



## Accounting for Climate Resilience in Corporate Risk Narratives

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### ABSTRACT

This study examines how 15 energy and manufacturing companies listed on the Indonesia Stock Exchange (2021–2023) disclose climate resilience in annual and sustainability reports. Using descriptive qualitative content analysis, the findings show that disclosures remain largely symbolic and not systematically integrated into risk reporting. The study highlights the gap between climate risk awareness and reporting practices, stressing the need for standardized climate-based risk narratives to enhance information quality and provide practical implications for regulators and report preparers.

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## **INTRODUCTION**

Climate change has become a significant source of systemic risk to the business world and the global financial system. Impacts such as extreme rainfall, rising sea levels, and supply chain disruptions directly affect the sustainability of business operations (World Economic Forum, 2024). In this context, companies are required not only to manage environmental risks, but also to disclose how climate resilience is part of their adaptive strategy. International reporting standards institutions, such as the International Sustainability Standards Board (ISSB) through the International Financial Reporting Standard Sustainability 2 (IFRS S2), as well as the Task Force on Climate-related Financial Disclosures (TCFD), have emphasized the importance of risk narratives that integrate aspects of climate change resilience (ISSB, 2023; TCFD, 2021). In accounting, this is part of the practice of sustainability accounting that emphasizes relevance, transparency, and accountability in non-financial reporting. However, in developing countries such as Indonesia, the adoption of climate resilience disclosure still tends to be normative and methodologically unstructured.

The concept of climate resilience in the context of corporate reporting includes not only the identification of physical and transitional climate risks, but also how companies develop adaptive capacity and measurable mitigative strategies. According to (Eccles & Klimenko, 2022), the relevance of non-financial information related to environmental issues is increasingly important in influencing investment decisions and capital market perceptions. Therefore, risk narratives that contain the dimension of climate resilience have the potential to be the main driver of strategic transparency that has an impact on company value. This demands the integration of accounting into more dynamic and proactive risk management of long-term climate challenges.

One of the key frameworks that has become a global reference in climate risk reporting is the TCFD, which recommends disclosure in four key pillars: governance, strategy, risk management, and metrics and targets. However, empirical studies show that the implementation of TCFD principles is still variable and does not fully reflect strategic integration in corporate reporting (KPMG, 2023). In the context of Southeast Asia, only a small percentage of companies explicitly disclose climate scenario analysis or align climate risk metrics with financial indicators, indicating a weak alignment between risk narratives and managerial decision-making.

From an accounting perspective, climate resilience should be integrated into risk measurement and qualitative disclosures that can strengthen the legitimacy of reporting. (Gray, 2023) states that effective sustainability reporting not only reflects ethical commitments, but is also a form of accountability for environmental risk exposure. Therefore, a strong climate risk narrative not only answers investors' needs for ESG (Environmental, Social, and Governance) information, but also supports strengthening the company's risk governance structure. When aspects of climate resilience are ignored, there is a distortion of risk perception, which ultimately disrupts the accuracy of decision-making by key stakeholders.

Previous literature reviews indicate that many companies convey information related to climate risks only to fulfill formal obligations or to maintain a corporate image, without a substantive link to a key business strategy. (Amel-Zadeh & Serafeim, 2021) found that sustainability disclosures by most companies are symbolic and driven by external pressures, rather than by internal needs for risk mitigation. Furthermore, the study (Krueger et al., 2022) revealed that despite the increasing trend of climate reporting, the information conveyed still does not reflect economic relevance or strategic consistency. Research gaps are also seen in the context of developing countries, where in-depth analysis of climate risk narratives in corporate reports is still limited and tends to focus on the quantity of disclosure rather than the quality of the narrative and its relevance to global standards.

Based on the existing background and gaps, this study aims to analyze how companies recognize and disclose aspects of climate resilience in the risk narrative contained in annual reports and sustainability reports, with a focus on public companies in the energy and manufacturing sectors in Indonesia. This study specifically evaluates the form, depth, and linkage of disclosure to applicable sustainability reporting standards, as well as assesses the coherence between risk strategies and constructed climate narratives.

Theoretically, this research contributes to the development of the sustainability accounting literature, particularly in terms of integrating climate resilience into corporate risk reporting structures. In practical terms, the results of this study are relevant for regulators, report compilers, and auditors in establishing a more transparent, adaptive, and climate-data-based reporting framework, as well as helping companies improve the quality of risk communication to stakeholders.

## **THEORETICAL REVIEW**

### ***Sustainability and Climate Change Accounting***

The development of sustainability accounting in the last two decades shows a paradigm shift from traditional financial-based reporting to reporting that includes environmental, social, and governance (ESG) aspects. This initiative is triggered by increasing global awareness of the impacts of climate change and the systemic risks it poses to business sustainability (Global Reporting Initiative, 2023). Sustainability accounting plays an important role as an important instrument in providing relevant, trustworthy, and useful non-financial information for companies' strategic decision-making (IFAC, 2022). In this context, climate resilience is an integral part of a responsible reporting system, especially for entities operating in high-risk sectors such as energy, manufacturing, and mining.

Recent studies emphasize the importance of narrative disclosure of climate risks in corporate reporting, given the characteristics of climate risks that are long-term, complex, and often not directly quantified in traditional accounting figures (IFRS Foundation, 2023). Therefore, a narrative approach to climate risk not only represents transparency efforts, but also reflects the strategic capacity of companies to respond to climate uncertainty through adaptation and

mitigation policies (Andersson & Botzen, 2021). In practice, climate resilience reporting includes explanations related to climate change scenarios, physical and transition risk exposure evaluations, and internal strategies to strengthen operational resilience.

### ***Climate Risk Reporting Framework***

International sustainability reporting standards have evolved rapidly to accommodate the need for more systematic disclosure of climate risks. The two dominant main frameworks are the Task Force on Climate-related Financial Disclosures (TCFD) and the International Financial Reporting Standards Sustainability Disclosure Standards (IFRS SDS) published by the International Sustainability Standards Board (ISSB). (TCFD, 2021) recommends four main elements in climate risk reporting, namely governance, strategy, risk management, and metrics and targets. Meanwhile, (IFRS H2, 2023) emphasizes that companies are required to disclose material information on climate-related risks and opportunities that affect their short- to long-term financial prospects. Both frameworks emphasize the importance of consistency, comparability, and integration of climate information into annual reports.

However, the adoption rate and quality of implementation of these standards vary widely between regions and industry sectors. According to (KPMG, 2023), only 34% of global companies adequately convey climate risk scenarios in their reports, and most still use a declarative approach without a detailed explanation of their impact on business models. In the Southeast Asia region, a report from (United Nations ESCAP, 2022) shows that companies tend to reactively communicate climate risk disclosures and have not strategically integrated them into long-term planning. This raises concerns about the accuracy of information conveyed to stakeholders, including investors and regulators.

### ***The Narrative of Risk and Relevance of Accounting***

In the context of accounting reporting, the risk narrative is an important medium that connects quantitative information and managerial strategy holistically. Research by (Boiral et al., 2021) shows that narratives in annual and sustainability reports have a significant influence on investors' perceptions of the legitimacy and credibility of companies in addressing climate issues. While numerical disclosure remains important, narrative information that describes an organization's resilience to long-term climate threats is often a key consideration in risk evaluation. Therefore, strengthening narrative capacity in risk reporting is the main demand in the development of value-based accounting.

From a theoretical perspective, the legitimacy theory and stakeholder theory approaches provide a normative basis for analyzing climate risk disclosure. Legitimation occurs when a company consciously communicates a commitment to environmental issues in order to maintain social relationships with stakeholders (de Villiers & Maroun, 2020). Meanwhile, from a stakeholder perspective, companies are considered responsible for conveying information that can influence the decisions of external groups, especially institutional investors who increasingly prioritize ESG criteria in portfolio allocation (OECD, 2023). Therefore, climate risk narratives are not just a form of corporate

communication, but also part of legitimacy and reputation management strategies that are theoretically and empirically recognized.

## **METHODOLOGY**

### ***Research Approach***

This study uses a qualitative approach with a descriptive design to describe the pattern of climate resilience disclosure in the company's risk narrative in a systematic and in-depth manner. This approach was chosen because it allows researchers to explore the construction of meaning in corporate reports, particularly in the context of non-financial disclosures that are narrative in nature (Creswell & Poth, 2021). The population in this study is all public companies in the energy and manufacturing sectors listed on the Indonesia Stock Exchange (IDX). Through purposive sampling techniques, 15 companies were selected that consistently published annual reports and sustainability reports during the 2021–2023 period. Selection criteria include the availability of complete documents and involvement in strategic sectors that have high exposure to climate change risks.

### ***Data Collection Techniques***

Data collection is carried out by the method of documentation of annual reports and sustainability reports from each company. The focus of the collection is on the risk narrative section, ESG (Environmental, Social, and Governance) disclosure, and the section that mentions climate change adaptation strategies and environmental resilience. The data collected was analyzed using a thematic content analysis approach to identify key themes that emerged, such as the integration of climate resilience in the company's strategy, the consistency of disclosure, and the level of depth of information (Braun & Clarke, 2021). The analysis process is carried out in stages, starting from the initial coding stage, category grouping, to the withdrawal of the main theme. To increase the credibility of the results, the analysis was carried out using peer debriefing methods and inter-coder reliability checks between researchers.

### ***Research Procedure***

The analysis tool used is NVivo 12 Plus software to facilitate systematic coding and thematic visualization. The validity of the data was maintained through source triangulation and cross-period document checking, while reliability was analyzed through consistency of interpretation between researchers. With this method, this study is expected to be able to reveal in depth how companies construct risk narratives related to climate resilience and to what extent these disclosures reflect the principles of accountability, transparency, and information relevance in sustainability-oriented corporate reporting.

## **RESEARCH RESULTS**

This study analyzes 15 annual and sustainability reports from energy and manufacturing sector companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2023 period. The analysis was carried out on the risk narrative

and disclosures related to climate resilience using a thematic content analysis approach through NVivo 12 Plus.

### *Climate Resilience Disclosure Rate*

An analysis of 15 annual reports and sustainability reports from energy and manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2023 period shows that the level of disclosure regarding climate resilience is still very limited. Only 5 out of 15 companies (33%) explicitly use the term "climate resilience" in their risk narrative. The use of this term also tends to be general descriptive and has not been accompanied by a description of strategy, indicators, or adaptation plans that can be operationally verified. This shows that the understanding and translation of the concept of climate resilience in the context of corporate risk management has not been thoroughly internalized in corporate reporting practices in Indonesia.

Most other companies, 9 out of 15 (60%), prefer to use alternative terms such as "environmental risk", "climate change", or "climate adaptation" without including a conceptual framework explaining how the company integrates climate risks into strategic planning or long-term business decision-making. This terminology generally appears in the corporate social responsibility (CSR) section, and not in the risk management section which is supposed to be a strategic place for climate-related financial disclosures. In addition, 1 in 15 companies (7%) do not contain information related to climate risks at all, either explicitly or implicitly, indicating a gap in understanding or awareness of the urgency of climate issues in the context of business sustainability.

This gap in disclosure also highlights the challenge of convergence between external transparency demands and the company's internal ability to manage complex environmental issues. In the context of international standards such as the Task Force on Climate-related Financial Disclosures (TCFD) and (IFRS S2, 2023), climate resilience disclosure is not only interpreted as a sustainability commitment, but also as a form of adaptive strategy that has a direct impact on the company's financial sustainability in dealing with physical risks and transitions due to climate change (IFRS Foundation, 2023; TCFD, 2021). The lack of substantial use of the term and concept of climate resilience reflects the low integration of climate risk-based approaches into internal control systems and corporate governance. To clarify this condition, the following is a classification of findings based on thematic categories:

**Table 1. Categories and Percentages of Climate Resilience Disclosures in Energy and Manufacturing Sector Company Reports (2021–2023)**

Category: Thematic	Number of Companies	Percentage
Calling it "climate resilience"	5	33%
Climate change adaptation	9	60%
Not mentioning at all	1	7%

This data shows that the majority of companies are still in the early stages of developing a structured climate risk narrative. Instead of using disclosure as a means of strategic communication with stakeholders, most of the narratives found are more inclined towards symbolic disclosure that has not been able to demonstrate the company's readiness to face increasingly uncertain global climate dynamics. Thus, it can be concluded that climate resilience disclosure in Indonesia's energy and manufacturing sectors is still reactive, not systematic, and far from the standard of scenario-based climate risk disclosure as recommended by the international framework (Boiral et al., 2021; Andersson & Botzen, 2021).

### ***Compliance with TCFD and IFRS S2 Standards***

A comparative analysis of the annual reports and sustainability reports of 15 energy and manufacturing companies in Indonesia during the 2021–2023 period shows varying levels of adoption of the four main pillars of the Task Force on Climate-related Financial Disclosures (TCFD) framework, namely governance, strategy, risk management, and metrics and targets. Although Indonesia has not yet mandatorily adopted TCFD or IFRS S2 (International Financial Reporting Standard Sustainability Disclosure S2), the company's policy documents and strategic reports show that there are efforts to transition to a more standardized, but not comprehensive and consistent climate reporting framework. From an in-depth analysis of the four pillars of TCFD (governance, strategy, risk management, metrics & targets), it was found that:

#### *The Pillars of Governance and Strategy are Described in 80% of the Document.*

As many as 80% of the total reports reveal governance and strategy elements in general, usually in the form of a sustainability responsibility structure at the board level and statements of support for the Paris Agreement or SDGs. However, exposure to the integration of climate issues in strategic decision-making and environmental risk governance processes tends to be narrative and has not been accompanied by a structured internal oversight system or measurement of management accountability Quantitative. Meanwhile, the strategy aspect often only mentions energy efficiency and energy diversification initiatives without explaining the climate transition scenario or long-term risk assessment.

#### *The Risk Management Pillar is Disclosed in 67% of the Document, but without Explicit Linkages to Physical Climate or Transition Risks.*

The risk management pillar was identified in 67% of the report, but the majority of disclosures were still limited to a list of general environmental risks and did not explicitly classify the types of climate risks both physical (such as floods, extreme temperatures) and transitional (e.g., carbon policies and changing market preferences). The absence of a measurable and systematic climate-based risk management framework creates a gap in integrating climate resilience as part of the corporate risk management system. This has implications for the weak capacity of companies to communicate climate risk mitigation or adaptation in an accountable manner to stakeholders.

### **The Metrics & Targets Pillar was Only Quantitatively Disclosed by 4 Companies (27%) that Have Implemented Net Zero Emission Targets.**

As for the pillars of metrics and targets, it is the weakest aspect of disclosure. Only 4 out of 15 companies (27%) have a quantitative carbon emission reduction target, and all of them mention a commitment to a net zero emissions target before 2060. However, not all of these targets are supported by performance indicators (KPIs) that can be verified or explained by the calculation methodology. In addition, companies are less likely to include financial exposure to climate risks in the form of estimated losses or adaptation expenses, which is one of the key elements in IFRS S2.

These findings reinforce the indication that the disclosure of climate resilience in company reports is still symbolic and has not fully met the principles of transparency and materiality as required by international standards. This shows the need to strengthen regulations and increase the capacity of corporate reporting in integrating the climate dimension into the corporate risk and accountability narrative in a more systematic and data-driven manner.

#### ***Narrative Consistency***

The results of the analysis of climate risk narratives in annual reports and sustainability reports show that narrative consistency in climate resilience disclosures is still low and has not been systematically integrated into corporate risk reporting frameworks. Although most companies mention the issue of climate change, the approach to disclosure is more descriptive, symbolic, and tends to be positioned in the context of philanthropic or corporate social responsibility (CSR) programs, rather than as an inherent strategic element in corporate risk management. This shows that many companies still view climate issues as a social externality rather than a material threat to business sustainability and long-term economic value.

Of the total 15 companies analyzed, only 6 companies (40%) showed narrative consistency between the annual report and the sustainability report. This consistency is seen from the similarity in the use of terminology, disclosure structure, and reasoning logic in explaining climate risks, adaptation, and mitigation measures taken. Meanwhile, the rest show significant variations in both content and communication styles, which can cause confusion or even distrust among stakeholders, including institutional investors who increasingly demand data-driven accountability and comprehensive ESG (Environmental, Social, and Governance) integration.

### **DISCUSSION**

The results of this study reinforce the suspicion that the disclosure of climate resilience by companies in the energy and manufacturing sectors in Indonesia is still in its early stages and is mostly symbolic. The use of the term "climate resilience" was found in only one-third of the companies analyzed, and even that without an operational elaboration of adaptation strategies, performance indicators, or measurable risk management mechanisms. This fact reinforces the argument (Amel-Zadeh & Serafeim, 2021) that ESG disclosure is in



many cases more influenced by external pressures than by the real internalization of risk in the company's managerial and decision-making systems.

The lack of integration of climate resilience in risk reporting structures also reflects weaknesses in the forward-looking and data-driven approach advocated by international standards. (IFRS Foundation, 2023) expressly states that climate risk reporting should be prospective, scenario-based, and integrated with long-term business strategies. However, in this study, no strong evidence was found that companies systematically adopted physical or transitional climate scenarios, or disclosed financial exposures to climate risks in their reports. Only a small percentage reveal the net zero emission target, even without a verifiable quantitative methodology. This shows the company's unpreparedness in conveying relevant and reliable information in accordance with the principles of materiality promoted by (TCFD, 2021).

Furthermore, in terms of structure and reporting coherence, narrative consistency between documents (annual reports and sustainability reports) is still a major challenge. Only 40% of companies demonstrate the suitability of cross-document reporting terminology and logic. This discrepancy shows the dualism of the purpose of reporting: one to meet the demands of regulators or stakeholders, and the other as a means of corporate image. (Boiral et al., 2021) emphasize that inconsistencies in risk narratives can reduce the credibility of information, especially for investors who increasingly rely on ESG integration in long-term risk assessment. This indicates a narrative bias in the preparation of reports, which prioritizes symbolic legitimacy over substantive reporting.

From a theoretical perspective, these findings are in line with stakeholder theory, which states that companies structure climate risk narratives not solely to reflect operational realities, but to respond to the expectations of strategic stakeholders, especially institutional investors, ESG rating agencies, and global regulators (de Villiers & Maroun, 2020). Within this framework, disclosure is carried out to gain social and economic legitimacy. However, if it is not accompanied by a strong regulatory framework and an independent audit system, such disclosures can cause information bias or even greenwashing.

The main limitation of this study lies in the limited number of samples and the focus on only two industrial sectors, namely energy and manufacturing. Nonetheless, the content analysis approach used has provided an in-depth understanding of the risk narrative patterns and reporting structures used by companies. This research contributes to the sustainability accounting literature, particularly in the context of emerging markets, and serves as a basis for regulators, reporting standards makers, and practitioners to formulate climate resilience disclosure policies that are more consistent, substantive, and integrated with corporate risk management systems.

## CONCLUSIONS AND RECOMMENDATIONS

This study highlights the low level of integration of climate resilience in corporate risk narratives, especially in the energy and manufacturing sectors in Indonesia. Although some companies have adopted the term "climate resilience" in their annual or sustainability reports, such disclosures are generally

declarative, fragmented, and have not demonstrated deep narrative integration in the company's risk management systems. Most climate-related narratives are still positioned within the framework of corporate social responsibility (CSR), rather than as an integral part of long-term risk mitigation strategies.

Furthermore, compliance with the TCFD and IFRS S2 frameworks has also not been fully met, especially in the aspects of risk management and quantitative measurement relevant to climate exposure. The metrics and targets pillars that are at the core of sustainability evaluations are only disclosed by a small percentage of companies, indicating a gap between climate risk awareness and transparent and verifiable reporting practices.

These findings reinforce the importance of standardizing climate-based risk narratives in corporate reporting as well as the need for stricter regulatory oversight and guidance to encourage accountable, relevant, and value-based disclosures. The study also confirms that meaningful climate resilience reporting practices can only be achieved if companies strategically internalize climate risks, not just in response to external pressures, but as part of a real commitment to long-term sustainability.

## **FURTHER STUDY**

Future studies could explore the development of more robust frameworks for integrating climate resilience into corporate risk narratives, particularly by examining how companies can operationalize TCFD and IFRS S2 guidelines in practice. Comparative research across different industries and countries would also provide broader insights into best practices and sector-specific challenges. In addition, further investigation into the relationship between climate resilience disclosures and investor decision-making could strengthen the practical relevance of standardized reporting and highlight its role in enhancing corporate accountability and long-term sustainability.

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