into supply chain accounting equips businesses with insights into potential disruptions and vulnerabilities from climate change. This, in turn, encourages adopting sustainable sourcing practices and promotes collaboration with suppliers to minimise overall environmental impacts.

Fostering Climate-Conscious Investment: From an accounting perspective, augmented funding for meteorological services enhances the availability of reliable climate data for investors. This, in turn, drives the growth of sustainable finance and facilitates the integration of environmental, social, and governance (ESG) criteria into investment decisions. Investments guided by climate considerations channel capital towards climate-resilient projects and businesses, accelerating the global transition towards a low-carbon and climate-resilient economy.

Moreover, accounting emerges as a potent tool in the battle against climate change, with increased funding for meteorological services enhancing its effectiveness. The suggestions and solutions outlined here emphasise the crucial role of accounting methodologies in promoting climate resilience, sustainability, and informed decision-making. By embracing the concept of increased funding for meteorological services as a powerful solution from an accounting perspective, a pathway is paved for transformative action in combatting the destructive effects of climate change and securing a sustainable future for generations to come.

This study holds significant implications for addressing the complex and urgent issue of climate change. The integrated approach of combining accounting principles with meteorological services offers a novel perspective on how financial practices can be pivotal in mitigating and adapting to climate change threats.

Enhancing climate-related financial reporting, valuing carbon assets, incorporating climate risk assessments, driving sustainable supply chains, and fostering climate-conscious investment represent strategic actions that various stakeholders can adopt. By allocating increased funding to meteorological services, decision-makers can tap into more accurate and reliable climate data, enabling them to make more informed choices that support climate resilience and sustainability.

Furthermore, aligning accounting practices with climate-related objectives, as outlined in the suggestions and solutions, underscores the potential for positive synergies. Robust financial disclosure standards, such as those advocated by the TCFD, enhance transparency and facilitate a more comprehensive understanding of climate risks and opportunities. This, in turn, enables more effective resource allocation and the implementation of strategies that contribute to long-term climate resilience.

However, it is crucial to acknowledge the limitations inherent in this study. The reliance on existing literature and secondary data sources might introduce biases or gaps in the analysis. Climate change's multifaceted and evolving nature presents challenges in fully capturing its complexities within a conceptual framework. Contextual variations and forecasting uncertainties could impact the generalizability of the findings to diverse regions and industries. Despite these limitations, the study's robust integration of accounting principles and meteorological services offers a valuable perspective on addressing climate change threats.

In summary, the comprehensive exploration of increased funding for meteorological services from an accounting perspective underscores the potential for transformative change in combatting climate change. Organisations, governments, and stakeholders can collectively work towards a sustainable future by leveraging accounting methodologies to support climate resilience. The limitations notwithstanding, the study's findings contribute to the ongoing climate change mitigation and adaptation discourse, guiding future research and policy endeavours in this critical area.

CONCLUSIONS

In conclusion, it is evident that the severe repercussions of climate change, exemplified by the destructive aftermath of intense floods and wildfire smoke, demand our urgent attention. These catastrophic weather events highlight the pressing need for swift and collaborative efforts involving individuals, communities, governments, and international bodies. The escalating threat to humanity worldwide is starkly evident through

these alarming occurrences. The existential danger of climate change is already materialising in more frequent and severe disasters, resulting in displacement, economic challenges, and food insecurity. The extensive devastation caused by severe flooding includes destroying homes, infrastructure, and agricultural lands, while rising water levels escalate the risk of coastal erosion and flooding, endangering coastal towns. Additionally, the harmful impacts of wildfire smoke pose grave dangers to air quality, particularly threatening vulnerable groups like the elderly and young children, leading to respiratory issues.

The consequences of climate change extend beyond immediate disruptions, unsettling the delicate equilibrium of our planet's ecosystems and biodiversity. This disruption has far-reaching effects on food production, water availability, and climate stability. Given these unsettling realities, it is imperative to treat climate change seriously and implement decisive measures to alleviate its impacts. Key actions include investing in sustainable practices, transitioning to renewable energy sources, and enhancing climate resilience through increased funding for meteorological services. Simultaneously, fostering awareness and collective action to reduce greenhouse gas emissions and protect natural habitats is crucial in charting a sustainable path for humanity and the planet. Addressing the existential threat of climate change necessitates a united global endeavour, wherein international cooperation and collaboration play pivotal roles in devising effective climate policies, executing adaptive strategies, and assisting vulnerable communities. By acknowledging the undeniable influence of climate change and taking prompt action, we can strive for a more robust, just, and sustainable world for future generations. The time has come for us to embrace our duty to safeguard our planet and secure a brighter future for humanity.

This study provides fresh insights into challenges, emphasising the role of accounting science in understanding and mitigating climate risks. It contributes recommendations and highlights accounting's importance globally. Amid uncertainties, businesses and governments can use climate-related financial reporting, carbon asset valuation, and risk assessments. Accounting methods promote transparency and sustainability in a changing climate. The study's novelty lies in using accounting as a tool against climate threats, showing its value in navigating complexities. It responds promptly, aiming for change. Proposing increased funding for meteorological services from an accounting perspective enhances climate resilience.

In conclusion, the study's significance emerges as a call to action against climate change. Focusing on accounting science offers promising solutions. Embracing funding from an accounting viewpoint supports informed decision-making, adaptation, and a sustainable future. The insights guide a climate-conscious global community in confronting climate challenges.

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