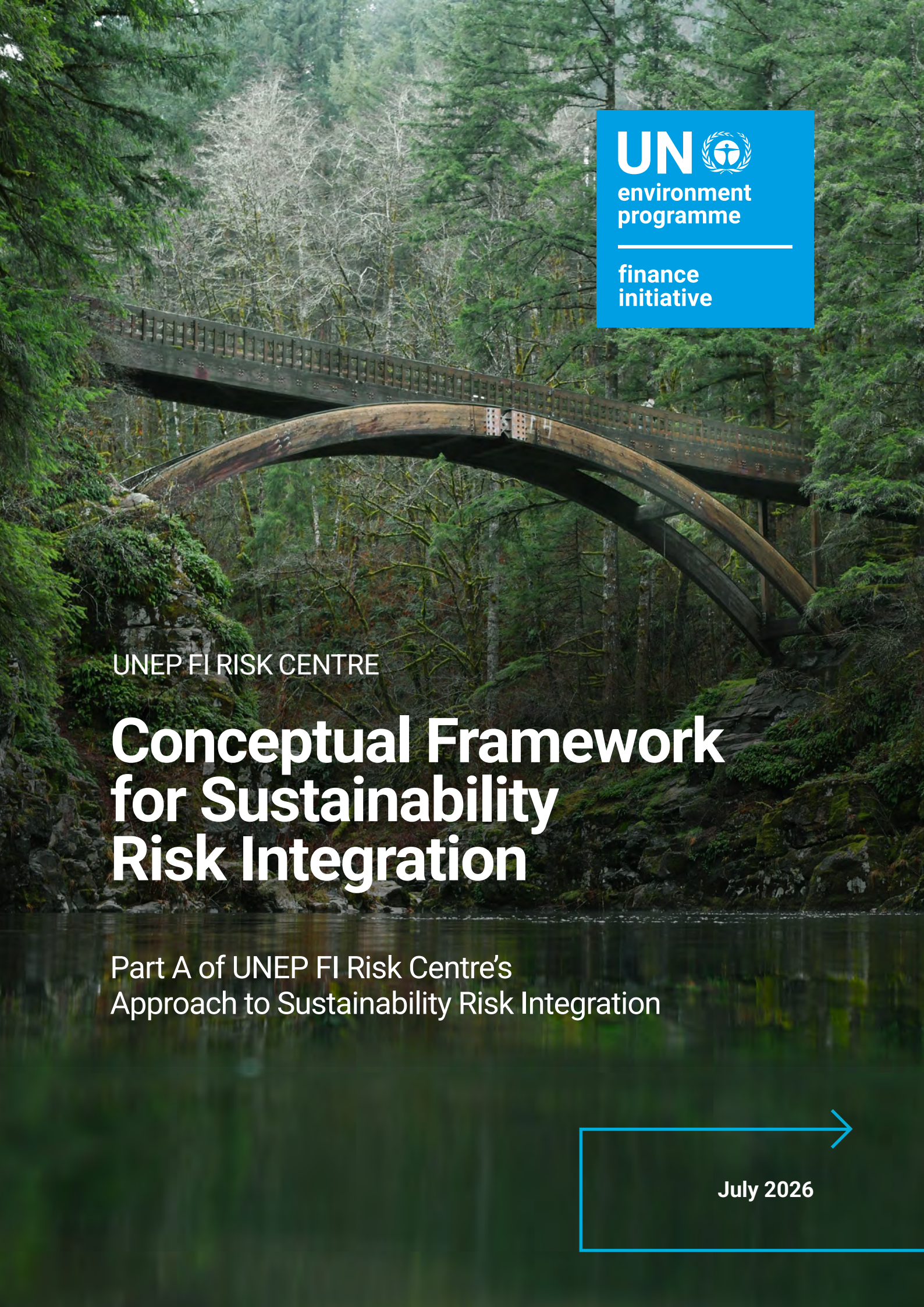


UNEP FI RISK CENTRE

Conceptual Framework for Sustainability Risk Integration

Part A of UNEP FI Risk Centre's Approach to Sustainability Risk Integration

July 2026

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About the Risk Centre

The United Nations Environment Programme Finance Initiative (UNEP FI) Risk Centre is a United Nations (UN) centre-of-expertise that provides financial institutions with a coherent and practical approach to systematically integrate sustainability considerations into their existing risk management frameworks and practices.

Launched in 2024 at the World Economic Forum (WEF) meeting in Davos by Inger Andersen, Executive Director of UNEP, the Risk Centre undertakes research and develops knowledge resources to inform various aspects of sustainability risks. The Risk Centre works closely with financial institutions, academic institutions, data providers, modellers, tool developers, regulators and other stakeholders to create actionable insights and practical resources chiefly for risk professionals within banks and insurers.

The Risk Centre develops tools, methodologies and guidance to help financial institutions understand how sustainability factors affect prudential risk and provides practical support irrespective of where they are on their sustainability risk integration journey.

More information about the Risk Centre can be found here: unepfi.org/risk-centre/.

About this report

Sustainability is increasingly central to prudential risk management. Yet sustainability risk integration remains uneven, with a persistent gap between supervisory expectations and embedded practice. Over 90 per cent of banks consulted by the UNEP FI Risk Centre in 2026 indicated that a structured reference framework would benefit their sustainability risk integration efforts. This document presents the UNEP FI Risk Centre's *Conceptual Framework for Sustainability Risk Integration*. It defines seven core elements that together provide the architecture through which sustainability considerations are integrated into existing risk management practices. The seven elements function as a coherent, interconnected system in which each reinforces the others. Integration is designed to be scalable and proportionate to institutional size and complexity. The *Conceptual Framework* treats sustainability risk as transversal: sustainability factors are drivers and amplifiers of established prudential risk categories rather than a standalone risk type. It is bank-focused, jurisdiction-neutral, and structured around the typical risk management life cycle and establishes what needs to be in place without prescribing specific methodologies, tools, or models, and is applicable across a range of bank types, sizes, and jurisdictions. The *Conceptual Framework* is the first part of the UNEP FI Risk Centre's *Approach to Sustainability Risk Integration*, to be followed by an Operational Playbook, and a suite of technical resources and case studies.

Acronyms and abbreviations

BCBS	Basel Committee on Banking Supervision
BII	British International Investment
E&S	Environmental and Social
GHG	Greenhouse Gas
ICAAP	Internal Capital Adequacy Assessment Process
ISSB	International Sustainability Standards Board
PCAF	Partnership for Carbon Accounting Financials
PRB	Principles for Responsible Banking
RAF	Risk Appetite Framework
RAS	Risk Appetite Statement
SRI	Sustainability Risk Integration
UNEP FI	United Nations Environment Programme Finance Initiative
WEF	World Economic Forum

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Executive summary

Sustainability risks are increasingly central to prudential risk management, yet integration across the banking sector remains uneven. Consultation by the UNEP FI Risk Centre found that over 90 per cent of member bank respondents would benefit from a structured reference framework for sustainability risk integration. This view was shared even among institutions with mature frameworks, suggesting that the integration challenge grows as implementation deepens.

This document presents the UNEP FI Risk Centre's *Conceptual Framework for Sustainability Risk Integration.* The *Conceptual Framework* treats sustainability risk as transversal: i.e., sustainability factors act as drivers and amplifiers of established prudential risk categories rather than constituting a new risk type that requires parallel structures. Its central proposition is that sustainability considerations should be embedded within banks' existing risk management architecture rather than built alongside it.

The *Conceptual Framework* defines seven core elements that together constitute this architecture: (i) Risk strategy; (ii) Governance; (iii) Risk taxonomy and scope; (iv) Risk identification, measurement and materiality assessment; (v) Risk appetite; (vi) Risk management actions; and (vii) Risk monitoring and reporting. These core elements correspond to foundational elements of a typical risk management life cycle that are already familiar to banks, and function as an interconnected system. Risk strategy provides the overarching direction for Risk taxonomy and scope, and feeds directly into Risk appetite. Risk identification, measurement and materiality assessment informs Risk appetite and Risk management actions. Governance determines the cadence and character of Risk monitoring and reporting, which in turn feeds back into Risk management actions and Risk appetite.

Bank-focused and jurisdiction-neutral, the *Conceptual Framework* is structured around the typical risk management life cycle rather than the pillars of any single disclosure standard. It establishes what needs to be in place without prescribing specific methodologies, tools or models, enabling scalable application across bank types, sizes and jurisdictions, proportionate to institutional complexity. The primary audience for this work is risk professionals in banks, including chief risk officers and their teams, second-line risk managers, and board risk committees.

The *Conceptual Framework* is motivated by the *Landscape Report on Sustainability Risk Integration* (UNEP FI, 2026a), which documents the consultation underpinning this work. It will be followed by an *Operational Playbook* providing modular guidance, templates and case studies that translate the seven core elements into sequenced actions, and by a suite of *Tools and Resources* offering further technical support. Together, these three components constitute the *UNEP FI Risk Centre's Approach to Sustainability Risk Integration (UNEP FI, 2026b)* in full that supports banks in moving from uneven or peripheral treatment of sustainability risks toward their systematic integration into core prudential risk management.

Introduction

Sustainability risks are no longer at the periphery of financial decision-making. Climate change, biodiversity loss, and pollution, coupled with resource and social pressures, transmit directly into credit, market, operational and liquidity risk—often non-linearly and across uncertain time-horizons. Supervisory expectations have expanded across most parts of the world. Yet integration remains uneven, with a gap between regulatory expectations and embedded practices.

This document constitutes Part A of the UNEP FI Risk Centre's *Approach to Sustainability Risk Integration* ('Approach', hitherto) (UNEP FI, 2026b), with a planned *Operational Playbook* as Part B. It presents the UNEP FI Risk Centre's *Conceptual Framework for Sustainability Risk Integration*. In terms of content, it defines the core elements that banks need for integrating sustainability considerations into their day-to-day risk management functions. These elements serve as building blocks that together provide the architecture that banks must have in place for sustainability risk integration to be operationalized. The *Conceptual Framework* describes the 'what' of the risk integration approach. In particular, it establishes the core elements required, without prescribing specific methodologies, tools or models. It is designed to be applicable across a wide range of bank types, sizes and jurisdictions. Over time, the *Conceptual Framework* will be supplemented by an *Operational Playbook* (the 'how' of the risk integration approach), and a suite of technical resources, including tools and case studies that will cover various elements and aspects of the *Conceptual Framework*.

The *Conceptual Framework* is a bank-focused approach oriented towards prudential risk. It adopts a comprehensive definition of sustainability risk. In addition, it is jurisdiction-neutral and based on a typical risk management life cycle. The target audience for this document is primarily risk professionals in banks. These include, among others: chief risk officers and their teams; risk managers in the second line who cover credit, market, liquidity, operational and other prudential risk types, and enterprise risk management; and board risk committees.

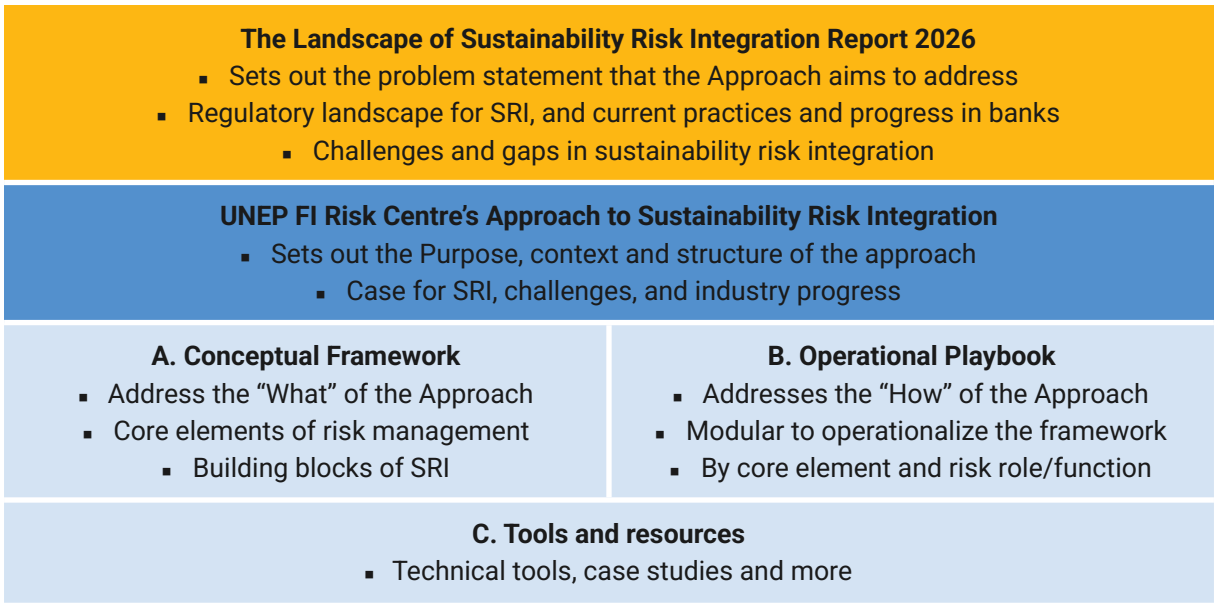


Figure 1: UNEP FI Risk Centre's Approach to Sustainability Risk Integration (SRI)

The *Conceptual Framework* is focused on prudential risk management. In particular, it sets out to provide a framework for the integration of sustainability into prudential risk management. Nevertheless, it sits within the ecosystem of UNEP FI frameworks, journeys and guidance on sustainability, including the UN Principles for Responsible Banking (PRB). As such, it is important to note that sustainability risk integration can also inform how banks identify impacts and opportunities. The same analyses used to identify sustainability risks and emerging vulnerabilities can also highlight opportunities associated with adaptation and resilience, transition and healthy, inclusive economies. This does not alter the prudential orientation of the *Conceptual Framework* but instead recognizes that effective risk management can contribute to improved strategic allocation, portfolio resilience and positive sustainability impact over time.

What this *Conceptual Framework* offers

This *Conceptual Framework* provides a common reference for banks to assess their current integration efforts, identify gaps, and sequence further work, guided by the principles of proportionality and materiality. It is not prescriptive. This work has been shaped by the needs and practices of UNEP FI member banks, as documented in the UNEP FI Risk Centre's *Sustainability Risk Integration Landscape Report 2026* (hitherto, *Landscape Report*) (UNEP FI, 2026a)[1]. The *Conceptual Framework* takes a holistic approach to sustainability risk and can be applied both holistically and discretely. Structured around the typical risk management life cycle rather than the pillars of leading disclosure frameworks, it offers a jurisdiction-neutral benchmark for banks across regulatory regimes.

The *Conceptual Framework* does not prescribe a maturity model, nor does it envisage that every bank will follow the same path or achieve the same degree of integration. It is intended to be helpful to all banks and is guided by the principles of proportionality and materiality. Nevertheless, the *Conceptual Framework* can help banks to assess the progress of their sustainability risk integration practices.

1 In April and May 2026, UNEP FI members were consulted on sustainability risk integration progress and challenges in their banks. In total, 28 banks from across all regions and representing a diversity of sizes and business models participated. The banks were specifically consulted on the core elements of sustainability risk integration, and the feedback received has shaped the design of this *Conceptual Framework*.

At earlier stages, integration may be limited to selected portfolios or to sustainability specialists, with a focus on meeting regulatory requirements or tackling individual sustainability topics. At more advanced stages, sustainability considerations are reflected consistently across governance structures, business units, geographies, risk types and decision-making processes. As risk management practices continue to evolve across the banking sector, consideration will be given to referencing additional risk elements commonly found in more developed approaches. These include risk culture, control frameworks, data architecture and governance, escalation and breach management, and assurance.

The movement from limited or partial integration to systematic integration is not only a technical progression but also an organizational one. Roles, decision rights, incentives, governance forums, data ownership, reporting arrangements and system connectivity may need to evolve as sustainability risk becomes embedded into day-to-day risk management practice. Over time, banks may also move from reliance on specialist teams, and from individual expertise towards more institutionally embedded capabilities supported by governance frameworks, information systems and organizational structures.

Managing this progression will be looked at further in the forthcoming *Operational Playbook for Sustainability Risk Integration*.

Scope and focus of this *Conceptual Framework*

This *Conceptual Framework* focuses on the integration of sustainability risks into banks' existing risk management frameworks, with a particular emphasis on governance, strategy, risk appetite, risk measurement and reporting. It provides a conceptual basis for identifying, assessing, managing, monitoring and reporting sustainability-related risks across portfolios and business activities. The framework is not intended to replace transaction-level environmental and social risk management approaches. Approaches such as the Equator Principles and other sector-specific environmental and social due diligence frameworks are key implementation mechanisms that provide information and tools to support the identification and management of sustainability risks within broader risk management processes. The framework therefore considers both the top-down assessment of sustainability risks that informs enterprise and portfolio-level decisions, and bottom-up insights generated through client engagement, due diligence and individual transactions.

Defining sustainability risk

The definition of sustainability risk used in this *Conceptual Framework*, and throughout the Risk Centre's *Approach to Sustainability Risk Integration*, is outlined below.

Understanding sustainability as a risk driver

The UNEP FI Risk Centre views sustainability as a driver and amplifier of existing risk types, rather than as a standalone risk category. These risk types relate to environmental, social and governance conditions or events that could have negative consequences for a bank and its counterparties should they occur. Such conditions and events include those induced by the bank or its counterparties, as well as those arising independently of them. They can emerge gradually or abruptly and can drive and amplify financial risks across short-, medium-and long-term horizons. Time-horizons in sustainability risk management are not typically defined as fixed periods but are considered in relation to how sustainability-related factors develop and how they may translate into financial risks over time.

Sustainability-related risk drivers, conditions and events are deeply interconnected and mutually reinforcing. For example, climate change accelerates nature loss through rising temperatures and through more frequent and extreme weather events. Meanwhile, nature loss and pollution undermine climate resilience by degrading the ecosystems that absorb carbon dioxide and buffer communities against physical impacts. Both can drive social disruption by displacing people, causing food insecurity and destroying livelihoods. This can increase losses for banks.

Governance-related counterparty risks are addressed through established corporate governance, conduct, due diligence and stewardship frameworks. These include the Equator Principles and International Finance Corporation Performance Standards, and the OECD Guidelines for Multinational Enterprises on Responsible Business Conduct and the OECD Due Diligence Guidance. As such, the current focus of the Risk Centre's work and its Approach is on environmental and social factors that can drive financial risks for banks and their counterparties. Governance remains relevant as an enabling factor because weak governance can amplify environmental and social risks and hinder effective risk management responses.

Sustainability does not introduce a separate risk universe, but changes the severity, timing and distribution of familiar risks. For instance, climate transition could drive credit risks through the impairment of carbon-intensive assets, or it could manifest as market risks due to repricing. Similarly, nature degradation such as biodiversity loss may affect collateral values and operational resilience. For example, declining soil health could lead to a lowering of farmland prices. Similarly, localized water stress could disrupt business operations.

This framing has two implications. Firstly, it shapes where and how sustainability considerations are embedded across banks' risk management frameworks; namely, into existing risk strategy, governance, materiality assessment, appetite and reporting processes rather than into parallel structures. Secondly, it aligns with the prevailing characterization of sustainability risks within supervisory frameworks, which also treat sustainability as a driver of existing risk categories.

The case for the Conceptual Framework for Sustainability Risk Integration

Banks have made notable progress incorporating sustainability risks into prudential risk management, particularly with respect to climate. Yet over 90 per cent of respondent banks in the UNEP FI Risk Centre's 2026 consultation indicated that a structured reference framework would benefit their sustainability risk integration efforts (UNEP FI, 2026a). The figure is notable given the maturity of the respondents: 71 per cent already operate such a framework, and a further 25 per cent plan to introduce one. The demand for such a common reference framework is widely shared, including among experienced institutions. It is strongest among the banks that are furthest along the integration journey. Notably, those banks with frameworks already in place are more likely to report integration difficulty (62 per cent) than those still considering one (57 per cent), which indicates that the challenge grows as implementation deepens. It also suggests that banks believe they may benefit from a more standardized approach to sustainability risk integration, particularly in jurisdictions where frameworks are not yet established, as this could improve comparability in risk practices and peer positioning.

The existing body of guidance is substantial, and each framework, guide and tool serves a distinct purpose. Supervisory frameworks aim to set expectations rather than provide the implementation architecture for sustainability risk integration. Disclosure standards focus on structuring external reporting rather than on internal risk management. Voluntary commitment frameworks address ambition and target-setting rather than the embedding of sustainability into core risk processes. Banks operating across multiple regulatory regimes brings these instruments together into a single internal architecture. At present, however, they have limited guidance for doing so.

Even as integration tends to proceed topic-by-topic and risk type-by-risk type, the underlying risks are interconnected and are system-wide (UNEP FI, 2026a). For instance, climate change accelerates nature loss, nature loss can reduce climate resilience, and resource scarcity impacts compound across the value chain, all which can transmit into social disruption and liability exposure. An approach focused on climate alone, or on credit risk alone, or on governance structures ahead of operational depth may not capture these shared transmission channels. This could lead to gaps across market, liquidity, operational and strategic risk frameworks that are relevant for banks' risk management practices and prudential supervisors. The holistic treatment of sustainability risks adopted here is consistent with UNEP FI's impact management approach, in which comprehensive coverage of sustainability topics is a defining feature.

Banks have established the foundations of sustainability risk integration and recognize its prudential relevance. A coherent and practical architecture would help organize integration across the full life cycle of risk management and across all sustainability dimensions.

Interconnected set of elements. The core elements described above are not to be seen as standalone components or as individual building blocks that function on their own. To be effective and consistent, they should function as a coherent, interconnected system that is deeply embedded into existing risk management processes, where each element reinforces and informs the others. The *Conceptual Framework* has been designed to enable interconnections and therefore the deep embedding of sustainability considerations into core risk processes, as described in the sections above.

Embedded into existing processes. Sustainability risks are embedded within existing risk management frameworks and business processes, rather than implemented as a separate structure. The *Conceptual Framework* enables incorporating sustainability considerations into core risk processes, governance and day-to-day decision-making tools.

Scalable and proportionate. Integration is tailored to the size, complexity and risk profile of each institution. For smaller or less complex banks, this may mean high-level qualitative assessments, targeted sector policies and simpler monitoring indicators. For larger or more complex institutions, it may involve advanced scenario analysis, granular portfolio analytics, and full integration into internal models and capital frameworks. The proportionate approach taken by the *Conceptual Framework* allows banks to build capabilities iteratively while maintaining alignment with evolving regulatory and market expectations.

From fragmented to systematic. The *Landscape Report* (UNEP FI, 2026a) suggests that many of the consulted UNEP FI member banks are currently in an intermediate phase in their integration journeys, with more work to be done to comprehensively embed sustainability risks. Over time, banks are likely to move from ad-hoc risk assessments and isolated capabilities to systematic management of sustainability risk across their organizations. This *Conceptual Framework* is intended to support that evolution by providing a coherent structure that banks can adapt and embed over time, as needed.

Aligned with UNEP FI frameworks and journeys. The UNEP FI Risk Centre's *Conceptual Framework* is primarily aimed at supporting the integration of sustainability into prudential risk management. It forms one part of a wider set of UNEP FI frameworks, journeys and resources that address distinct but complementary dimensions of responsible banking. The PRB provide the overarching framework for signatory banks, aligning bank strategy and practice with the Sustainable Development Goals and the Paris Agreement across climate, nature, human rights, and healthy and inclusive economies. The associated Responsible Banking Journey maps signatories' progression from foundational to leading practice through the cornerstones of Assessment, Strategy and Action. Thematic guidance deepens practice within specific sustainability themes. The *Conceptual Framework* complements this body of work by providing a prudential risk architecture through which the sustainability drivers surfaced by PRB impact analysis and thematic guidance are embedded into a bank's risk strategy, governance, appetite and monitoring processes.

Aligned with regulation and industry frameworks. The sustainability risk landscape is populated by a wide range of regulation and frameworks, as documented in the *Landscape Report* (UNEP FI, 2026a). Each piece of this guidance plays a valuable role. The *Conceptual Framework* serves a different function. It supports the integration of sustainability considerations into prudential risk management to facilitate sound risk management practices and alignment with prudential supervisory expectations across jurisdictions. It aims to interoperate with extant toolkits such as the British International Investment's (BII) FI toolkit (including its Climate Risk Management Toolkit [BII, n.d.]) and with measurement standards like the Partnership for Carbon Accounting Financials (PCAF).

The *Conceptual Framework* primarily operates at the enterprise and portfolio levels. It is not intended to replace transaction-level environmental and social risk management approaches. Existing frameworks, such as the Equator Principles and sector-specific due diligence tools, remain important implementation mechanisms that provide inputs into the identification, assessment and management of sustainability risks across portfolios. Together, enterprise-level risk integration and transaction-level approaches enable banks to connect individual client and transaction insights with broader risk management processes, including risk appetite, portfolio assessment and monitoring. There is also a body of work published by development finance institutions that expand on specific approaches to one or more of the core elements outlined below (for example, see the European Bank of Reconstruction and Development's Environmental and Social Policy [2024]).

The building blocks for sustainability risk integration

Banks will recognize these seven elements listed below as the foundational components of a typical risk management framework. They comprise the established architecture through which banks already identify, assess, and manage traditional risks. The following section introduces each core element, defines it in the context of sustainability risks, provides an example and draws out the links between the other core elements. These elements were decided based on an UNEP FI Risk Centre consultation in 2026 (as explained in footnote 1).

The aim of this *Conceptual Framework* is to ensure that sustainability considerations are fully reflected within existing risk management practices. These core elements are shown in Figure 2 below and comprise:

- **Risk strategy** is the strategic link between a bank's overall approach to risk tasking and the bank's strategy, as well as its financial and commercial objectives, including its sustainability ambition and goals.
- **Governance** is the set of structures, policies and controls used for the oversight of how risk is managed in a bank, including sustainability risks.
- **Risk appetite** comprises the quantitative and qualitative limits and thresholds related to sustainability risks and impacts within which the bank conducts its business.
- **Risk taxonomy and scope** define sustainability risk for the bank and the organizational boundaries to which such definitions apply including geographies, sectors and client segments.
- **Risk identification, measurement and materiality** are related processes for identifying, measuring and assessing the materiality of sustainability-related financial risks to the bank.[2]
- **Risk management actions** are the steps taken by the bank to manage and mitigate its sustainability risk exposure such as hedging, client engagement, pricing adjustments and insurance.
- **Risk monitoring and reporting** is the process of collating sustainability risk metrics and dashboards for internal oversight and external disclosures.

A worked example of how the core elements operate together as a connected framework is included as Annex A of this report. Table 1 sets out the primary connections between the seven core elements in the framework. The UNEP FI Risk Centre's research projects seek to provide a more granular and detailed development of tools and other resources for each core element of this framework. This includes forthcoming publications on risk appetite, sector-specific sustainability scorecards for credit risk assessments, and sustainability risk-related disclosures.

2 See Box 1 for a further discussion of materiality and the importance of double and dynamic materiality assessment in respect of sustainability risks and impacts.

A worked example of how the core elements operate together as a connected framework is included as Annex A of this report. Table 1 sets out the primary connections between the seven core elements in the framework. The UNEP FI Risk Centre's research projects seek to provide a more granular and detailed development of tools and other resources for each core element of this framework. This includes forthcoming publications on risk appetite, sector-specific sustainability scorecards for credit risk assessments, and sustainability risk-related disclosures.

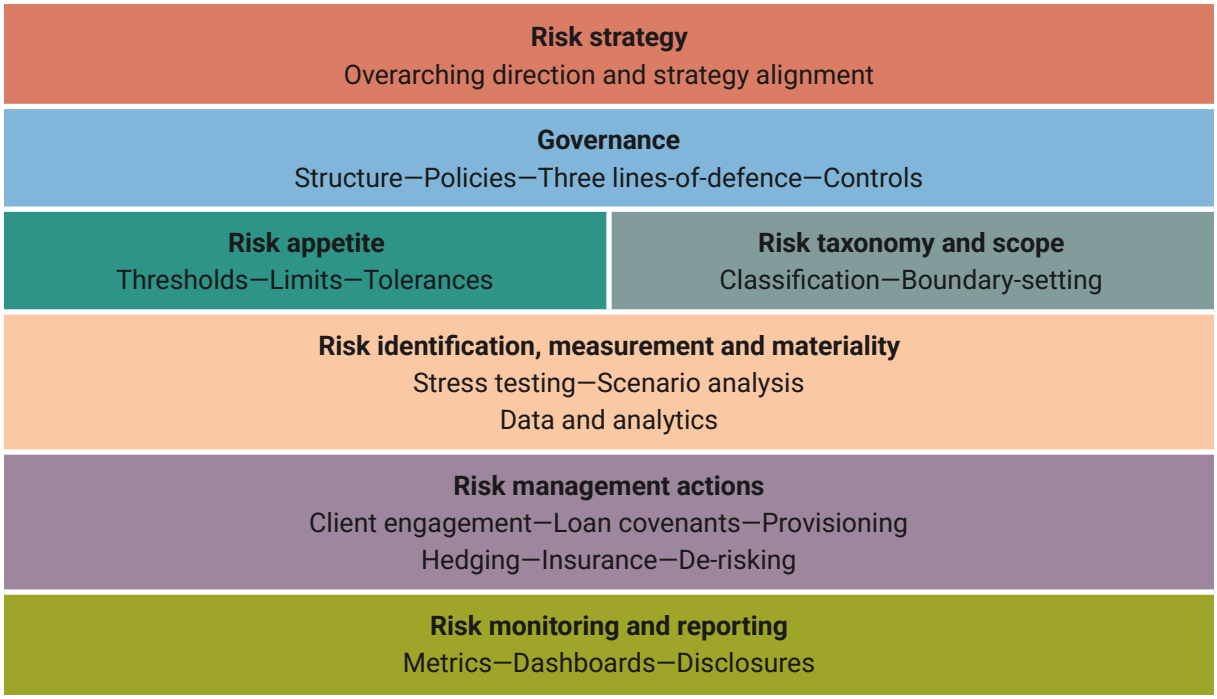


Figure 2: The core elements of a conceptual framework for sustainability risk integration

Table 1: An interconnected framework—key linkages between core elements

	Risk strategy	Governance	Risk appetite	Risk taxonomy and scope	Risk identification, measurement and materiality	Risk management actions	Risk monitoring and reporting
Risk strategy		Shapes governance for sustainability risks: structures, policies, reporting and escalation.	Translates into limits, thresholds and exclusions for sustainability risks.	Defines which sustainability risks matter across units, products, segments and geographies.	Sets the breadth and depth of sustainability risk identification and materiality thresholds.		
Governance			Sets the approval process for the Risk Appetite Framework and Statement.	Assigns roles and responsibilities for sustainability risks across the three lines of defence, business units and geographies.		Defines approval and escalation channels for sustainability risk management actions.	Sets reporting lines, metrics and disclosure requirements for sustainability risks.
Risk appetite						Drives risk management actions where thresholds are breached or at risk of breach.	Defines limits, thresholds and metrics for monitoring sustainability risk exposures and management actions.
Risk taxonomy and scope			Determines which sustainability risk types are subject to risk appetite limits.		Defines boundaries for identifying and assessing sustainability risk drivers.		

	Risk strategy	Governance	Risk appetite	Risk taxonomy and scope	Risk identification, measurement and materiality	Risk management actions	Risk monitoring and reporting
Risk identification, measurement and materiality	identifies material sustainability risks relevant to the business model and may prompt strategy recalibration.		Informs limits and thresholds by identifying, measuring and determining material sustainability risks.	May prompt review and refinement of the Risk taxonomy and scope where new sustainability drivers are identified.		May trigger reviews of limits, underwriting standards or engagement protocols.	Determines which sustainability risks require monitoring and disclosure.
Risk management actions	indicates whether the strategic sustainability risk posture remains appropriate and may prompt recalibration of Risk strategy.		Feeds back into Risk appetite where residual sustainability risk exceeds thresholds, prompting reassessment of limits, pricing or engagement terms.				Feeds into sustainability risk metrics, providing evidence of effectiveness.
Risk monitoring and reporting	informs periodic review and calibration of risk strategy.		Shows whether exposures remain within limits.		Informs ongoing risk measurement and materiality assessment.	Triggers actions when limits or thresholds are breached.	

Core element 1: Risk strategy

Risk strategy defines the overall level and types of risk that a bank is willing to accept in pursuit of its business objectives. Grounded in a bank's financial goals, target markets, and growth ambitions, it reflects a fundamental institutional disposition toward risk-taking that is set at board level, embedded in governance structures, and expressed consistently across business lines and decision-making processes. The Basel Committee on Banking Supervision (BCBS) identifies alignment with commercial and financial strategy as a foundational component of sound risk management, establishing the directional parameters within which all other risk management activity operates (BCBS, 2015).

A bank's *Risk strategy* addresses how risks are weighed against returns across its chosen business activities, what concentrations it is prepared to accept, and how it responds to emerging risks that may affect the viability of its business model over different time-horizons. *Risk strategy* is forward-looking in nature as it anticipates how external factors such as regulations and economic trends may alter the risk profile of an institution, and it therefore shapes the bank's positioning accordingly.

Sustainability risk drivers are embedded within *Risk strategy* because they affect the long-term viability of business models, alter sector and geography risk profiles and introduce time-horizon considerations that extend beyond conventional planning cycles. The integration of sustainability risk drivers into *Risk strategy* is a natural extension of existing risk practices. It extends the same logic that leads a bank to define its appetite for credit concentration or to clarify how market volatility applies to its disposition towards climate risks, pollution risks, resource efficiency, nature risks and social risks.

How Risk strategy links to other parts of the Conceptual Framework[3]

Risk strategy sets the directional foundation for all other core elements. It shapes *Governance* by setting the risk orientation that governance structures are established to enforce. *Risk strategy* establishes the institution's overall approach to managing risk exposures, which is then translated into *Risk appetite* with defined limits, thresholds and metrics against which exposures can be monitored and governed. *Risk strategy* shapes *Risk taxonomy and scope* by determining which sustainability risk drivers a bank recognizes as relevant to its business model. Findings from *Risk identification, measurement and materiality* and from *Risk monitoring and reporting* flow back into *Risk strategy*, prompting revisions to a bank's general risk posture as sustainability risk exposures and their financial materiality evolve.

3 For clarity and simplicity of presentation throughout this document, the seven core elements and their interlinkages are presented in a linear manner. In practice, risk management is an ongoing and iterative process that flows across a bank's annual operating cycle. Each core element is linked to every other core element as connected elements within a bank's enterprise risk management.

In practice[4]

A bank's risk strategy influences how it identifies and manages sustainability risk exposures. For example, a bank with a strong focus on balance sheet resilience and financial stability may apply a more cautious approach to exposures associated with heightened sustainability risks, including through enhanced due diligence, risk mitigation measures and monitoring. Another bank may place greater emphasis on supporting clients in managing transition-related risks, using client engagement, transition planning and ongoing monitoring to inform risk decisions. In both cases, the integration of sustainability risks involves aligning approaches to identification, assessment and management with the bank's overall risk strategy, risk appetite and existing risk management practices.



Figure 3: Links between Risk strategy and other core elements

Core element 2: Governance

Governance is the framework of structures, policies, processes and controls through which a bank's board and senior management direct and oversee risk management. It links risk-taking to corporate strategy, ensures that risks are identified and maintained within *Risk appetite*, and sustains a risk-aware culture throughout the institution. Effective governance is a prerequisite for sustainability risk integration. Without clear ownership, defined decision rights and appropriate oversight mechanisms, sustainability risk drivers cannot be systematically managed within a bank's existing risk framework.

This typically includes a dedicated sustainability risk policy, set of policies or the embedding of sustainability risk principles within existing credit and sector risk policies. It is here that a bank sets out its own sustainability risk definitions, risk type owners, processes and escalation requirements for sustainability risk.

The 'three lines of defence' is the typical structure through which risk management responsibilities are organized in banks. The first line—business units and front-office—owns and manages risk at

4 For each of the core elements, a brief practical example is provided for illustrative purposes. These are not meant to be comprehensive. More detailed examples will be included in the forthcoming *Operational Playbook*.

the point of origination. The second line—the risk management function and compliance—provides independent oversight, sets standards and challenges first-line risk assessments. The third line—audit—provides independent assurance over the adequacy and effectiveness of the overall framework. Sustainability risk governance operates within this existing structure as the ownership, oversight and assurance responsibilities for sustainability risks are assigned within the established 'three-lines of defence' model.

In practice

Guided by a bank's climate risk policy, a first-line relationship manager may flag physical climate exposure during loan origination for a counterparty in a flood-prone region. A second-line sustainability risk function then challenges that assessment against the bank's risk appetite and escalates where thresholds may be breached. At the third-line, auditors might periodically test whether sustainability findings are captured within standard risk reporting and governance processes, in the same way as for other prudential risk types.

At the board level, effective governance requires that sustainability risks are subject to the same scrutiny as other risk categories. This includes board-level oversight of how sustainability risks are reflected in strategy and risk appetite, and adequate skills and capacity among board members and senior management to examine sustainability risk exposures and management responses. Where dedicated sustainability risk functions exist, their mandate is to support and strengthen second-line oversight rather than to substitute for it. Governance structures, and the policies and processes that flow from them, are typically subject to supervisory review as part of the broader assessment of a bank's risk management framework.

Risk culture refers to the values, attitudes and behaviours that influence how risk is handled within a bank. If governance is the hardware of oversight, then risk culture can be understood as the software that makes it work. Risk culture is important for sustainability risk integration because policies, taxonomies and appetite statements only take effect when risk practitioners across the bank treat sustainability risks as part of their core responsibilities. Senior leadership's 'tone from the top' plays a significant part in this positioning. Similarly important are the extent to which sustainability outcomes feature in performance objectives and incentives, and the level of investment in training across the three 'lines of defence'.

In practice

Banking supervisors conducting oversight, or a board risk committee reviewing a bank's overall risk governance framework, might examine whether sustainability escalation triggers are formally documented within existing risk policies. They might also consider whether board risk committee minutes provide evidence of substantive engagement based on sustainability risk findings.

How Governance links to other parts of the Conceptual Framework

Governance translates the risk orientation set under *Risk strategy* into the structures, policies and escalation channels through which sustainability risks are managed day-to-day. *Governance* establishes the role of a board in approving *Risk appetite.* It shapes *Risk taxonomy and scope* by determining how sustainability risk ownership and definitions are assigned across the 'three lines of defence', plus it defines the approval and escalation channels for *Risk management actions*. Finally, it shapes *Risk monitoring and reporting* by setting the reporting lines and board-level review processes through which sustainability risk exposures are surfaced.



Figure 4: Links between Governance and other core elements

Core element 3: Risk appetite

Risk appetite[5] is the aggregate level and type of risk a bank is willing to accept in pursuit of its strategic objectives and business plan. This third core element operationalizes *Risk strategy*, translating the institution's overall orientation toward risk-taking into defined limits, thresholds and conditions against which exposures can be monitored and governed. Two instruments give Risk appetite its operational form where sustainability risk drivers are incorporated: Risk Appetite Statement (RAS) and Risk Appetite Framework (RAF).

The RAS is the formal articulation of the specific limits, thresholds and qualitative conditions within which a bank operates. As such, it is the concrete expression of what the RAF governs. Sustainability exposures are expressed in quantitative terms where data and methods allow, and in qualitative terms where they do not, such as exclusions based on human rights or ecological sensitivity

On the other hand, the RAF provides the overarching structure through which risk appetite is implemented and monitored across a bank, covering the full range of risk types included in the *Risk taxonomy*. In some jurisdictions, bank supervisors require banks to maintain a robust RAF as a core component of their prudential risk management system. Sustainability risks are subject to the same governance, monitoring and escalation mechanisms as other prudential risk categories.

5 *Risk appetite* is the focus of a forthcoming publication from the UNEP FI Risk Centre.

Risk appetite is set relative to risk capacity, which represents the absolute maximum level of risk that a bank can assume given its financial resources before its viability is jeopardized. In sustainability terms, this capacity provides the critical buffer for absorbing non-linear tail events such as sudden policy shifts or catastrophic physical climate impacts that could erode capital more severely than traditional economic cycles.

This third core element is calibrated using the outputs of the materiality assessment, including risks arising from sustainability risk drivers, and is monitored through the risk indicators and dashboards that feed into risk reporting. Where appetite thresholds are breached or at risk of breach, the escalation and management response mechanisms described under *Risk management actions* are engaged.

How Risk appetite links to other parts of the Conceptual Framework

Risk Appetite is set within the boundaries defined by *Risk Taxonomy and Scope*, which determines the range of sustainability risk types that the RAF and RAS must cover. *Risk Appetite* operationalizes *Risk Strategy* and, in turn, drives *Risk Management Actions* where thresholds are breached or at risk of breach. It is informed by the outcomes of the *Risk Identification, Measurement and Materiality* actions. Once established, Risk Appetite thresholds are tracked through *Risk Monitoring and Reporting*, providing the basis against which sustainability risk exposures are assessed on an ongoing basis.

In practice

A bank's RAS might include a quantitative limit on aggregate exposure to sectors with high climate transition risks, such as coal-fired power generation, alongside a qualitative exclusion on financing new coal mining projects. This illustrates how the same sustainability driver can be expressed through both quantitative thresholds and qualitative conditions within the RAS.

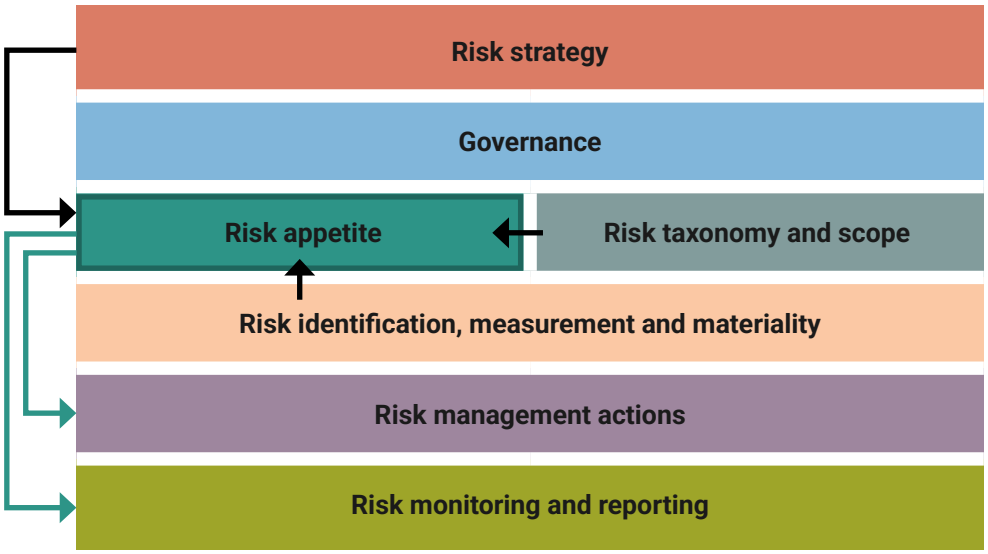


Figure 5: Links between Risk appetite and other core elements

Core element 4: Risk taxonomy and scope

Risk taxonomy and scope define what sustainability risks mean for a bank in operational terms. Together they translate broad sustainability issues into concrete risk categories, establish the boundaries of application, and provide the standardized definitions and categories as well as a common language for consistent identification and management of sustainability risk across the institution.

Risk taxonomy is a structured, hierarchical classification of the risks that a bank faces. It provides a standardized language for identifying, measuring and reporting risks consistently across business lines and risk functions, thereby helping map risk drivers to their transmission channels and potential financial impacts. It facilitates regulatory compliance, supports risk aggregation and underpins data-driven decision-making.

A practical question for any taxonomy is how sustainability-related issues map onto a bank's existing prudential risk categories. In practice, banks have taken different approaches, often in combination. These approaches include: embedding sustainability drivers directly into existing risk types such as credit or market risk; specifying environmental and social (E&S) risk as a distinct subtype for project finance and client due diligence; and naming sustainability risks explicitly as risk drivers, cross-cutting themes, overlays or formal risk types in response to the systemic nature and regulatory salience thereof. While the appropriate approach depends on a bank's business model, regulatory context, and existing risk architecture, this *Conceptual Framework* treats sustainability as a transversal driver of other prudential risks.

Risk scope defines the boundaries within which the *Risk taxonomy* applies. It determines which business units, geographies, products, asset classes and legal entities fall within the risk management framework, and which risk categories within the taxonomy are considered material for a given institution. Where the *Risk taxonomy* provides the definitional architecture, the *Risk scope* determines where and to what that architecture is applied. Internal consistency is important. In whichever ways that sustainability risks are classified and scoped, the *Risk taxonomy and scope* together ensure that drivers are systematically identified, that responsibilities are clearly assigned, and that sustainability risks are assessed throughout a bank's core prudential risk processes.

For banking groups operating across multiple countries, business units and legal entities, *Risk scope* has both a vertical and a horizontal dimension. Vertically, group-level sustainability risk expectations cascade into subsidiary, country, portfolio and transaction-level decision-making. Horizontally, sustainability considerations apply consistently across business units, while recognizing differences in products, business models, client bases and local regulatory environments. This dimension is particularly relevant where country-level sustainability issues, sovereign risk dynamics, national decarbonization pathways or public policy priorities shape both an institution's risk profile and its opportunity set.

In practice

A bank might embed nature risks directly within its existing credit risk taxonomy by treating nature-dependent collateral, such as agricultural land or forests, as a contributing factor in standard credit assessment. This reflects how a sustainability driver can be absorbed into an established risk category rather than requiring a new one. In respect to the *Scope* aspect of this fourth core element, a bank with material exposure to carbon-intensive industrial sectors might place transition risk within the scope of the taxonomy for its wholesale and corporate lending portfolios, where policy, technology and market shifts feed through to borrower cash flows and asset values. Transition risk might be treated as immaterial for its unsecured retail lending book, where the transmission to individual borrower creditworthiness is currently indirect. *Scope* is set by a judgement about where the risk driver is currently material, not applied uniformly across a bank.

How Risk taxonomy and scope links to other parts of the Conceptual Framework

Risk taxonomy and scope translate the direction set by *Risk strategy* and the accountability structures established under *Governance* into a defined classification of sustainability risk drivers. In turn, it shapes *Risk appetite* by determining the risk types over which appetite is set. Similarly, it shapes *Risk identification, measurement and materiality assessment* by defining the boundaries within which risk drivers are identified and assessed.

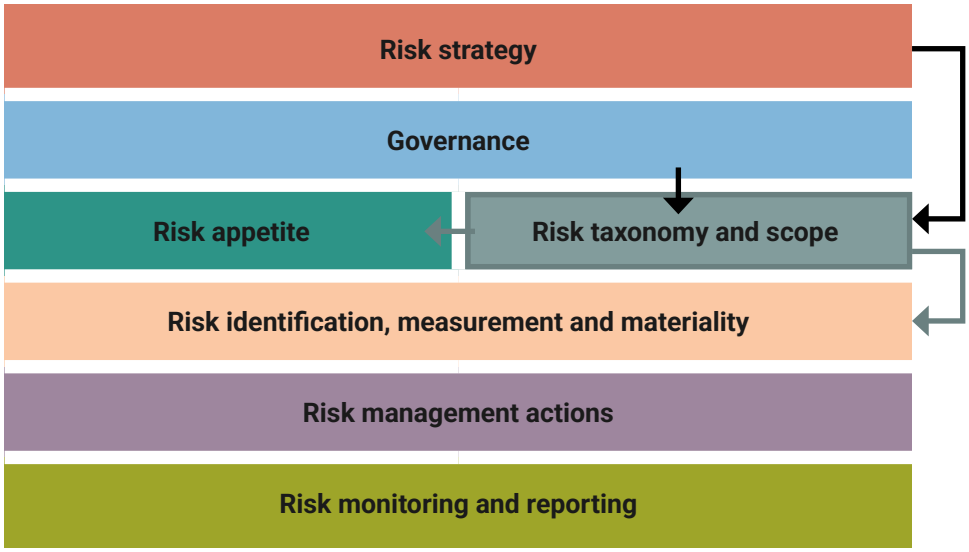


Figure 6: Links between Risk taxonomy and scope and other core elements

Core element 5: Risk identification, measurement and materiality

Risk identification, measurement and materiality is the analytical engine of the sustainability risk management framework. Through a structured process, a bank determines (at both portfolio and counterparty level) which risk drivers are present and estimates their potential financial significance. It then prioritizes those risk drivers that are material to its financial condition, business strategy, capital and liquidity adequacy, funding access and collateral values. Without systematic identification and credible measurement, risk appetite cannot be meaningfully set, risk management actions cannot be prioritized, and monitoring cannot be anchored to evidence. Under the Internal Capital Adequacy Assessment Process (ICAAP), materiality assessment also forms the basis for determining whether additional capital buffers are warranted.

Risk identification is the process of detecting and recording sustainability drivers that could transmit into a bank's established prudential risk categories across relevant business units, geographies, sectors and counterparty types. For example, a single counterparty may carry physical climate risks through asset location, climate transition risks through carbon-intensive production, pollution-related risks through effluent and hazardous waste, nature-related risks through ecosystem dependencies in its supply chain, and social risks through labour practices in exposed geographies. Identification methods include portfolio-level sector and geography screening, counterparty-level due diligence, and internal scoring frameworks that flag sustainability drivers at origination and at review.

Risk measurement translates identified risk drivers into estimated financial impacts, including changes to credit parameters, asset valuations, liquidity positions or operational loss exposures. This translation exercise is complex as the industry continues to build its capabilities for modelling the transmission mechanisms between sustainability risks and financial risks. Sustainability drivers tend to operate through indirect pathways and over longer time-horizons than conventional risk factors. Moreover, they do not map easily onto discrete, point-in-time parameters that standard quantitative models are designed to capture. Where full quantification is not feasible, calibrated qualitative assessments supported by structured scoring, heatmaps and expert judgement provide a proportionate interim approach.

Scenario analysis and stress testing are particularly important methods for the measurement and assessment of sustainability risks, given their long time-horizons and potential non-linearity. Scenario analysis defines plausible future states—which are combinations of physical climate outcomes, policy trajectories, technology transitions, and nature or social system changes—and estimates financial impacts on a bank's portfolios under each. Stress testing applies defined shocks to estimate impacts on capital, earnings, liquidity or specific portfolios. Results are best presented by acknowledging uncertainty, and they are best used to inform business decisions rather than generate false precision.

Working off a bank's inventory of identified and measured risks, *Materiality assessment* prioritizes those risks that could significantly affect its financial condition or business strategy. *Materiality assessment* translates identification and measurement outputs into a prioritized risk map that directs resource allocation and informs risk appetite calibration. For prudential risk management purposes, the primary lens is financial materiality, although two related concepts are relevant and addressed in Box 1. *Materiality assessment* also takes account of country and sovereign context where these factors influence an institution's sustainability risk profile. Sustainability risk drivers can be amplified or mitigated by national policy frameworks, fiscal capacity, infrastructure resilience, energy systems, natural resource dependence, social conditions and institutional effectiveness. For institutions

operating across multiple jurisdictions, materiality assessments connect counterparty and portfolio-level analysis with the country and sovereign context in which the institution operates.

In practice

A bank identifies that it has a textile manufacturing counterparty operating in a region with documented labour rights concerns. Risk measurement translates this into an estimated increase in operational and reputational loss probability should adverse labour practices come to light. At the same time, it considers potential credit impacts if disrupted operations affect the counterparty's revenue. Through the risk materiality assessment, a bank considers this exposure alongside its broader lending concentration in the same region and industry, recognizing that aggregate exposure to this social risk driver may be material even where any single counterparty's exposure is not.

Box 1: Double materiality and dynamic materiality

Double materiality. This concept holds that materiality has two directions: inward and outward. The financial impacts of sustainability factors on a bank are 'inward', while its own impacts on the environment and society are 'outward'. Prudential risk management is principally concerned with the inward dimension. The two are related as a bank's own sustainability impacts and those of its counterparties can create risks that feed back into financial exposure and strategic risks.

Dynamic materiality. Sustainability risks do not have a fixed profile. Factors that appear immaterial today can become financially material in the future. Examples include physical climate risks in a particular geography, liability risks from biodiversity loss or social risks in a supply chain. This act of becoming material may happen gradually or abruptly as physical systems, policy environments, market dynamics, technology and stakeholder expectations shift. This concept of dynamic materiality underscores why a materiality assessment calibrated only to current conditions may underestimate emerging risks, and why the choice of time-horizon and the use of forward-looking tools such as scenario analysis are particularly important.

Data, metrics and analytics are the enabling infrastructure for identification, measurement and materiality assessment. Key risk indicators operationalize risk appetite thresholds, provide input to risk monitoring dashboards and enable the bank to track whether materiality conclusions remain valid as conditions change. In practice, data limitations should not preclude the start of integration. Instead, data capabilities should be developed in parallel with the identification and measurement processes that they support. To do so, they should draw on proxies, qualitative judgement and expert input where quantitative data is incomplete or unavailable. Model risk management (MRM) establishes a formal process for validating the models and expert judgments used to quantify sustainability impacts. Since sustainability data are frequently estimated or forward-looking, MRM ensures analytical tools are not "black boxes" by rigorously testing assumptions, data inputs and limitations to prevent significant errors in risk estimation.

How Risk identification, measurement and materiality links to other parts of the Conceptual Framework

Risk identification, measurement and materiality assessment draws on the classification of risks established under *Risk taxonomy and scope* to determine which sustainability risk drivers warrant further analysis. Materiality findings that indicate a shift in a bank's sustainability risk profile are fed back into *Risk strategy*, prompting a reconsideration of a bank's overall risk-taking orientation. Its outputs also feed into *Risk monitoring and reporting*, providing the indicators and materiality reference points against which sustainability risk exposures are tracked. Where identification surfaces new or previously unrecognized sustainability drivers, findings may also prompt a review of the *Risk taxonomy and scope* itself. *Risk management actions* are taken following the *Risk identification and measurement* of sustainability risk drivers.

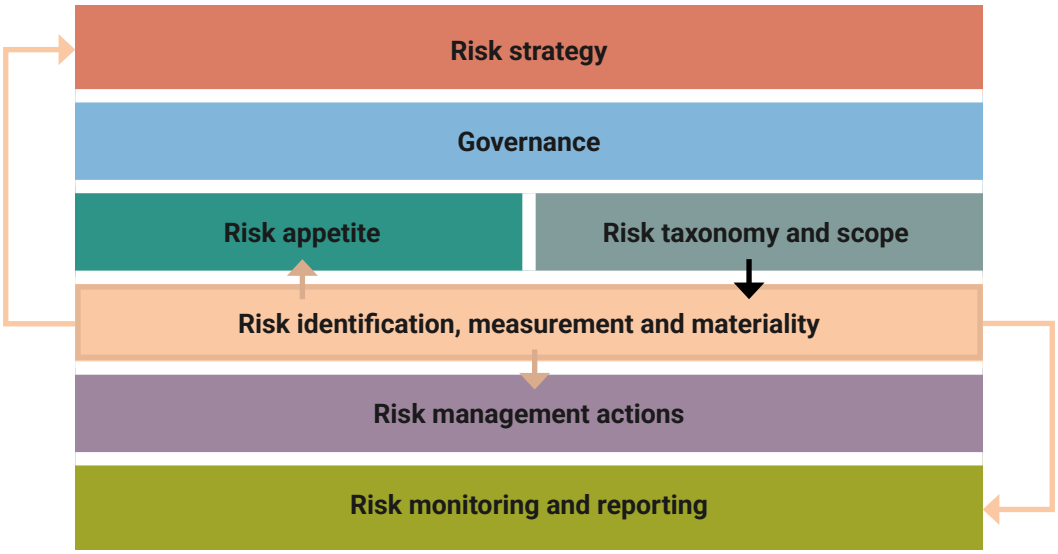


Figure 7: Links between Risk identification, measurement and materiality and other core elements

Core element 6: Risk management actions

Risk management actions are the operational responses that a bank takes once risk drivers have been identified, measured and assessed as material. They translate the outputs of the materiality assessment and the boundaries set by *Risk appetite* into concrete controls, adjustments and interventions across portfolios, transactions and counterparty relationships.

Portfolio-level actions are the primary mechanism through which a bank manages aggregate sustainability risk exposures in line with its *Risk appetite*. The principal tools are sector exposure limits and concentration controls, setting maximum aggregate exposures to sectors, geographies or asset classes carrying material sustainability risks. Portfolio screening and heat-mapping provide the analytical foundation for limit-setting and ongoing management, enabling the bank to identify concentrations, monitor trends and prioritize where more granular action is required.

At the transaction level, sustainability risk management operates through the underwriting and credit assessment process, ensuring that material sustainability risk drivers are reflected in credit decisions, pricing, collateral requirements and covenant structures. Enhanced due diligence is the primary instrument for higher risk counterparties. Where due diligence identifies material drivers, available instruments include pricing adjustments, collateral requirements, covenant structures and provisioning overlays.

In practice

A bank identifies elevated transition risk concentration within its packaging and consumer goods portfolio, where producers reliant on single-use plastics face declining demand as consumer preferences shift and regulatory restrictions on plastic packaging expand across key markets. In response, a bank sets a maximum aggregate exposure limit for single-use plastics-dependent producers and applies enhanced screening to new originations, using portfolio heat-mapping to monitor whether concentration trends toward or away from the limit as the transition progresses.

Within *Risk management actions*, scenario analysis and stress testing serve a distinct function from their role in the fifth core element (*Risk identification, measurement and materiality*). Their purpose here is to assess whether actions taken at portfolio and transaction levels are sufficient to keep a bank's risk profile within the defined risk appetite under plausible adverse conditions. Where stress results indicate that current exposures would generate impacts beyond the risk appetite, findings trigger a review of limits, underwriting standards or engagement protocols.

Sustainability risk integration also broadens the nature of client engagement. Traditional credit engagement centres on repayment capacity, financial performance, collateral, covenants and management quality. Sustainability risk integration extends this to the drivers that may shape those fundamentals over time, such as transition readiness, physical resilience, nature dependencies, labour practices and exposure to evolving stakeholder expectations. These sharpen an institution's understanding of risk and its response. As such, client engagement is a risk management instrument. The E&S risk management capacity, credible transition plans or transition readiness of borrowers are direct driver of credit quality, and assessment thereof is an established component of credit risk management at more advanced institutions. Where engagement does not produce required improvements within a defined time frame, escalation to relationship review, limit reduction or client exit follow through the standard credit governance process. However, client exit is considered a risk management outcome of last resort.

In practice

Where enhanced due diligence on a manufacturing counterparty identifies a pattern of unresolved pollution incidents, inadequate waste management controls, and weak resource efficiency, the counterparty can be exposed to rising input costs, regulatory action and reputational risk. In such a scenario, a bank might respond through tighter covenant structures. These might include the requirement of remediation milestones, with engagement on a defined improvement time frame. Where the counterparty fails to meet these milestones, the bank may escalate to limit reduction or, ultimately, exit through its standard credit governance process. The findings also feed back into the bank's *Risk appetite* for the exposure. Where residual sustainability risk exceeds the appetite set at origination, the bank may reassess the limits, pricing and terms on which the relationship is maintained.

Risk management actions reduce an individual bank's exposure to sustainability risks through portfolio adjustments, tighter covenants and, in the last resort, client exit. This helps protect the individual balance sheet. Importantly, such *Risk management actions* do not, on their own, reduce the underlying risk drivers or the financial system's aggregate exposure to these drivers (FSB, 2022). Supporting counterparties to adapt their assets, operations and business models strengthens the resilience of the real economy that bank exposures ultimately depend on (FSB, 2025). Bank supervisors have recognized this systemic dimension of sustainability risks and are developing frameworks to monitor it, with the joint macroprudential work of the European Central Bank (ECB) on climate risks among the most advanced (ECB, 2023).

Where sustainability risk drivers are assessed as material and not fully mitigated by portfolio or transaction-level controls, they are reflected in the bank's capital adequacy assessment. Under Pillar 2 of the Basel framework, banks may be required to hold capital, strengthen their control frameworks, or restrict risk appetite for material risks that are not captured in the Pillar 1 minimum requirements (BCBS, 2020; 2022). The ICAAP is considered the appropriate vehicle for reflecting residual sustainability risks in internal capital requirements.

The data and metrics infrastructure underpinning *Risk management actions* is outlined under core element 5 (*Risk identification, measurement and materiality*). The relevant question at this stage is whether a bank has the indicators needed to track whether its actions are effective, whether portfolio exposures are aligned with limits, whether counterparty risk profiles are improving, and whether provisioning and capital positions adequately reflect residual sustainability risks.

How Risk management actions link to other parts of the Conceptual Framework

Risk management actions are shaped by *Governance*, which determines the approval and escalation channels through which actions are authorized, in addition to the boundaries set by *Risk appetite*. The controls, adjustments and exit decisions taken under *Risk management actions* in turn feed the data captured through *Risk monitoring and reporting*, providing the evidence base against which the effectiveness of those actions is assessed. These *Risk management actions* also translate the outputs of *Risk identification, measurement and materiality* and the boundaries set by *Risk appetite* into specific controls, adjustments and interventions across portfolios, counterparties and transactions. *Actions* also feed back into *Risk appetite* where residual sustainability risk exceeds thresholds set at origination, prompting reassessment of limits, pricing or engagement terms. Finally, *Risk management actions* link back to a bank's *Risk strategy* where the set of actions taken indicates that the risk posture established at the strategic level needs to be reconsidered.



Figure 8: Links between Risk management actions and other core elements

Core element 7: Risk monitoring and reporting

Risk monitoring and reporting is the ongoing process of tracking, assessing and communicating a bank's risk exposures against established thresholds and metrics, fulfilling both internal management and external regulatory requirements. It enables proactive management decisions, supports regulatory compliance and provides transparent, timely information to stakeholders including senior management, the board, and supervisors.

Risk monitoring tracks sustainability risk exposures and management actions against the limits, thresholds and indicators established under *Risk appetite*. Key metrics are to be embedded in existing risk dashboards and management information systems rather than maintained in separate sustainability reporting structures. Sustainability risk metrics are inherently more forward-looking than conventional risk indicators, which tend to be calibrated to historical loss experience. Effective monitoring therefore relies on a combination of backward-looking performance indicators and forward-looking metrics, including scenario-based projections and transition pathway assessments. This combination is necessary to provide a complete picture of a bank's risk profile over relevant time-horizons. Risk metrics, dashboards, 'deep dives' and reports typically trigger *Risk management actions*.

In practice

A bank monitoring exposure to its agricultural counterparties that are dependent on water-intensive irrigation might track a forward-looking indicator on regional water stress alongside backward-looking metrics such as historical drought-related loan defaults. Doing so would provide an early signal of deteriorating risk profile before it materializes in conventional credit metrics.

Risk reporting[6] communicates the outputs of monitoring to the appropriate governance levels and external audiences. Internally, sustainability risk information is reported to senior management and the board through the same governance processes that oversee conventional risk categories. This ensures that sustainability risk management actions are visible to and acted upon by decision makers with the authority to respond. Externally, climate-related financial risk disclosures form a part of Pillar 3 reporting under the Basel framework (BCBS, 2025) and are increasingly subject to specific regulatory reporting requirements across jurisdictions.

In practice

Where risk reporting to the board identifies a sustained increase in exposure to counterparties with documented labour rights concerns approaching a bank's appetite threshold, this finding would be escalated through *Risk management actions* and fed back into the materiality assessment. This would then prompt a reassessment of whether labour rights risk in the relevant sector warrant a lower risk appetite threshold or tighter portfolio controls.

Consider also a bank whose climate-related credit risk exposures (as identified through scenario analysis) are reported internally to senior management and the board as part of standard risk reporting cycles. The same underlying data also feed into a bank's Pillar 3 disclosures on climate-related financial risk and supervisory returns required under its prudential authority's climate risk reporting expectations. Further, the same data and metrics are used for external sustainability disclosures prepared in accordance with applicable standards, such as the ISSB standards. This ensures consistency between what is disclosed externally to regulators, investors, and other stakeholders, on the one hand, and what informs internal decision-making, on the other.

Data governance is a component of effective *Risk Monitoring and Reporting* and includes establishing access to data and data ownership, as well as methods for data provenance and traceability, quality controls, model validation, and the transparent documentation of assumptions, limitations, and the use of expert judgement. These considerations are particularly important for sustainability data, which is often incomplete, estimated, or forward-looking, and frequently reliant on third-party providers whose methodologies may vary and evolve over time. Internal audit, second-party opinions and external assurance are mechanisms that banks have increasingly introduced to bolster confidence in sustainability risk metrics and disclosures.

6 Sustainability-related risk disclosures is the focus of a forthcoming publication from the UNEP FI Risk Centre.

How Risk monitoring and reporting links to other parts of the Conceptual Framework

Risk monitoring and reporting operates in close connection with the other elements of the framework. It relies on the escalation channels and board-level review processes established under *Governance*, so that limit breaches, emerging exposures and adverse trends are brought to the attention of senior management and the board. It also consolidates the controls and adjustments taken under *Risk management actions* into the risk metrics and dashboards through which sustainability risk exposures are tracked, allowing banks to assess if those actions are having the intended effect.

The outputs of *Risk monitoring and reporting*, in turn, inform the other core elements. Where *Risk monitoring* identifies adverse trends or shortcomings in existing controls, the findings support the review and recalibration of *Risk appetite* and *Risk management actions*. Where new or previously underestimated exposures are identified, the results feed back into *Risk identification, measurement and materiality*, so that a bank's view of its risk profile remains up to date. In this way, *Risk monitoring and reporting* closes the loop across the core elements of the framework and supports its application as an iterative, ongoing process rather than a one-off exercise.

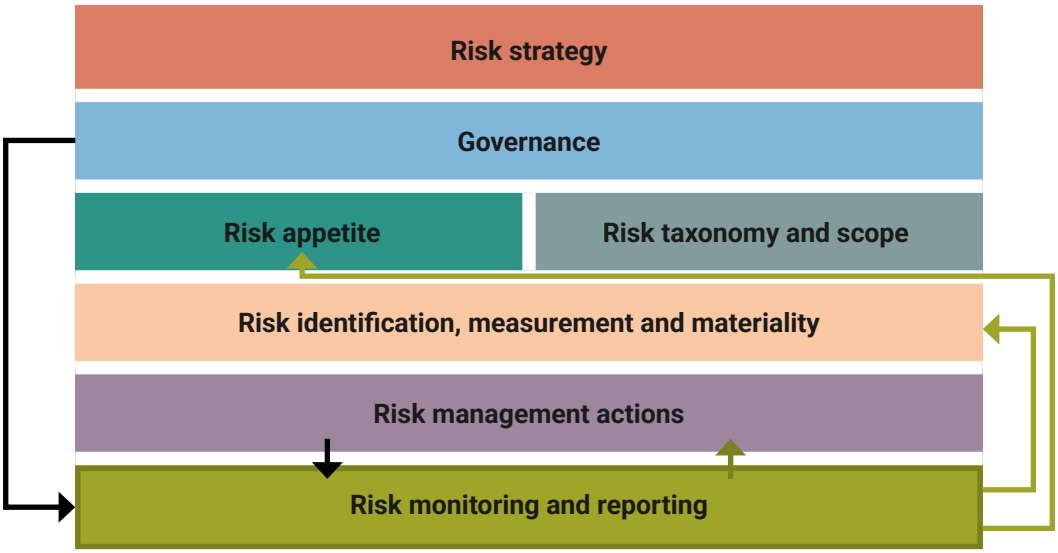


Figure 9: Links between Risk monitoring and reporting and other core elements

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ANNEX. Conceptual Framework for Sustainability Risk Integration—hypothetical example

Managing deforestation risk in an agribusiness lending portfolio

This example is presented for illustrative purposes only. It does not represent regulatory or supervisory expectations, nor does it reflect the practice of any specific institution or jurisdiction. It illustrates how a sustainability risk driver may be considered through each of the seven core elements of the *Conceptual Framework*. Figure 10 below depicts the primary sustainability considerations for each core risk element in the example.

The example is set in the context of Bank A, a bank with substantial corporate and commercial lending exposure to the agribusiness sector, including palm oil production and trade. For banks of this type, palm oil and related financing typically forms part of mainstream corporate lending rather than a discrete portfolio, spanning trade finance, working capital and term lending across the supply chain. Bank A falls within the scope of emerging supervisory expectations on climate and nature risks and is in the process of building its sustainability risk framework. A small sustainability risk function within the second 'line of defence' works alongside credit risk to embed sustainability considerations into existing processes. Internal guidance is under development, and external regulatory and industry publications inform the approach in the interim.

The example follows a single sustainability risk driver—namely, deforestation linked to agribusiness expansion—through each of the seven core elements. This driver is chosen because it engages nature, climate, pollution and social dimensions within a single counterparty relationship, reflecting the holistic definition of sustainability risk. The nature dimension arises through biodiversity loss and degradation of ecosystem services. The climate dimension arises through the loss of carbon sinks and, in peatland areas, direct greenhouse gas emissions from land conversion. Pollution arises through waterway contamination from processing effluent and air pollution from land burning. Social dimensions arise through community and indigenous land rights. The example is presented at counterparty, portfolio and enterprise level to illustrate how the same driver is managed across the risk management life cycle.

The example begins when routine monitoring in Bank A identifies recent land clearing associated with Firm B, one of the bank's largest palm oil borrowers, which holds significant outstanding credit facilities. An environmental organization publishes allegations linking Firm B to peatland deforestation, waterway contamination downstream of processing operations, air pollution from land burning, and unresolved community and indigenous land rights disputes. Several international buyers of palm oil announce that they are reviewing supplier relationships. Although Firm B continues to meet its

financial obligations, these developments raise concerns that future cash flows and creditworthiness could be weakened die to reduced market access, higher costs, legal action and reputational damage.

1. Risk strategy

Bank A's *Risk strategy* recognizes that sustainability drivers can affect its financial risk profile through established prudential risk categories. Agribusiness remains an important lending sector. The strategy identifies that deforestation-related activities may increase credit, market, operational, legal, compliance, reputational and strategic risks. At counterparty level, sustainability information is considered alongside conventional financial analysis. At portfolio level, agribusiness is identified as a sector requiring enhanced oversight because similar sustainability risk drivers may affect multiple borrowers at once. At bank level, the strategy sets out Bank A's overall approach to integrating sustainability risks into risk management practices.

2. Governance

The relationship manager escalates the deforestation exposure at Firm B through established credit risk processes. The sustainability risk function and the credit risk function jointly review and challenge assumptions on the potential consequences of certification loss, supply chain disruption and changing market requirements. Additional analysis is requested before Firm B's next credit review.

The exposure is considered through existing credit and risk committees, and developments within the agribusiness portfolio are reported through routine management information. At bank level, the Board Risk Committee receives regular reporting on sector concentrations and on emerging sustainability risk themes, including the agribusiness deforestation exposure.

3. Risk appetite

Bank A's board-approved *Risk appetite framework* is being extended to incorporate qualitative and quantitative boundaries for sustainability risks.

At counterparty level, lending to borrowers associated with unresolved illegal deforestation or serious land rights violations falls outside the bank's qualitative risk appetite unless credible remediation measures are underway.

At portfolio level, management monitors exposure to borrowers with elevated deforestation-related risk characteristics and applies sector limits to manage concentrations.

At bank level, these measures inform broader assessments of concentration risk and strategic portfolio allocation to the sector.

4. Risk taxonomy and scope

Bank A classifies deforestation as a nature-related sustainability risk driver with climate linkages. Peatland conversion and land burning give rise to greenhouse gas (GHG) emissions and reduced carbon sequestration capacity. Moreover, climatic conditions such as drought can amplify fire and land conversion risks. Drawing on external guidance while internal guidance is developed, Bank A identifies how deforestation-related activity may transmit into:

- **Credit risk** through weaker loan repayment capacity as certification loss, buyer sanctions, litigation costs and reduced market access impair borrower cash flows.
- **Market risk** through negative sentiment toward securities issued by affected companies and through commodity price volatility affecting related market exposures.

- **Liquidity risk** through reduced borrower loan repayment cash flows across the sector placing pressure on short-term funding profiles.
- **Sovereign risk**, where trade restrictions or reduced exports in commodity-dependent economies weaken fiscal conditions and, indirectly, the bank's sovereign exposures.
- **Concentration risk**, where similar exposures across borrowers, commodities or regions may create correlated losses and increase portfolio vulnerability.
- **Legal and compliance risk** through potential breaches of expanding regulatory expectations and possible litigation brought by non-governmental organizations or affected communities.
- **Reputational risk** through stakeholder concerns about the bank's association with environmentally damaging activities.
- **Strategy risk** through sector concentration effects and longer-term implications for the bank's business model.

The scope of the assessment extends beyond Firm B to the wider agribusiness portfolio, recognizing that materiality may differ across sectors and business lines. The transmission channels are principally transition in character. Bank A's exposure to the underlying physical deforestation event is realized through market, regulatory and reputational responses to it.

5. Risk identification, measurement and materiality assessment

Bank A assesses Firm B's exposure using satellite imagery, client disclosures, publicly available information and third-party data. Analysis indicates that approximately 18 per cent of Firm B's plantation operations is associated with recently cleared land. Internal modelling considers an adverse transition scenario in which certification is withdrawn, major international buyers cease purchasing and regulatory intervention on deforestation-linked commodities tightens. Under this scenario, loss of market access reduces EBITDA by around 25 per cent and increases Firm B's Probability of Default from 1.7 per cent to 3.4 per cent.

At the portfolio level, analysis identifies similar characteristics across approximately US$1.4 billion of exposures, representing around 22 per cent of the agribusiness portfolio. Expected Shortfall on the affected sub-portfolio, at 99 per cent, is estimated at approximately US$115 million under the adverse scenario. Sector-specific sustainability risk scorecards are under development to support consistent counterparty-level scoring across the agribusiness portfolio. These will enable comparison of borrowers on deforestation and related sustainability dimensions.

At the enterprise level, aggregated results contribute to Bank A's assessment of material sustainability risks and identify deforestation as a priority driver for the current cycle.

6. Risk management actions

Following the assessment, Bank A undertakes enhanced due diligence and client engagement. It requests additional environmental and social information from Firm B and agrees a remediation plan covering certification, land management, waterway and air quality mitigation, and community stakeholder engagement. Revised loan covenants require periodic reporting on progress.

At the portfolio level, Bank A reviews other borrowers with similar characteristics, updates sector heat maps, applies its emerging sector scorecards and stress tests portfolio credit resilience under transition scenarios reflecting tighter regulatory expectations and constrained market access. Findings are assessed against the Risk Appetite Framework to identify whether any sustainability limits are approached or breached.

At the bank level, management considers whether similar sustainability risk drivers may affect other sectors and incorporates the findings into its broader risk management processes.

7. Risk monitoring and reporting

Firm B is subject to enhanced monitoring conducted jointly by the relationship manager and the sustainability risk function, covering remediation commitments, certification status, buyer relationships and legal developments.

At the portfolio level, risk metrics track aggregate exposures to borrowers with elevated deforestation-related risk characteristics, combining historical data with forward-looking analysis.

At bank level, regular reporting to senior management and the board supports oversight of sustainability risk concentrations and informs periodic reviews of strategy, materiality assessments and risk appetite. Information disclosed through prudential and sustainability reporting frameworks provides additional transparency on the management of material sustainability risks.



Figure 10: Managing deforestation risk in an agribusiness lending portfolio

UN environment programme

finance initiative

UNEP Finance Initiative brings together a large network of banks, insurers and investors that catalyzes action across the financial system to deliver more sustainable global economies.

For more than 30 years the Initiative has been connecting the UN with financial institutions from around the world to shape the sustainable finance agenda. We've established the world's foremost sustainability frameworks, helping the finance industry achieve sustainability goals, address sustainability risks and identify the business opportunities in taking a responsible approach to banking and insurance.

Convened by a Geneva, Switzerland-based secretariat, more than 550 banks and insurers are individually implementing UNEP FI's Principles for Responsible Banking and Principles for Sustainable Insurance. Financial institutions work with UNEP FI on a voluntary basis to apply these industry frameworks and develop practical guidance and tools that drive institutional change, shaping the future of sustainable finance and positioning their businesses for the transition to a sustainable and inclusive economy. In parallel, UNEP FI also drives systems change and fosters enabling conditions in service of the broader mission to mobilize and align private finance to help achieve the UN Sustainable Development Goals.

Founded in 1992, UNEP FI was the first organization to engage the finance sector on sustainability and incubated the Principles for Responsible Investment, now the world's leading proponent of responsible investment.

Today, we cultivate leadership and advance sustainable market practice while supporting the implementation of global programmes at a regional level across Africa & the Middle East, Asia Pacific, Europe, Latin America & the Caribbean, and North America.

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