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Accounting for Catastrophe: Reframing Ecological Loss and Environmental Accountability in the Capitalocene

[1]Mradul Ranawat, [2]Dr. Pragya Mishra

[1]Research Scholar, [2]Professor

Department of English Literature

[1&2]Poornima University, Jaipur, Rajasthan, India.

Abstract

The growing ecological crises of the 21st century, increasingly understood as part of the Capitalocene, highlight an urgent weakness in our accounting systems: the invisibilization of environmental degradation and ecological loss. This paper advances an interdisciplinary, theoretical approach that combines environmental accounting and ecocritical thinking to explore the role of ecological invisibility in modern reporting. Through the narrative portrayal of the Kedarnath disaster of 2013 in Ved Vilas Uniyal's Havoc in Heaven, the research addresses how disaster tourism, unplanned development and the monetisation of sacred sites create forms of ecological degradation that are invisible to conventional accounting systems. The paper suggests that accounting paradigms, such as sustainability reporting and Environmental, Social and Governance (ESG) reporting, are inherently constrained by their focus on measured, human-centred measures, which fail to account for irreversible changes to the environment, such as biodiversity loss, cultural degradation and ecosystem extinction. Drawing on Capitalocene theory, the paper locates these constraints in the context of capitalist relations that externalise environmental costs and prioritise growth. In turn, the paper recasting ecological damages as a hidden liability and ecosystems as a form of undervalued capital, the study extends the scope of accounting beyond financial reporting. The paper proposes that literary texts can serve as other epistemic spaces for detecting ecological costs, providing qualitative insights into accounting representations. By marrying humanities-based ecological analysis with theoretical accounting perspectives, this research offers new insights into the practice of environmental crisis reporting, value and accountability. It finally proposes more inclusive, ethical accounting frameworks which embed ecological sustainability, intergenerational equity and non-human stakeholders as integral elements of systems of accountability.

Keywords: Environmental Accounting; Ecological Accountability; Capitalocene; Sustainability Reporting; Ecocriticism; Natural Capital; Environmental Governance; ESG Frameworks; Ecological Loss; Disaster Tourism.

Introduction

The growing incidence and intensity of ecological crises in the 21st century have brought into question the capacity of current systems of economic calculation and reporting. Climate-related disasters, biodiversity degradation and environmental degradation are not only prominent features in global life today but increasingly recognised as core components of the global economy. However, in spite of these changes, traditional accounting systems continue to prioritise financial capital while overlooking ecological concerns. This disconnect highlights a key shortcoming: the failure of accounting to acknowledge, quantify and report environmental degradation in holistic terms. In this light, the 2013 Kedarnath disaster in the Indian state of Uttarakhand becomes a critical case to explore the nexus of environmental collapse, economic activity and governance failure. Often perceived as a natural disaster, the event was aggravated by human activities such as unregulated tourism, infrastructure development, deforestation and the monetisation of vulnerable Himalayan environments. These factors have been well-documented in policy and environmental studies, but their ramifications for accounting theory have received little attention. Specifically, there is a lack of exploration of the ways in which such environmental disasters highlight the limitations of accounting systems to capture environmental externalities and long-term environmental impacts. This paper seeks to bridge this gap by putting ecological crisis in the context of the emerging concept of the Capitalocene, which holds ecological loss responsible for not just human activity, but the particularities of capitalist modes of production and accumulation. Ecological devastation, then, is not an accidental consequence, but rather an integral part of economies that externalise environmental costs. Accounting, as a key means of representing economic activity and informing decision-making, is integral to this process by shaping the measurement, valuation and, ultimately, the visibility or invisibility of economic activity within and across organisations and policies. While advances in environmental and sustainability accounting, such as Environmental, Social and Governance (ESG) reporting, have sought to overcome some of these constraints, they continue to be constrained by underlying assumptions about the measurability and marketability of environmental issues. These often overlook irreversible changes in ecological relations, including species extinction, ecosystem destabilisation and cultural change linked with environmental degradation. As a result, there remains a need for a broader and more theoretically sophisticated conception of accountability that goes beyond economic valuations and take into account ecological, ethical and multigenerational perspectives. In pursuit of this goal, the current research takes an interdisciplinary approach that brings together environmental accounting and ecocritical studies. Drawing on Ved Vilas Uniyal's Havoc in Heaven, a narrative account of the Kedarnath disaster, the paper examines how narrative forms of ecological crisis can illuminate aspects of environmental loss that are hidden within existing accounting models. In so doing, it argues that narrative types can be alternative epistemic spaces that provide qualitative information that complement and critique hegemonic forms of economic representation. This paper argues that ecological loss should be reframed in accounting theory as a hidden liability and ecosystems should be viewed as examples of under-valued or mispriced capital. Through the integration of perspectives from ecocriticism, Capitalocene studies and environmental accounting, this research aims to broaden the theoretical horizons of accountability and contribute to the debate within theoretical accounting. To this end, this paper seeks to critique current approaches to accounting and ecological loss, produce an interdisciplinary theoretical framework that bridges ecological and accounting thought and propose an extension of the concept of accountability that encompasses environmental sustainability and ethical considerations. By doing so, the study advances the project of reimagining accounting in the midst of ecological crisis.

2. Literature Review

The rise of environmental accounting reflects the recognition that traditional accounting is structurally incapable of integrating the environmental impacts of economic activity, thus requiring the broadening of accounting practices from a focus on financial transactions to a consideration of ecological costs. Pioneering work in the field has shown that accounting is not a neutral practice but constitutive of organisational reality in so far as it decides what is valuable and relevant for measurement and reporting, thereby embedding certain value and relevance criteria into economic activity. Notwithstanding its conceptual potential, environmental accounting remains bound by methodological commitments to measurability and control, which focus on indicators such as emissions, resource depletion and compliance management that, while important, overlook the complexity, interconnectedness and non-reversibility of environmental processes, hence perpetuating an instrumental and anthropocentric approach to the environment. To address these shortcomings, sustainability accounting and Environmental, Social and Governance (ESG) reporting frameworks have emerged to try to embed non-financial considerations into corporate reporting and disclosure practices, thereby enabling transparency and accountability in relation to environmental and social impacts; but these approaches are themselves open to criticism because they are voluntary, lack standardisation and are prone to symbolic compliance or "greenwashing", as well as continuing to focus on those aspects of environmental performance that can most readily be quantified (such as greenhouse emissions) while overlooking other, less measurable but equally important forms of environmental degradation (such as biodiversity loss and ecosystem collapse). At the heart of these issues is the problem of environmental externalities, whereby accounting systems, which are designed to capture economically transactable events, fail to capture environmental costs beyond market exchanges, resulting in an under-representation of the true costs of economic activity. While the internalisation of externalities through approaches such as natural capital accounting and environmental valuation attempt to monetise ecosystem services, they remain highly problematic, as the commodification of nature may reduce complex environmental relations to units of exchange while overlooking aspects such as cultural value, spiritual meaning and environmental resilience that are difficult to quantify. These shortcomings are further exposed by the concept of the Capitalocene, which reframes our focus from human impacts in general to the particularities of capitalist production, accumulation and commodification, thus placing ecological destruction within a political-economic context that externalises environmental costs in order to facilitate growth. In this context, accounting is no longer a passive observer but an integral part of capitalist economies that seeks to enhance profitability and shareholder returns, and, therefore, to maintain the invisibility of ecological costs. Through its focus on qualitative representation, ecocriticism presents an alternative epistemological approach that draws attention to the cultural, ethical and experiential aspects of human–nature relations through the study of literary and narrative texts. Stories like Havoc in Heaven offer rich depictions of ecological disasters, embodying the social, emotional and cultural aspects of environmental destruction in a manner that is unavailable to traditional accounting practices, thereby demonstrating the limits of quantitative forms of representation. Notwithstanding these parallel advancements, an important gap remains between accounting research, which remains largely quantitative and economically focused and ecocriticism, which prioritises qualitative and interpretative insights but is often divorced from institutional and economic analysis. It is here that the current study intervenes, offering an interdisciplinary approach to the integration of environmental accounting and ecocriticism in the context of the Capitalocene and in so doing, contributes to theoretical accounting research by extending the notion of accountability to include ecological and non-human actors, challenging the primacy of quantitative forms of knowledge in accounting and suggesting the inclusion of narrative and qualitative forms of knowledge as essential elements of environmental reporting.

3. Theoretical Framework

This research generates an interdisciplinary theoretical framework that reframes ecological degradation as a problem of accounting rather than an environmental or moral issue. Drawing on theories of environmental accounting, the Capitalocene and ecocritical epistemology, this framework aims to broaden the conceptual horizon of accountability, valuation and reporting in contemporary accounting discourse.

Accounting might be thought of not only as a technical system of measurement but as a system of representation that defines the conditions under which economic activity is made visible within institutional and organisational discourse. Its epistemic power is underpinned by its ability to define value, and hence, to render certain things visible while others are rendered invisible to systems of knowledge and recognition. Conventional accounting definitions favour that which is measurabable, monetisable and of specific, finite temporal duration, thereby excluding ecological processes that cannot be commensurated through financial mechanisms. This inclusion-exclusion constitutes what I will call structured invisibility, wherein processes of ecological degradation, species decline and environmental risk are not just ignored but actively rendered absent within accounting discourse. In this context, accounting is not a descriptive, self-sufficiency of the environment, but constitutive, in the sense that it defines reality through its mode of representation. Consequently, ecological crises may be thought of, at least in part, as products of these regimes of non-accountability that de-legitimate and de-represent environmental externalities as forces of value and disclosure. Such a conceptualisation allows for ecological degradation to be reframed as a form of deferred, unrecognised liability, challenging conventional accounting definitions of obligation in terms of knowledge and time. Newcomers in the field of accounting recognise liabilities only in the presence of measurable, existing and legally enforceable obligations; in contrast, ecological degradation occurs as a result of diffuse and cumulative causality and deferred effects, and may not become evident until a crisis event occurs. These characteristics correlate to the concept of slow violence, where degradation occurs gradually and invisibly, then physically. Through a shift in the concept of liability to account for ecological risks of uncertain and future nature, accounting can be pre-emptively re-oriented towards considering the longer-term environmental liabilities that are currently excluded from representations. Similarly, the notion of natural capital arises as a proposal to incorporate ecological value into accounting, but its use of monetary valuation carried on the assumption that ecology is comparable to the economy. This is problematic as ecological systems embody attributes of non-substitutability, irreversibility, and complexity that are difficult to translate into monetary terms. As such, valuation is not merely a technical but also an epistemic practice; that is, an act of translation that transforms ecological relations into economic terms, often by simplifying their inherent complexities. In turn, this approach proposes a multi-faceted approach to value that extends beyond the ecological, cultural and ethical dimensions in order to recognise the limitations of monetualization and to make room for non-monetary forms of representation. These challenges also need to be contextualised within the structural framework of the Capitalocene, which places ecological problems within the historical context of capitalist accumulation, commodification and extraction. Accordingly, accounting is not an externalised technical practice, but rather an integral infrastructure that enables processes of capital accumulation by prioritising efficiency, profitability and growth, while externalising the costs of environmental degradation. The invisibility of ecological degradation in accounting systems is therefore not incidental but a characteristic of accounting systems in the context of the Capitalocene. Consequently, overcoming this invisibility demands a more than technological shift in accounting that recasts its nature and function. Unlike the reductionism and abstraction of accounting systems, narrative forms - at the forefront of ecocritical approaches - provide an alternative epistemology to convey leibliche, cultural, and experiential loss associated with ecological degradation. Narratives are spaces of sense making that convey forms of loss (spiritual, social and ecological) that are incommensurable within quantitative accounting systems. In this context, narrative can be thought of as a counter-accounting system that disrupts dominant representational regimes and extends the epistemologies of accounting. The place of narrative in the field of accounting does not simply contribute additional data to the mix of quantification but rather transforms what is represented and reported. In bringing these threads together, the concept of ecological accountability may be understood as a broadening of the ontological dimension of appreciating responsibility, from financial to ecological, intergenerational and non-human actors. This broader perspective overturns the supremacy of the quantitative and redefines the field of accounting in relation to broad conceptions of value, responsibility and sustainability. In this respect, the Ecological Accountability Model (EAM) might be viewed as a conceptual transformation of the account which incorporates ecological degradation into its recognition, measurement and disclosure practices. Recognition is reconceived as a notion of ecological constructive obligation, in which ecologically destructive actions create anticipatory liabilities grounded on the expected consequences rather than legal enforceability, thereby transforming accounting from retrospective confirmation to prospective risk recognition. Measurement is reframed as an epistemically multiple activity that combines monetary estimates, physical-ecological indicators and narrative representations, dismissing the idea of commensurability and embracing the incommensurable in accounting. And disclosure is recast as a proactive governance mechanism that includes prospective ecological risk disclosure and qualitative narratives, thereby transforming accounting from descriptive to interventionist practice. The model also integrates temporal depth, acknowledging that ecological degradation occurs over long time-frames, and thereby facilitates the consideration of cumulative and delayed effects that are lost in traditional reporting cycles. Finally, responsibility is broadened from the entity to include systemic and networked forms of accountability, recognising that ecological degradation is the product of networked socio-economic processes. Collectively, this model raises a series of theoretical propositions: that accounting regimes systematically fail to include ecological degradation through restrictive recognition rules; that the temporal compression of accounting displaces environmental risk; that monetary valuation results in epistemic reduction; that accounting practices enable the externalisation of ecological costs; that quantitative accounting regimes are incapable of capturing ecological loss; and that the inclusion of ecological accountability in accounting practice enhances the possibility of long-term, sustainable governance.

Methodology

The current study is qualitative, interpretive and theoretically driven, and falls within the genre of conceptual accounting studies, in which the aim is not empirical hypothesis testing but rather critical analysis and development of theory that can be used to explain complex socio-ecological processes. It is grounded in an interdisciplinary methodological approach that brings together environmental accounting, Capitalocene critique and ecocritical analysis, on the basis of the understanding that ecological disasters are multi-scalar in nature and require interdisciplinary analysis to be effectively understood. In this context, data is not conceptualised in the traditional empirical sense, but rather as a representational and epistemic material, the primary source being the book Havoc in Heaven, which is not simply a text but a narrative site that makes visible the ecological, economic and social processes shaping the 2013 Kedarnath tragedy. This text is purposely and theoretically selected because it reflects the interdependency of environmental degradation, tourism-led commodification and governance crises, and so offers a rich analytical terrain to explore accounting invisibilities. This source of primary narration is supported by various secondary conceptual resources, as well as the environmental accounting literature, sustainability, and ESG models, and Capitalocene and political ecology literature, all of which make up the theoretical framework of the research. The analytical approach is based on a conceptually based thematic analysis, in which themes are not inductively constructed, rather they are specified and explained in terms of already-existing conceptual descriptions; this is to first involve concept strategically identifying the dominant forms of narrative with references to ecological degradation, tourism expansion, commodification of nature and the formation of disasters and then apply the specified themes to accounting constructs using the concept of environmental externalities, At the core of this approach is an epistemic revaluation of narrative as a form of data, which challenges the traditional dominance of quantitative and financial data in accounting; narrative, here, is understood as an epistemic alternative that makes visible aspects of environmental loss (such as cultural impacts, ethical implications and human experience) that remain structurally invisible to formal accounting practices. Far from replacing quantitative research, this study complements them by broadening the field of knowable and reportable information, thereby making narrative a key means to expose accounting deficiencies. This study is also shaped by the integration of three themes of analysis - environmental accounting, which examines the recognition, measurement and disclosure of ecological costs; Capitalocene, which addresses practices such as accounting for environmental externalities through the lens of capitalist accumulation and environmental externalisation; and ecocriticism, which treats the cultural and narrative dimensions of human-nature relationships - all of which facilitates a layered analysis that links micro-level narrative findings to macro-level analytical frameworks. The study has significant theoretical implications, but also recognises its limitations, including the single-case design, which may limit generalizability and interpretive subjectivity inherent to narrative analysis (although this is offset by robust theoretical reflexivity); and the fact that the study does not seek to quantify ecological costs empirically, but to develop concepts, which is consistent with its place in theoretical accounting research and does not diminish its potential to expand the epistemological and conceptual scope of accounting knowledge.

5. Results and Analysis

This research showcases that environmental degradation, as exemplified in the Kedarnath disaster narrative, is not a discrete environmental phenomenon but should be accounted for as a systemic byproduct of accounting practices that invisibilise, devalue and externalise ecological processes in economic systems. The narrative demonstrates that environmental degradation in the form of deforestation, land development, riverbed degradation and destabilization occurred over time through extended temporal frames, but were not accounted for in formal accounting systems due to their failure to produce immediate transactions or legally binding obligations. This is a case of what might be described as structured invisibility in which accounting practices, by emphasising measurability, reliability and monetisation, rule out complex ecological processes and thereby institutionalise environmental degradation through its invisibility in reporting. This invisibility is not accidental but integral to accounting rationality, resulting in a skewed portrayal of economic activity that emphasises the short-term benefits of tourism and development while hiding the long-term environmental costs. In this context ecological degradation becomes a type of latent or deferred liability, which accrues gradually until it realizes itself in disastrous events like the Kedarnath catastrophe, and thus judges some deep temporal discrepancy between ecological processes and accounting acknowledgments. According to conventional accounting, liabilities are only realized when obligations exist and when they are quantifiable, yet in ecological risk cases, e.g. disruption of ecosystems or ecosystem destabilization, liabilities are not realized until it affects a business or other liabilities have become material through the cause and effect nexus, effectively applying the same concept of making disasters a liability realization moment, but not a liability event per se. This dynamic cement the necessity to reformulate accounting towards more of a probabilistic and forward-oriented accounting, capable of accounting long-term environmental risks. At the same time, the evaluation of the issue helps reveal how accounting contributes to the commodification of nature, especially with the help of economic growth provided by tourism, in which intersection of sacred and ecological sceneries is re-established as a place of consumption. Accounting systems facilitate this process by systematically registering economic benefits but omitting the ecological costs to establish an asymmetrical regime of valuation under which financial benefits become visible and quantifiable, whereas the environmental benefits are not quantifiable and, in fact, they are not valued at all. This partial representation not only distorts decision-making but also creates a basis for unsustainable practices by contributing to the distortion of value, thereby contributing to the monetisation of ecological systems. Also, the research points to the diffused nature of accountability among multiple stakeholders, such as the state, private developers and tourism interests, within which environmental degradation is produced but not adequately accounted for. The current accounting regime, which rests on entity-based accounting, is inherently inadequate in dealing with such a reality, creating a lack of accountability where environmental degradation occurs in the absence of recognition and repair. This points to the need for accounting systems that move beyond individualised to systemic or collective forms of accountability, in order to capture networked forms of environmental responsibility. Importantly, the study also suggests narrative as an alternative form of accounting representation, where the literature (such as Havoc in Heaven) represents aspects of ecological degradation, such as the emotional, cultural, spiritual and social, that are not captured in quantitative reporting. Narrative, therefore, operates as a mode of counter-accounting that subverts dominant modes of representation by 'making visible' those dimensions of environmental degradation that are systematically excluded from the world of accounting. Through its engagement with experiential and qualitative dimensions, narrative widens the representational horizon of what is accountable, implying that environmental accounting must look beyond quantitative representation to forms of expression that are more holistic. Together, these insights demonstrate that the Kedarnath disaster is not only an environmental tragedy but also a symptom of structural problems within accounting systems, namely the exclusion of environmental degradation from financial reports, the build-up of unaccounted environmental liabilities, the manipulation of value through selective accounting, the fragmentation of accountability across networked actors, and the epistemic inadequacy of quantitative representation. These insights ultimately inform the development of a broader notion of ecological accountability that reframes accounting to include recognition of long-term environmental risks, the inclusion of non-financial and qualitative aspects of value and the integration of systemic and collective accountability, and in doing so, shifts accounting from a system of economic abstraction towards a system capable of engaging with ecological realities.

6. Discussion

This research positions ecological degradation, in the form of the Kedarnath disaster, not simply as an external consequence of environmental mismanagement but as a structural outcome of the representational regimes of the accounting system, thereby strengthening the claim that accounting is not only a representational system governed by technical considerations but also a social practice that actively contributes to the construction of socio-ecological realities through processes of exclusion, abstraction and selective valuation. This research shows that accounting plays a role in ecological crisis through practices of invisibility-making, as the privileging of measurable and monetisable indicators excludes environmental processes that fail to meet criteria of quantification, thereby reinforcing an anthropocentric ontology whereby nature becomes relevant only when articulated in terms of economic value. In this sense, the invisibility of ecological degradation is not a technical constraint of accounting systems but a structural component of accounting rationality, corroborating a body of critical accounting studies that view accounting as a social-political rather than a representational practice. This inherent constraint is compounded by a temporal misalignment between ecological dynamics and accounting practices, given that environmental change occurs over long time frames, while accounting is constrained by short-term reporting periods that place emphasis on short-term economic performance, thereby externalising environmental risk into the future, and enabling the accumulation of latent environmental liabilities that remain obscured until their catastrophic manifestation. This temporal compression not only conceals the long-term impacts of ecological degradation but also reinforces reactive rather than proactive forms of governance, suggesting a need for a transition towards risk-oriented and anticipatory accounting that is able to account for uncertainty and environmental change. Simultaneously, the analysis reveals the deficiencies of current valuation approaches, as the monetisation of nature in the context of tourism economies exemplifies a reductionist view of value that prioritises economic value and ignores ecological and cultural costs, thus creating misrepresentations that enable the commodification of natural and sacred sites. This reductionism highlights the epistemic limits of monetary valuation and justifies the need for a multi-dimensional understanding of value, which takes into consideration environmental sustainability, cultural relevance and moral considerations, alongside the dominance of financial indicators in decision-making. Moreover, the research highlights the fragmentation of accountability within current reporting practices, as ecological degradation is produced through the interdependencies of multiple actors within socio-economic networks, while accounting frameworks remain largely entity-centred, and therefore unable to account for collective and networked forms of responsibility. This creates accountability blind spots where environmental degradation occurs in the absence of recognition or redress, hence requiring a shift in accountability away from entity-based to systemic and network-based forms that recognise the relational aspects of ecological systems. One of the key insights of this study is the role of narrative as a transformative epistemic strategy in accounting discourse, in which literary representations like Havoc in Heaven expose dimensions of ecological loss - the emotional, cultural, spiritual and experiential - that go unrepresented within the quantitative paradigm of conventional accounting, thus exposing the epistemic failure of accounting systems based solely on numerical abstraction. Through the incorporation of narrative as a form of counter-accounting, the research extends the representational and accountability agenda to include more pluralist forms of representation that go beyond quantification, thereby arguing that environmental reporting must move in the direction of more inclusive representations. Overall, these insights contribute to theoretical accounting research by informing and challenging fundamental assumptions about value, measurement and accountability, and by suggesting that the way forward in countering ecological crisis is not through evolutionary change but through a revolutionary reorientation from financial to ecological rationality, from measurement to representation, and from entity to ecosystem-based accountability. This shift recommends accounting as a potential tool for the governance of ecological systems rather than a passive historian of economic activity, and so highlights the future-oriented functions of accounting. This approach has implications for several aspects of accounting, including for standard setting bodies to include environmental liabilities as a probability in recognition criteria, for corporate reporting to adopt multi-dimensional disclosure models, which integrate financial, physical and narrative data streams, for audit to extend to the verification of non-financial and risk-based disclosures, and for public sector accounting to embed frameworks of ecological risk assessment into policy and strategy development, especially in areas sensitive to environmental risk. In such a way, accounting is reconceived as a tool for addressing ecological crisis through its ability to reveal environmental risks, to organise accountability over time and space, and to support more sustainable decision-making.

Conclusion

This article has shown that modern ecological disasters, such as that which occurred at Kedarnath, cannot be comprehensively understood without considering the ways accounting systems contribute to the recognition, measurement and visibility of things within economic discourse. Through its synthesis of environmental accounting, Capitalocene theory and ecocritical discourse, the paper shows that ecological degradation is not just an external environmental problem but a symptom of the inadequacies of accounting systems that fail to recognise, value, or even ignore environmental realities.

The study demonstrates that traditional accounting methods are inherently constrained by their emphasis on quantification, temporal focus on the short term and anthropocentric valuation. This means that ecological degradation is hidden until it becomes a catastrophic loss, revealing the limitations of current practices in liability recognition, valuation and disclosure. The paper's main contribution is to re-envision ecological degradation as a hidden liability and natural ecosystems as forms of under-priced capital, thus broadening accounting theory.

Also, through its use of narrative as a secondary epistemic tool, the paper addresses the over-reliance on quantitative forms of knowledge and explores the role of qualitative knowledge in uncovering ecological liabilities. This interdisciplinary approach not only contributes to the theoretical development of accounting, but also to new thinking and practice to address socio-ecological challenges.

The study broadens the concept of ecological accountability, by recognising that accounting systems need to take into account long-term environmental risks, non-financial elements of value and more encompassing views of responsibility that go beyond individual organisation to embrace collective and intergenerational responsibility. This implies a shift in accounting from an economic representation to an ethical and ecological responsibility.

While this research is theoretical and focuses on a single case, it lays the groundwork for subsequent research to investigate models of ecological valuation and narrative reporting, and empirical studies of the model in various industries and regions. It therefore offers a starting point for a transition in accounting practice to respond to the challenges of environmental sustainability and an ecological crisis.

The research not only has theoretical implications, but also provides a conceptual Ecological Accountability Model (EAM) that provides a way to integrate environmental degradation in the accounting recognition, measurement and disclosure systems. The model, along with a series of theoretical propositions, illustrates how accounting systems might consider environmental risks as probabilistic liabilities, overcoming the problems of current sustainability and ESG reporting. This brings the debate from theoretical to practical and more theoretically informed accounting.

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