

Article

Managerial Sensemaking of Climate Policy Uncertainty: Environmental Management Accounting and Climate Risk Disclosure in Zimbabwean Firms

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Abstract

The purpose of this study is to explore how Zimbabwean firms use Environmental Management Accounting (EMA) and climate risk disclosure amid climate policy uncertainty and how managers perceive these practices as relevant to organisational resilience and long-term sustainability within a volatile institutional and macroeconomic context. The study was couched in the interpretivist research philosophy and adopted the inductive research approach. A case study research design, which aligns with a qualitative research design, was chosen for the study. The study employed in-depth interviews with management accountants, finance executives, and industry leaders across firms in Harare. The study adopted the cross-sectional time horizon and analysed data using thematic analysis to develop insights into the role of EMA and climate risk disclosure in times of policy uncertainty. The findings suggest that participants perceived climate policy uncertainty as influencing organisational efforts to reconfigure management accounting practices through greater environmental performance monitoring, adaptive budgeting, and scenario-based planning. The findings of this study suggest that organisational actors interpreted climate policy uncertainty as a condition requiring greater flexibility in budgeting, environmental monitoring, and strategic planning. Participants in this study associated EMA with improved environmental cost visibility and more adaptive approaches to investment appraisal and risk management under uncertain policy conditions. Similarly, participants perceived climate risk disclosure as increasingly crucial for strengthening organisational legitimacy, stakeholder confidence, and institutional credibility. While respondents linked sustainability-oriented accounting adaptation to broader organisational resilience and long-term sustainable growth aspirations, these relationships were understood through managerial perceptions and organisational experiences rather than as directly measurable macroeconomic outcomes. The study contributes to the sustainability accounting literature by providing qualitative, context-sensitive insights into how managers in an emerging economy interpret climate policy uncertainty and adapt EMA and climate risk disclosure practices within volatile institutional conditions. The study further contributes by integrating sensemaking theory and institutional theory to explain how organisational interpretations of uncertainty shape sustainability-oriented accounting adaptation and perceptions of organisational resilience. It is therefore recommended that the regulatory institutional pillar be strengthened to reduce uncertainty and enhance the EMA's strategic adaptation.



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1. Introduction

Climate policy uncertainty has increasingly influenced how organisations approach sustainability, risk management, and strategic decision-making [1]. Organisations are operating in unstable institutional environments characterised by erratic regulatory frameworks, volatile economies, and heightened stakeholder pressure for environmental responsiveness and climate change accountability, particularly in emerging economies [2]. In these circumstances, Environmental Management Accounting (EMA) and climate risk disclosure are increasingly shifting from compliance-oriented functions to strategic frameworks that support organisations' adaptation, legitimacy, and resilience [3].

In Zimbabwe, climate-related uncertainty is exacerbated by a weak institutional framework, shifting policies, and economic instability, creating a complex operating environment that requires firms to balance economic survival and environmental responsiveness [4]. On this basis, management accounting is anticipated to play an increasingly crucial role in integrating environmental costs, climate risks, and long-term sustainability factors into strategic planning and investment decisions [5]. In addition, climate disclosure has become an essential tool for communicating environmental initiatives, managing stakeholder expectations, and strengthening investor confidence, especially amid uncertain regulatory frameworks [6]. These disclosure pressures are also increasingly influenced by evolving sustainability governance expectations within Zimbabwe and internationally. For example, the Zimbabwe Stock Exchange (ZSE) has progressively encouraged stronger corporate governance and sustainability-related reporting practices, while the introduction of the International Sustainability Standards Board (ISSB) disclosure standards in 2023 further intensified global expectations surrounding climate-related financial disclosure, governance transparency, and sustainability accountability. Although formal implementation remains uneven within emerging economies, these developments have contributed to growing organisational awareness of climate-related disclosure obligations and environmental accountability. Although previous studies have investigated sustainability and environmental accounting practices, they have primarily focused on quantitative disclosure and regulatory compliance in developed, stable institutional environments [7]. Consequently, there is limited understanding of how managers in emerging economies perceive climate policy uncertainty and integrate it into their organisations' EMA and climate risk disclosure processes [8]. This is crucial for understanding that organisational responses to uncertainty are, at most, influenced by managerial sensemaking processes, which are often associated with strategic adaptation, stakeholder confidence, and sustainability decision-making [9].

To bridge the identified research gap, this study explores how managers in emerging economies make sense of climate policy uncertainty and how their understanding of it influences EMA and climate risk disclosure practices using Zimbabwe as a case study. This study offers qualitative, context-specific insights into sustainability accounting in an emerging economy, focusing on managerial lived experiences and organisational change. The study contributes to the growing sustainability accounting literature by examining how managers in Zimbabwean firms interpret climate policy uncertainty and how these interpretations shape EMA adaptation, climate disclosure practices, and organisational responses within volatile institutional environments.

Zimbabwe provides a theoretically important context for examining climate policy uncertainty because it combines environmental vulnerability with institutional volatility, regulatory inconsistency, economic instability, and evolving sustainability governance structures. Unlike relatively stable regulatory environments where sustainability reporting and EMA practices may become institutionalised and routinised, Zimbabwe presents conditions in which managers are required to continuously interpret uncertain policy signals, shifting enforcement patterns, resource constraints, and competing organisational priorities.

This makes managerial sensemaking processes more visible and analytically accessible. The Zimbabwean context is therefore not treated merely as a geographically convenient research site but as one in which the interaction among institutional uncertainty, organisational interpretation, and sustainability-oriented accounting adaptation is particularly pronounced. Examining these dynamics within Zimbabwe consequently provides broader theoretical insight into how firms operating in volatile emerging economies negotiate climate governance pressures, organisational legitimacy, and adaptive decision-making amid institutional uncertainty. The study was thus guided by the following research questions in undertaking it:

- (a) How do managers in Zimbabwean firms interpret and respond to climate policy uncertainty?
- (b) How does climate policy uncertainty shape EMA and climate risk disclosure practices?
- (c) In what ways do managers perceive EMA and climate risk disclosure as relevant to organisational resilience and long-term sustainability under conditions of climate policy uncertainty?

2. Literature Review

This section examines existing debates on climate policy uncertainty, EMA, climate risk disclosure, and organisational resilience within sustainability accounting research. The literature review focuses on organisational interpretations of the uncertain climate-related regulatory framework and how these understandings influence sustainability reporting adaptations, disclosure practices, and strategic organisational responses. The review methodically outlines the conceptual, empirical, and contextual limitations of current studies, particularly the scant qualitative emphasis on volatile institutional settings in developing countries. This section of the study will also integrate sensemaking theory and institutional theory to establish a grounded theoretical framework that underpins the study and explains how managerial interpretations of uncertainty affect organisational legitimacy, resilience, and sustainability-focused decision-making.

2.1. Environmental Management Accounting and Climate Policy Uncertainty

EMA has emerged as an essential strategic vehicle for integrating environmental considerations into managerial decision-making, budgeting, risk management, and performance evaluation [10]. Growing stakeholder, regulatory, and sustainability governance expectations have increasingly pressured firms to move away from traditional accounting practices, which focus on financial performance, toward modern sustainability reporting frameworks that integrate social and environmental issues, climate-related risks, and long-term sustainability factors [11]. In some countries, policies have framed EMA as an emerging strategic organisational capability that can support organisational adaptation, resilience, and legitimacy [8].

Studies have shown that organisations operating in uncertain regulatory frameworks encounter challenges integrating environmental risks into their accounting systems due to inconsistent climate-related regulations that are politically contested and selectively, and at times poorly, enforced [12]. In these situations, managers are expected to assess prevailing uncertainty to proactively restructure their accounting systems, enabling the organisation to respond to and adapt to environmental demands while protecting its image and fostering its survival [13]. This, therefore, implies that managerial understanding and interpretation of the uncertainty surrounding organisational operations shape the growth of EMA practices [14].

Most studies on EMA, however, have focused on developed and stable economies, with very little on emerging economies [15,16]. Besides being concentrated in developed and relatively stable institutional environments, much of the sustainability and corporate

responsibility reporting literature has been dominated by quantitative and compliance-oriented approaches that emphasise disclosure levels, reporting quality, reporting scores, and environmental performance indicators, with comparatively less attention given to managerial interpretation and organisational meaning-making processes [17–19]. Consequently, there is very little understanding of how managers in volatile emerging economies make sense of climate policy uncertainty and integrate these into sustainability reporting systems [20,21]. This identified research gap is crucial to the Zimbabwean setup as an emerging economy, where climate-related uncertainty intersects with macroeconomic volatility, institutional fragility, and resource constraints.

2.2. Climate Risk Disclosure and Organisational Legitimacy

Climate risk disclosure has been identified as a bridge to sustainability governance, driven by stakeholder demand for greater transparency into organisational exposure to climate-related risks [22]. Recent developments in global sustainability governance, including the establishment of the International Sustainability Standards Board (ISSB) and the growing integration of climate-related disclosure expectations within stock exchange governance frameworks, have further increased institutional pressure on firms to improve transparency regarding environmental risk exposure, sustainability governance, and climate-related financial impacts. These pressures are increasingly shaping organisational disclosure expectations even within emerging economies characterised by uneven regulatory implementation and institutional uncertainty.

Driven by this demand, firms are expected to communicate how climate uncertainty is shaping their strategic planning processes, operational resilience, environmental performance, and long-term sustainability disclosures [23]. Ultimately, climate disclosure practices have evolved from their traditional symbolic regulatory practices into strategic mechanisms for managing legitimacy, investor confidence, and stakeholder trust [24].

Essentially, sustainability disclosure is increasingly expected to extend beyond symbolic CSR communication towards more substantive organisational commitments relating to climate adaptation, environmental risk mitigation, operational resilience, and long-term sustainability planning. As climate-related governance expectations intensify, firms are increasingly pressured not only to disclose environmental intentions but also to demonstrate how sustainability considerations are integrated into operational strategy, investment planning, procurement practices, and organisational risk management processes. In this regard, climate disclosure becomes more meaningful when linked to visible organisational adaptation practices rather than broad sustainability rhetoric alone.

Previous empirical studies have shown that organisations use climate disclosure as a mechanism to signal accountability and responsiveness to environmental accountability [25,26]. The challenge, however, is that the frameworks used to prepare sustainability reports are not developed in neutral environments but are instead influenced by institutional pressures, organisational interpretations, and strategic considerations [27]. This has thereby resulted in organisations operating in uncertain regulatory frameworks experiencing tensions between environmental compliance expectations and resource constraints and fighting for survival [28]. These tensions are exacerbated in emerging economies where climate governance frameworks are weak and institutional enforcement mechanisms are selectively applied and unreliable [29].

Even though the growing body of literature now recognises the significance of climate disclosure, current studies have, at most, focused on quantitative disclosure metrics and reporting frameworks at the expense of qualitative narratives [30,31]. A few studies have examined how organisational managers interpret climate disclosure requirements under conditions of uncertainty [25]. Ultimately, the existing studies provide an inadequate under-

standing of the organisational interpretation processes that influence disclosure decisions with volatile emerging economies [32–34]. This study closes this gap by contributing to the body of knowledge by expanding the literature through examining climate disclosure through the lens of sensemaking rather than treating it solely as a technical reporting outcome.

2.3. Organisational Resilience, Sustainability and Strategic Adaptation

Organisational resilience refers to a company's ability to anticipate, withstand, and adapt to environmental, regulatory, and economic challenges while preserving operational continuity and long-term sustainability [35]. Scholars have suggested that resilience depends on an organisation's ability to fuse environmental risks into strategic planning, investment decisions, and management control systems, particularly in a climate-related context [36]. In this regard, EMA and climate disclosure are widely regarded as vehicles that support organisational learning, adaptive decision-making, and sustainability-oriented transformation [37].

Empirical research studies show that firms that integrate environmental accounting systems into their strategic planning processes typically exhibit stronger adaptive capacity and greater stakeholder confidence than those that do not [38]. For firms to foresee climate-related disruptions and develop mitigatory measures, organisations have been called to continuously monitor environmental costs, engage in scenario planning, and adopt sustainability-oriented budgeting practices [39]. It must therefore be recognised that resilience is determined not solely by technical systems but also by managerial interpretations of uncertainty and the strategic choices that flow from them [40].

There are few studies in emerging economies examining how firms in volatile institutional environments strategically adapt their accounting practices amid climate policy uncertainty, despite growing interest in sustainability and resilience [23,41,42]. Most current research treats resilience as an organisational outcome and has not explored the managerial processes through which it is socially constructed [43]. This study, therefore, addresses this research gap by examining how managerial sensemaking influences strategic adaptation, environmental accounting practices, and organisational resilience in Zimbabwean firms.

2.4. Theoretical Framework

This study draws on institutional theory, with sensemaking theory underpinning it. The sensemaking theory provides that organisational actors understand and interpret uncertainty and vague environments through socially constructed meaning-making processes that influence organisational and strategic action [44,45]. Based on this sensemaking theory, managers are therefore called upon to consistently monitor and comprehend ever-changing regulations, environmental expectations, and prevailing institutional constraints [46]. These understandings and interpretations help the organisations understand how they must respond to climate uncertainty and thereby shape the development of EMA and climate risk disclosure practices [8].

Sensemaking theory is a theoretical underpinning to this study because it enables the study to understand how managers interpret climate policy uncertainty and how these interpretations influence the adoption of sustainability reporting [47]. What makes the theory interesting and aligns with this study is its ability to visualise sustainability reporting practices as socially constructed organisational responses that emerge from managerial interpretations of uncertainty, rather than viewing them as purely technical mechanisms [48].

Sensemaking theory is complemented by institutional theory, which suggests that organisations tend to respond to coercive, normative, and mimetic pressures in their environments to maintain legitimacy and social acceptance [49]. The theory holds that

climate risk disclosure and environmental accounting practices are influenced not only by economic rationality but also by institutional factors, sustainability expectations, and environmental accountability [50].

This study argues that integrating sensemaking theory and institutional theory provides a robust analytical framework for understanding how managers in Zimbabwean firms interpret institutional pressures, mediate uncertainty, and strategically adapt sustainability accounting systems. Therefore, the theoretical integration strengthens the study's focus on managerial interpretation, organisational adaptation, legitimacy, and resilience in the context of climate policy uncertainty.

2.5. Literature Synthesis and Research Gap

The reviewed literature demonstrates growing scholarly interest in EMA, climate risk disclosure, organisational resilience, and sustainability-oriented governance. However, existing studies have predominantly focused on disclosure metrics, reporting quality, environmental performance indicators, and regulatory compliance within relatively stable institutional environments. Ultimately, much of the current literature provides limited insight into how managers operating within volatile and uncertain policy contexts interpret climate-related uncertainty and translate these interpretations into organisational accounting adaptation and disclosure practices.

The literature further reveals three important limitations. First, most studies adopt quantitative and compliance-oriented approaches that prioritise measurable disclosure outcomes at the expense of managerial interpretation and organisational meaning-making processes. Second, limited attention has been given to how climate policy uncertainty is experienced and interpreted within emerging economies characterised by institutional fragility, regulatory inconsistency, and macroeconomic instability. Third, existing studies often conceptualise EMA and climate disclosure as technical reporting mechanisms rather than socially constructed organisational responses influenced by managerial judgement, institutional credibility, and strategic adaptation. This study addresses these limitations by adopting an interpretivist qualitative approach, grounded in sensemaking and institutional theories, to examine how managers in Zimbabwean firms interpret climate policy uncertainty and adapt sustainability-oriented accounting practices amid a volatile institutional environment.

The study addressed this gap by adopting an interpretivist qualitative research design to explore managerial sensemaking in Zimbabwe, an emerging economy. The study contributed a process-oriented understanding of how managers interpret climate policy uncertainty and integrate these interpretations into EMA and climate risk disclosure practices, drawing on sensemaking and institutional theories. The study therefore contributes empirical, contextual, and theoretical novelty to sustainability accounting literature.

Within this study, climate policy uncertainty refers to managerial perceptions of inconsistency, ambiguity, unpredictability, or uneven implementation of climate-related regulations and sustainability expectations. EMA adaptation refers to organisational attempts to increase the visibility of environmental costs, integrate sustainability considerations into planning processes, and modify accounting routines in response to perceived environmental and institutional pressures. Organisational resilience is understood not as a fixed outcome, but as the perceived organisational capacity to adapt operationally and strategically under uncertain policy conditions. Sustainable growth is interpreted cautiously in this study as a long-term organisational aspiration associated with stability, continuity, and adaptive capacity rather than as a directly measurable macroeconomic outcome.

3. Materials and Methods

The study's research methodology was designed to explain how managers in Zimbabwean firms make sense of climate policy uncertainty, how that sensemaking influences EMA and climate risk disclosures and how these practices relate to organisational resilience and sustainable growth. The methodological novelty of this study lies in conceptualising accounting adaptation as a socially meaningful process within firms rather than solely as a reporting outcome, while maintaining the study's qualitative orientation.

3.1. Philosophical Position and Research Approach

This study adopted the interpretivist research philosophy because the phenomenon under consideration is not climate policy uncertainty as an objective external condition alone but rather how organisational actors interpret, negotiate, and act upon that uncertainty in practice. The interpretivist qualitative inquiry was chosen for this study because it is appropriate for questions focused on meaning, context, and lived organisational experiences, whereas interpretivist case study designs prioritise reflexive, comprehensive, and holistic analysis grounded in participants' narratives rather than abstract generalisations [51]. This method is methodologically appropriate for this study, as it seeks to understand managerial interpretations, accounting responses, and organisational adaptation in unclear policy circumstances [52].

An inductive research approach was deemed appropriate for this study, as the evaluation does not start with testing a theory but with extracting categories and process explanations from interview narratives, thereby transitioning from language-informed insights to elevated conceptual insights (theory development) [53]. In this study, inductive reasoning was deemed appropriate because climate policy uncertainty in Zimbabwe had to be interpreted through context-specific managerial interpretations and understandings that quantitative disclosure metrics would not capture.

3.2. Research Design and Time Horizon

The study adopted a multiple-case study research design, which aligns with the interpretivist research philosophy. The multiple case study design was selected for this study because it often provides more compelling and substantial evidence when used through replication logic, unlike statistical sampling [54]. In this study, the four firms operating in the financial services, manufacturing, quarry mining, and food processing sectors constituted the primary cases for analysis. Participants within each organisation were treated as embedded informants whose experiences and interpretations provided insight into organisational responses to climate policy uncertainty. This design enabled both within-case analysis of organisational sensemaking processes and cross-case comparison of how firms in different sectors interpreted and adapted EMA and climate risk disclosure practices under uncertain institutional conditions.

The selected sectors were intentionally chosen because they reflected differing levels of environmental exposure, operational complexity, sustainability pressure, and climate-related risk visibility. Financial services represented a highly regulated sector increasingly exposed to sustainability governance expectations and climate-related disclosure pressures. Quarry mining and food processing were selected for their direct environmental exposure, operational vulnerability, and resource dependence, while manufacturing provided insight into industrial adaptation and environmental cost management in production-oriented contexts. This sectoral variation strengthened the study's ability to explore how organisational responses to climate policy uncertainty differed across institutional and operational environments.

A qualitative case design was preferred in this study because it is superior to survey-based inquiry, given the research questions' processual nature: how managers perceive

uncertainty, how accounting practices are reshaped, and how these practices contribute to resilience. These are the “how” questions that require an in-depth investigation of the matter to obtain its contextual details and access organisational reasoning.

A cross-sectional time horizon was adopted for the study, which required capturing sensemaking and accounting reactions at a specific policy juncture rather than examining them longitudinally. A cross-sectional time horizon provides a snapshot of events, which in this case are beliefs and behaviours at a particular point in time [52].

3.3. Sampling and Data Collection

Purposive sampling was chosen for this study, as participants had to have experience and occupy positions in which climate uncertainty was interpreted and translated into accounting disclosures and strategic decisions. On this basis, senior managers or executives, management accountants or finance personnel, risk reporting officers, or sustainability personnel were deemed the most relevant participant categories in this study. This study focused on firms operating in Harare across the financial services, manufacturing, quarry mining, and food processing sectors, which were purposively selected due to their significant exposure to climate-related risks, environmental accountability pressures, and sustainability reporting expectations. What motivated the selection of these sectors was their ability to provide diverse organisational contexts through which managerial interpretations of climate policy uncertainty and accounting adaptation could be comparatively explored.

The data for the study were generated through in-depth semi-structured interviews (Appendix A), which ensured consistency among participants while allowing flexibility to explore their understanding of policy ambiguity, modifications to internal accounting systems, and the strategic use of disclosure [55]. Given the homogeneous participant profile intentionally selected through purposive sampling and the focused research question, the study's sample consisted of 13 in-depth interviews conducted across four firms operating in the quarry mining, manufacturing, financial services, and food processing sectors in Harare. Participants in this study were selected based on their roles and participation in issues related to the subject matter, including sustainability reporting, management accounting, environmental governance, and strategic decision-making. The inclusion of participants from differing organisational functions also enabled the study to capture variation in how EMA and climate-related disclosure practices were interpreted across strategic, operational, accounting, administrative, and risk-management contexts. This strengthened the study's interpretive depth by allowing comparisons between participants whose organisational responsibilities shaped different forms of engagement with environmental governance, budgeting processes, sustainability disclosure, and climate-related operational risk.

The study did not limit participation exclusively to senior executive personnel because the research sought to explore organisational interpretations and experiences of climate policy uncertainty, EMA adaptation, and disclosure practices across organisational levels. Consequently, participants were selected based on their practical involvement in sustainability-related decision-making, operational risk management, environmental governance, budgeting processes, reporting practices, or implementation responsibilities within their respective organisations. This approach recognised that organisational responses to climate-related uncertainty are often shaped by interactions among strategic, operational, and administrative actors rather than by executive decision-making alone.

Access to participating firms was obtained through formal organisational requests and professional networks within the selected sectors. Potential participants were initially approached through organisational gatekeepers and subsequently contacted directly by the researcher, who provided information on the study objectives, ethical considerations, and participation requirements. Participation was voluntary, and all approached participants

who met the inclusion criteria agreed to participate in the study. Consequently, no eligible participant declined participation after being formally approached by the researcher. The recruitment process prioritised participants with direct involvement in sustainability-related decision-making, risk management, environmental governance, accounting adaptation, or operational responses to climate-related uncertainty.

Although the study primarily focused on accounting, finance, sustainability, and managerial personnel, some participants occupied operational and administrative roles directly linked to environmental governance, compliance processes, infrastructure management, and climate-related operational decision-making. For example, participants from quarry mining contributed insights into how climate-related disruptions, environmental risk exposure, and regulatory uncertainty were interpreted at the operational level and subsequently translated into organisational responses. Their inclusion, therefore, strengthened the study's objective of understanding climate policy uncertainty as an organisation-wide interpretive process rather than a narrowly technical accounting issue alone. Sample adequacy for the study was determined through data saturation, in which the interviews continued until no new themes emerged [55]. Data saturation was reached with interview number 11, with the additional two used to confirm that no new substantial themes were emerging from the data. The emphasis of this study was not on large samples; rather, it was on depth, contextual richness, and analytical insights from participants rather than statistical representativeness.

3.4. Trustworthiness and Ethics

Trustworthiness was infused throughout the research process to enhance the study's quality, achieved through credibility and integrity. The credibility of this study was strengthened by the length of participants' engagement during in-depth interviews, probing of responses, and continuous comparison of perspectives across firms and participants' roles. In this regard, the researcher strengthened credibility by continuously reading transcripts and engaging in reflective interpretation of participants' accounts, thereby ensuring that the study's findings accurately reflected participants' lived organisational experiences.

The study's transferability was enhanced by providing rich contextual descriptions of the Zimbabwean business environment, organisational settings, and participant roles, enabling readers to assess the applicability of the study's findings to similar emerging economies. The use of a structured interview protocol, systematic coding procedures, a clear audit trail documenting the progression of data interview transcripts into codes, detailed analytical memos, categories, and final themes strengthened dependability. The coding structure was organised progressively from initial descriptive codes derived from interview narratives to more focused analytical categories and final interpretive themes. The codebook remained flexible throughout the analysis process and was continuously refined through comparison across transcripts, organisational cases, participant roles, and emerging theoretical interpretations. Reflexive journaling and continuous documentation of analytical decisions throughout the study process to strengthen the study's confirmability, reduce researcher bias, and increase interpretive transparency.

Given the interpretivist orientation of the study, coding and interpretation were conducted by the researcher rather than through statistical inter-coder agreement procedures. The emphasis was therefore placed on reflexive engagement with the data, transparency of analytical decisions, consistency in coding procedures, and continuous movement between participant narratives, emerging interpretations, and theoretical framing. This approach aligns with interpretivist qualitative inquiry, where credibility and analytical coherence are prioritised over positivist notions of coding objectivity. The researcher acknowledges that data interpretation was influenced by ongoing engagement with participants' narratives,

contextual realities, and the theories underpinning the study, given the study's interpretivist, qualitative nature. Reflexivity was therefore maintained throughout the study, from the analytical to the critical examination of emerging themes, by minimising subjective bias and strengthening analytical transparency. Interpretive uncertainty was managed through repeated engagement with transcripts, continuous comparison of emerging interpretations across interviews, revisiting analytical memos, and iterative refinement of codes and themes whenever inconsistencies, ambiguities, or alternative interpretations emerged during analysis.

The study received ethical clearance from the Walter Sisulu University Ethical Clearance Committee (FREC), with approval number 07/03/10/2025/PG and approval date 2025-02-10 prior to data collection. Before participating in this study, participants were provided with information sheets explaining the study's aim, their right to withdraw without penalty, and that participation was voluntary. This was followed by getting both verbal and written informed consent from the participants. Participants were also assured of confidentiality and that all identifiers would be removed from the study, which ultimately resulted in the use of pseudonyms and participant codes instead of names and organisational identities throughout the study report. The interview residue, including audio recordings, coding documents, and interview transcripts, was securely stored on a password-protected file and on a laptop, accessible only to the researcher. Care was also taken in this study to avoid reporting information that could expose participants and their organisations to reputational and professional risks, given the potentially sensitive nature of climate disclosure issues in emerging economies.

4. Results

This section discusses findings from 13 participants across four firms operating in Harare Province, Zimbabwe: financial institutions (P1–P4), a manufacturing firm (P5–P7), a quarry mining firm (P8–P10), and a food processing firm (P11–P13). The overall position across the cases is that managers described the Zimbabwean climate-policy landscape as directional but unevenly executed, with policy commitment visible at the national level, though the details of implementation, timing, enforcement intensity, and reporting expectations are very unclear. Five themes were developed across the case, and these included (Table 1): climate policy uncertainty was experienced as implementation ambiguity rather than policy absence; EMA was unevenly evolving from hidden overhead treatment towards clearer environmental cost visibility; climate risk disclosure, which was initially internally oriented, had become more formal due to external pressures from regulators and investors; resilience was built through adaptive budgeting, structured investment, operational redesign, and selective disclosure; managers associated firm-level accounting adaptation with broader sustainable growth aspirations.

These configurations appeared more formalised in the financial services and manufacturing cases, more transitional in the food processing case, and comparatively reactive in the quarry mining case. The relative formalisation of the financial case reflects stronger supervisory expectations stemming from the Reserve Bank of Zimbabwe's policy guidelines, which require financial institutions to focus on governance, strategy, risk management, and the disclosure of climate-related risks.

Overall, the findings of this study address the research questions in an integrated way, where managers interpreted climate risk policy uncertainty as a matter of survival, adaptability, and institutional vagueness (RQ1), uncertainty was viewed as influencing the development of EMA systems and the extent of climate risk disclosure (RQ2), while participants generally associated stronger environmental cost visibility with greater organisational readiness to respond to regulatory disruptions and environmental uncertainty

(RQ3). The findings from the study therefore suggest that participants perceived EMA and climate disclosure not merely as technical reporting tools, but as socially interpretive and institutional mechanisms associated with organisational efforts to navigate uncertainty, maintain legitimacy, and strengthen resilience within volatile environmental contexts.

Table 1. The coding development and structure.

Initial Codes	Categories	Final Themes	Illustrative Participant Sources
Regulatory inconsistency; delayed policy implementation; unclear enforcement mechanisms; changing sustainability expectations; uncertainty regarding future compliance obligations	Climate policy ambiguity and institutional inconsistency	Climate Policy Uncertainty as Institutional Ambiguity	P1, P2, P5, P8, P9, P11
Environmental budgeting adjustments; scenario-based planning; environmental cost visibility; phased capital investment; adaptive resource allocation; sustainability-oriented monitoring	Environmental Management Accounting adaptation practices	Uneven Evolution of Environmental Management Accounting	P1, P3, P5, P6, P8, P9, P13
Stakeholder pressure; legitimacy concerns; ESG expectations; sustainability reporting pressures; disclosure credibility; investor and regulatory expectations	Climate disclosure and organisational legitimacy pressures	Climate Disclosure as Organisational Legitimacy	P1, P2, P3, P5, P7, P10, P12
Adaptive budgeting; operational redesign; procurement flexibility; risk anticipation; organisational learning; strategic adjustment under uncertainty	Organisational adaptation and resilience-building practices	Sustainability-Oriented Organisational Resilience	P2, P5, P6, P8, P9, P10, P12
Institutional pressure; regulatory expectations; industry imitation; sustainability governance influence; organisational interpretation of external pressures	Institutional influence and managerial sensemaking processes	Managerial Sensemaking and Institutional Adaptation under Climate Uncertainty	P1, P5, P7, P8, P10, P13

4.1. Overview of the Cases and Analytical Structure

The 13 participants, purposefully selected for this study (Table 2), came from management accounting, finance, risk, sustainability, operations, and administration, and all had direct or indirect involvement in budgeting, sustainability reporting, risk management, compliance, and strategic decision-making. Participant quotations were de-identified to protect organisational and individual confidentiality and were edited minimally for readability where necessary. Editing was limited primarily to the correction of minor grammatical inconsistencies, removal of repetitive filler expressions, and shortening of lengthy extracts without altering the substantive meaning or interpretive intent of participants' responses. Ellipses were used where portions of quotations were omitted for brevity or clarity. No translation was required because all interviews were conducted and transcribed in English. Cross-case comparison showed that the financial case exhibited the most formalised climate-oriented risk and disclosure routines, with the manufacturing case serving as a transitional model in which environmental costs became more visible. The food processing sector occupied an intermediate position, in which environmental and climate information had not yet been fully integrated into a mature EMA, though it was still present through operational metrics. The quarry mining case was reactive, with environmental costs recognised following a major disruption to the firm's operations.

Table 2. Demographic Profile of participants.

Participant	Sector	Sex	Age	Role	Experience
P1	Financial institution	Female	45	Investment and risk manager	18 years
P2	Financial institution	Female	42	Sustainability and Compliance Officer	12 years
P3	Financial institution	Male	55	Finance Executive	15 years
P4	Financial institution	Female	38	Branch manager	8 years
P5	Manufacturing	Male	62	Operations and Procurement Manager	24 years
P6	Manufacturing	Male	53	Environmental Accounting Officer	14 years
P7	Manufacturing	Female	69	Management Accountant	20 years
P8	Quarry mining	Male	51	Administrator	11 years
P9	Quarry mining	Male	48	Environmental Accounting Officer	16 years
P10	Quarry mining	Male	44	Geologist	13 years
P11	Food processing	Female	41	Accountant	9 years
P12	Food processing	Male	53	Manager	17 years
P13	Food processing	Female	40	Operations and Procurement Manager	5 years

4.2. Demographic Profile of Participants

The sample comprised 13 participants, drawn from diverse sectors of the Zimbabwean economy, including financial institutions, manufacturing, food processing, and quarry mining (Table 2). These participants held positions in management accounting, finance, sustainability management, operations, compliance, and strategic planning, and, as a result, provided diverse insights into organisational responses to climate policy uncertainty and EMA practices. In this regard, the diversity of participants added depth to the findings and enabled cross-sectoral perspectives on the subject matter. This study benefited from both emerging and experienced managerial viewpoints, as participants' work experience ranged from 4 to 24 years. The gender composition is balanced, thereby strengthening the breadth and credibility of the qualitative insights generated in this study.

Table 2 above presents the demographic profile of participants purposively selected for this study, including sector, sex, age, role, and work experience. It was deemed crucial to present participants' profiles in qualitative studies because they provide a contextual understanding of participants' interpretations, thereby enhancing the credibility and richness of the findings.

4.3. THEME 1: Policy Uncertainty as Implementation Ambiguity

Participants held varying organisational roles across strategic, operational, administrative, accounting, and risk management functions. Although not all participants held executive-level positions, each participant was directly involved in organisational processes relating to sustainability governance, operational adaptation, environmental risk interpretation, reporting responsibilities, or climate-related decision-making within their respective organisational contexts.

4.3.1. Subtheme: Direction Without Operational Clarity

The cross-case pattern of this study found that most participants (P1, P2, P3, P5, P8, P9, P11, P12, P13) acknowledged the existence of climate policy, though they all agreed it was difficult to implement. These participants viewed uncertainty as pragmatic rather

than theoretical, since it influenced the timing of the investment, compliance preparation, budgeting cycles, and the degree of caution built into the strategy. In this regard, participants suggest that they were more worried about whether they could trust climate governance policies in place and place confidence in anticipating how they translate into cost standards, thresholds, and enforcement. To reinforce the importance of this discussion, some participants said:

“Although there is a climate-related policy in Zimbabwe, it still needs to be adjusted to reflect the Zimbabwean context. Our regulators are doing a copy and paste of policies from the developed world, which are becoming too difficult for us to implement locally.” (P1)

An identical interpretation came from the manufacturing case, where it was said:

“The greatest challenge we have is that environmental regulations are selectively applied; they lack clarity, consistency, and in the end, we have adopted a flexible, phased environmental planning.” (P5)

This trend was more visible in operationally exposed sectors such as manufacturing, quarry mining, and food processing, where climate-related disruptions directly affected supply chains, investment planning, and production costs. Most participants associated climate policy uncertainty and climate-related risks with adopting more flexible and cautious decision-making approaches. Even though many firms relied on contingency budgeting, phased investments, and adaptive operational strategies to manage environmental shocks, participants indicated that climate uncertainty significantly influenced sustainability reporting practices, prompting greater attention to environmental cost tracking, resource monitoring, and sustainability-oriented planning. To reinforce this aspect of the discussion, one participant remarked:

“I would describe climate change and sustainability as a deal breaker that has forced us to develop an interest in climate-related issues. Previously, we were not concerned at all, but frequent droughts and flooding have adversely impacted our operations, prompting us to adjust and be prepared to respond.” (P7)

In this regard, organisational actors therefore interpreted uncertainty in relation to their organisational exposure and strategic priorities. Participants in this study have perceived that policy ambiguity is a standard feature of the economic environment, compelling them to make decisions based on incomplete and changing policies. Therefore, most organisational actors relied on judgements, prior experience, and anticipated policy changes to guide investment, budgeting, and sustainability-related decisions. This aspect of the research finding reflects an ongoing sensemaking process in which organisations continually had to adjust and respond to policy shifts to maintain resilience under uncertain policy conditions.

Importantly, these narratives suggest that participants were not only responding to uncertainty about climate policy itself but also to questions about the credibility, consistency, and practical enforceability of the institutions responsible for implementing sustainability governance. For example, P1 questioned the local applicability of externally derived policy frameworks, while P5 associated uncertainty with selective enforcement and inconsistent regulatory application. These interpretations indicate that managerial sensemaking extended beyond uncertainty signals alone towards ongoing evaluation of institutional reliability and governance credibility within the Zimbabwean context.

4.3.2. Subtheme: Buffers, Shorter Horizons and Phased Commitment

Several participants (P2, P3, P5, P6, P8, P9, P10, P11, P12, P13) in this study showed that sensemaking translated into temporal strategies. These participants noted that, due

to ongoing policy uncertainty, they have resorted to short-term investments, shortened budgeting horizons, and staged investments. To reinforce this aspect of the discussion, some participants had this to say:

“Regular policy changes have created a lot of uncertainty, which has created confusion among investors. An announcement in policy shift has the effect of changing the risk profile of the entire investment.” (P2)

While another participant said:

“Uncertainty has created a challenging environment to operate in. Financial planning now includes a contingency buffer and shorter budgeting cycles to align with the prevailing situation. You cannot be seen making a long-term investment under these circumstances.” (P6)

This aspect of the finding suggests that participants interpreted policy uncertainty as reshaping decision-making processes, encouraging greater reliance on provisional and scenario-based planning approaches. This aspect of the finding therefore addresses RQ1 by showing that the managerial response was interpretive, socially constructed, strategic, and adaptive rather than passive.

4.4. THEME 2: Uneven Evolution of EMA

4.4.1. Subtheme: From Hidden Overheads to Visible Environmental Costs

All participants in this study agreed that environmental costs had traditionally been treated as overhead costs and were not visible. Participants indicated that, due to regulatory pressures and investor and other stakeholder demands, efforts are underway to make environmental costs more visible, as this will also assist management in comparing investment projects, justifying adaptation spending, and anticipating regulatory exposure. The major difference in how environmental costs are treated lies between quarry mining and manufacturing. One participant from the mining case remarked:

“Traditionally, we used to regard environmental costs as expenses reducing our profits, though of late we have started recognising them as key costs, but we have not yet come to a stage where we are specifically tracking them or measuring them in advance, but rather we are reactive when they are incurred.” (P8)

This aspect of the finding depicts a reactive accounting model in which sustainability information becomes visible only to management following a major disruption to the production process or supply chain. Several participants in this study indicated that climate-related costs were absorbed into overhead and general operational budgets rather than systematically tracked through EMA systems, making them less visible. This therefore implied that organisations tended to respond to environmental risks following operational interruptions, regulatory pressures, or unplanned cost increases, with participants associating these experiences with increased attention to organisational adaptation. By contrast, the manufacturing case showed a clearer move towards making environmental costs visible. This was demonstrated by one participant who stated:

“We are facing increased pressure from both the regulator and investors, and we are trying our level best to make environmental costs more visible, and we have moved from treating them as overhead costs to environmental costs.” (P7)

The response from participants indicated that, although they have not reached a stage where the system in use could be explicitly labelled EMA, there was progress in tracking and monitoring costs across categories such as energy, waste, package losses, and compliance-related costs, thereby making them easier to identify.

4.4.2. Subtheme: Cost Visibility as a Factor for Scenario Planning and Capital Ranking

Most participants (P1, P2, P3, P4, P5, P8, P9, P11, P13) in this study linked cost visibility to scenario planning and capital investment appraisal. These participants indicated that it was essential to systematically track environmental costs, as this would enable organisations to anticipate and assess regulatory risks, energy volatility, and infrastructure vulnerabilities they were likely to face. Across the cases, organisational resilience was therefore discussed less in terms of symbolic CSR positioning and more in relation to practical organisational adjustments to manage environmental disruption and operational uncertainty. Participants cited measures such as adaptive budgeting, revised procurement practices, operational monitoring systems, phased investment planning, infrastructure adjustments, and greater visibility into environmental risks as evidence of firms' attempts to operationalise sustainability commitments amid uncertain institutional conditions. In the end, participants argued that this would inform the organisation's investment in energy-efficient technologies and climate-resilient infrastructure while supporting its strategic mission. A participant from the manufacturing remarked:

"Tracking of environmental costs is key because it makes it easier to compare projects, and it's obvious that when environmental costs are attributable to an investment, those with a higher initial outlay but with lower future environmental and regulatory costs become easier to defend in board meetings." (P6)

While another participant from the financial case said:

"When we know environmental costs, it becomes easier for us to avoid high-energy investment projects due to their long-term financial implications." (P3)

The cross-case trend points towards an uneven maturity rather than full adoption of EMA practices. When compared, the financial services and manufacturing cases exhibited more structured approaches to sustainability management, with environmental costs increasingly integrated into budgeting, investment appraisal, and strategic planning. At the same time, food processing firms occupy a transitional position, reflecting the growing awareness of environmental risks, even though they still rely on partially developed sustainability reporting systems and reactive cost management practices. In contrast, the quarry mining sector is worrisome because it has remained event-driven, with environmental costs becoming visible only after catastrophic disruption, institutional pressure, or infrastructure damage, prompting investigations into their causes and the best ways to respond. Of interest is the acknowledgement of participants across all sectors of the growing importance of moving from non-recognition to recognition of environmental costs and embarking on efforts to make them more visible. However, these differences should be interpreted with caution, as the more structured EMA and disclosure practices observed in the financial services and manufacturing cases may also reflect pre-existing organisational capabilities, governance maturity, resource availability, and stronger institutional exposure rather than the effects of climate policy uncertainty alone.

Participant interpretations of EMA also varied according to organisational role and functional responsibility. Participants occupying finance, accounting, and managerial positions generally emphasised environmental cost visibility, disclosure expectations, governance pressures, and strategic budgeting processes. In contrast, operational and technical participants more frequently discussed climate-related disruption in terms of production continuity, infrastructure vulnerability, resource uncertainty, and operational adaptation. These differences suggest that organisational role influenced how participants understood the practical significance of EMA and climate-related disclosure within their respective organisational environments. The findings address RQ2 by showing that participants

perceived climate policy uncertainty as shaping the collection, classification, and strategic utilisation of environmental information within organisational decision-making processes.

4.5. THEME 3: Pragmatic and Legitimacy-Seeking Disclosure

4.5.1. Subtheme: Internal Disclosure Came First

Across the cases, most participants (P1, P2, P3, P4, P5, P8, P9, P11) in this study indicated that they never understood climate risk disclosure as purely an external reporting exercise, but rather as an internal decision-making tool. These participants perceived that climate disclosure had begun internally through the production of management reports, board updates, budget memoranda, and operational dashboards, and that external disclosure would be considered only when stakeholder pressure and demands were exerted.

The financial services case provided the clearest example of increasingly formalised internal and external climate risk disclosure practices. Participants in the case agreed that although the disclosures have not yet fully aligned with global best practices, organisations in the financial case are mandated to integrate climate-related risks into their broader risk management and annual reporting. In this regard, climate-related risks have been slowly integrated into governance discussions, enterprise assessments, sustainability reporting language, and ESG oversight structures, thereby increasing their visibility and improving the case's image. The participants in this sector pointed out that they have been pushed to do good because of growing regulatory expectations, investor scrutiny, and, above all, international financing requirements that call upon firms to improve quality, consistency, and transparency on issues regarding climate-related disclosures, which have left them with no option but to adhere. Although this trend was consistent with stronger climate risk expectations placed on them by the Reserve Bank of Zimbabwe, which is the regulator, participants indicated that they were still experiencing some challenges, which included limited technical expertise, inconsistent reporting frameworks, and uncertainty brought by changing regulations, suggesting that the disclosure systems were still evolving and had not yet been institutionalised.

Participants in the financial services and manufacturing sectors also associated rising disclosure expectations with broader global developments in sustainability reporting, including growing awareness of international climate-related disclosure frameworks and investor expectations for environmental accountability.

In the quarry mining sector, disclosure was more tentative. One participant had this to say:

"Maybe the reason why we have been reactive and not taken a proactive approach to sustainability disclosure is due to the fact that Zimbabwe does not have a standard guideline that has been structured for the Zimbabwean context, and what is prescribed to us are standards developed from stable economies, which, when we try them, do not work here." (P10)

The food processing sector exhibited a similar trend of partial development in sustainability disclosure. Participants in this sector described disclosure systems that captured environmental metrics and operational trends and emphasised that climate-risk integration was still in its infancy but was developing.

These narratives from participants suggest that internal data generation may precede external disclosure by a considerable margin: in many firms, environmental and climate risk-related data were already being collected but were not appearing in structured external sustainability disclosures. Participants in this study pointed out that firms utilised internal environmental data for operational control, cost management, and strategic planning, rather than for external disclosure. These findings suggest that climate-related disclosure is

evolving and must first satisfy internal needs before becoming formalised and externally visible to all stakeholders.

4.5.2. Subtheme: External Disclosure as Credibility, Accountability, and Finance Access

Several participants (P1, P2, P3, P5, P6, P8, P9, P10, P11, P12, P13) in this study associated risk disclosure with improved organisational reputation and access to finance, thereby signalling managerial competence to external stakeholders. These participants noted that organisations have become increasingly aware of climate-related risks and are managing long-term environmental uncertainty. Participants associated climate disclosure with increased investor confidence, stronger relationships with regulators and financial institutions, and improved prospects for accessing sustainability-linked funding. In this regard, disclosure was viewed as a compliance and strategic mechanism intended to reinforce legitimacy, accountability, and organisational credibility under conditions of policy uncertainty. One participant remarked:

“Even if it’s in some instances the disclosure symbolic, we have come to learn that it enhances stakeholder confidence and reduces information asymmetry and perceived risk.”
(P7)

Similarly, another participant stated:

“Climate risk disclosure is essential now because lenders and financial institutions demand it and have become a requirement if you require a loan.” (P12)

The aspect of this research finding is that disclosure was not treated as an end, but rather as a mechanism through which an organisation could gain credibility, be accountable, and secure legitimacy under uncertain policy conditions.

Cross-case comparison suggested variation in how legitimacy was interpreted and operationalised across the participating firms: in the financial case, it was linked to reporting structures and governance frameworks, whereas in the manufacturing case, it was linked to financing, partnerships, and market credibility. In the mining and food processing sector, compliance remained oriented, even though participants anticipated stronger stakeholder pressure in the long term. This aspect of the finding addresses RQ2 by showing that uncertainty influenced environmental accounting systems and their disclosure styles, including the audiences they serve.

4.6. THEME 4: Accounting and Organisational Resilience

4.6.1. Subtheme: Adaptive Budgeting and Phased Investment

Many participants (P2, P3, P5, P6, P8, P10, P12) perceived EMA and disclosure practices as relevant to organisational resilience amid climate policy uncertainty. These participants described resilience as an evolving capability that responded to uncertainty created by changing policies and was influenced by continuous budget adjustments, revised procurement strategies, operational redesign, and more disciplined capital planning. In this regard, participants described firms as increasingly adapting their financial and operational systems in response to climate-related disruptions and uncertain regulatory expectations. Participants indicated that when environmental costs were systematically tracked and disclosure processes were more structured, they perceived organisations as being better able to anticipate potential vulnerabilities and support more informed decision-making under conditions of uncertainty. These findings also align with broader evidence from institutionally unstable environments, suggesting that organisational resilience may be constrained by financial pressures, operational uncertainty, and limited adaptive flexibility, particularly within emerging economies characterised by resource instability and evolving governance conditions [56]. Participants from the financial case stated that resilience took

the form of diversification, cautious capital allocation, and scenario-based planning, while in the manufacturing case, it appeared through supplier and material adjustments. One participant remarked:

“Organisations have become more selective in environmentally vulnerable regions, and they have shown greater interest in initiatives to mitigate future climate risks.” (P2)

Another participant said:

“We have had to adjust, and due to stakeholder demand, we now prioritise working with material suppliers that are certified by the Standard Association of Zimbabwe, as a communication that we have also gone green.” (P5)

4.6.2. Subtheme: Operational Redesign and Post-Incident Learning

Across cases, quarry mining has shown a more reactive resilience pathway, in which firms' mitigatory strategies are influenced by catastrophic events such as flooding, infrastructure damage, operational disruptions, and compliance pressures. Some of the participants (P3, P5, P8, P9, P10, P11, P12, P13) in this study have shown that, before an interruption that would have resulted in losses, environmental costs were not visible, and remedial action followed later. In this regard, it means budget adjustments and operational changes would be implemented in response to the pressure exerted on an organisation following the catastrophic disaster, rather than long-term environmental risk planning. One participant remarked:

“It's true that climate-related costs influenced decision-making, though in my sector it's reactionary as that will be through post-incident adjustments.” (P9)

Participants indicated that concerns about potential penalties also influenced their decision-making, particularly on operational procedures such as waste management, storage practices, and environmental compliance monitoring. Participants perceived the regulatory framework as increasingly influencing operational behaviour within firms that had previously adopted reactive approaches to environmental planning.

What is essential from this finding is that resilience strength depended on the degree of coupling between environmental information and managerial routines, with stronger resilience in situations where environmental tracking was strong. When environmental information was not made visible and was buried in overhead, the response was most likely triggered by a disruption rather than by a planned one. This aspect of the finding therefore addresses RQ3 by showing how participants associated EMA and climate disclosure practices with organisational adaptation and resilience under uncertain policy conditions.

Cross-sector comparison further revealed that organisational responses to climate policy uncertainty varied according to industry exposure, regulatory visibility, operational dependence on environmental resources, and sustainability governance expectations. Participants from financial services generally described more structured approaches to climate disclosure and environmental risk governance, reflecting stronger regulatory and stakeholder pressures. In contrast, quarry mining and food-processing participants more frequently discussed operational disruption, environmental exposure, resource uncertainty, and reactive adaptation practices linked to production realities and environmental vulnerability. Manufacturing participants occupied an intermediate position, characterised by increasing visibility of environmental costs and the gradual integration of sustainability considerations into operational planning processes. These differences suggest that organisational interpretations of climate policy uncertainty were shaped partly by sector-specific environmental exposure and institutional expectations.

4.7. THEME 5: From Firm Adaptation to Sustainable Growth

4.7.1. Subtheme: Micro-Level Accounting Change as a Contribution to Wider Stability

Most participants agreed that adopting sustainable development was associated with a country's macroeconomic stability. Participants (P1, P2, P3, P5, P6, P8, P9, P10, P11, P12, P13) perceived that a stronger environmental performance and climate disclosure had the potential to improve investment discipline, business continuity, and resource allocation, which they viewed as crucial in unlocking global funding and subsequent growth of the case and the economy in general. These participants indicated that the regulator must desist from imposing copy-and-paste policies from advanced, stable economies and develop a regulatory framework that aligns with the Zimbabwean context, as efforts by firms alone were insufficient.

Participants in the financial and manufacturing sectors were very clear regarding the broader strategic role of EMA and climate risk disclosure. Participants within the financial case pointed out that they play a critical role in economic development by allocating investment required by firms, and hence, having in place a stable and stronger regulatory framework was going to shape stronger environmental risk accounting practices, which was also going to shape lending decisions, investment priorities, and the flow of finance towards more sustainable business activities. This finding suggests that climate-related accounting practices have grown in importance to the extent that they are no longer viewed solely as internal management tools but also as a vehicle shaping broader patterns of corporate behaviour and sustainability. To reinforce the discussion, one participant stated:

"If EMA and climate risk are adopted consistently across all economic sectors, there is a chance that this will help in unlocking global funding through increased investor confidence, which in the end can contribute to economic development and the broader sustainable growth." (P5)

The findings suggest that some participants perceived the adaptation of sustainability-oriented accounting as potentially contributing to broader organisational continuity, investment confidence, and long-term sustainability aspirations in uncertain institutional environments. These narratives from participants underscore the argument that incremental accounting modifications at the firm level could prompt similar organisations to follow suit, thereby producing broader, systemic impacts when implemented across sectors amid uncertain environmental and regulatory policies.

4.7.2. Subtheme: Institutional Clarity as the Missing Condition

Participants from the less formalised sustainability-reporting firms concurred that EMA and climate risk disclosure were valuable to an entity, and that a firm could unlock their holistic benefits by moving beyond reactive environmental management accounting approaches and adopting a proactive approach to environmental management. A participant from the mining case stated:

"We could not be enjoying the benefits associated with EMA adoption since we are reactive in terms of our approach. ... we stand to benefit if we adopt a proactive systems approach, which could be supported with dedicated environmental cost centres and futuristic environmental modelling." (P8)

Similarly, in the food, one participant had this to say:

"Our greatest challenge is that we are concerned with regulatory compliance, which has hindered sustainability innovation. Sustainability should move beyond compliance and be viewed as a strategic driver of long-term value and resilience to an organisation." (P11)

This finding therefore shows that participants increasingly view sustainability-oriented accounting practices as an essential vehicle for strengthening a firm's adaptation and long-term competitiveness.

A recurring issue concerned the institutional conditions required to integrate EMA and climate disclosure practices. All participants across the cases underscored the need for clearer policy direction, context-based, standardised accounting and disclosure frameworks, enhanced engagement between regulators and firms, phased implementation approaches, and incentives for environmental performers. One participant said:

"Policy change has brought a lot of confusion to us. Our request is for the government to come up with a clear, consistent policy direction." (P7)

Although all participants in this study acknowledged the growing importance of sustainability-oriented accounting practices and the increased pressure from various stakeholders, they contended that without a consistent, stronger regulatory framework, sustainability goals would remain a dream. Participants noted that uncertainty around sustainability disclosure expectations and future regulatory requirements has hindered innovation and the transition from compliance to formal accounting systems. The aspect of this study, therefore, shows that organisational actors have become increasingly aware of the association between EMA, disclosure, resilience, and sustainable growth, but argue that this association relies on the quality, consistency, and predictability of the institutional environment.

5. Discussion

The findings of this study on climate policy uncertainty in Zimbabwe suggest that, despite the presence of climate disclosure policies, participants perceived them as a policy vacuum due to inconsistent implementation and enforcement difficulties. Although organisational actors across the four cases acknowledged that uncertainty becomes more calculable through EMA and climate disclosure, they emphasised that shifting from reactive compliance to anticipatory adaptation required strategic sectoral pressure, making environmental costs visible, and a strong institutional environment. The discussion supports an evolving sustainability accounting system that views EMA and climate disclosure not as fixed tools but as shaped by the interpretation of climate signals, strategic decisions, and initiatives to build resilience under volatile conditions.

5.1. Integrated Discussion

In relation to the first research question, the study's findings suggested that although climate regulation existed, organisational actors perceived climate policy uncertainty as an implementation challenge, as they found it difficult to understand continuously changing policies. What is crucial is the understanding that organisational actors acknowledge the visibility of climate disclosure policy and confront its direction by questioning its enforceability and its practical implications for investment, reporting, and operations, which they argue remain chaotic.

Examined through the sensemaking theory, which asserts that organisations function in challenging environments and need to interpret the prevailing situation to formulate viable courses of action [57]. To keep abreast of changing policies that had created uncertainty, managers shortened their planning horizons, used phased investment commitments, and relied on provisional decisions to strategise. Analysed through the lens of institutional theory, the findings suggest that the participating firms responded differently to coercive, normative, and mimetic pressures. The financial services and manufacturing cases exhibited more formalised sustainability accounting and disclosure practices, whereas the quarry mining and food processing cases reflected more contingent, reactive, and operationally driven approaches. The theoretical contribution of the study was its extension of sense-

making theory from its traditional role of explaining how managers interpret uncertain events to showing that, in volatile institutional settings, organisational actors can go a step further by interpreting the credibility of the institutions that produce the signals. This aspect of the finding, which aligns with prior studies, is crucial because it suggests that climate-policy uncertainty is higher in emerging economies due to lower institutional reliability [58]. The study's findings indicate that institutional theory is relevant in this context, but institutional pressure on an organisation becomes crucial and impactful when it is consistent and sufficiently enduring, thereby transforming internal calculative routines rather than remaining a background source of compliance anxiety.

The findings extend sensemaking theory by showing that managers were not only interpreting climate policy uncertainty itself but also evaluating the credibility, consistency, and enforceability of the institutional environment in which climate policies are operated. Instead of reacting automatically to regulatory signals, participants consistently assessed the likelihood that policy pledges would result in significant implementation, enforcement, or enduring institutional stability.

A particularly important theoretical insight emerging from the study is that managers appeared to interpret not only climate policy uncertainty itself but also the credibility, consistency, and enforceability of the institutions responsible for sustainability governance. For example, participants questioned the local applicability of externally derived policy frameworks and highlighted concerns regarding selective enforcement and inconsistent implementation. These narratives suggest that managerial sensemaking extended beyond interpreting uncertain policy signals towards evaluating the reliability of the institutional environment from which those signals originated. This finding extends existing sensemaking perspectives by highlighting institutional credibility as an important interpretive dimension shaping sustainability-oriented accounting adaptation under conditions of uncertainty.

The findings also reinforce and extend institutional theory by demonstrating how coercive, normative, and mimetic pressures interacted unevenly across sectors. Coercive pressures were most visible in the financial case through regulatory expectations surrounding climate-risk governance and disclosure. Normative pressures emerged from growing stakeholder expectations regarding sustainability accountability, environmental legitimacy, and responsible investment practices. Mimetic pressures were evident in firms' attempts to emulate internationally recognised sustainability reporting approaches, despite uncertainty about their contextual suitability in Zimbabwe. However, the findings further suggest that institutional pressures alone were insufficient to produce uniform adaptation in accounting. Instead, managerial interpretation mediated the understanding, prioritisation, and translation of such pressures into organisational practices.

This suggests that managerial sensemaking in volatile emerging economies involves the ongoing interpretation of institutional reliability alongside environmental uncertainty. In this regard, accounting adaptation emerged not simply as a technical organisational response, but as a socially constructed process shaped by managerial judgement, prior organisational experience, and anticipated institutional behaviour.

The second question in the study concerned how uncertainty shapes EMA and climate risk disclosure. The findings of the study show the evolution from an internal to an external focus, in which environmental and climate data, in their infancy, were intended to enhance internal decision-making by informing budgeting, operational monitoring, capital screening, dashboard reporting, and risk assessment. In response to uneven stakeholder demand, the practices have shifted to satisfy all stakeholders by becoming a formal public practice. The study's interesting contribution is its ability to shift the way we understand and interpret disclosure beyond a mere external reporting perspective. Previous studies align with this finding by suggesting that climate-related systems become strategically essential

when physical and monetary environmental accounting information is first integrated into internal management routines [59]. The aspect of this finding is reinforced by noting that when environmental costs were aggregated into overhead costs, disclosure was poor; when costs were tracked and became visible and routinised, disclosure became more structured and credible, which, in the end, shows that visibility preceded disclosure maturity.

The findings further suggest that climate policy uncertainty was not interpreted uniformly across sectors. Firms operating within more environmentally exposed industries, particularly quarry mining and food processing, described climate-related uncertainty in more operational and resource-dependent terms, whereas financial services participants framed uncertainty more strongly around governance expectations, disclosure credibility, and regulatory legitimacy. This indicates that industry-specific environmental exposure and institutional visibility shaped managers' interpretations of sustainability pressures and organisational resilience within their respective organisational contexts.

The findings further indicate that organisational role shaped participants' interpretations of the relationship among EMA, climate disclosure, and organisational resilience. Accounting and managerial participants tended to frame EMA in terms of governance, disclosure credibility, budgeting, and environmental cost management, whereas operational participants interpreted climate-related uncertainty more directly as environmental exposure, operational disruption, and adaptive infrastructure needs. This suggests that the adaptation of sustainability-oriented accounting is uneven across organisational functions and is mediated, in part, by the institutional and operational responsibilities associated with different organisational roles.

Regarding legitimacy disclosure, the findings of this study, which align with the literature, indicate that organisations are primarily motivated to disclose climate information to maintain credibility, secure acceptance, and signal competence [7]. The study findings show that participants linked disclosure to reputation, unlocking finance, and improved stakeholder confidence, although suggestions are that disclosure was strongest when based on prior internal accounting rather than solely on communication. The use of sensemaking theory helped explain how climate disclosure becomes sufficient for integration into management reports, cost categories, and investment appraisal, and when these interpretations will later be translated into external disclosure, while institutional theory gives a clarification on why this translation was more advanced in sectors which were subjected to a stronger regulatory framework and scrutiny. The aspect of the finding which aligns with the literature shows that disclosure quality depended on built internal organisational infrastructures capable of producing reliable information, which needed to be complemented by institutional pressures [60].

The third research question for the study concerned how EMA and disclosures supported organisational resilience and sustainable growth. The findings of this study indicate that resilience was a capability developed through routines rather than a stable organisational trait. This implies that when environmental costs were tracked and became visible, when the reporting process became formalised, when capital allocation before disruption intensified, and when climate-related information influenced procurement and budgeting, it means firms became more anticipatory. The study shows that quarry mining followed a reactive pathway, with environmental costs becoming visible and adaptation following a disruptive, catastrophic event. On the other hand, the food processing sector followed a hybrid pathway, characterised by improved operational metrics and an understanding of seasonality, though it displayed minimal formalisation. The financial and manufacturing sectors had internal environmental information closely integrated with strategic planning and disclosure, thereby closer to anticipatory resilience. The difference across cases was not based on whether

organisational actors recognised climate risk, but on whether they could readily sense it, respond to it (through an adaptation strategy), and reconfigure routines in time.

The findings of this study do not indicate a clear association among firm-level accounting changes, sustainable growth, and macroeconomic stability. The study shows a conditional pathway in which participants saw a plausible connection between environmental cost visibility and disciplined investment decisions, stronger disclosure credibility, and, as a result, greater resilience across all economic sectors. Organisational actors emphasised that this depended on clear institutional prerequisites, such as clear regulatory policies. The study's findings, consistent with previous studies, showed that clear policy direction, phased implementation, context-oriented guidance, stronger regulator-firm engagement, and incentives linked to environmental performance were the mechanisms through which micro-level adaptation was likely to generate broader developmental value [61].

Importantly, the findings should not be interpreted as demonstrating direct macroeconomic outcomes arising from firm-level accounting adaptation. Rather, participants expressed the view that greater visibility of environmental accounting, climate disclosure, and sustainability-oriented planning could contribute to broader organisational continuity, investment confidence, and long-term sustainability aspirations, provided a stable institutional environment is in place. The study, therefore, captures managerial interpretations and organisational expectations regarding these relationships rather than empirically verified macroeconomic effects.

The relationship among EMA, climate disclosure, and organisational resilience should be interpreted with caution, as alternative explanations remain plausible, as firms with stronger governance structures, greater managerial capability, higher international exposure, or better access to finance may already be better positioned to adopt sustainability-oriented accounting systems while appearing more resilient under uncertain policy conditions. In the same vein, more adaptive firms may possess the organisational resources necessary to invest in environmental monitoring and disclosure practices in the first place. The findings, therefore, do not suggest a linear causal pathway in which EMA directly produces resilience, but rather indicate that participants perceived sustainability-oriented accounting practices as part of broader organisational adaptation processes shaped by institutional conditions, managerial interpretation, and firm capability.

5.2. Implications

The theoretical contribution of the study is integrating sensemaking theory and institutional theory in a procedural rather than cumulative method, whereby Sensemaking theory elucidates the process by which ambiguous climate policy signals are transformed into practical strategies within organisations, while institutional theory provides a grounding explanation for the reasons for the variability of such cues' influence across different sectors of the economy.

The study's findings add to the limited qualitative insights from an emerging economy that has not been deeply researched and are analytically insightful. In this regard, Zimbabwe exhibits dynamics less apparent in more stable economies: internal data prior to disclosure, the coexistence of reactive and anticipatory approaches, and the role of institutional reliability in shaping accounting transformation.

The study's practical contribution is that firms should prioritise internal visibility of environmental costs before expecting disclosure to become strategically useful. In addition to raising expectations, regulators should consider phased implementation, enhanced coordination within firms, and support for sector-specific guidance. Ultimately, policymakers should regard the enhancement of accounting capabilities as their primary and integral objective within the climate governance framework, rather than a secondary technical issue.

The study therefore contributes theoretically by integrating sensemaking and institutional theories to explain how organisational responses to climate policy uncertainty are influenced not only by external regulatory pressures but also by managerial interpretations of institutional credibility and environmental risk. The findings suggest that sustainability-oriented accounting adaptation in emerging economies is neither purely compliance-driven nor fully strategic in a rational-economic sense. Instead, it reflects an interpretive organisational process in which managers continuously negotiate uncertainty, legitimacy pressures, operational realities, and anticipated institutional change.

The contribution of this study should therefore be understood primarily at the interpretive and organisational level rather than as evidence of directly measurable macroeconomic outcomes. The study provides qualitative insight into how managers operating within uncertain institutional environments interpret climate policy ambiguity and adapt sustainability-oriented accounting practices in response to perceived environmental, regulatory, and legitimacy pressures. In doing so, the study contributes context-sensitive evidence from an underexplored emerging economy while extending theoretical discussions on managerial sensemaking and institutional adaptation within sustainability accounting research.

5.3. Conceptual Framework

The framework (Figure 1) below presents this study as a process model by illustrating how climate policy uncertainty in Zimbabwe is interpreted and understood through sensemaking, and how this shapes EMA and disclosures, how those routines produce different resilience pathways across different sectors of the economy, and how different institutional conditions determine whether firm-level adaptation can scale into wider sustainable growth. Its design is consistent with the study's cross-case evidence and with the current policy emphasis on governance, reporting, scenario analysis and disclosure.

Figure 1 illustrates climate policy uncertainty as the central contextual condition shaping managerial interpretation, adaptation of sustainability-oriented accounting, and organisational responses within Zimbabwean firms. Drawing on sensemaking theory, the framework explains how managers continuously interpret regulatory ambiguity, institutional inconsistency, and environmental risk in ways that influence budgeting, environmental cost visibility, investment planning, and disclosure practices. Institutional theory complements this process by demonstrating how coercive, normative, and mimetic pressures shape organisational expectations surrounding legitimacy, accountability, and sustainability governance.

The framework further suggests that Environmental Management Accounting (EMA) and climate risk disclosure do not operate merely as technical compliance mechanisms, but rather as interpretive organisational practices through which firms attempt to navigate uncertainty, strengthen adaptive decision-making, and maintain longer-term organisational continuity. Organisational resilience, therefore, emerges not as a fixed or guaranteed outcome but as an adaptive organisational capacity shaped by managerial interpretation, institutional conditions, and sustainability-oriented strategic responses.

Importantly, the framework does not imply that all participating firms experienced these relationships uniformly. Rather, the findings revealed variation across sectors, organisational roles, institutional exposure, and levels of Environmental Management Accounting maturity, indicating that sustainability-oriented accounting adaptation remained uneven and context-dependent across the cases examined.

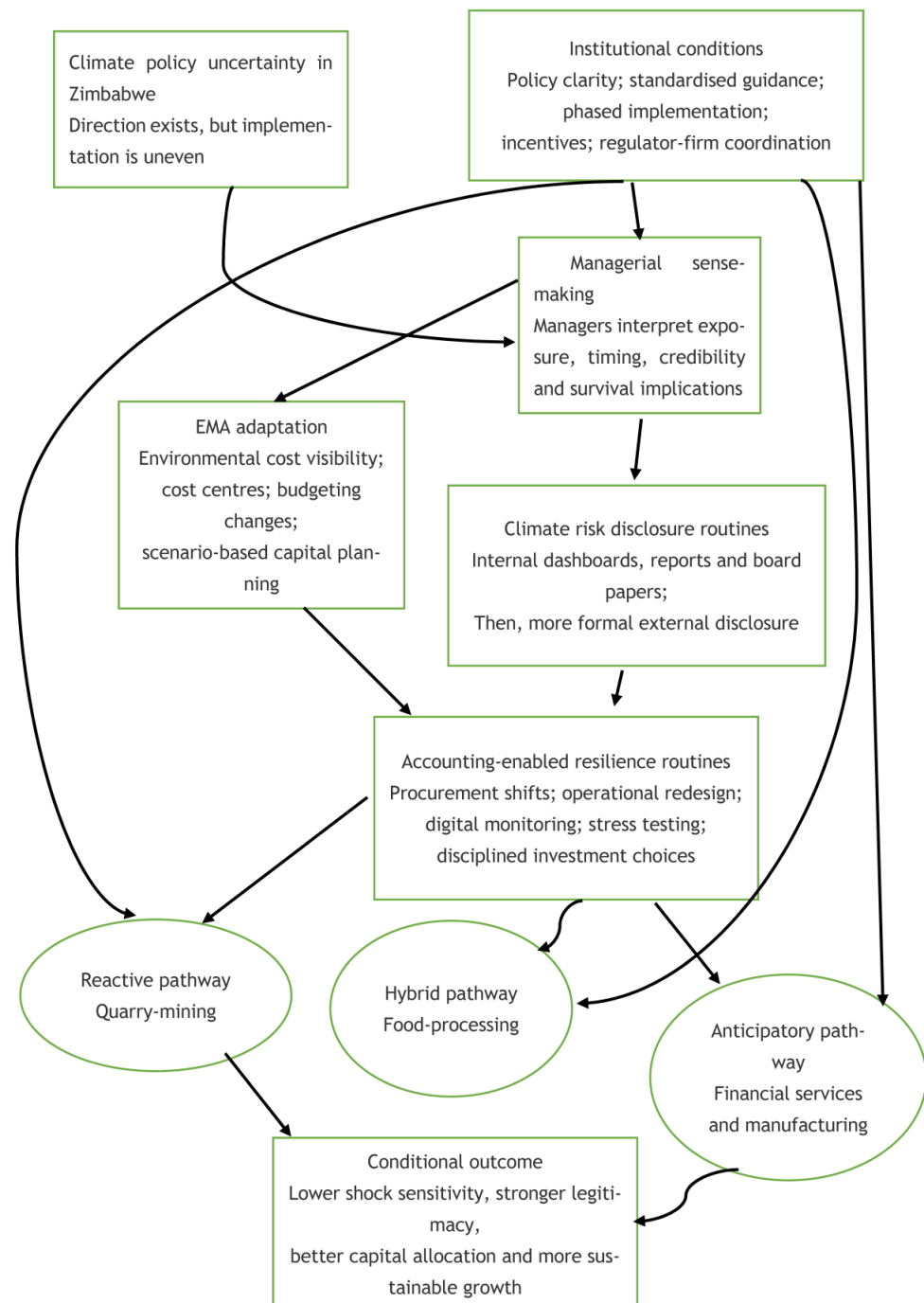


Figure 1. Conceptual Framework for Understanding the Relationship between Climate Policy Uncertainty, Environmental Management Accounting, Climate Risk Disclosure, and Organisational Resilience in Zimbabwean Firms.

6. Conclusions

This study showed that organisational actors in Zimbabwean firms do not perceive climate policy solely as a matter of lack of direction; rather, they confront a context in which the policy exists, but its implementation is obscured by a lack of clear guidelines, inconsistent enforcement, and fluctuating institutional legitimacy. Mitigatory measures to address uncertainty were suggested, including making environmental costs visible, disclosing climate costs, and selective adaptation, thereby ensuring that EMA and climate disclosure are not just reporting tools. In this regard, EMA techniques were described as

the vehicle through which organisational actors would interpret climate signals, strategise, and hence protect organisational continuity.

The essential analytical contribution of the study was to show that the development of this within sectors was uneven and that, in situations where environmental costs have become more visible and routinised, firms were better placed to shift from a reactive compliance approach to anticipatory adaptation. On the other hand, in situations where environmental information remains weakly formalised, adaptation and resilience tend to be learned only after a major disruption rather than built in advance. The findings of this study, therefore, support a process model in which internal accounting changes that make environmental costs more visible precede external disclosures and in which disclosures are most credible when they are founded on solid internal procedures rather than merely symbolic signalling.

Ultimately, though conditional, the study delineates the association between firm-level adaptation and broader sustainable growth, recognising that EMA and climate-risk disclosure can strengthen resilience beyond the firm level, prompting others to copy, thereby driving wider sustainable growth and possible economic responses. It is recommended that the government develop contextually aligned guidance, ensure consistent implementation, and strengthen institutional coordination if micro-level improvements are to be realised in the broader context, rather than remain fragmented across sectors. Broadly, it can be concluded that the significant impact of sustainability accounting in volatile emerging economies characterised by policy uncertainty is contingent not only on organisational actors but also on the quality of the institutional environment in which the initiatives are implemented. The study concludes that managers increasingly perceive Environmental Management Accounting and climate risk disclosure as important organisational mechanisms for navigating uncertainty, strengthening adaptive decision-making, and supporting longer-term sustainability aspirations within volatile institutional environments. The major limitation of this study is that it is based on a small qualitative sample and offers analytical depth rather than statistical generalisability. In addition, the study uses a cross-sectional time horizon and captures managerial interpretations at a single point in time, thereby falling short of showing how accounting routines stabilise, diffuse, or change as regulatory expectations evolve. The study also acknowledges that organisational resilience and sustainability-oriented accounting adaptation may be influenced by broader firm-level characteristics beyond EMA practices alone. Factors such as governance quality, managerial capability, international exposure, financial capacity, and institutional positioning may influence both the adoption of climate-related accounting systems and firms' ability to respond to environmental uncertainty.

The study further acknowledges that all participating firms were in Harare Province, which may limit the transferability of the findings to firms operating in other regions of Zimbabwe or within different emerging-economy contexts characterised by distinct institutional, environmental, and economic conditions. In addition, the study relied on retrospective managerial narratives and organisational interpretations of climate policy uncertainty. Consequently, participants may have reconstructed earlier interpretations and organisational responses in ways that appeared coherent with current organisational practices and sustainability positions. These limitations are consistent with the study's interpretivist orientation and should be considered when interpreting the findings.

The study further acknowledges that documentary triangulation using internal reports, sustainability disclosures, board records, or regulatory documents was limited. Consequently, the research focused primarily on managerial sensemaking and organisational narratives regarding climate policy uncertainty, rather than independently verifying the

extent of actual change or implementation of Environmental Management Accounting systems within participating firms.

The study further acknowledges that the conceptual framework developed from the findings represents an interpretive synthesis of participant narratives within the selected cases rather than a universally generalisable model of organisational behaviour. Although the framework reflects recurring patterns identified across the interviews, organisational responses to climate policy uncertainty remained uneven and context-dependent across sectors, institutional conditions, and organisational roles. Consequently, the framework should be interpreted as analytically illustrative rather than deterministically predictive.

Ultimately, the findings should not be interpreted as evidence of direct causality between EMA adoption and organisational resilience, but rather as interpretive insights into how managers perceive and narrate these relationships within uncertain institutional environments. The study also acknowledges the possibility of social desirability bias, particularly given the increasing stakeholder sensitivity surrounding sustainability, environmental accountability, and climate disclosure practices. Participants may at times have presented their organisations in a more sustainability-oriented manner than is reflected in everyday practice. Although probing questions, cross-case at times have presented their organisations in a more sustainability-oriented manner than in comparison, and reflexive interpretation was used to strengthen credibility, the findings remain based primarily on participant narratives and managerial interpretations.

Future research could extend this study through longitudinal qualitative designs to examine how EMA and climate disclosure practices evolve over time as climate policies become more institutionalised in emerging economies. Comparative multi-country studies across African contexts may also provide deeper insights into how differing institutional environments influence managerial sensemaking and the adaptation of sustainability-oriented accounting under conditions of policy uncertainty. In addition, mixed-methods or sector-specific studies involving documentary analysis, sustainability reports, and organisational performance data could further examine the relationship between accounting adaptation, disclosure practices, and organisational resilience beyond managerial interpretation alone. Future research may also benefit from focusing on specific organisational actors, such as regulators, investors, sustainability officers, or operational managers, to explore how competing institutional logics influence climate-related accounting practices and disclosure behaviour across organisational settings.

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Informed Consent Statement: All participants provided informed consent. Before participation, verbal informed consent was obtained, with participants informed of the study's purpose, assured of confidentiality, and informed of their right to withdraw at any time. All identifying information was anonymised to protect participants' identities. Participants have provided informed consent for the publication of anonymised excerpts from their narratives in this paper.

Data Availability Statement: The data supporting the findings of this case study are not publicly available due to privacy and ethical restrictions that protect participant confidentiality. Transcripts and raw interview data may contain identifiable information and are therefore accessible only to the principal investigator upon reasonable request, provided that appropriate ethical clearance has been obtained.

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Appendix A. Interview Guide

Section A: Climate Policy Uncertainty and Strategic Response

1. How would you describe the current climate-related policy environment in Zimbabwe, and how does uncertainty around these policies affect your organisation's strategic and financial planning?
2. Can you provide examples of how your organisation has adjusted its operations or financial strategies in response to climate-related regulatory changes or uncertainty?

Section B: Environmental Management Accounting (EMA)

3. How are environmental costs (such as energy use, emissions, waste, or compliance costs) integrated into your management accounting and budgeting systems?
4. Have your environmental management accounting practices evolved due to climate risks or policy uncertainty? If so, how?
5. In what ways does environmental cost tracking influence capital investment decisions, scenario planning, or long-term budgeting?

Section C: Climate Risk Disclosure and Stakeholder Confidence

6. How does your organisation approach climate risk disclosure in internal or external reporting?
7. How do these disclosure practices influence stakeholder confidence, investor relations, or access to finance?

Section D: Organisational Resilience and Macroeconomic Linkages

8. To what extent do environmental management accounting and climate risk disclosure strengthen your organisation's ability to manage economic or regulatory shocks?
9. Do you believe that such firm-level practices contribute to broader economic stability or sustainable growth in Zimbabwe? Please explain.

Closing

10. What changes in climate policy or regulatory clarity would better support firms in aligning environmental accounting practices with long-term economic sustainability?

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