

## RESEARCH ARTICLE OPEN ACCESS

# Climate-Related Disclosure in European Banking: Stakeholder Capitalism Between Sustainability and Financial Imperatives

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## ABSTRACT

This study examines how the largest European banks are integrating climate change considerations into their nonfinancial disclosures, focusing on the interplay between sustainability strategies and stakeholder-oriented practices. The sample includes the 30 top-ranking European banks by total assets and is subject to CSRD reporting obligations. Adopting a content analysis of nonfinancial reports published in 2024 by the European banks included in the sample, the research highlights advances in climate-related disclosure, particularly regarding climate risk management, transition strategies, and stakeholder engagement initiatives. The findings reveal substantial alignment with global frameworks such as GRI, ESRS, and TCFD, but also identify persistent gaps in areas like unidentified risks, climate-induced migration, land degradation and desertification, tourism, and infrastructure. While stakeholder-oriented governance is gaining traction, the findings indicate that the traditional tension between shareholder value and broader stakeholder interests is being attenuated as banks increasingly align their climate strategies and disclosures with both financial imperatives and societal expectations. The study also underscores the role of regulatory frameworks and best practices in driving transparency and comparability, emphasizing the significant contribution of banks in climate resilience and sustainable finance.

## 1 | Introduction

Our ordinary lives are increasingly shaped by the complex challenge of climate change, which is no longer a distant threat. Climate change represents one of the most pressing global challenges, with profound implications across ecological, economic, and social dimensions (Abbass et al. 2022; Raimo et al. 2025). Its diverse impacts, ranging from rising global temperatures, extreme

weather events, and biodiversity loss to deteriorating public health, water scarcity, and disruptions to agriculture and infrastructure, demand urgent and coordinated responses from both public and private sectors (Abbass et al. 2022; Arora and Mishra 2023; Olabi and Abdelkareem 2022). In this context, financial institutions, particularly banks, are increasingly expected to mitigate risks while playing a transformative role in financing a climate-resilient future through green loans, investments in renewable energy, and

This study examines how leading European banks are integrating climate change considerations into their nonfinancial disclosures and governance strategies. Through a content analysis of the 2024 nonfinancial reports of 30 major banks, the research explores alignment with international sustainability frameworks, advances in stakeholder governance, and persistent gaps in climate risk reporting. The findings provide insights into the evolving role of banks in sustainable finance, highlighting the interplay between regulatory compliance, stakeholder engagement, and climate-related strategic objectives.

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risk mitigation mechanisms. Banks not only operate as individual financial institutions but also fulfill a systemic function at both the microeconomic level, by supporting firms, households, and local economies, and at the macroeconomic level, contributing to financial stability, development financing, and the implementation of sustainable policy frameworks (Nicolò, Zamponi, et al. 2024; Stephens and Skinner 2013; Weber and Feltmate 2016). Because of this strategic role, understanding how banks communicate their climate-related strategies and impacts becomes essential to evaluate their contribution to a sustainable future. Within this evolving context, the role of corporate reporting practices becomes critical, as it serves as the primary channel through which banks convey their climate-related commitments, actions, and performance to stakeholders. There are not many studies that shed light on how banks are intervening (de Bandt et al. 2024; Friedrich et al. 2023). Corporate reporting practices have evolved significantly due to increasing environmental concerns and regulatory pressures, identifying initiatives within and beyond banking organizations (Pérez-López et al. 2015). Sustainability disclosure, a form of corporate reporting that communicates environmental, social, and governance (ESG) performance to stakeholders, aims to enhance transparency, accountability, and informed decision making (Deegan 2019; Veltri et al. 2023). While initially voluntary and disparate in format, sustainability disclosure is increasingly subject to formalization through globally recognized standards and national regulations, such as the Global Reporting Initiative (GRI), the EU's Corporate Sustainability Reporting Directive (CSRD), and the European Sustainability Reporting Standards (ESRS) developed by EFRAG (Carungu et al. 2025; Garcia-Torea et al. 2024; Brescia et al. 2024). This regulatory evolution reinforces the expectation that banks not only meet compliance requirements but also integrate ESG considerations into their governance and long-term strategies.

This transition reflects a broader paradigm shift: companies, including banks, are no longer perceived solely as profit-maximizing entities but as responsible societal actors (Bowen 2013; Dahlsrud 2008; Paul 2023). At the macro level, banks influence systemic economic stability, policy alignment with sustainability goals, and capital allocation toward long-term development objectives, thereby shaping political and regulatory frameworks (Nicolò, Santis, et al. 2024; Weber and Feltmate 2016). At the micro level, they affect communities and enterprises by enabling access to green finance and integrating ESG criteria into credit policies, fostering local resilience and social inclusion (Bengo and Arena 2019; Stephens and Skinner 2013). These intersecting roles highlight why climate-related disclosure must be analyzed not only in terms of regulatory compliance but also through broader frameworks, such as stakeholder capitalism, that emphasize the balance between financial performance and societal responsibility. However, this responsibility is not without tension. By embedding ethical principles into governance, stakeholder capitalism fosters shared value creation and reinforces sustainability disclosure as a tool to communicate complex data to diverse audiences. The growing scholarly interest in sustainability disclosure has underlined its relevance in reducing information asymmetries, enhancing risk management, and promoting organizational legitimacy, especially in regulated industries such as the banking sector (Boiral et al. 2019; Manes-Rossi et al. 2020). Existing studies on climate-related disclosure in European banks have developed along different directions, examining the types of information

disclosed, motivations, and compliance with frameworks such as the Task Force on Climate-related Financial Disclosures (TCFD), while also identifying determinants like board characteristics, bank size, and governance structures (Cosma et al. 2022; Friedrich et al. 2023; Kılıç and Kuzey 2019). Most recent works, such as the one by Raimo et al. (2025), focus on the influence of board-level factors on climate change disclosure in European banks. However, there are still critical gaps. Few studies specifically investigate how climate-related issues are integrated into sustainability disclosure practices within the European banking sector, particularly when analyzed through the lens of stakeholder capitalism, which emphasizes the balance between financial performance and broader societal and environmental responsibilities. Even fewer explore how these disclosures respond to institutional pressures, meet evolving stakeholder expectations, and align with global frameworks such as the SDGs and the Paris Agreement.

Given this scenario, the study seeks to address the following research questions:

**RQ1:** How do the most capitalized European banks integrate climate change considerations into their nonfinancial disclosures?

**RQ2:** To what extent do these disclosures reflect stakeholder-oriented models in terms of governance, stakeholder engagement, and ESG metrics?

To address this issue, the study adopts a dual methodology combining thematic content analysis of the 2024 nonfinancial reports (NFRs) of the 30 largest European banks, selected based on total assets and market capitalization, with a coding framework derived from both relevant literature and current reporting standards. The findings shed light on emerging disclosure patterns, highlight the integration of climate-related risks and opportunities into banking strategies, and assess the alignment with key SDG 13 targets. The paper contributes to the literature by systematically analyzing how European banks disclose climate-related information in alignment with stakeholder capitalism principles and SDG 13 targets. It also offers insights into emerging disclosure practices under the evolving ESRS and GRI frameworks, highlighting the extent to which governance, strategy, and stakeholder engagement are integrated into sustainability disclosure.

The remaining part of the paper is structured as follows. Section 2 reviews the relevant literature and presents the theoretical framework. Section 3 presents the methodology adopted for the analysis. Section 4 reports and discusses the results, underlying emerging disclosure patterns, and Section 5 draws conclusions, outlining the study's contributions, limitations, and implications for future research.

## 2 | Literature Review

### 2.1 | Climate Change and Sustainability Disclosure

Climate change represents a profound and escalating global risk, affecting ecological, social, and economic systems in interconnected ways. Anthropogenic greenhouse gas (GHG) emissions have led to unprecedented shifts in temperature and precipitation patterns, rising sea levels, biodiversity loss, and the

intensification of extreme weather events (Abbass et al. 2022; Filonchik et al. 2024; Onoh et al. 2024). These transformations not only undermine agricultural productivity (Yuan et al. 2024), public health (Liao et al. 2024), and critical infrastructure (Tanrisever et al. 2024), but also pose significant threats to the resilience and stability of the global financial system (Rising et al. 2022). In particular, the banking sector faces a dual exposure: it is vulnerable to direct climate-induced disruptions, such as credit defaults triggered by floods and droughts (Arora and Mishra 2023), and simultaneously plays an essential role in financing mitigation and adaptation efforts. Banks are increasingly expected to integrate climate-related considerations into their risk management frameworks, lending practices, and investment strategies, thereby contributing to SDGs 13 on Climate Action.

Corporate reporting practices have evolved to address ESG aspects alongside the growing urgency of climate challenges. Corporate reporting practices refer to the structured processes and communication tools through which companies disclose both financial and nonfinancial information, including ESG-related data, to meet the informational needs of stakeholders and ensure organizational accountability (Adams et al. 2004; Hahn and Kühnen 2013). Beyond their disclosure responsibilities, banks increasingly participate in defining sustainability metrics and shaping ESG frameworks at national and international levels (Bengo and Arena 2019; Stephens and Skinner 2013). Sustainability disclosure has emerged as a key mechanism through which organizations communicate their sustainability strategies and performance (Deegan 2019; Veltri et al. 2023; Biancone et al. 2025). In the European banking sector, the evolution of sustainability disclosure has been shaped by a shift from voluntary, fragmented reporting practices to mandatory, standardized frameworks such as the GRI, the Sustainability Accounting Standards Board (SASB), and more recently, the ESRS developed under the CSRD (Garcia-Torea et al. 2024; Gäumann and Dobler 2024). The CSRD, replacing the Nonfinancial Reporting Directive (2014/95/EU), notably expands the perimeter of mandatory reporting, requiring detailed disclosures on climate-related issues like greenhouse gas emissions (GRI 305; ESRS E1), biodiversity impacts (GRI 304; ESRS E4), and water resource management (GRI 303; ESRS E3). A growing body of research highlights how climate-related financial disclosures enhance transparency, reduce information asymmetries, and serve as governance mechanisms that support the transition toward sustainable business models (Mougenot and Doussoulin 2024; Sengupta et al. 2023). Standards such as ESRS E1 require companies, including banks, to articulate their climate strategies, emission targets, and risk management processes, while ESRS E5 emphasizes resource efficiency and circular economy principles.

## 2.2 | Stakeholder Capitalism as a Theoretical lens

Stakeholder capitalism underscores the fundamental challenge of reconciling short-term investor demands with long-term environmental and social sustainability (P. P. Biancone et al. 2024; Freeman 2023). As a model of capitalism, it recognizes the intrinsic value of various forms of capital affecting stakeholders such as employees, customers, suppliers, communities, and

the environment, promoting their active engagement in the long-term value creation process and integrating ESG and SDG considerations into corporate strategy (Freeman et al. 2007; Schwab 2021). Unlike shareholder capitalism, which focuses solely on maximizing returns for shareholders, stakeholder capitalism seeks to balance the interests of all parties involved in the economic system. Despite legislative advances, significant tensions persist between short-term investor expectations for financial returns and the broader environmental and societal responsibilities demanded by stakeholders. In this context, the theoretical lens of stakeholder capitalism becomes increasingly relevant. Under stakeholder capitalism, banks are envisioned not merely as profit-maximizing entities but as institutions responsible for balancing financial performance with sustainable value creation for a broader range of stakeholders, including society and the environment (P. P. Biancone et al. 2024; Freeman 2023). Stakeholder capitalism differs from traditional shareholder-centric models by emphasizing that the purpose of business is not solely to maximize shareholder value, but to create shared value for all those interested in the organization's success. As defined by Freeman et al. (2007), stakeholder capitalism reformulates the narrative of capitalism around voluntary value creation and trade, embedding ethical considerations into the core of business practice, rather than treating ethics as external or secondary to economic goals. In this context, businesses are conceived as systems of stakeholder cooperation where multiple interests, such as those of employees, customers, suppliers, communities, and investors, are simultaneously acknowledged and served. Freeman et al. (2007) agree that traditional capitalism's emphasis on competition, scarcity, and winner-take-all dynamics is fundamentally inadequate for addressing today's complex challenges, including climate change. Instead, stakeholder capitalism recognizes that prosperity is better achieved through cooperation, long-term relationships, and mutual value creation (Schwab 2021). Similarly, P. P. Biancone et al. (2024) underline the evolving paradigms within stakeholder capitalism, distinguishing between instrumental, classical, beneficial, and protectionist forms of capitalism, reflecting different degrees of stakeholder engagement and influence on governance. Beneficial capitalism, as a subtype of stakeholder capitalism, aims to improve the well-being of all stakeholders, aligning with the broader societal goals promoted by sustainable development agendas. Therefore, stakeholder capitalism calls for a holistic integration of ESG factors into business strategy, promoting a system where long-term success is linked to the flourishing of all stakeholders, not just shareholders. Within this framework, banks, as pivotal institutions in the financial ecosystem, are expected to play a critical role in financing climate change mitigation and adaptation efforts, while maintaining their commitment to inclusive and sustainable development. Although governance is acknowledged as a relevant dimension of stakeholder capitalism and within sustainability disclosure, in this study, it is considered one of the ESG categories, alongside environmental and social aspects.

## 2.3 | Risk and Sustainable Finance in the Banking Sector

Climate-related risks also embody deep uncertainties and cascading effects that challenge traditional risk assessment models.

Policy shocks, ecosystem tipping points, and large-scale migration can amplify systemic vulnerabilities across sectors and geographies (Abbass et al. 2022; Rising et al. 2022). A precautionary approach in credit evaluation and portfolio management is thus increasingly advocated (Ziolo 2024). Empirical studies suggest that banks that proactively integrate climate metrics into their strategic planning benefit from enhanced stakeholder trust and reduced exposure to stranded assets (Ozili 2024; Sengupta et al. 2023). Furthermore, banks play a pivotal advocacy role in facilitating access to international climate funds, such as the Green Climate Fund (Adu et al. 2024), directing capital towards projects that enhance climate resilience, particularly in vulnerable areas. While standardization initiatives like the CSRD and ESRS are vital, they are not sufficient on their own. Meaningful climate-related disclosure must be embedded within a broader cultural and strategic shift toward sustainability-oriented banking practices. Within this transformation, stakeholder capitalism provides a compelling framework to assess how banks can combine financial and societal imperatives against climate change.

Table 1 identifies the relationship between literature and variables currently considered by the standards and analyses performed.

### 3 | Methodology

To ensure relevance and coherence with the study's objectives, a purposive sampling strategy was adopted. The sample includes the 30 largest European banks selected based on total assets and market capitalization, ensuring institutional relevance and sectoral comparability. Each bank's sustainability disclosure was retrieved from official corporate websites. Only documents related to the fiscal year 2024 were considered, reflecting the latest trend in sustainability disclosure practices. Reports were screened to ensure the presence of climate-related content. This preliminary screening was essential to guarantee that the selected documents provided a substantive basis for content analysis.

#### 3.1 | Research Design

This study employs a content analysis, based on the use of structured coding categories of nonfinancial reports (NFRs) published by the 30 top-ranking European banks, selected based on total assets.<sup>1</sup> These banks all exceed the CSRD thresholds (in particular, more than 250 employees, total net revenue exceeding €40 million, or total assets exceeding €20 million). Furthermore, the sample includes institutions that were already subject to the previous Non-Financial Reporting Directive (NFRD), such as listed companies, banks, and insurance (with over 500 employees, assets above €25 million, or revenues above €50 million). These entities were among the first required to comply with CSRD standards, highlighting the EU's intention to strengthen and expand sustainability reporting requirements across the financial sector. The selected sample is homogeneous as it is subject to the same European cultural and regulatory context (Biancone et al. 2025; Brescia and Campra 2023). Content analysis is a systematic coding technique for transforming narrative

text into analyzable categories, enabling researchers to discern patterns and underlying meanings in the data. As outlined by Guthrie and Abeysekera (2006), it is appropriate for sustainability and climate information, as it allows both quantitative assessment of disclosure frequency and qualitative interpretation of information content. Prior research in accounting and sustainability reporting has validated the use of content analysis to investigate corporate disclosures by codifying information into themes or variables that can be compared across firms and over time (P. Biancone et al. 2019; Carungu et al. 2025; Dal Mas et al. 2019). Considering that content analysis can be criticized for its potential subjectivity and lack of standardization (Dumay and Cai 2014; Guthrie 2014), a transparent coding process and rigorous reliability checks can mitigate these concerns. Thus, research suggests emphasizing the definition of a clear coding framework in advance (Massaro et al. 2016) and conducting reliability testing to ensure consistency (Krippendorff 2018). This approach leverages the strengths of qualitative analysis through contextual understanding and theme identification, while maintaining systematic rigor, making it highly appropriate for analyzing sustainability disclosures in corporate reports (Bowen 2008; Guthrie and Abeysekera 2006). Given these considerations, this study applies a coding approach to investigate how European banks report on climate change issues within their NFRs published in 2024.

#### 3.2 | Data Set and Sample

The dataset utilized to conduct the analysis consists of the most recent nonfinancial statements of the 30 largest European banks. These banks were selected based on their size (among the largest by total assets and market capitalization in Europe) and regional representativeness, ensuring a broad cross-section of countries and banking institutions. Specifically, the total assets of the selected banks ranged from approximately €294 billion to €2.6 trillion.<sup>2</sup> All institutions exceed the thresholds set by the CSRD, such as having more than 250 employees, total revenue above €40 million, or total assets exceeding €20 million. The sample includes leading banks from the United Kingdom, France, Germany, Italy, Spain, the Netherlands, and other key European markets (e.g., HSBC, BNP Paribas, Deutsche Bank, Santander, ING, among others), providing a comprehensive overview of European banking nonfinancial disclosures. Europe represents a unique context for this analysis due to its pioneering regulatory frameworks on sustainability reporting, the ambitious climate targets set by the European Union, and a diverse banking landscape characterized by strong stakeholder expectations and engagement, making it suitable for investigating how banks successfully balance financial performance with broader social and environmental responsibilities (Lazarides and Drimpetas 2016; Raimo et al. 2025). Furthermore, the selection of a homogeneous European sample ensures cultural and systemic coherence, providing a stable contextual foundation that supports consistent organizational responses (Nicolò et al. 2025). This study focuses on NFRs because they represent rich repositories of organizational practices, accounting also for information regarding the environmental impact, human capital development, innovation, and governance approaches, which are all areas critical to long-term value, not always fully captured by traditional financial documents (L'Abate et al. 2023;

**TABLE 1** | Climate change key variables.

Macro-variable	Description	Primary References	Relevance to SDG 13 for Banks	Additional References	GRI Standards	ESRS Standards
Temperature and precipitation	Long-term changes in global temperatures and precipitation affect the environment and ecosystems.	(Abbass et al. 2022; Olabi and Abdelkareem 2022)	—	—	GRI 302 (Energy) GRI 303: (Water and effluents)	ESRS E1 (Climate change) ESRS E3 (Water and marine resources)
Greenhouse gas (GHG)	The increase of CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, and other greenhouse gases due to anthropogenic activities (industry, agriculture, transport) contributes to global warming, contributing to the melting of polar ice caps and rising sea levels.	(Filonchyk et al. 2024)	—	—	GRI 305 (Emissions)	ESRS E1 (Climate change)
Extreme weather events	Extreme weather events, such as heatwaves, storms, droughts, and floods, have devastating effects on communities and economies.	(Abbass et al. 2022; Olabi and Abdelkareem 2022)	Increased insolvency risks and operational exposure for banks.	(Arora and Mishra 2023)	GRI 201 (Economic performance) GRI 305 (Emissions)	ESRS E1(Climate change) ESRS S2 (Workers in the value chain)
Biodiversity loss	Climate-induced habitat alteration leading to species extinction/migration.	(Abbass et al. 2022; Olabi and Abdelkareem 2022; Onoh et al. 2024)	—	—	GRI 304 (Biodiversity)	ESRS E4 (Biodiversity and ecosystems)
Human health	Higher temperatures and altered ecosystems exacerbate infectious diseases, antibiotic resistance, and contribute to the worsening of preexisting conditions.	(Abbass et al. 2022; Liao et al. 2024)	—	—	GRI 403 (Occupational Health and Safety)	ESRS S1 (Own workforce) ESRS E1 (Climate change)
Agriculture and food security	Climate variability reduces crop yields and increases in raw material costs, which have direct consequences on global economies.	(Yuan et al. 2024)	—	—	GRI 204 (Procurement practices) GRI 305 (Emissions)	ESRS E1(Climate change) ESRS E2 (Pollution)

(Continues)

TABLE 1 | (Continued)

Macro-variable	Description	Primary References	Relevance to SDG 13 for Banks	Additional References	GRI Standards	ESRS Standards
Tourism and infrastructure	Higher temperatures and extreme weather events reduce the attractiveness of certain regions and increase maintenance costs.	(Abbass et al. 2022; Tanrisever et al. 2024)	—	—	GRI 203 (Indirect economic impacts)	ESRS G1 (Business conduct) ESRS E1 (Climate change)
Environmental resilience	Climate change weakens ecosystems' ability to regenerate and regulate climate, absorbing carbon emissions.	(Leichenko 2011; O'Connell and Hou 2015)	—	—	GRI 304 (Biodiversity) GRI 305 (Emissions)	ESRS E4 (Biodiversity and ecosystems)
Water resources	Reduced precipitation and increased evaporation the availability of water resources, such as drinking and irrigation water.	(Olabi and Abdelkareem 2022)	—	—	GRI 303: (Water and effluents)	ESRS E3: (Water and marine resources)
Renewable energy sources	Transition to clean energy essential to reduce carbon emissions.	(Moomaw et al. 2011; Olabi and Abdelkareem 2022; Owusu and Asumadu-Sarkodie 2016; Quaschnig 2019; Sims 2004)	The role of banks in financing sustainable projects, such as renewable energy and resilient infrastructure, is crucial for reducing GHG emissions and promoting sustainability. Investments in green bonds and sustainable financial instruments are becoming increasingly relevant. The banking sector can stimulate the transition to a circular economy through lending policies that favor companies with sustainable production models.	(Arora and Mishra 2023; Kamran et al. 2020) (Horsch and Richter 2017; Sengupta et al. 2023) (Ozili 2021; Sengupta et al. 2023)	GRI 302 (Energy)	ESRS E5 (Resource use and circular economy)

(Continues)

TABLE 1 | (Continued)

Macro-variable	Description	Primary References	Relevance to SDG 13 for Banks	Additional References	GRI Standards	ESRS Standards
Mitigation policies and strategies	The adoption of regulations to incentivize renewable energies and limit CO <sub>2</sub> emissions is crucial to tackle the climate crisis.	(Devi and Salam 2025; Olabi and Abdelkareem 2022)	Banks can facilitate access to global funds for climate change mitigation and adaptation, especially in developing countries. The Green Climate Fund (GCF) and other international instruments represent opportunities for the banking sector in mobilizing capital for sustainable projects. Climate change may alter banking business models, necessitating diversification of investment portfolios to reduce exposure to the most vulnerable sectors (e.g., fossil fuels and intensive agriculture). The adoption of “green banking” and “blue finance” strategies is key to aligning with sustainable development goals.	(Arora and Mishra 2023) (Ziolo 2024) (Sengupta et al. 2023) (Ahmar et al. 2024; Sengupta et al. 2023; Wanta et al. 2023; Ziolo 2024)	GRI 307 (Environmental compliance)	ESRS E1 (Climate change)
Carbon capture and storage technologies	Carbon capture and storage technologies can reduce the impact of industries and power plants, promoting a sustainable transition.	(Olabi and Abdelkareem 2022)	Innovative financial instruments, such as sustainability-linked loans, reward companies that improve their environmental performance and can facilitate the transition to a low-carbon economy.	(Arora and Mishra 2023)	GRI 305 (Emissions) GRI 307 (Environmental compliance)	ESRS E1 (Climate change) ESRS E2 (Pollution)

(Continues)

TABLE 1 | (Continued)

Macro-variable	Description	Primary References	Relevance to SDG 13 for Banks	Additional References	GRI Standards	ESRS Standards
Spatial and temporal variability	Climate impacts vary significantly by region and population affected. Vulnerable communities are more exposed, but economic models tend to simplify these differences, ignoring the consequences of extreme disasters such as heat waves, floods, and storms.	(Rising et al. 2022)	Social and reputational responsibility: philanthropic initiatives, community engagement and ethical investments. Regional differences in the implementation of the SDGs depending on local economic and social needs.	(Sengupta et al. 2023)	GRI 201 (Economic performance) GRI 305 (Emissions)	ESRS E1 (Climate change) ESRS S3 (Affected communities)
Interactions between risks	Climate change acts as a catalyst that amplifies other crises, such as economic insecurity, social instability, and forced migration. The interaction between extreme weather events can generate cascading effects that make the system increasingly fragile.	(Rising et al. 2022)	Banks must integrate ESG risk into their strategies, as it has a significant impact on financial operations and reputation.	(Ziolo 2024)	GRI 201 (Economic performance) GRI 305 (Emissions)	ESRS E1 (Climate change) ESRS G1 (Business conduct)
Deep uncertainty	Many climatic and socioeconomic processes are characterized by such high uncertainty that it is difficult to assign reliable probabilities to their impacts. This includes unforeseen extreme events (“black swan events”), such as the risk of sudden and irreversible changes in climate systems.	(Rising et al. 2022)	Banks must integrate climate risks into their credit assessment models and risk management strategies.	(Arora and Mishra 2023; Engen 2025; Sengupta et al. 2023; Ziolo 2024)	GRI 201 (Economic performance) GRI 305 (Emissions)	ESRS E1 (Climate change) ESRS G1 (Business conduct)

(Continues)

TABLE 1 | (Continued)

Macro-variable	Description	Primary References	Relevance to SDG 13 for Banks	Additional References	GRI Standards	ESRS Standards
Unidentified risks	There are still unknown dangers associated with the interactions between the climate and socioeconomic systems. The inability to predict all possible consequences of climate change requires a precautionary approach in mitigation and adaptation policies.	(Rising et al. 2022)	Their influence extends to supporting social initiatives, through funding for financial inclusion, scholarships and social impact projects. Collaboration between banks, governments and NGOs to accelerate the adoption of sustainable practices. Creation of consortia and alliances to develop shared sustainable finance strategies.	(Ziolo 2024) (Sengupta et al. 2023)	GRI 201 (Economic performance) GRI 305 (Emissions)	ESRS E1 (Climate change) ESRS G1 (Business conduct)
Land degradation and desertification	Climate change contributes to expanding drylands and land degradation, reducing agricultural capacity and accelerating desertification.	(Arora and Mishra 2023; UN 2022)	Land degradation affects asset values and increases credit risk for agriculture-focused financial products, impacting banks' resilience.	(Arora and Mishra 2023; UN 2022)	GRI 204 (Procurement practices) GRI 302 (Energy)	ESRS E1 (Climate change) ESRS E2 (Pollution) ESRS E4
Climate-induced migration	Extreme climate events and sea level rise are expected to cause large-scale displacement and migration, affecting social stability.	(IPCC 2022; Rising et al. 2022)	Migration affects housing markets, infrastructure planning and regional credit exposure, requiring banks to adjust long-term risk strategies.	(IPCC 2022; Rising et al. 2022)	GRI 201 (Economic performance) GRI 403 (Occupational health and safety)	ESRS E1 (Climate change) ESRS S3 (Affected communities)
Climate risk governance and strategy	Implementation of climate risk governance models and integration of climate change in strategic planning and enterprise risk management.	(P. P. Biancone et al. 2024; Freeman et al. 2007; Ziolo 2024)	Banks must adopt climate-conscious governance and stakeholder capitalism to ensure resilience and attract sustainable finance.	(P. P. Biancone et al. 2024; Freeman et al. 2007; Ziolo 2024)	GRI 102 (General Disclosures) GRI 307 (Environmental compliance)	ESRS G1 (Business conduct) ESRS E1 (Climate change)
Climate finance and green instruments	Financing mechanisms such as green bonds, ESG-linked loans, and investment in adaptation and mitigation infrastructure.	(Adu et al. 2024; Sengupta et al. 2023)	Banks act as intermediaries in mobilizing capital for sustainable development and play a key role in transition finance.	(Adu et al. 2024; Sengupta et al. 2023)	GRI 203 (Indirect economic impacts) GRI 201 (Economic performance)	ESRS E1 (Climate change) ESRS E5 (Resource use and circular economy)

Vitolla et al. 2022). Focusing on the reporting year 2024 allows for capturing the latest climate disclosure practices under current regulations. Each bank's annual NFR was collected from official sources (e.g., corporate websites), and the reports were verified to include substantial climate-related content (strategy, risk, metrics, etc.) to ensure relevance. This choice is further supported by evidence that more structured organizations, such as large banks, tend to disclose more systematically the link between governance, adopted policies, and external reporting (Nicolò, Zampone, et al. 2024). Using this purposive sample of large banks across multiple jurisdictions strengthens the study's generalizability within the European context, as these institutions are likely leaders in climate reporting and are subject to prominent regulatory frameworks (such as the CSRD).

### 3.3 | Coding Framework Development and Analysis

This section presents the structure and application of the coding framework, followed by the analytical procedures used to interpret both quantitative and qualitative patterns emerging from the sustainability disclosures. The coding framework was developed through a detailed review of relevant literature and regulatory standards on climate and sustainability disclosure in the banking sector (Table 2). To identify the most frequently used words within each thematic category, a coding process was conducted using NVivo 14. Words were assigned to categories by the authors based on contextual interpretation, and then their frequency was calculated using the software's word frequency and text query features. This ensured a rigorous and replicable content analysis, combining human judgment and automated frequency analysis within a structured qualitative framework (Henry et al. 2023; Landrum and Ohsowski 2018). Drawing on prior studies and the requirements of some regulations, such as the CSRD and ESRS, we identified the following seven thematic categories emerging from the analysis conducted through NVivo: (1) financial performance and risk; (2) sustainability and climate change; (3) governance and strategy; (4) organizational structure; (5) reporting and compliance; (6) social and human capital; (7) time and reference. These categories were derived through an iterative coding process informed by both literature and emergent semantic patterns (P. Biancone et al. 2019; Guthrie and Abeysekera 2006; Kotb et al. 2020). This initial codebook was piloted on a subset of reports and refined to ensure clarity and coverage of emerging themes (Bowen 2008). The finalized framework was applied systematically to all 30 NFRs using NVivo 14, enabling both deductive coding based on predefined categories and inductive coding for novel topics. This methodological approach is consistent with other prior studies that employ NVivo and qualitative content analysis to examine sustainability disclosures, strategies, and worldviews (Degregori et al. 2025; Henry et al. 2023; Campira et al. 2023; Kumar et al. 2021; Landrum and Ohsowski 2018). These contributions confirm the robustness of coding-based approaches in extracting meaningful patterns from complex corporate documents. Additionally, Kumar et al. (2021) underline the increasing adoption of content analysis in the journal's methodological landscape. Coding was primarily performed independently by the authors, followed by consensus checks to ensure reliability (Parker and Roffey 1997). Quantitative and qualitative analyses

were then conducted to identify disclosure patterns, common practices, and variations across banks. To ensure the reliability of our coding analysis, we calculated Krippendorff's alpha (Krippendorff 2018) on the coding results across the assignments of the 100 most frequent words into their thematic groups. Each word was independently categorized by two researchers. The observed disagreement was 9%, while the expected disagreement by chance was approximately 85.7%, yielding an alpha coefficient of 0.90. This value exceeds the generally accepted threshold for exploratory research (0.667), confirming substantial reliability of the coding scheme (Krippendorff 2018; Massaro et al. 2016). The qualitative analysis consisted of identifying emergent themes and interpretative insights through contextual readings and inductive coding of the textual content, understanding the differences in how each bank reports climate change information. The quantitative analysis involved counting the frequency of disclosure occurrences across predefined categories and computing word frequency statistics using NVivo 14. This enabled the description of disclosure patterns and the generation of comparative indicators across the sample. Table 2 presents the frequency of coded items for each category, which supports the quantitative dimension of the analysis, while narrative examples presented in the following section of results illustrate the qualitative insights.

Table 3 below further clarifies the thematic categories used in the coding process and their relation to climate change. This table lists the core disclosure categories along with the most relevant thematic keywords, their origins (based on literature and regulatory frameworks), and the rationale for connecting each group to climate-related disclosures. While some categories, like "Financial Performance and Risk," may appear more broadly defined, they were interpreted within the context of climate change, such as through disclosures on climate risk exposure, climate-related credit portfolios, or environmental investments.

## 4 | Results and Discussion

To provide a clear overview of the overall disclosure landscape, the study begins with descriptive statistics of the main categories coded, as reported in Table 2. These statistics reflect the number of coded references per category across the sample, illustrating how disclosure attention varies between governance, strategy, risk, targets, emissions, and stakeholder engagement. These quantitative patterns provide the foundation for the deeper qualitative interpretation of each thematic area that follows.

### 4.1 | Financial Performance and Risk

European banks heavily emphasize climate change in terms of financial performance and risk implications. Banks commonly refer to climate change as a source of physical and transition risks to their loan portfolios and operations, recognizing that extreme weather events and carbon-transition policies can affect credit quality and profitability (Gambhir et al. 2022; Xu et al. 2024). Many banks focus on how to integrate climate factors into risk management, for instance, developing climate stress tests, adjusting credit risk models, and setting risk appetite limits for carbon-intensive exposures (Bringas Fernández

TABLE 2 | Research framework.

Group	Category	Variables (most frequently words)	Results (n, %)
1	Financial performance and risk	Financial	29,228 (0.93%)
		Risk	25,694 (0.82%)
		Assets	16,074 (0.51%)
		Value	12,447 (0.40%)
		Credit	8809 (0.28%)
		Loans	8587 (0.27%)
		Income	6950 (0.22%)
		Equity	6602 (0.21%)
		Capital	6415 (0.20%)
		Market	5134 (0.16%)
		Investment	4909 (0.16%)
		Liabilities	4899 (0.16%)
		Performance	4888 (0.16%)
		Loss	4135 (0.13%)
		Cash	3812 (0.12%)
Interest	5031 (0.16%)		
2	Sustainability and climate change	Sustainability	11,296 (0.36%)
		Sustainable	6863 (0.22%)
		Climate	10,317 (0.33%)
		Emissions	6277 (0.20%)
		Transition	4892 (0.16%)
		Impact	5722 (0.18%)
		Energy	3759 (0.12%)
		ESG	4826 (0.15%)
		Taxonomy	10,238 (0.32%)
		Environmental	3015 (0.10%)
3	Governance and strategy	Governance	4878 (0.15%)
		Board	7920 (0.25%)
		Directors	2520 (0.08%)
		Management	15,642 (0.50%)
		Policies	3801 (0.12%)
		Corporate	5311 (0.17%)
		Strategy	5676 (0.18%)
		Statement	4867 (0.15%)
		Review	4554 (0.14%)

(Continues)

TABLE 2 | (Continued)

Group	Category	Variables (most frequently words)	Results (n, %)
4	Organizational structure	Group	23,254 (0.74%)
		Bank	14,202 (0.45%)
		Company	4182 (0.13%)
		Sectors	4738 (0.15%)
		Business	10,943 (0.35%)
		Customers	6409 (0.20%)
		Services	4296 (0.14%)
		Including	7569 (0.24%)
		Banking	4897 (0.16%)
5	Reporting and compliance	Policy	3695 (0.12%)
		Report	15,856 (0.50%)
		Reporting	4403 (0.14%)
		Regulation	3918 (0.12%)
		Statements	8442 (0.27%)
		Information	10,752 (0.34%)
		Data	6208 (0.20%)
		Consolidated	6740 (0.21%)
		Applicable	3734 (0.12%)
		Material	4131 (0.13%)
		Aligned	4586 (0.15%)
		ESRS	2390 (0.08%)
		GAR	2368 (0.08%)
6	Social and human capital	Compliance	2584 (0.08%)
		Employees	5168 (0.16%)
		Support	3800 (0.12%)
		Securities	5569 (0.18%)
		Risks	9130 (0.29%)
		Customer	3122 (0.10%)
		Clients	2981 (0.09%)
		Target	2973 (0.09%)
		Remuneration	2808 (0.09%)
7	Time and reference	Include	2365 (0.08%)
		2024	25,267 (0.80%)
		2023	11,060 (0.35%)
		Year	7970 (0.25%)
		December	4357 (0.14%)
		Annual	8941 (0.28%)
		Million	7060 (0.22%)

Source(s): Authors' elaboration through NVivo.

**TABLE 3** | Climate-related disclosure categories, keywords, and sources.

Category	Source(s)	Interpretation within climate-related disclosure
Financial performance and risk	GRI 201–2; ESRS E1–2; Kumar et al. (2021); Henry et al. (2023)	Financial metrics reflecting exposure to physical and transitional climate risks, investments in green finance, etc.
Sustainability and climate change	GRI 305; GRI 302; ESRS E1–1, E1–3, E1–4; Guthrie and Abeysekera (2006); Bowen (2008), Kotb et al. (2020)	Core climate and sustainability themes including emissions, taxonomy alignment, and transition pathways.
Governance and strategy	GRI 2–9, 2–12; ESRS 2-GOV; ESRS E1–1; Aguilera et al. (2007); Adams et al. (2017); Landrum and Ohsowski (2018)	Captures how boards and management oversee climate risks, set sustainability strategies, and monitor progress.
Organizational structure	ESRS 2-GOV; GRI 2–1; L'Abate et al. (2023); Nicolò, L'Abate, et al. (2024)	Organization's internal structures influence integration of climate goals within business units and customer engagement strategies.
Reporting and compliance	GRI 2–4, 2–5; ESRS 1 and 2; Manes-Rossi et al. (2020)	Compliance with climate-related reporting standards and quality of sustainability communication.
Social and human capital	GRI 401; GRI 404; ESRS S1, ESRS S3; Gray et al. (1995); P. Biancone et al. (2019); Parker and Roffey (1997)	Addresses climate's impact on employees and communities and related adaptation policies (e.g., reskilling, health risks, fair transition).
Time and reference	Not directly mapped; interpretative link based on ESRS 1; GRI 2–4	Indicates temporal framing of disclosure (e.g., year-end reference, fiscal timeline) which provides comparability and progression in climate reporting.

Source(s): Authors' elaboration.

et al. 2024). This focus aligns with broader recognition that climate change poses a major challenge to the banking sector (Abbass et al. 2022). Indeed, recent empirical evidence suggests that banks in regions with greater climate adaptation readiness tend to enjoy higher profitability and lower credit risk (Arora and Mishra 2023; Doan et al. 2025). These observations closely relate to why leading banks are increasingly disclosing climate-related financial risks and performance impacts. In the sample under analysis, several banks explicitly highlight how mitigating climate risk preserves long-term financial performance, often linking their climate risk disclosures to strategic financial stability goals. This indicates that climate change is not treated as a remote sustainability issue but as a material financial factor, increasing regulatory expectations that banks should consider climate risks with the same rigor as traditional financial risks. These practices reflect an evolving consensus that managing climate-related risks is integral to value preservation (Arora and Mishra 2023; Raimo et al. 2025). In line with ESRS 2 and ESRS E1–4, several disclosures report on climate-related financial risks and outline sustainable finance strategies; however, the degree of application remains uneven. While banks often detail their integration of climate risk into financial risk management practices, disclosures under SDG13 frequently lack quantified metrics on avoided emissions or the specific economic impacts of transition finance. The gap lies in translating high-level commitments into standardized, comparable KPIs, especially across

institutions with differing risk appetites and geographic exposures. Reporting practices of leading European banks increasingly reflect the tenets of stakeholder capitalism. Rather than viewing climate-related risks solely through the lens of shareholder value or regulatory compliance, banks are positioning themselves as key actors in balancing financial stability with broader societal interests (P. P. Biancone et al. 2024; Freeman et al. 2007). This shift is evident in the way climate-related financial disclosures are framed, considering that banks present their risk management activities not only as safeguards for their own financial health but as contributions to systemic resilience and stakeholder welfare, including that of clients, employees, investors, and affected communities (Carungu et al. 2025; Petrick 2011).

## 4.2 | Sustainability and Climate Change

Within their nonfinancial disclosures, the top European banks consistently position climate change as a central pillar of their sustainability and corporate responsibility agendas. Thus, banks contextualize their climate efforts within global sustainability frameworks (Carungu et al. 2025). Many reports articulate climate strategies as part of broader commitments to sustainable development, for instance, by referencing alignment with the SDGs, especially SDG 13, or making a commitment to uphold the objectives established within the Paris Agreement (Nicolò,

L'Abate, et al. 2024; Reghezza et al. 2022). Banks often highlight their role in financing the transition to a greener economy through green loans, sustainability bonds, and investment in renewable energy projects (Hossain et al. 2024). The content analysis also shows numerous references to reducing the bank's own environmental footprint (e.g., cutting operational emissions, using renewable power), underscoring that sustainability starts "at home." This integration of climate change into sustainability commitments reflects an understanding that banks have a pivotal role in fighting climate risks beyond mere compliance. This integrated view is consistent with the ESRS E1 2.2 and 2.3 sections, which highlight the importance of explaining climate-related targets, policies, and action plans, as well as transition plan disclosures. The emphasis on net-zero alignment and stakeholder responsiveness also aligns with the stakeholder inclusiveness principle in GRI 102 and the double materiality approach emphasized in the ESRS architecture. As Raimo et al. (2025) observe, banks are "uniquely positioned to address climate change by managing the carbon footprint of their operations and evaluating the environmental impacts of their loan portfolios." In line with stakeholder capitalism, banks are increasingly presenting themselves as stewards of environmental welfare, seeking to balance profitability with environmental responsibility (Freeman et al. 2007). By embedding climate commitments (like achieving net-zero emissions by 2050 or financing climate solutions) into their core strategy, banks demonstrate responsiveness to stakeholder expectations and a strategic view that economic and environmental value can be mutually reinforcing (P. P. Biancone et al. 2024; Freeman et al. 2007).

This reflects the disclosure expectations outlined in GRI 302 (Energy), GRI 305 (Emissions), and ESRS E1, which require organizations to report on energy consumption, greenhouse gas emissions, and climate change mitigation and adaptation measures. Banks like *Crédit Mutuel* (2024) and *Deutsche Bank* (2024) illustrate these principles by aligning loan portfolios with transition risk assessments and net-zero targets.

### 4.3 | Governance and Strategy

Boards of directors and top executives are actively involved in climate-related matters of banks. Many banks note that their board or a dedicated board subcommittee (e.g., a Climate or Sustainability Committee) supervises climate strategy implementation and risk management. They also describe how climate considerations are integrated into corporate strategy documents, scenario planning, and long-term business objectives (Jizi et al. 2014). This is aligned with ESRS 2-GOV 1 and GOV 2, which require a description of governance bodies' roles and responsibilities related to sustainability, including climate oversight. Similarly, GRI 2-9 and 2-12 emphasize disclosing the highest governance body's involvement in sustainability issues and the processes for evaluating its performance. This approach reflects recommendations by frameworks like the TCFD, which call for board-level governance of climate issues (Friedrich et al. 2023; TCFD 2017). Climate change is portrayed as a strategic priority overseen by governance mechanisms, like other key business issues. This is consistent with recent research showing that strong governance drives better climate disclosure (Matuszak et al. 2019; Vitolla et al. 2020). Raimo et al. (2025)

find that European banks with more robust board expertise in sustainability, larger boards, and greater gender diversity tend to disclose significantly more climate information, underscoring the critical role of governance structures in promoting transparency and accountability practices regarding climate-related matters (Islam and Hossain 2022; Nicolò et al. 2023; Saadah et al. 2024). Most banks included in the study's sample mention appointing chief sustainability officers or assigning clear climate-risk responsibilities to senior management, linking climate objectives with executive performance metrics. Such disclosures illustrate that climate change is being embedded into corporate governance and strategic planning processes. This demonstrates that banking climate-related practices are considered a strategic issue requiring oversight from the top. For this reason, banks are adopting higher-level engagement, aligning climate initiatives with corporate strategy, and thereby signaling to stakeholders that climate action is led by their highest governance bodies.

These practices are consistent with ESRS GOV-3, which calls for detailing how sustainability matters are integrated into performance metrics and management incentives. The presence of dedicated committees, CSOs, and performance-linked KPIs is also aligned with GRI 2-14 and 2-18, promoting transparency in sustainability governance. Banks like *UBS* and *Crédit Agricole* offer best-in-class examples of this integration (UBS 2024; *Crédit Agricole* 2024).

### 4.4 | Organizational Structure

Closely related to governance, banks also describe adjustments in their organizational structures to support climate change objectives. Many large banks have established internal committees that bridge different divisions (risk management, lending, operations, etc.) to coordinate climate-related initiatives (Nicolò, L'Abate, et al. 2024). They often report hiring specialists or upskilling staff in climate risk and sustainable finance. This indicates an institutionalization of climate considerations rather than ad-hoc efforts; banks are embedding climate expertise and responsibilities within their organizational charts (Islam and Hossain 2022). For instance, some banks note that they created new roles like head of climate risk or expanded their sustainability office to cover climate strategy implementation across the group. Others mention that climate-related performance indicators are now part of business unit evaluations. These disclosures demonstrate a transition toward integrated management of climate issues, where different parts of the bank (from risk management to lending to HR) collaborate under a unified climate agenda. This structural integration also aligns with the principles advocated in the ESRS and GRI guidelines, which emphasize the need for clearly defined responsibilities, internal coordination, and the incorporation of sustainability objectives into the governance and organizational systems of firms. The implementation of cross-functional teams, climate-focused roles, and KPIs embedded in management practices reflects the attempt to fulfill ESRS 2 (Governance and Strategy) and GRI 2-9 (Governance Structure and Composition), signaling that internal transformation is a prerequisite for credible climate reporting and performance (L'Abate et al. 2023; Vitolla et al. 2020). It recalls the

stakeholder theory view that corporations must realign internal processes and structures to address stakeholder demands, like climate change (P. P. Biancone et al. 2024; Freeman 2023). Recent literature suggests that building internal capacity and clear roles for sustainability can catalyze more transparent and sustainable governance frameworks within firms (Lee et al. 2024; Saadah et al. 2024; Setiawan et al. 2024).

#### 4.5 | Reporting and Compliance

As highlighted by both academic and practitioner literature (Carungu et al. 2025; Friedrich et al. 2023; Giner and Luque-Vilchez 2022), sustainability disclosures of European banks appear strongly shaped by reporting frameworks and compliance. The analysis reveals emergent terms like “TCFD,” “GRI standards,” “EU Taxonomy,” “Directive 2014/95/EU” (NFRD), and CSRD that are commonly referenced, showing that banks frequently cite these frameworks to gain legitimacy and meet stakeholder expectations (Cosma et al. 2022; de Villiers et al. 2022). Most of the top 30 banks align their climate reporting with international standards, explicitly state that their disclosures are prepared in accordance with TCFD recommendations, GRI guidelines, or integrated reporting principles, reflecting what Hossain et al. (2024) and Friedrich et al. (2023) observed as a rising but still inconsistent application of global frameworks. This focus on standardized reporting and compliance suggests a high level of transparency and comparability in how banks communicate climate information, a trend that is underpinned by research highlighting the harmonizing effects of regulatory mandates like the CSRD and the proliferation of voluntary standards (Hummel and Jobst 2024; Luque-Vilchez et al. 2023). It also reflects external pressures: regulators and investors are pushing for consistent, decision-useful climate disclosures, as underlined by Caby et al. (2020) and Lee et al. (2024), who stress the influence of both country-level regulation and market demand. Relevant literature also confirms the influence of these normative pressures. For instance, Carungu et al. (2025) found that after the introduction of Directive 2014/95/EU, banks' sustainability disclosure levels generally rose, though not uniformly, across European countries, a pattern attributed to the interaction between regulation and local contexts (Caby et al. 2020; Simsek et al. 2024). In some countries, banks maintained steady disclosure levels post-directive, while in others, they experienced marked growth, indicating that regulation provided a boost but interacted with specific governance and market features (Mou and Ma 2023). Our sample banks often highlight such regulatory drivers, noting forthcoming rules like CSRD and how they are preparing to meet them. In addition, many banks refer to external assurance or verification of their climate data, underscoring compliance and credibility (Cosma et al. 2022; de Villiers et al. 2022).

#### 4.6 | Social and Human Capital

European banks are increasingly highlighting the social and human capital dimensions of their climate-related disclosures. In their NFRs, references to employees, support initiatives, customers, clients, and remuneration are frequently

coded, reflecting the sector's recognition that climate change and sustainability extend beyond environmental concerns to include the people affected by their operations (P. Biancone et al. 2019; Carungu et al. 2025). Many leading banks report on programs supporting employee training in sustainable finance, climate awareness campaigns, and the integration of ESG criteria into remuneration policies, demonstrating an understanding that employee engagement and client trust are central to effective climate action (Caby et al. 2020; Saadah et al. 2024). These elements are aligned with GRI 401 (Employment) and GRI 403 (Occupational Health and Safety), as well as ESRS S1, which requires disclosures on working conditions, equal treatment, and opportunities for development. HSBC (2024), for example, in its 2024 ESG Report, noted that over 227,000 colleagues completed mandatory mental health awareness training, while mental health education modules were completed more than 37,000 times, indicating proactive efforts under GRI 403–6 and ESRS S1–7. Barclays also refreshed its long-running mental health eLearning program to maintain relevance and effectiveness in 2024, a clear example of continuity and adaptation in line with GRI standards and ESRS disclosure principles (HSBC 2024; Barclays 2024). Furthermore, the literature shows that the presence of diverse and well-trained staff, together with proactive stakeholder engagement, can drive more sustainability practices (Sonal and Shamil 2022). For example, Mou and Ma (2023) found that banks with larger, more diverse boards and greater client orientation tend to produce higher-quality climate disclosures. Likewise, Saadah et al. (2024) observed that the representation of women and diversity among employees and the board of directors positively impacts the extent and quality of climate change disclosures. This focus on diversity and inclusion also connects with ESRS S2 (Workers in the Value Chain) and S3 (Affected Communities), especially when disclosures go beyond internal employees to include clients and societal well-being. BPCE's 2024 ESG report, for example, illustrates their actions on physical and mental health awareness to combat sedentary lifestyles, fully in line with ESRS social impact requirements and GRI 403 (BPCE, 2024). In line with a stakeholder capitalism perspective, these disclosures underscore banks' commitments to balancing financial goals with social responsibility, emphasizing that addressing climate change involves not just financial risk management but also empowering people and communities (Freeman et al. 2007).

#### 4.7 | Time and Reference

A notable aspect of climate-related disclosure in European banks' nonfinancial reports is the frequent and detailed referencing of specific timeframes, years, and reporting periods, indicating a strong orientation toward both retrospective and prospective reporting cycles. The literature recognizes the importance of temporal markers in sustainability and climate disclosures, as these references set data and targets reported within concrete timelines, enhancing the credibility and comparability of information (Cosma et al. 2022; Friedrich et al. 2023). Temporally constrained information, such as interim targets for emissions reduction, annual climate risk assessments, or forward-looking statements about transition plans, are increasingly expected by stakeholders and



Theoretically, this study advances the literature on stakeholder capitalism in banking. Evidence suggests that while the traditional division between shareholder value and stakeholder needs is attenuating, it is not fully resolved (Freeman et al. 2007). European banks are shifting from an instrumental stakeholder approach, focused on mitigating risks to value, toward a more beneficial and inclusive model that integrates stakeholder concerns into long-term strategy and accountability (Arora and Mishra 2023; P. P. Biancone et al. 2024; Freeman 2023). However, as our analysis shows, persistent tensions remain, particularly where regulatory, market, and societal expectations conflict or where disclosure on complex, emerging climate risks is still limited (Caby et al. 2020; Carungu et al. 2025).

From a practical perspective, these findings underscore the importance of regulatory drivers, such as CSRD, ESRS, and TCFD, and voluntary best practices in shaping climate-related disclosure (Carungu et al. 2025; Friedrich et al. 2023). Banks that move beyond compliance can achieve long-term advantage and are better positioned to produce more credible and actionable disclosures (Mougenot and Doussoulin 2024; Vitolla et al. 2020). Policymakers and standard-setters should prioritize clearer guidance and expectations, particularly for under-reported areas like the effects of climate change on migration, tourism, infrastructure, deforestation, and diversification (Carungu et al. 2025).

This study has limitations. By focusing on the largest European banks and their most recent NFRs, the analysis may not fully capture disclosure practices in other contexts, particularly in areas outside Europe where regulatory approaches and market pressures may differ. Furthermore, the study is constrained by the quality and level of detail in publicly available disclosures, which may limit insights into internal governance or informal stakeholder engagement processes. Future research could address some of the present study's limitations by exploring data sources beyond publicly available NFRs. Employing qualitative approaches, such as interviews or case studies, could offer deeper insights into internal governance dynamics and informal stakeholder engagement practices that may not be fully captured in official disclosures. Expanding the analysis to banks operating in diverse geographic areas and under different regulatory frameworks would provide a more comprehensive understanding of global climate disclosure practices. In addition, future studies could investigate the limited application of specific GRI and ESRS standards related to less disclosed climate impacts. Our analysis reveals that while significant topics like GHG emissions and climate governance are well covered, disclosures remain weak or absent for issues such as climate-induced migration, land degradation, tourism, infrastructure vulnerability, and indirect effects on health and food security. These aspects are implicitly connected to GRI 413 and 306, and ESRS E1–6 and E1–2 but are rarely operationalized. Further research could examine why these dimensions are underexplored and underreported, investigating institutional, regulatory, or methodological barriers that hinder their inclusion. Longitudinal and comparative studies could further illuminate how banks' climate reporting evolves over time and in response to changing policy and market contexts.

Overall, what is observed within this study, when situated in the broader European context, highlights the systemic

role banks play both as financial intermediaries and as institutional actors influencing the socioeconomic response to climate change. By actively steering capital allocation, enhancing climate-related governance, and engaging different stakeholders, these institutions have the potential to drive not only sectoral transformation but also to contribute to national and EU-level climate objectives, supporting a just and inclusive transition. The evidence presented reinforces the dual macro- and micro-level impact of banking disclosures in shaping sustainable trajectories for economies and communities alike.

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### Conflicts of Interest

The authors declare no conflicts of interest.

### Endnotes

<sup>1</sup>As identified by S&P Global Market Intelligence and consolidated through practitioner rankings.

<sup>2</sup>According to data provided by S&P Global Market Intelligence.

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