ASEAN International Sandbox Conference 2026
http://aseansandbox.org

AISC Proceedings, Volume 11, 2026

Environmental Sustainability in Vietnamese Commercial Banks: A Comparative Analysis of Banking Practices

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Abstract

Environmental sustainability is becoming increasingly important for Vietnamese commercial banks as regulatory requirements expand and banks assume a greater role in green capital allocation and environmental-risk management. This study examines how environmental sustainability was increasingly reflected in the reported practices of Vietcombank, BIDV, and VPBank during 2023–2025. Using a qualitative longitudinal multiple-case design, nine bank-year sustainability disclosures were analyzed through deductive qualitative content analysis across five environmental-banking themes, while distinguishing commitments, implementation, and reported outcomes. The findings show increasing reported formalization of environmental governance, expansion of green-finance activities, and broader reported integration of environmental risks into credit processes. However, the three banks follow different institutional and financing pathways, while convergence in environmental screening is accompanied by uneven development of climate-risk analytics and portfolio-level measurement. Most importantly, evidence of commitments and implementation is more developed than comparable evidence of environmental outcomes, revealing a pattern of institutionalization ahead of outcome measurement. Accordingly, regulators should strengthen reporting comparability and climate-risk guidance, while banks should more closely connect governance and financing decisions with measurable portfolio-level environmental outcomes.

Keywords**:** *Commercial banks, environmental disclosure, environmental sustainability, green finance, sustainable banking*

1. Introduction

Banks have relatively small direct environmental footprints, but their financing decisions can generate substantial indirect impacts. UNEP FI (2023) and Conlon et al. (2024) emphasize that banks' environmental and climate-related exposures arise substantially through financed activities and lending relationships with borrowers and counterparties. In the case of Vietnam, the World Bank (2022) estimates that a climate-resilient, net-zero pathway could require about US$368 billion in additional investment through 2040. Against this background, commercial banks are increasingly important to both green capital allocation and the integration of environmental considerations into risk management.

Reflecting this growing role of the banking sector, Vietnam has progressively strengthened its green-banking framework. The State Bank of Vietnam's Green Bank Development Scheme promoted green capital flows and environmental-risk integration (State Bank of Vietnam, 2018), while Circular No. 17/2022/TT-NHNN established environmental-risk requirements for credit extension from 2023 (State Bank of Vietnam, 2022). More recently, and further reinforcing this regulatory direction, Decision No. 21/2025/QD-TTg introduced national environmental criteria and a green taxonomy (Prime Minister of Vietnam, 2025). Together, these policy developments create a stronger institutional basis for green banking; however, they do not by themselves demonstrate how environmental requirements are translated into day-to-day banking practices. Therefore, there is a practical need to examine how commercial banks embed environmental considerations in governance, financing, risk management, operations, and accountability. Alongside these practical developments, an important research gap remains. From a theoretical perspective, existing Vietnamese studies have mainly examined the determinants of green-banking development, green-finance activities, disclosure, and financial outcomes (Bang et al., 2023; Ngo, 2020; Nguyen et al., 2023; Nguyen & Phan, 2025; Tran & Ha, 2025). Although these studies provide valuable evidence on why green banking develops and what consequences it may have, less attention has been given to how reported environmental practices change within the same banks over time and whether increasingly detailed disclosure reflects policy commitment, operational implementation, or reported environmental outcomes. Consequently, the research problem concerns the extent to which corporate disclosures provide evidence that environmental sustainability is becoming embedded in core banking practices, rather than remaining primarily a matter of general commitment, regulatory compliance, or isolated green-finance initiatives.

2. Objectives

To address this problem, this study aims to assess the development of reported environmental-sustainability practices in Vietcombank, BIDV, and VPBank during 2023-2025. Specifically, it seeks to:

- Examine how reported environmental practices developed across governance and strategy, green finance, environmental and climate-risk management, internal environmental management, and measurement and disclosure.

- Identify common patterns, differences, and remaining accountability gaps across the three banks. To achieve these objectives, the study employs a qualitative longitudinal multiple-case design based primarily on nine bank-year sustainability disclosures, using deductive document analysis and a non-scoring comparison of commitments, implementation evidence, and reported outcomes.

3. Materials and Methods

3.1. Environmental sustainability and the distinctive role of banks

Environmental sustainability in commercial banking concerns how environmental considerations are incorporated into banks' governance, financing decisions, risk-management processes, operations, and disclosure rather than being treated only as operational environmental initiatives (Riegler, 2023). This broader perspective is consistent with the Principles for Responsible Banking, which emphasize the integration of sustainability impacts into bank strategy, target setting, client engagement, governance, and transparency (UNEP FI, 2019).

This perspective is particularly relevant because banks generate environmental impacts through both their own operations and, more importantly for this study, their financing activities. Operational impacts arise from energy use, business travel, buildings, waste, and other internal activities, whereas financed impacts arise through lending and investment decisions that channel capital toward environmentally beneficial or environmentally sensitive activities (Riegler, 2023). Consequently, assessing environmental sustainability in banks requires attention not only to internal environmental management but also to how environmental considerations affect capital allocation and portfolio decisions. Green-banking research similarly shows that environmental practices increasingly involve changes in banking products, governance, and risk processes rather than isolated operational initiatives (Bukhari et al., 2020). Environmental and climate factors are also relevant to conventional bank risk management because physical and transition risks can affect borrowers' financial conditions and ultimately transmit to banks' existing risk categories (Basel Committee on Banking Supervision, 2022). Taken together, these characteristics justify examining environmental sustainability as an interconnected set of banking practices covering governance and strategy, green finance, environmental and climate-risk management, internal environmental management, and environmental measurement and disclosure.

3.2. From environmental commitments to institutionalized banking practices

Environmental commitments become meaningful in banking when they are translated into observable governance arrangements, financing practices, and risk-management processes. Regulatory guidance and governance mechanisms can encourage banks to formalize green-banking practices and disclosure, rather than leaving environmental objectives at the level of general policy statements (Bose et al., 2018). Evidence from Vietnam also indicates that commercial banks differ in how they translate green-finance priorities into institutional arrangements and implementation practices (Nguyen et al., 2023).

Moreover, public commitments and disclosure should not be treated as equivalent to environmental performance. Cregan et al. (2024) find that environmental scores for global banks may reflect climate-commitment signals more strongly than actual lending and underwriting activities. Accordingly, this study distinguishes three types of disclosed evidence: commitments, such as policies and targets; implementation, such as governance mechanisms, screening procedures, and financial products; and reported outcomes, such as quantified green-finance or emissions results. These categories are used to distinguish the nature of disclosed evidence, rather than to impose a fixed maturity sequence or performance ranking. In this study, reported institutionalization refers to the extent to which environmental considerations are disclosed as being embedded in formal and recurring organizational arrangements and core banking processes. It is identified through evidence such as assigned governance responsibilities, formal policies and internal frameworks, recurring environmental-risk procedures, sustainable-finance mechanisms, and environmental data or reporting systems.

3.3. Development of the analytical framework

The analytical framework was developed deductively by mapping recurring environmental-banking dimensions identified in the academic literature against established banking, climate-risk, and sustainability-

reporting frameworks. Rather than adopting a single standard, the study combines complementary sources because no individual framework covers all environmental practices relevant to commercial banks. This approach is consistent with Gunawan et al. (2022), who combined GRI disclosures with banking-specific green-practice measures to construct a more comprehensive framework for longitudinal content analysis of bank sustainability reports. Similarly, Auzepy et al. (2023) derived detailed analytical labels from the TCFD recommendations to examine climate-related disclosures across 188 banks, demonstrating the usefulness of externally defined categories for systematic analysis of banking reports.

The source mapping produced five analytical themes, as shown in Table 1. Firstly, governance and strategy are retained because environmental considerations need to be linked to formal oversight and strategic decision-making. IFRS S2 organizes climate disclosure around governance, strategy, risk management, and metrics and targets (IFRS Foundation, 2023). Moreover, the Basel Committee requires banks to assign climate-related responsibilities to boards and management and to integrate material climate risks into business strategy and risk appetite (Basel Committee on Banking Supervision, 2022). Secondly, green finance is treated separately because capital allocation represents a distinctive channel through which banks influence environmental outcomes. Nguyen et al. (2023), using six Vietnamese commercial-bank cases, show that green financing constitutes a substantive banking practice involving the mobilization and allocation of finance to support green business initiatives. Thirdly, environmental and climate-risk management is retained because environmental factors can affect conventional banking risks and therefore need to enter established risk processes. Basel guidance specifically addresses climate factors in client onboarding, credit assessment, ongoing monitoring, risk appetite, and stress testing (Basel Committee on Banking Supervision, 2022). Auzepy et al. (2023) likewise show that risk management is a distinct component of climate-related bank disclosure. Fourthly, internal environmental management remains necessary to capture banks' direct operational impacts, for which GRI provides established measures of energy consumption, greenhouse-gas emissions, and waste (Global Reporting Initiative, 2016a, 2016b, 2020). Finally, measurement, targets, and disclosure are treated as a cross-cutting accountability dimension because reported practices can only be evaluated meaningfully when their scope, baselines, metrics, and targets are identifiable. In addition, Cregan et al. (2024) caution that environmental scores for banks may reflect climate-commitment signals more strongly than actual lending and underwriting activity.

Table 1 Derivation of the five analytical themes

Evidence base	Dimension supported by the source	Relevance to environmental banking analysis	Resulting analytical theme
IFRS Foundation (2023); Basel Committee on Banking Supervision (2022)	Governance structures, strategic integration, oversight, responsibilities, and risk appetite	Environmental commitments require formal responsibility and integration into bank strategy and decision-making	Environmental governance and strategy
Nguyen et al. (2023); Gunawan et al. (2022)	Green lending, sustainable-finance activities, and banking products	Banks influence environmental outcomes through the allocation and mobilization of financial resources	Green finance and sustainable products
Basel Committee on Banking Supervision (2022); Auzepy et al. (2023)	Credit assessment, client monitoring, risk appetite, scenario analysis, and stress testing	Environmental and climate factors can transmit into conventional bank risk and therefore need to enter established risk processes	Environmental and climate-risk management
GRI 302; GRI 305; GRI 306; Gunawan et al. (2022)	Energy use, GHG emissions, waste, and operational environmental practices	Banks also generate direct environmental impacts through their own facilities and operations	Internal environmental management
IFRS Foundation (2023); PCAF (2022); Cregan et al. (2024)	Metrics, targets, financed emissions, reporting boundaries, and comparability	Environmental practices require measurable and transparent evidence, while disclosure volume alone cannot be treated as environmental performance	Environmental measurement, targets, and disclosure

Source: Authors' synthesis

The synthesis yields five distinct but complementary analytical themes: Environmental governance and strategy, green finance and sustainable products, environmental and climate-risk management, internal environmental management, and environmental measurement, targets, and disclosure. The first four capture substantive domains in which environmental considerations can become embedded in banking activities, whereas the fifth provides a cross-cutting accountability perspective on how those practices are measured and reported.

3.4. Methods

This study adopts a qualitative longitudinal multiple-case design using deductive qualitative content analysis to examine how reported environmental practices developed across three selected Vietnamese commercial banks. A multiple-case design is appropriate when a contemporary organizational phenomenon is examined comparatively while the institutional context of each case is retained (Yin, 2018). In addition, longitudinal content analysis is suitable for sustainability-report research because recurring corporate disclosures allow changes in reported practices to be examined systematically over time (Gunawan et al., 2022).

Case selection followed a criterion-based purposive procedure designed to balance comparability, information richness, and analytical variation. Purposive sampling is appropriate when cases are selected because they possess characteristics directly relevant to the research question rather than to achieve statistical representativeness (Palinkas et al., 2015). Accordingly, the 2025 Top 10 Banks Vietnam Green ESG list was used only as an initial screening frame (Viet Research, 2025). Banks were subsequently assessed against three additional criteria: (1) continuous official sustainability disclosure for 2023–2025; (2) official disclosures containing environmental or climate-related evidence relevant to multiple dimensions of the predefined analytical framework; and (3) variation in institutional and reporting characteristics that could support meaningful cross-case comparison. Accordingly, the empirical analysis focuses on nine official sustainability disclosures issued by Vietcombank, BIDV, and VPBank over the 2023–2025 reporting period, with one primary disclosure examined for each bank-year. The resulting case configuration is summarized in Table 2.

Table 2 Case-selection rationale and characteristics

Bank	Ownership profile	Sustainability-reporting trajectory, 2023–2025	Analytical variation introduced
Vietcombank	State-controlled joint-stock commercial bank	Sustainability section in Annual Report 2023; standalone Sustainable Development Reports in 2024 and 2025	Provides a case in which sustainability reporting became progressively more specialized during the observation period
BIDV	State-controlled joint-stock commercial bank	Standalone Sustainability Reports throughout 2023–2025	Provides continuity in reporting architecture, supporting relatively stable longitudinal observation
VPBank	Private joint-stock commercial bank	Integrated sustainability reporting in 2023; standalone Sustainability Reports in 2024–2025; supplementary TCFD Report in 2025	Introduces ownership contrast and a reporting trajectory with increasingly climate-specific disclosure

Source: Authors' synthesis

The three cases provide a deliberately structured comparison rather than a representative sample of the Vietnamese banking system. Their common characteristics: large commercial-bank status, inclusion in the same external screening frame, and continuous sustainability disclosure, provide a sufficient basis for comparison. At the same time, variation in ownership and reporting development introduces analytical contrast, allowing the study to examine whether environmental practices are disclosed and institutionalized differently across comparable banks. However, this case-selection strategy also introduces potential selection bias. Because the initial screening frame comprised banks already recognized for ESG-related activity, while continuous sustainability disclosure was an additional selection criterion, the three cases are likely to represent relatively advanced sustainability reporters rather than the Vietnamese banking sector as a whole. Accordingly, the findings are intended for

analytical comparison and should not be generalized statistically across all commercial banks. Longitudinal interpretation also requires caution because the reporting architecture changed during the observation period. Vietcombank moved from sustainability disclosure within its 2023 Annual Report to standalone Sustainable Development Reports, while VPBank moved from integrated reporting in 2023 to standalone sustainability reporting and additional climate-specific disclosure. Therefore, increases in disclosure detail may partly reflect changes in reporting format and capacity rather than equivalent changes in underlying organizational practice. In addition, the 2023-2025 period represents a substantively relevant regulatory window for environmental banking in Vietnam. Circular No. 17/2022/TT-NHNN took effect on 1 June 2023 and formally required credit institutions to incorporate environmental-risk identification, assessment, monitoring, and mitigation into credit-extension activities (State Bank of Vietnam, 2022). The observation period therefore begins when these environmental-risk requirements became operational. It then extends through 2025, when Decision No. 21/2025/QD-TTg established national environmental criteria and procedures for identifying investment projects under Vietnam's green taxonomy (Prime Minister of Vietnam, 2025).

Following corpus construction, the nine sustainability disclosures were examined using deductive qualitative content analysis guided by the literature-informed analytical framework. Evidence was then classified as commitment, implementation, or reported outcome. The analysis proceeded sequentially from within-case longitudinal comparison to cross-case synthesis, allowing bank-specific developments to be assessed before broader similarities and differences were identified (Assarroudi et al., 2018; Yin, 2018). Because the primary evidence consists of corporate disclosures, the analysis identifies changes in reported practices rather than independently verified changes in underlying organizational practices or environmental performance. Accordingly, a practice first disclosed in a given year is not assumed to have been first implemented in that year, while non-disclosure is treated as an absence of evidence in the reviewed corpus rather than evidence that the practice did not exist. To reduce exclusive reliance on corporate self-reporting, selected claims were also cross-checked, where independent documentary evidence was available, against regulatory documents and third-party assessments. These external sources were used for corroboration rather than as additional case observations, while the nine bank-year disclosures remained the primary analytical corpus. Table 3 summarizes the analytical procedure and decision rules applied to the documentary corpus.

Table 3 Analytical procedure for the nine sustainability disclosures

Analytical stage	Purpose	Application to the nine reports	Decision rule	Methodological support
1. Documentary review	Identify environmentally relevant evidence	Review each bank-year report for relevant narrative passages, tables, policy statements, and quantitative indicators	Include evidence only when environmental or climate relevance is explicit	Morgan (2022)
2. Deductive thematic categorization	Organize evidence consistently across reports	Map relevant evidence to one of the five analytical themes developed in Section 2.3	Use the literature-informed framework as the initial analytical structure rather than generating themes solely from the reports	Assarroudi et al. (2018); Gunawan et al. (2022)
3. Evidence classification	Distinguish the nature of reported practice	Within each theme, classify evidence as commitment, implementation, or reported outcome	The categories describe the type of disclosed evidence and are not treated as maturity scores	Analytical distinction developed in Section 2.2
4. Within-case longitudinal analysis	Examine development within each bank	Compare each bank's 2023, 2024, and 2025 disclosures chronologically	Identify continuity, newly disclosed practices, and comparable changes; first	Yin (2018); Gunawan et al. (2022)

			disclosure is not assumed to mean first implementation	
5. Cross-case comparison	Identify similarities, differences, and gaps	Compare Vietcombank, BIDV, and VPBank across the same five themes	Preserve differences in reporting scope and avoid scoring or ranking the banks	Yin (2018)
6. Quantitative comparability check	Avoid misleading interpretation of numerical changes	Compare reported balances, shares, emissions, and other indicators only where definitions and reporting boundaries permit	Interpret a numerical difference as a trend only when measures are sufficiently comparable; otherwise report it descriptively	Authors' analytical rule based on document-comparison principles

Source: Authors' synthesis

4. Results and Discussion

The analysis shows increasing evidence in the reviewed disclosures that environmental sustainability was being integrated into the reported banking practices of all three cases during 2023–2025. However, this development did not follow a uniform pathway. While reported evidence of governance arrangements, green-finance instruments, and environmental-risk procedures became progressively more observable, the measurement of portfolio-level environmental outcomes remained comparatively less developed. Therefore, the results reinforce the distinction introduced in Section 2.2: commitments, implementation, and reported outcomes represent different forms of evidence and should not be treated as interchangeable indicators of environmental performance.

Table 4 Cross-case development of environmental banking practices, 2023–2025

Analytical theme	Vietcombank	BIDV	VPBank	Main comparative finding
Governance and strategy	ESG progressively integrated into strategy and risk oversight	Sustainability governance became increasingly formalized	Explicit ESG strategy and board/risk oversight already visible early in the period	Convergence in formalization, but different starting points and institutional pathways
Green finance and sustainable products	Green lending plus green/sustainable bonds and deposits	Large green-credit portfolio and diversified domestic ESG instruments	Rapid green-credit expansion and substantial international sustainable funding	Three distinct models of green-finance development
Environmental and climate-risk management	Environmental risk integrated across credit lifecycle	Formal environmental assessment, monitoring and ESMS	Detailed E&S screening plus climate/portfolio tools	Common regulatory baseline, but uneven transition toward climate-risk management
Internal environmental management	Increasing operational GHG and resource indicators	Scope 1–2 measurement and efficiency initiatives	Extensive intensity indicators for energy, water, paper and emissions	Operational impacts are easier to quantify than financed impacts

Measurement, targets and disclosure	Increasingly detailed operational and finance-related disclosure	Strong ESG-data governance and impact reporting	PCAF-related work and limited assurance of selected indicators	Reporting capacity is advancing faster than whole-portfolio outcome comparability

Source: Authors' synthesis

4.1. Environmental governance and strategy

The three banks all reported stronger formal integration of sustainability into governance and risk-management arrangements during the observation period, although they entered the period at different stages. Vietcombank moved from a broader five-pillar sustainable-development orientation in 2023 toward more explicit integration of ESG issues into risk oversight by 2025 (Vietcombank, 2023, 2025). BIDV similarly embedded sustainability into its strategic direction, while its 2024 disclosure identified a Steering Committee and project-management structure for sustainability implementation (BIDV, 2024). By 2025, ESG risk was also incorporated into its risk taxonomy and Risk Appetite Statement (BIDV, 2025). VPBank, meanwhile, had already completed and formally introduced a comprehensive ESG strategy in 2023 and subsequently reported increasingly explicit links between sustainability, board oversight, and risk management (VPBank, 2023, 2024).

Comparatively, the main finding is therefore not that one bank "has ESG governance" while another does not, but that the reviewed disclosures indicate different pathways through which environmental governance became more formalized. VPBank reported a relatively explicit ESG architecture at the beginning of the observation period, whereas BIDV reported substantial formalization of governance structures during the period itself. Vietcombank, by contrast, reported progressively stronger integration through existing strategic and risk-governance mechanisms, rather than through a clearly separate sustainability architecture within the 2023–2025 period. Overall, moved toward clearer responsibilities and stronger oversight for environmental sustainability, although the pace and governance structures differed across the cases. At the same time, the reports provide much stronger evidence of formal governance arrangements than of how environmental performance is linked to executive incentives, capital-allocation decisions, or managerial accountability. Therefore, the main cross-case finding is that the reviewed disclosures indicate increasing formalization of environmental governance across all three banks, although the form and reported depth of this integration remain different. This pattern is consistent with Bose et al. (2018), who argue that institutional and governance mechanisms contribute to the formalization of green-banking practices.

4.2. Green finance and sustainable products

Green finance provides the strongest evidence of implementation across all three banks. Nevertheless, the cases reveal markedly different development patterns.

Table 5 Selected reported green-finance indicators

Bank	2023	2024	2025	Main longitudinal feature
Vietcombank	Green-project loans >3.6% of total loans	3.3%; about VND47.6tn	2.5%; 74.4% of green credit in renewable/clean energy	Broader sustainable-finance instruments despite lower reported portfolio share
BIDV	VND74,177bn	VND80,870bn	VND82,332bn	Large and steadily expanding green-credit base
VPBank	VND14,774bn	VND21,943bn	VND39,052bn	Strong reported acceleration in green-credit expansion, particularly in 2025

Source: Authors' synthesis

BIDV reported a large and steadily increasing green-credit balance, rising from VND74,177 billion in 2023 to VND82,332 billion in 2025 (BIDV, 2023, 2025). In parallel, it diversified its funding architecture through green bonds, sustainability bonds, and green deposits (BIDV, 2024, 2025). VPBank exhibited a different pattern: its green-credit balance increased from VND14,774 billion in 2023 to VND39,052 billion in 2025 (VPBank, 2023,

2025). Meanwhile, Vietcombank expanded sustainable funding instruments through green and sustainable bonds and green deposits, although the reported proportion of green-project loans declined from above 3.6% in 2023 to 2.5% in 2025 (Vietcombank, 2023, 2024, 2025).

The cross-case evidence therefore points to three distinct models of green-finance development. BIDV's trajectory is primarily characterized by scale and progressive diversification of domestic sustainable-finance instruments; VPBank's trajectory is characterized by rapid portfolio expansion combined with substantial access to international sustainable funding; whereas Vietcombank shows increasing product diversification even though its reported green-loan share declined. This distinction is important because it demonstrates that green-finance development cannot be captured by a single indicator. A decline in portfolio share, for example, does not necessarily imply weaker activity when the total loan book, sector composition, and financing instruments change simultaneously. For Vietcombank, the reported development of green-bond financing is also supported by S&P Global (2024) independent Second Party Opinion, which assessed the bank's Green Bond Framework as aligned with the ICMA Green Bond Principles. Similarly, BIDV's green-bond allocation process received independent post-issuance review from FiinRatings (2024), which found the allocation and governance process consistent with the bank's Green Bond Framework. Likewise, VPBank's rapid growth should be interpreted alongside its sectoral concentration, since sustainable transportation represented 76.6% of its green-credit portfolio in 2025 (VPBank, 2025). Accordingly, the most important finding is not which bank reports the "largest" or "fastest" green portfolio, but that Vietnamese banks are constructing green-finance capabilities through different combinations of lending scale, product diversification, funding sources, and sector specialization. This finding extends Nguyen et al. (2023) by showing that differences in sustainable-finance implementation remain visible even among leading commercial banks operating under the same national policy environment.

4.3. Environmental and climate-risk management

Environmental-risk management shows greater similarity across the three banks than green finance. BIDV reported environmental-risk assessment for relevant investment projects in 2023 and subsequently formalized project categorization, assessment, post-disbursement monitoring, and an ESMS for trade finance (BIDV, 2023, 2024). Vietcombank similarly reported that environmental-risk considerations had been incorporated throughout appraisal, approval, and credit monitoring under internal regulations aligned with Circular No. 17 (Vietcombank, 2025). VPBank reported screening and classifying approximately all credit proposals according to E&S risk levels, combined with exclusion lists, action plans, and ongoing borrower monitoring (VPBank, 2025).

The comparison reveals an important two-level pattern. At the first level, the three banks increasingly converge around environmental screening within the credit process, a pattern that is consistent with the emergence of a common procedural baseline under the same regulatory framework. At the second level, however, divergence becomes more visible when the analysis moves from conventional environmental-risk screening to climate-specific portfolio management. VPBank provides particularly explicit evidence linking financed-emissions estimation, carbon-intensive sectors, exclusion policies, and portfolio-transition considerations, while BIDV was still developing its financed-emissions methodology and exploring closer PCAF alignment in 2025 (BIDV, 2025; VPBank, 2025). Vietcombank's disclosures, meanwhile, provide clear evidence of environmental-risk integration across the credit lifecycle but less explicit portfolio-level climate analytics within the reviewed corpus. Consequently, the key cross-case distinction is no longer whether environmental risk is incorporated into lending; rather, it is the extent to which banks are progressing from regulatory environmental compliance toward forward-looking climate-risk and portfolio-transition management. This distinction is consistent with the Basel Committee on Banking Supervision (2022) view that climate-related risks ultimately need to be embedded within broader risk-management processes rather than treated solely as environmental compliance issues.

4.4. Internal environmental management

All three banks increasingly quantified their direct operational impacts. Vietcombank reported both absolute emissions and intensity measures, with total operational GHG emissions increasing slightly between 2023 and 2024 while emissions intensity improved (Vietcombank, 2024). By 2025, emissions per unit of revenue had declined further (Vietcombank, 2025). BIDV also reported Scope 1 and Scope 2 emissions together with resource-efficiency measures (BIDV, 2024, 2025). VPBank, meanwhile, reported reductions in electricity, water, and paper intensity per employee and lower GHG intensity in 2025 despite network expansion (VPBank, 2025).

Across the three cases, reported outcomes are most readily observable in internal environmental management. However, this apparent comparability is partly a function of measurability rather than necessarily of greater strategic importance. Electricity, water, paper, and office emissions can be directly quantified, whereas

financed environmental impacts depend on borrower-level data, attribution methodologies, and portfolio boundaries. Moreover, the banks do not always use identical intensity denominators. Vietcombank emphasizes measures such as emissions per revenue and per employee, while VPBank similarly reports several intensity measures, and BIDV places greater emphasis on aggregate Scope 1–2 changes and resource-saving initiatives. Consequently, operational indicators provide useful evidence of implementation and efficiency, but they remain unsuitable for simple cross-bank ranking. More importantly, the comparison confirms the conceptual argument in Section 2.1: direct operational impacts are increasingly manageable and measurable, yet they represent only one part of a bank's environmental footprint and should not overshadow financed impacts.

4.5. Measurement, targets and disclosure

Measurement and disclosure developed markedly during the period, but the depth of measurement varied. BIDV reported a broader ESG data-governance system covering 876 ESG indicators in 2025, including centralized metadata management for 133 indicators, alongside the development of a methodology for financed emissions (BIDV, 2025). It also disclosed estimated avoided emissions associated with projects financed through ESG bonds (BIDV, 2025). VPBank advanced external verification by obtaining limited assurance from KPMG for selected sustainability indicators, including green-credit data (VPBank, 2025). At the same time, its financed-emissions assessment remained explicitly described as a pilot because of data and methodological limitations (VPBank, 2025). Vietcombank similarly expanded the detail of its operational emissions, green-finance, and risk disclosures (Vietcombank, 2024, 2025).

The deeper comparative finding is that disclosure capacity appears to be developing faster than portfolio-wide environmental outcome measurement. Each bank demonstrates a different aspect of this transition: BIDV emphasizes ESG-data infrastructure and impact reporting; VPBank combines increasingly granular portfolio information with external assurance and pilot financed-emissions analysis; whereas Vietcombank shows substantial improvement in disclosure detail, although a comparable bank-wide financed-emissions inventory was not identified in its reviewed disclosures. These differences should not be interpreted as a hierarchy of environmental performance. Rather, they reveal different stages and approaches in the construction of measurement capacity. Importantly, even the more advanced disclosures remain selective: VPBank's assurance applies only to specified indicators, while BIDV's financed-emissions methodology was still under development. Therefore, the common constraint across all three banks is not the absence of environmental reporting, but the incomplete link between financing decisions and standardized, portfolio-wide environmental outcomes.

4.6. Cross-case synthesis and key findings

The five analytical themes reveal increasing reported evidence that environmental sustainability is being embedded in banking practices across all three cases. However, the extent and form of this reported formalization vary across different dimensions of banking activity. The three cases show increasing convergence in areas where regulatory requirements and established banking processes provide relatively clear implementation pathways, particularly environmental screening, credit-risk procedures, and formal governance responsibilities. By contrast, greater divergence emerges in areas that require bank-specific strategic choices, technical capabilities, or access to specialized funding, such as sustainable-finance portfolio development, climate-risk analytics, financed-emissions measurement, and external assurance. A second and more substantive finding concerns the gap between reported institutionalization (understood here as the formalization of environmental considerations in disclosed governance structures, policies, and banking processes) and measurable environmental outcomes. Across the cases, evidence of commitments and implementation is substantially more developed than evidence connecting those practices to portfolio-wide environmental consequences. The disclosures show clearer governance responsibilities, expanding green and sustainable financial instruments, and increasingly formalized environmental-risk procedures within conventional credit processes. Nevertheless, the reviewed disclosures provide comparatively less evidence showing how these developments translate into changes in financed emissions, portfolio transition alignment, or other standardized environmental outcomes.

The comparison also reveals an important measurement asymmetry. Internal environmental indicators, including electricity, water, paper use, and Scope 1–2 emissions, are relatively easy to quantify and therefore appear prominently in sustainability reporting. However, these indicators represent only the direct operational footprint of banks, whereas potentially more significant environmental effects arise through financing activities. At the same time, the green-finance findings show that loan balances or portfolio shares alone cannot resolve this accountability problem. The three banks differ in portfolio scale, sector composition, funding sources, financial instruments, and reporting definitions; consequently, a larger green-credit balance or a higher reported share cannot by itself demonstrate stronger environmental performance. The meaningful analytical shift is therefore

from asking how much "green finance" a bank reports toward asking what activities are financed, how environmental risks and impacts are measured, and whether financing decisions can be connected to observable environmental outcomes. Finally, the differences in disclosure sophistication across the three cases should be interpreted as differences in measurement and reporting capacity rather than as a hierarchy of environmental performance. BIDV's ESG-data infrastructure, VPBank's external assurance and emerging financed-emissions analysis, and Vietcombank's increasingly detailed environmental disclosure provide evidence of different approaches to strengthening reported environmental accountability. However, none of these features alone establishes superior underlying environmental performance. This reinforces Cregan et al. (2024), who caution against treating stronger environmental disclosure signals as equivalent to stronger lending-related environmental performance. Overall, the cross-case evidence therefore suggests that the next analytical frontier for environmental banking in Vietnam lies not simply in expanding environmental commitments, green products, or disclosure volume, but in strengthening the connection between governance, capital allocation, risk management, and comparable portfolio-level environmental outcomes.

5. Recommendations

Based on the cross-case findings, the recommendations concern both banking regulators, particularly the State Bank of Vietnam (SBV), and commercial-bank managers. Since the study is based on three purposively selected banks rather than a representative sample of the entire banking system, these recommendations should be interpreted as case-informed directions for strengthening environmental banking practices in Vietnam.

At the regulatory level, greater consistency in environmental-finance classification and reporting should be a priority. Although all three banks have expanded green-finance activities, differences in definitions, portfolio boundaries, and reporting measures continue to limit direct comparison. Accordingly, the SBV could provide more detailed guidance on the application of the national green taxonomy and gradually standardize key disclosure requirements for green credit and sustainable-finance portfolios. Such standardization would not only improve comparability across banks but also provide a clearer basis for evaluating whether increases in sustainable finance are associated with meaningful environmental outcomes. At the same time, regulatory development should progressively move beyond project-level environmental screening toward portfolio-level climate-risk management. The findings indicate increasing convergence in environmental-risk assessment within credit processes, whereas financed-emissions measurement and forward-looking portfolio analysis remain less consistent across the three cases. Therefore, the SBV could introduce a phased roadmap for climate-risk metrics, financed-emissions measurement, and portfolio-transition assessment. However, because the reports also reveal continuing data and methodological constraints, such requirements should be accompanied by sector-wide data infrastructure, technical guidance, and capacity-building support.

In parallel, commercial banks should strengthen the connection between environmental governance, financing decisions, and measurable accountability. While governance arrangements have become more formalized, the evidence linking environmental objectives to capital allocation, managerial accountability, and portfolio outcomes remains comparatively limited. Moreover, green-finance progress should not be evaluated solely through loan balances or portfolio shares; instead, banks should complement financial indicators with information on sectoral composition, use of proceeds, and measurable environmental impacts where reliable methodologies are available. Similarly, operational indicators such as electricity, water, paper use, and Scope 1–2 emissions should continue to be monitored, but they should not overshadow the potentially larger environmental impacts associated with financed activities. Ultimately, stronger financed-emissions measurement, portfolio-level climate analysis, and external assurance of material environmental information would help shift environmental banking from increasingly sophisticated commitments and disclosure toward clearer evidence of implemented practices and measurable outcomes.

6. Conclusion

In conclusion, this study examined how environmental was increasingly reflected in the reported practices of Vietcombank, BIDV, and VPBank during 2023–2025 through a qualitative longitudinal multiple-case analysis. The findings provide evidence that all three banks reported stronger environmental governance arrangements, expanded green-finance activities, and greater integration of environmental risks into credit processes; however, their reported institutional pathways, financing models, and measurement capacities remained different. The study identifies a broader pattern of reported institutionalization ahead of outcome measurement, as evidence of commitments and implementation is more developed than comparable portfolio-

level environmental outcomes. Moreover, operational impacts are more readily quantified than financed impacts, while green-credit volumes alone cannot indicate environmental performance. Because these findings are derived primarily from banks' own disclosures, they should be interpreted as changes in reported evidence rather than as independent verification of underlying organizational change or environmental performance. Theoretically, the study contributes by distinguishing reported organizational embedding from environmental performance and by identifying a measurement asymmetry between relatively observable operational impacts and less-developed financed environmental outcomes. This suggests that reporting visibility may partly reflect measurement feasibility rather than the environmental materiality of banking activities. Practically, the findings highlight the need for regulators to improve disclosure comparability and climate-risk guidance, while banks need stronger links between environmental governance, financing decisions, financed-emissions measurement, and portfolio-level accountability.

Nevertheless, the study still has some limitations. It relies primarily on self-reported corporate disclosures and examines only three purposively selected banks initially identified through a non-academic ESG screening list, which may favor relatively advanced sustainability reporters. Although selected claims were corroborated using external documentary evidence, the analysis does not independently verify all reported practices or environmental outcomes. Future research should therefore extend the sample and time horizon, incorporate broader regulatory, portfolio, and third-party data, and examine whether reported institutionalization is associated with independently observed environmental performance.

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