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GREEN FINANCE AND SUSTAINABLE BANKING: GLOBAL TRENDS AND POLICY IMPLICATIONS FOR EMERGING ECONOMIES

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Abstract: Green finance and sustainable banking have moved from a niche area of corporate responsibility to a core component of financial-sector policy. This article examines the principal global trends shaping green finance and evaluates their implications for emerging market and developing economies (EMDEs). Using a qualitative comparative review of international standards, supervisory guidance, market frameworks, and recent policy reports, the study identifies four dominant trends: the institutionalization of climate-risk management in banking supervision; the spread of taxonomies and sustainability disclosure standards; the rapid development of labelled debt markets; and the growing use of central-bank and supervisory tools to address climate-related financial risks. The findings show that EMDEs face a dual challenge. They must mobilize significantly more private capital for low-carbon and climate-resilient investment while protecting financial stability, inclusion, and development priorities. The article argues that effective policy should therefore combine credible taxonomies, proportionate disclosure requirements, climate-risk supervision, project-pipeline development, and blended or catalytic finance. A sequenced approach is preferable to direct transplantation of advanced-economy rules because data quality, market depth, institutional capacity, and transition pathways differ substantially across countries.

Keywords: green finance; sustainable banking; climate risk; sustainable finance taxonomy; emerging economies; green bonds

1. Introduction

The transition toward low-carbon and climate-resilient development requires a major reallocation of capital. Financial institutions are increasingly expected not only to finance renewable energy and environmentally beneficial infrastructure but also to identify how physical climate hazards and transition policies affect credit, market, liquidity, operational, and reputational risks. This change has altered the meaning of "green finance." It now encompasses both the mobilization of finance for environmental objectives and the integration of climate and environmental risk into mainstream financial decision-making. The Basel Committee on Banking Supervision (BCBS, 2022) and the Network for Greening the Financial System (NGFS, 2024) treat climate-related risks as financially material risk drivers that need to be incorporated into governance, risk management, scenario analysis, and supervision.

The transformation is especially important for emerging market and developing economies. Banks dominate financial intermediation in many EMDEs, yet the World Bank (2024) reports that climate-related lending remains a small share of portfolios in a large proportion of these banking systems. At the same time, EMDEs often face larger adaptation needs, higher capital costs, shallower capital markets, and more limited fiscal space. Sustainable Banking and Finance Network (SBFN, 2024) evidence nevertheless shows a rapid diffusion of national sustainable-finance frameworks, including taxonomies, environmental and social risk-management requirements, disclosure rules, and

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thematic bond guidelines. These developments suggest that green finance is becoming a component of financial-sector modernization rather than a separate environmental policy field.

The central policy problem is therefore not whether EMDEs should participate in sustainable finance, but how they can do so without creating excessive compliance costs, mispricing risk, encouraging greenwashing, or restricting credit to sectors that require transition investment. Academic research has long emphasized this tension. Campiglio et al. (2018) argue that climate change creates both physical and transition risks for financial systems, while Dikau and Volz (2021) show that sustainability considerations increasingly intersect with central-bank mandates and financial-stability responsibilities. Volz (2018) similarly stresses that financial governance in developing Asia must both redirect capital and overcome structural barriers to green investment.

Against this background, this article asks two questions: What global trends currently define green finance and sustainable banking, and what policy design principles are most relevant for emerging economies? The objective is to synthesize recent international regulatory and market developments and translate them into a sequenced policy agenda suitable for countries with developing financial systems.

2. Methods

The study uses a qualitative comparative policy-review method consistent with the IMRAD structure. The evidence base consists of international prudential standards, sustainability disclosure standards, market principles, regional regulatory frameworks, and policy reports published primarily between 2018 and 2025. Sources were selected because they either define widely used international practices or provide cross-country evidence relevant to EMDEs. The review includes BCBS climate-risk principles, NGFS climate scenarios, IFRS S2, the European Union taxonomy framework, European Banking Authority guidance, the Green Bond Principles, UNEP Finance Initiative banking principles, IMF and World Bank reports, SBFN benchmarking, and peer-reviewed research on central banks, supervision, and green finance.

The material was analyzed across four dimensions: prudential risk management; information architecture and disclosure; capital-market instruments and standards; and policy design for emerging economies. The comparison focused on areas of convergence among frameworks rather than on a formal ranking of countries. Because the study is based on documentary analysis rather than bank-level microdata, the results identify policy patterns and institutional implications rather than causal effects. This limitation is relevant: green-finance outcomes depend on domestic energy structures, fiscal conditions, legal institutions, market depth, and the credibility of broader climate policy.

3. Results

3.1. Climate risk is becoming part of ordinary banking supervision

The first major trend is the normalization of climate risk within prudential supervision. BCBS (2022) sets out principles covering corporate governance, internal controls, capital and liquidity adequacy, risk management, monitoring, scenario analysis, and supervisory responsibilities. The significance of this approach is that climate risk is not treated as a separate ethical category; it is a driver of traditional banking risks. The EBA (2025) follows the same logic in its guidelines on environmental, social, and governance risks, requiring institutions to identify and measure ESG risks through exposure-, portfolio-, sector-, alignment-, and scenario-based methods and to integrate them into risk appetite, internal controls, and internal capital adequacy processes.

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Scenario analysis has also become a core tool because climate risks are forward-looking, nonlinear, and highly sensitive to policy and technology assumptions. NGFS (2024) scenarios provide a common reference for analyzing orderly, disorderly, and high-warming pathways and highlight that delayed transition can increase both physical damages and adjustment costs. For banks, this trend implies that historical default data alone are insufficient for assessing long-horizon climate exposures. For supervisors, it implies a need to develop data infrastructure and analytical capacity before moving toward mechanically prescriptive capital treatment.

3.2. Taxonomies and disclosure standards are forming the information infrastructure of green finance

A second trend is the construction of a common information architecture. Sustainable-finance taxonomies classify which activities can credibly be considered environmentally sustainable or transition-aligned. The European Union taxonomy, established by Regulation (EU) 2020/852, is the most developed example of a rule-based classification system with environmental objectives, technical screening criteria, and safeguards (European Parliament & Council of the European Union, 2020). Its broader policy influence lies in providing a vocabulary for banks, issuers, investors, and supervisors. SBFN (2024) documents a parallel rise in taxonomies and sustainable-finance frameworks across emerging markets, although approaches vary according to national development needs.

Disclosure standards complement taxonomies by reducing information asymmetry. IFRS S2 requires entities to disclose material climate-related information concerning governance, strategy, risk management, metrics, targets, and the anticipated financial effects of climate-related risks and opportunities (IFRS Foundation, 2023). For banks, such information can improve credit assessment and portfolio monitoring. For investors, it supports pricing and comparison. However, disclosure can only be as reliable as the underlying corporate data. In many EMDEs, smaller firms do not measure emissions, physical-risk exposure, or transition plans, which means that highly sophisticated reporting requirements may initially generate estimates of uneven quality rather than decision-useful information.

3.3. Green and sustainable debt markets are maturing but integrity remains central

A third global trend is the expansion and institutionalization of labelled debt markets. The International Capital Market Association (ICMA, 2025) Green Bond Principles emphasize four core components: use of proceeds, project evaluation and selection, management of proceeds, and reporting. This framework has supported a market in which governments, development banks, financial institutions, and corporations can raise capital for specified environmental purposes. Climate Bonds Initiative (2025) data show that the sustainable-debt market has become a significant international financing channel, including a growing sovereign segment.

For emerging economies, labelled bonds can diversify funding sources, create benchmarks, and improve project transparency, but issuance alone does not guarantee environmental additionality. Credible frameworks, external review, post-issuance reporting, and a sufficient pipeline of bankable green projects are necessary to prevent greenwashing. UNEP Finance Initiative (2019) reinforces this portfolio-level perspective through the Principles for Responsible Banking, which call on banks to align strategy, impact management, client engagement, governance, and transparency with societal goals. Sustainable banking therefore extends beyond issuing a green product; it concerns the direction and risk characteristics of the institution's overall business model.

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3.4. Central banks and financial authorities are adopting a broader toolkit

The fourth trend is the widening role of central banks and financial authorities. Research by Dikau and Volz (2021) finds that sustainability objectives are relevant to a substantial share of central-bank mandates either directly or through obligations to support broader government policy, while climate risk can affect traditional price- and financial-stability objectives even in the absence of an explicit green mandate. Policy tools under discussion or use internationally include supervisory expectations, climate stress testing, disclosure requirements, sustainable-finance taxonomies, collateral and asset-purchase considerations, green refinancing facilities, and support for market standards. Campiglio et al. (2018) caution, however, that the appropriate role of central banks depends on mandates, institutional design, and the interaction with fiscal and environmental policy.

The IMF (2023) similarly emphasizes that climate policies and financial policies must be coordinated in a macrofinancial environment shaped by higher interest rates and constrained risk appetite. This is particularly relevant for EMDEs because higher financing costs can weaken the commercial viability of long-duration green infrastructure. The result is a policy environment in which financial regulation alone cannot close the investment gap. Prudential measures must be complemented by credible climate policy, public investment, development-finance participation, risk-sharing instruments, and measures that improve project preparation.

4. Discussion

The findings indicate that emerging economies should avoid two extremes: passive delay and wholesale replication of advanced-economy regulation. Passive delay would leave banks exposed to poorly measured physical and transition risks and could reduce access to international capital as investors demand better sustainability information. By contrast, copying complex taxonomies or disclosure regimes without adequate data, supervisory expertise, and issuer capacity may create high compliance costs and a formalistic market with limited environmental impact. A sequenced strategy is therefore more appropriate.

First, authorities should establish a national sustainable-finance taxonomy or classification framework that is interoperable with major international systems but tailored to domestic development and transition pathways. A useful taxonomy should distinguish activities that are already green from activities that are necessary for a credible transition. It should also minimize fragmentation across ministries, the central bank, capital-market regulators, and development institutions. The experience summarized by SBFN (2024) suggests that EMDE frameworks are increasingly moving in this direction. Interoperability matters because cross-border investors need comparable definitions, while domestic flexibility matters because energy mixes and technological starting points differ.

Second, climate-risk supervision should be phased in proportionately. Large and systemically important banks can be required to conduct materiality assessments, map sectoral exposures, and use scenario analysis first, while smaller institutions may initially follow simplified guidance. BCBS (2022) and EBA (2025) support a risk-based logic rather than a purely product-based one. Supervisors should prioritize governance, data quality, concentration risk, and the integration of material climate drivers into existing credit and operational risk processes. Automatic “green supporting factors” that reduce capital requirements for green assets should be approached cautiously unless lower risk is supported by evidence; otherwise prudential policy could weaken bank resilience.

Third, disclosure reform should be synchronized with the capacity of the real economy. IFRS S2 (IFRS Foundation, 2023) offers a global baseline, but many EMDE borrowers are small and medium-sized enterprises with limited reporting capacity. A practical model is to begin with a core set of

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decision-useful indicators for large listed firms, major borrowers, and financial institutions, then broaden coverage gradually. Public data platforms for energy use, emissions factors, geospatial hazards, and sector pathways can reduce reporting costs and improve consistency. This is especially important because climate-risk models depend heavily on data that individual banks cannot efficiently produce on their own.

Fourth, policymakers should focus on creating investable assets, not only financial labels. Green bond principles and sustainability taxonomies can channel finance only when projects are commercially and institutionally prepared. Development banks and multilateral institutions can help with project preparation, first-loss capital, guarantees, foreign-exchange risk mitigation, and blended-finance structures. The World Bank (2024) highlights the large gap between climate-finance needs and current bank lending in EMDEs, while Volz (2018) identifies barriers such as policy uncertainty, underdeveloped markets, limited capacity, and risk perceptions. Addressing these constraints can crowd in private capital more effectively than relying on regulatory mandates alone.

Fifth, sustainable banking policy should preserve financial inclusion and a just transition. A rapid withdrawal of finance from carbon-intensive sectors can create regional employment shocks, stranded assets, and credit losses if firms lack feasible transition plans. Sustainable banking should therefore distinguish between financing the expansion of high-emission activities and financing credible decarbonization of existing industries. This distinction is important in EMDEs, where industrialization and energy-access objectives remain central. Policy credibility improves when environmental objectives are integrated with social resilience, competitiveness, and energy security rather than treated as competing agendas.

Finally, the development of green finance should be evaluated by outcomes rather than by the number of frameworks issued. Key indicators should include the share of bank lending supporting mitigation and adaptation, the volume and quality of transition finance, reductions in financed emissions where measurable, improvements in resilience to physical risks, private-capital mobilization, and the incidence of greenwashing. Such outcome-based monitoring aligns with the broader responsible-banking emphasis on impact, target setting, and accountability (UNEP Finance Initiative, 2019).

5. Conclusion

Green finance and sustainable banking are becoming embedded in the architecture of modern financial systems. The dominant global trends are clear: climate risk is being integrated into prudential supervision; taxonomies and disclosure standards are creating a common information base; labelled debt markets are becoming more standardized; and central banks and supervisors are developing tools to assess climate-related financial risk and support market development. These trends are reinforced by international standards and market frameworks from BCBS, NGFS, IFRS, ICMA, UNEP FI, and regional regulators.

For emerging economies, the central challenge is implementation. Policy should be ambitious enough to improve risk management and mobilize capital, yet proportionate to local market depth, data availability, and institutional capacity. The most effective sequence is to build a credible taxonomy and basic disclosure architecture, strengthen supervisory capacity and climate-risk data, develop a pipeline of bankable green and transition projects, and use public or development-finance instruments to crowd in private investment. Green finance should ultimately be judged not by labels, but by whether it makes financial systems more resilient and channels capital toward sustainable, inclusive, and economically viable development.

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