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Adaptation and Resilience Impact Measurement Toolkit

A Practical Framework for Financial Institutions

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Disclaimer

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Glossary

Adaptation: Actions that reduce vulnerability or exposure to current and future climate impacts; building resilience of systems, populations, and ecosystems.

Attribution: The extent to which observed outcomes can be credibly linked to a specific intervention, accounting for other contributing factors.

Companion Template: Operational Excel-based and Web-based tool accompanying this Toolkit. It guides results indicator specification and practice indicator selection and tracking.

Counterfactual: An estimate of what would have happened without the intervention; the baseline against which impact is measured.

Exposure: The presence of people, livelihoods, infrastructure, economic assets, or ecosystems in places that could be adversely affected by climate hazards.

Hazard: The potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources.

Impact: Ultimate effects on people, economies, or ecosystems resulting from adaptation interventions (highest attribution challenge). these adaptation impacts are different from climate change impacts (as mentioned below under 'physical climate risk'), and are linked to the logical framework set out in the impact pathway.

Impact pathway: The logical chain linking financing → action → output → outcome → impact.

Lagging indicator: Metric that confirms results after activities are complete. Lagging indicators validate that capability development or interventions achieved intended results. Examples include disbursement volumes, verification completion rates, and outcome achievement rates.

Leading indicator: Metric providing early signals of future results before activities are complete. Leading indicators track prerequisites and capability-building. Examples include staff training completion, pipeline value, and data coverage.

Materiality: The significance of climate risks or opportunities to an institution's financial performance, strategic decisions, or stakeholder obligations. Materiality varies by exposure, business model, and regulatory context.

Outcome: How financed assets/systems perform under climate stress, e.g. operational continuity, recovery speed, loss patterns (moderate attribution challenge).

Output: Tangible deliverables from financing, e.g. infrastructure built, systems installed, policies adopted, people trained (direct attribution).

Physical climate risk: In the context of climate change impacts, risks result from dynamic interactions between climate-related hazards with the exposure and vulnerability of the affected human or ecological system to the hazards. Hazards, exposure, and vulnerability may each be subject to uncertainty in terms of magnitude and likelihood of occurrence, and each may change over time and space due to socio-economic changes and human decision-making.

Practice indicators: Metrics measuring actions the financial institution can take to build capacity. This includes actions related to internal policies and processes, client engagement activities and others.

RASCI: Accountability framework: responsible (does work)/accountable (owns outcome)/supporting/consulted/informed.

Resilience: The capacity of interconnected social, economic, and ecological systems to cope with a hazardous event, trend, or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure. Resilience is a positive attribute when it maintains capacity for adaptation, learning, and/or transformation.

Results indicators: Metrics measuring real-world changes i.e. outputs delivered, outcomes achieved, impacts generated.

Scoping: Process of defining measurement boundaries: which portfolio segments, geographies, metrics, and time periods will be included in impact measurement efforts. Scoping creates realistic expectations and concentrates resources where measurement has highest value.

Unit of measure (UoM): How an indicator is quantified, e.g. count (#), percentage (%), currency (USD), physical units (hectares, MW), rates (per 100,000).

Vulnerability: The propensity or predisposition of systems to be adversely affected by climate hazards. Vulnerability encompasses sensitivity to harm and lack of capacity to cope and adapt.

Acronyms and abbreviations

A&R	Adaptation and resilience
AUM	Assets under management
capex	Capital expenditure
CRM	Customer relationship management
DFI	Development finance institution
DSCR	Debt service coverage ratio
EAD	Exposure at default
EBITDA	Earnings before interest, taxes, depreciation, and amortization
EPC	Engineering, procurement, and construction
EWS	Early warning system
ILS	Insurance-linked securities
ISSB	International Sustainability Standards Board
LMS	Learning management system
LP	Limited partner
MDB	Multilateral development bank
MEL	Monitoring, evaluation, and learning
MIS	Management information system
NAP	National Adaptation Plan
NbS	Nature-based solutions
O&M	Operations and maintenance
PCR	Physical climate risk
PDNA	Post-disaster needs assessment
R^2	Coefficient of determination (statistical measure)
RM	Relationship manager
SFDR	Sustainable Finance Disclosure Regulation (EU)
SLL	Sustainability-linked loan
UNEP FI	United Nations Environment Programme Finance Initiative
UoM	Unit of measure

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How this document relates to The Companion

Use **The Companion** to identify, set and track your Results and Practice Indicators according to the methodological framework provided in this document. Metrics and indicators presented in the Companion are indicative only and have been compiled from existing frameworks.

The Companion is available in two formats: an Excel File and a Web App that you can use directly in your browser. Annex 1. Provides a guide to using both versions of The Companion.

Visual conventions

	Use Companion here
	Important information
	Action
Green boxes or tables	Examples and case studies
Grey boxes or tables	Informational
Blue boxes or tables	Templates and tools

Support and updates

- **Technical challenges:** The Companion includes a README tab. If you have further questions about its use, contact adaptation@unepfi.org
- **Peer learning:** UNEP FI's Adaptation Community of Practice provides a forum for institutions implementing this framework to share experiences and refine approaches. Participation info at: adaptation@unepfi.org
- **Framework updates:** This is Version 1.0. We expect to incorporate user feedback and evolving best practices. Check Adaptation Finance—UNEP Finance Initiative for updates and supplementary resources.

1. Background and context

This Toolkit emerges from the work of the UNEP FI-led Climate Adaptation Innovation & Learning Community of Practice,[1] which from late 2024 to mid-2025 explored how four different types of information flows can inform and enhance private financing for A&R (Figure 1):

1. Risk assessment identifies where interventions are needed.
2. Capital allocation creates assets whose performance can be tracked.
3. Performance data builds the case for measuring impact.
4. Validated impacts refine risk models and drive further allocation.

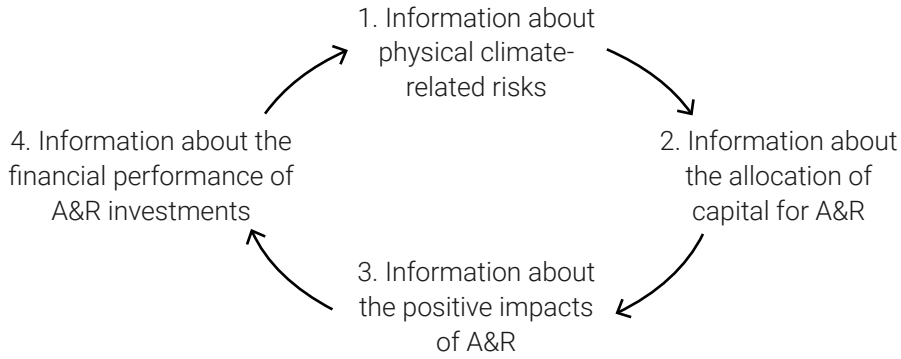


Figure 1: The four types of information flows

Consultations with Community of Practice members revealed that **a critical barrier to scaling adaptation finance is the challenge of measuring and demonstrating impact**. This measurement gap operates through three reinforcing mechanisms. First, financial institutions cannot construct viable business cases without quantifiable evidence of risk reduction or return enhancement, limiting product development and portfolio allocation to adaptation assets. Second, capital providers demand ex-ante impact projections and ex-post verification that current methodologies cannot reliably provide, constraining both debt and equity flows to the sector. Third, emerging regulatory frameworks for climate risk disclosure and sustainable finance taxonomies (see examples below) require impact substantiation, yet lack standardized assessment methodologies, creating compliance uncertainty that further inhibits capital deployment.

Drawing on this foundation, this document provides financial institutions with a practical and credible framework to assess, track, and report on adaptation and resilience (A&R) impact across their financing activities.

1 Subsequently the UNEP FI Adaptation Community of Practice, Climate Change Adaptation Impact Measurement and Information Flows | UNIDO

1.1 The adaptation impact measurement challenge

Climate adaptation and resilience financing faces a measurement paradox: the same characteristics that make adaptation critical: context-specificity, long time horizons and system complexity, make demonstrating its impact difficult. Impact measurement in A&R faces various challenges:

The common metric problem: Unlike mitigation, where tonnes of CO_2 avoided provide a common global metric, adaptation benefits are inherently local and context specific. Moreover, adaptation impacts often vary across people based on their intersectional characteristics, including gender, age, income level, and other socio-economic factors, requiring differentiated measurement approaches that capture who benefits and how.

The counterfactual challenge: Measuring "damage avoided" requires credible estimates of what would have happened without the intervention. Did the sea wall prevent losses, or would the storm have been less severe anyway? Did climate-smart agriculture increase yields, or was it a favourable rainfall year? These questions have no definitive answers, only methodologically sound approximations with clearly stated assumptions.

The time horizon mismatch: Many adaptation benefits accrue over decades: coastal protection infrastructure designed for 2050 sea levels; agricultural systems building soil resilience gradually; ecosystem restoration yielding benefits across generations. Yet financial institutions operate on quarterly reporting cycles, loan tenors of 3–10 years, and investment horizons that rarely exceed 15 years.

The data constraint: High-priority geographies for adaptation, often low-income countries, rural areas, informal settlements, typically lack the monitoring infrastructure needed to track outcomes systematically. While advances in remote sensing, climate modelling, and digital data collection are progressively closing some data gaps and improving attribution methodologies, significant challenges remain.

1.2 The business case for impact measurement

Financial institutions pursue A&R impact measurement for specific business reasons that vary by institution type and mandate. Understanding these drivers shapes realistic measurement approaches:

Credit risk management drivers: Understanding which investments reduce climate vulnerability helps optimize capital allocation and protect portfolio quality. Adaptation investments can make borrowers more creditworthy by reducing the probability and severity of climate-related disruptions to their operations, cash flows, and asset values.

Commercial and competitive drivers: Specific market opportunities justify investment in measurement. Sustainability-linked loans command pricing premiums when tied to verified sustainability outcomes. Green bonds require impact reporting that satisfies investor expectations. Climate-resilient infrastructure attracts patient capital seek-

ing stable, long-term returns. Blended finance facilities often require impact measurement as a condition of concessional funding. These drivers naturally lead to targeted measurement in specific products rather than portfolio-wide approaches.

Regulatory and compliance drivers: Financial regulators globally have set supervisory expectations on climate risk management, including the European Banking Authority (EBA), the UK Prudential Regulation Authority (PRA), the Monetary Authority of Singapore (MAS), the Hong Kong Monetary Authority (HKMA), and others. Sustainable finance regulations, such as national or regional sustainable finance taxonomies or the EU's Sustainable Finance Disclosure Regulation (SFDR), may also require substantiation of reported sustainability impact. Impact measurement provides the quantitative foundation for compliance, enabling institutions to demonstrate how they identify and manage physical climate risks effectively.

Reputational and stakeholder drivers: Key stakeholders increasingly expect evidence of positive contributions to climate action. However, to avoid reputational and legal risks associated with unsubstantiated claims, institutions must ensure impact measurement is based on robust data and credible methodologies before sharing or disclosing results externally.

The business case differs fundamentally across institution types:

- **Development finance institutions** require robust impact measurement from the outset to justify investments, with impact and financial performance as co-equal decision criteria.
- **Commercial banks** prioritize financial performance, with impact measurement serving deal-specific reporting, compliance and credit risk management needs, scaling A&R allocation mainly when it demonstrates strong financial performance with growing recognition that adaptation measures can improve credit quality.
- **Insurance companies** leverage their core risk assessment capabilities to validate impact claims through actual loss experience, with this information they can adjust pricing and underwriting models to account for new emerging risks or to improve the affordability and accessibility to insurance services.
- **Asset managers** focus on issuer-level resilience performance through operational continuity metrics, using impact evidence to inform allocation and stewardship decisions.

This Toolkit recognizes these differences and provides institution-specific modules (section 4) that align measurement approaches with actual business drivers rather than imposing universal requirements disconnected from institutional realities.

1.3 This Toolkit in context

Your measurement approach exists within an evolving ecosystem of standards, initiatives, and partnerships. Understanding key connections helps you leverage existing information and meet stakeholder expectations efficiently.

Framework	Primary Focus	Commonalities with this Toolkit	How this Toolkit complements the framework
MDBs' climate results reporting (including the MDB climate resilience results reporting)	Project-level outputs/outcomes for sovereign/public sector	Indicator families, impact pathways	Decision-usefulness layer; private sector application; institution-specific modules
ARIC guidance on Adaptation & Resilience Impact: a measurement framework for investors.	Investor impact measurement logic	Impact pathway structure, attribution guidance	Scoping process; companion tools; practical KPI integration
UNEP FI PRB Adaptation Guidance	Strategic target-setting for banks	Alignment with national goals, portfolio prioritization	Metric generation process; granular evidence-to-decision tables
UNEP FI's Tools for Impact Analysis, including Portfolio Impact Analysis Tool for Banks	High-level impact materiality and portfolio analysis	Materiality and practice alignment	A&R specific indicators and metrics
TCFD/ISSB S2	Climate risk disclosure (primarily physical risk)	Physical risk as starting point	Shift from risk to positive impact; outcomes and benefits measurement
PCRAM 2.0—Physical Climate Risk Appraisal Methodology (IIGCC)	Practical, asset-/portfolio-level appraisal of physical climate risk and resilience options	Impact pathway logic, event alignment, and appraisal steps useful for outcomes	Converts appraisal into decision-useful A&R metrics
Climate Bonds Resilience Taxonomy (CBRT)	Classification & interim screening criteria for A&R investments to support labelled debt markets.	Eligibility logic and taxonomy alignment for "what counts" as resilience.	Links CBRT eligibility to ongoing outcomes monitoring and label maintenance rules
GIIN IRIS+ (Resilience/Adaptation themes & metrics)	Broad, standardized impact metrics catalogue used by investors	Social/economic outcome & impact indicators	Narrows to decision-useful subsets for commercial FIs

The Toolkit is designed for interoperability, not duplication. Where credible frameworks exist, reference them. Where gaps remain, use this Toolkit to fill them.

The Toolkit also integrates the following distinctive features:

Process-based approach: Rather than prescribing a rigid list of metrics, the Toolkit focuses on the process of generating contextually relevant A&R metrics. This approach recognizes that A&R impacts vary significantly across sectors, geographies, and financing instruments.

Pathway-focused: The Toolkit distinguishes clearly between:

- **Outputs:** What was financed/delivered; directly attributable, verifiable through contracts, commissioning, technical reports and other documented evidence.
- **Outcomes:** How assets/systems perform under climate stress: measurable with event data, attributable with comparison groups.
- **Impacts:** Ultimate effects on people/economies/ecosystems: require counterfactual reasoning, attribution often shared.

The framework prioritizes measurable outputs and outcomes that can be directly attributed to financing activities. While acknowledging the ultimate goal of achieving societal-level resilience impacts, the Toolkit recognizes the practical challenges of measuring such impacts with precision. Instead, it focuses on tracking the impact pathway from financial inputs through implementation outputs to A&R outcomes and eventual A&R impact, establishing clear causal links that demonstrate value creation.

Decision-usefulness: All metrics and processes within the Toolkit are designed to be decision-useful for financial institutions. The framework supports the development of business cases for A&R investments by providing data that speaks to both risk management and opportunity identification. This ensures that impact measurement is not merely a compliance exercise but actively informs investment decisions and product development.

Flexibility and differentiation: The Toolkit provides common principles with differentiated application pathways. It adapts to fundamental differences between debt and equity financing, accommodates sector-specific considerations, and allows for regional variations in climate risks and A&R priorities. This flexibility ensures relevance across the diverse landscape of financial institutions, while maintaining sufficient standardization for comparability.

What this Toolkit does not cover:

- **Physical climate risk assessment methodologies:** We assume you have or can access PCR data. For risk assessment guidance, see UNEP FI Risk Centre resources.
- **Finance taxonomies:** We acknowledge definitional debates, but do not attempt to resolve them. For detailed classification systems, consult CBRT, MDB joint methodology or national taxonomies.
- **Financial performance analytics:** We distinguish this from impact measurement, but do not provide credit/underwriting models.
- **Project-level technical design:** We help you to measure resilience, not design it. For engineering standards, design criteria, or sector-specific adaptation measures, consult technical resources in your sector.
- **Broader sustainability impact beyond A&R:** This Toolkit focuses specifically on adaptation and resilience. For further guidance on impact frameworks, see UNEP FI's Portfolio Impact Protocol, which guides banks through an impact analysis of their portfolios following UNEP FI's holistic impact approach.

1.4 Who should use this Toolkit?

This Toolkit is designed for financial institutions engaged in lending, investing, or underwriting activities where climate adaptation and resilience are material considerations. This section helps you understand which parts of your institution and which business lines are in scope for this Toolkit.

Financial institution types

Commercial banks provide financing to corporate and retail clients through various business lines. This Toolkit is useful for:

- **Corporate and institutional banking:** Direct lending to large corporations, project finance, syndicated loans, and trade finance where use-of-proceeds can be identified and monitored. This business line typically has direct client relationships enabling detailed due diligence and ongoing monitoring, making outcome measurement feasible.
- **SME banking:** Specialized adaptation products where proceeds are explicitly designated for climate resilience measures (e.g., green credit lines, climate-resilient agriculture loans).
- **Retail and consumer banking:** Use-of-proceeds consumer financing with verified adaptation components (e.g., green mortgages with energy efficiency upgrades, solar home system loans).

Development finance institutions (DFIs) provide long-term financing to support economic development in emerging markets, often combining concessional and commercial terms. This Toolkit is useful for:

- **Direct project finance:** Sovereign and non-sovereign projects where DFI financing directly enables adaptation infrastructure or climate-resilient assets.
- **Direct corporate lending:** Use-of-proceeds facilities to corporate borrowers for specific adaptation investments.
- **Technical assistance:** Grant-funded programmes directly supporting adaptation capacity building or project preparation.
- **Blended finance facilities:** Where DFI capital mobilizes additional investment for identified adaptation outcomes.

Note: This version of the Toolkit does not cover intermediated finance. This will be explored and addressed in a future version.

Insurance companies engage with A&R in their roles as risk managers, insurers and investors. For the purposes of the Toolkit, the modules on insurance address both roles, with a focus on underwriting, particularly covering:

- Commercial property and casualty insurance: Policies covering commercial buildings, industrial facilities, and infrastructure where risk engineering assessments document adaptation measures and claims data validates loss reduction.
- Agricultural insurance: Crop and livestock insurance where specific climate hazards are covered and loss experience can be correlated with adaptation practices (e.g., drought-resistant varieties, improved irrigation, climate advisory services).
- Parametric/index insurance: Weather-index or catastrophe-index products where trigger accuracy and payout speed can be measured against actual events, and bundled adaptation services (early warning systems, advisory) have measurable uptake and outcomes.
- Catastrophe bonds and insurance-linked securities (ILS): Where issuance documentation specifies adaptation components and performance can be tracked through reduced trigger frequency or improved recovery metrics.
- Specialty lines with adaptation components: Marine insurance for climate-resilient ports, business interruption coverage with resilience premium discounts, supply chain insurance incorporating climate risk mitigation.

Note: Retail Property and Casualty Insurance, Life & Health Insurance and Treaty Reinsurance are not covered in this version of the Toolkit.

Asset managers and asset owners invest in securities (listed equities, bonds) or direct holdings (private equity, private debt, infrastructure, real estate) on behalf of clients or beneficiaries. This Toolkit is helpful for:

- Use-of-proceeds financing: Where loan or investment proceeds are explicitly designated for adaptation and resilience measures, enabling direct attribution from financing to outputs.
- Direct real estate or infrastructure: Asset ownership enabling operational monitoring of physical resilience performance.

Note: Impact investors typically combine characteristics of both DFIs (impact mandate) and asset managers (investment structures). Depending on your specific model, use the DFI module if impact and financial returns are co-equal investment criteria, or the Asset Manager module if financial returns are primary with impact as a secondary consideration.

2. The Toolkit's principles

This section establishes the core logic behind A&R impact measurement in this Toolkit. These principles apply universally across institution types, geographies, and sectors, providing the conceptual foundation for the differentiated implementation approaches in section 4.

2.1 Results vs practice indicators

Effective A&R measurement requires two complementary indicator types:

Results indicators: Real-world resilience improvements

Results indicators[2] measure the actual resilience outcomes and impacts resulting from financed activities. They map directly onto the Output → Outcome → Impact pathway and require external data. They justify allocation decisions, satisfy stakeholder accountability, support external disclosure, and provide learning feedback.

Results indicators face challenges in adaptation finance, particularly around data availability (consistency, granularity, accessibility) and attribution difficulty (isolating the effect of a specific investment from other contributing factors). Section 4's institution-specific modules help you navigate these challenges by focusing on indicators where attribution is clearest and data is most accessible.

Examples of results indicators:

- **Output:** Percentage of financed infrastructure meeting defined resilience standards
- **Outcome:** Operational continuity (uptime percentage) during documented hazard periods
- **Impact:** People maintaining access to essential services despite climate events

2 The UNEP FI Impact Protocol uses Impact Indicators to refer to what this Toolkit calls results indicators

Practice indicators: Institutional capacity and actions

Practice indicators track implementation progress; i.e. whether the institution is building the capabilities, processes, and partnerships needed to measure and drive results. These are directly controllable, easily measured, and provide clear feedback on institutional readiness.

Section 5 demonstrates how to use practice indicators for tracking institutional maturity and measuring progress on capacity-building roadmaps.

Examples of practice indicators:

- Number of client engagement conversations on adaptation per year
- Percentage of portfolio with verified location data enabling hazard exposure analysis
- Coverage of climate data partnerships across priority geographies
- Percentage of relationship managers trained on A&R risk and opportunity identification

The complementary relationship

Practice indicators measure the financial institution's own actions and capabilities. Results indicators measure what happens in the real world because of that financing.

Both indicator types are necessary. Practice indicators, without results, risks measuring activity rather than achievement ("we had 100 client conversations", but no observable resilience improvement). Results indicators, without practice indicators, lack institutional foundation, scalability and replicability.

This toolkit helps institutions develop balanced indicator sets: sufficient Practice indicators to demonstrate credible processes, sufficient results indicators to demonstrate tangible outcomes, and explicit acknowledgment when one type is weak (e.g., early-stage institutions may have strong practices but limited results evidence).

2.2 Impact pathways: Output → outcome → impact

Outputs: What was financed and delivered

Outputs are the direct, tangible results of financing: physical infrastructure built, systems commissioned, plans adopted, trainings completed, financing disbursed. These are directly attributable to the investment and verifiable through contracts, completion certificates, commissioning reports, and administrative records.

Examples of outputs (for different sectors, including real estate, agriculture, etc):

- Kilometers of drainage infrastructure installed to design specifications
- Number of early warning systems operational and transmitting alerts
- Hectares of agricultural land under climate-adaptive practices (certified)
- Percentage of critical facilities retrofitted to defined resilience standards
- Dollar value of adaptation finance disbursed to priority sectors

Outcomes: How financed assets/systems perform under climate stress

Outcomes measure whether delivered outputs function as intended when exposed to climate hazards. They capture operational performance, system reliability, service continuity, and loss patterns during or after climate events demonstrating that resilience was built, not merely claimed.

Examples of outcomes:

- Operational downtime hours during flood season (vs. comparable non-upgraded facilities)
- Recovery time to full service after extreme weather events
- Insurance claims frequency and severity for adapted vs. non-adapted assets

Impacts: Ultimate effects on people, economies, and ecosystems

Impacts are the broader, longer-term changes in human welfare, economic activity, or environmental health that result from improved outcomes. They answer: who ultimately benefits, and how much? Impacts operate at community, sectoral, or system levels and typically involve multiple contributing factors beyond any single investment.

Examples of impacts:

- Lives protected from climate hazards (mortality/morbidity avoided)
- Livelihoods sustained during climate shocks (income/employment maintained)
- Economic value preserved in climate-vulnerable regions (avoided GDP losses)
- Ecosystems providing sustained buffering services (hectares of functional coastal protection)
- Households maintaining food security despite production shocks

Integrating qualitative dimensions: Many adaptation impacts are inherently qualitative, e.g. enhanced community preparedness, improved risk awareness, strengthened social cohesion during crises. While this Toolkit emphasizes quantitative indicators for comparability, qualitative data (beneficiary testimonials, community assessments, stakeholder perception surveys) provide essential context.

Section 4's examples note where qualitative indicators complement quantitative metrics. Consider defining scales or thresholds to semi-quantify qualitative assessments (e.g., preparedness index scored 1–5, percentage of community members reporting improved disaster response capacity).

The pathway progression in practice

Not every measurement exercise requires all three levels. The appropriate stopping point depends on decision needs, data availability, and cost-benefit considerations:

	Attribution	Use in decisions
Outputs	**High.** The financing directly enabled these deliverables.	Outputs confirm delivery and compliance. They trigger financing tranches, satisfy contractual conditions, establish reporting eligibility, and provide the foundation for subsequent outcome monitoring.
Outcomes	**Medium to high.** Outcomes can be attributed to outputs when performance differences are observed in documented hazard windows and confounding factors are controlled or acknowledged.	Outcomes inform risk-based decisions. Banks adjust pricing, covenants, or exposure limits based on demonstrated continuity. Insurers refine premium structures and product terms. DFIs determine scale-up funding. Asset managers escalate engagement or tilt allocations. This is where measurement becomes decision-useful rather than merely descriptive.
Impacts	**Low to medium.** Impacts result from complex causation. Financial institutions can claim contribution when a plausible pathway connects their outputs → outcomes → impacts, but should not claim sole attribution except in rare cases (single financier of isolated intervention with independent verification).	Impacts serve strategic purposes. They demonstrate ultimate value, stakeholder communications, and policy dialogue. They inform long-term strategy and sectoral prioritization. Keep impact measurement selective: use it where you have strong output/outcome evidence and can state a clear counterfactual.

2.3 The evidence-to-decisions logic

A&R measurement fails when it becomes disconnected from how institutions make financing decisions. This Toolkit takes a different approach, i.e. measurement earns its cost by informing real institutional actions. Every indicator should connect to a specific decision: whether to extend financing, what price and terms to offer, how much capital to allocate to a sector, how to engage clients on risk management, or what to report externally.

The framework distinguishes three evidence types along the impact pathway, each informing distinct decision categories:

Evidence type	Measurement triggers decision	Typical decision actions
Output	What was delivered	Release financing tranches; Mark as eligible A&R; Activate outcome monitoring
Outcome	How it performs under climate stress	Adjust pricing terms; Scale proven approaches; Require improvements
Impact	Who benefits and how much	Validate sector strategy; external reporting; policy engagement

Figure 2: Evidence-to-Decisions Logical Flow

Section 4's institution-specific decision tables operationalize this logic, showing exactly which indicators inform which decisions, what evidence standards apply, and what actions follow when specific performance thresholds are met or missed. The guiding principle remains constant: if measuring something won't change what you do, question whether it's worth measuring.

3. Prioritization and scoping

Most institutions cannot measure A&R impacts across all activities simultaneously. This section provides practical guidance on where to focus initial efforts to demonstrate value, build capability, and create momentum for scaling. Scoping also creates realistic expectations and timelines that help demonstrate whether A&R measurement adds value in your context.

Important note for PRB member institutions:

For banks that are signatories to the Principles for Responsible Banking (PRB), this Toolkit is not a standalone framework but rather a specialized complement to the broader UNEP FI Impact Management Toolkit. Understanding this positioning is essential for avoiding duplication and leveraging existing institutional work.

The PRB Impact Protocol offers the following resources:

- UNEP FI Impact Protocol: provides a step-by-step overview of how to analyze and manage bank portfolio impacts as per UNEP FI's holistic impact approach
- UNEP FI Portfolio Impact Analysis Tool for Banks: provides a holistic view of your significant impact areas across environmental, social and socio-economic dimensions
- UNEP FI Impact Radar: provides a categorization of topics across all sustainability pillars
- UNEP FI Impact Mappings: helps you understand country needs, sector-impact associations and interlinkages between impact topics

UNEP FI Target-Setting Guidance: provides guidance on target setting for specific sustainability topics

Many banks have already completed impact analysis identifying climate adaptation as a material impact area, and some have set portfolio-level adaptation finance targets. If you have already completed these steps under the PRB, you do not need to repeat them. Section 3's prioritization filters can be streamlined or skipped, moving directly to metric specification using your existing impact analysis and targets as the foundation.

Scenario 1: You have completed PRB Impact Analysis

- Your starting point: Section 4 (Results Indicators) to translate your adaptation targets into specific, measurable indicators
- Focus on: Operational metric design, evidence standards, and decision integration

Scenario 2: You have not yet conducted systematic impact analysis

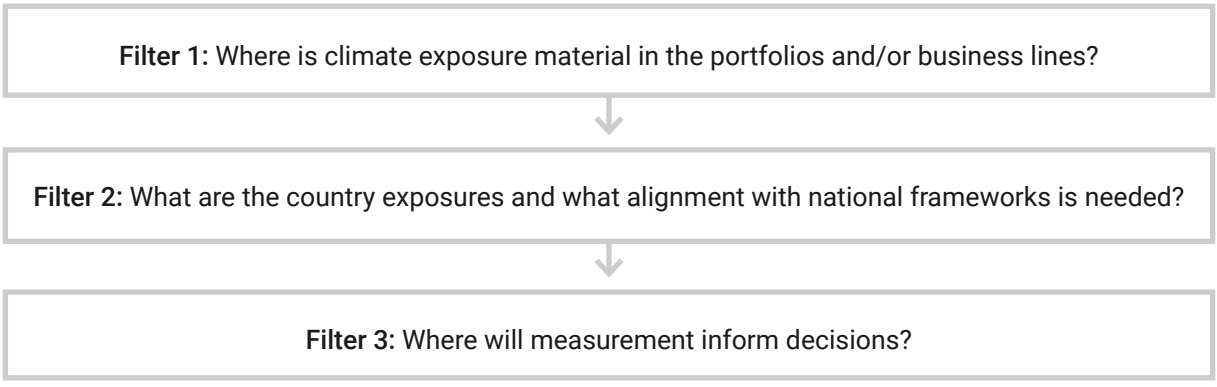
- Your starting point: Section 3 (Prioritization and Scoping) to identify where adaptation is material
- Use UNEP FI resources (listed above)
- Then proceed: Sections 4 and 5 for metric development

For non-bank institutions (DFIs, insurers, asset managers), similar logic applies if you operate under comparable impact management frameworks. If you have completed these processes, you do not need to repeat them. Instead, use your existing findings as inputs to this section:

- Your materiality assessment already tells you where climate exposure is significant (Filter 1)
- Your impact analysis may already identify priority sectors and geographies for A&R financing

3.1 Prioritization

Apply these three filters sequentially to identify where measurement will generate highest return on effort:



Filter 1: Where is climate exposure material in the portfolios or business lines?

Focus where physical climate risks most threaten portfolio value, where impacts have already caused performance issues, or where you have significant exposure at the intersection of climate-vulnerable sectors and high-hazard geographies. This filter identifies where adaptation measurement has highest strategic value.

If you've already completed impact analysis under the UNEP FI Principles for Responsible Banking (PRB) or similar framework, you may have already identified material climate impact areas. Use those findings as your starting point and skip to Filter 2.

Assessment dimension	Ask
Climate-sensitive sectors	Which sectors in our portfolio are inherently climate-sensitive? (Agriculture, coastal real estate, water-dependent industries, long-lived infrastructure, tourism)
High-hazard geographies	Which geographies face severe climate hazards? (Use ND-GAIN, INFORM Risk Index, or similar)
Concentrated exposures	Where do we have concentrated exposure at the intersection of vulnerable sectors and high-hazard geographies?
Historical climate issues	Where have climate events already caused credit issues downgrades, restructurings, claims, client distress?
Gross vs. net physical risk	What is the severity of climate hazards before considering adaptive capacity? What is the residual risk after accounting for existing adaptation measures and capacity?

Your top 5 segments	Exposure $	Climate-sensitive sector?	High-hazard geography?	Past climate issues?	Priority
1.		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	H/M/L
2.		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	H/M/L
3.		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	H/M/L
4.		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	H/M/L
5.		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	H/M/L

HIGH if 2–3 boxes checked | MEDIUM if 1 box | LOW if 0 boxes

Filter 2. What are the country exposures and what alignment with national frameworks is needed?

Identify geographic priorities based on portfolio concentration (following UNEP FI Impact Protocol methodology) and strategic value of national framework alignment. Prioritize countries based on institutional footprint and portfolio composition.

Assessment dimension	Ask
Countries of operation	Where do you have physical presence? For retail: % of customers. For corporate: % of drawn loans, commitments, or EAD. Prioritize top 3–5 countries AND any country where you're a market leader (top 5 by market share).
Country exposures	Where do financed activities physically occur? Particularly relevant for corporate/investment banking, trade finance, multinational clients. Allocate exposure by revenue/production geography, asset location, or operational headquarters.
Mega-diverse portfolios	Many countries, each <5% exposure? Consider regional groupings (Southeast Asia, West Africa) or global approach. Plan phased expansion: 1–3 priority geographies Year 1, then expand.
Additional considerations	Do you finance 'key negative' sectors in high-vulnerability countries? Known climate justice or human rights risks? Regulatory focus on specific jurisdictions?

Country	% Portfolio (by customers or drawn loans)	Market position (1–5 or >5)	Country of operation?	Country of exposure?	Climate vulnerability (nd-gain rank or similar)	Priority
			☐ Yes ☐ No	☐ Yes ☐ No		H/M/L
			☐ Yes ☐ No	☐ Yes ☐ No		H/M/L
			☐ Yes ☐ No	☐ Yes ☐ No		H/M/L
			☐ Yes ☐ No	☐ Yes ☐ No		H/M/L
			☐ Yes ☐ No	☐ Yes ☐ No		H/M/L

HIGH = >15% portfolio OR market leader (top 5) OR high climate vulnerability + material exposure
MEDIUM = 5–15% portfolio OR moderate climate vulnerability + growing exposure
LOW = <5% portfolio AND not market leader AND lower climate vulnerability

For priority geographies, determine whether NAP/NDC alignment adds strategic value:

Question	Yes/no	Details
Does a National Adaptation Plan (NAP) exist for priority geographies?		Countries:
Does the NAP identify priority sectors matching your segment?		NAP sectors:
Does the NAP mention financing gaps you could address?		Gap size (if stated):
Are you seeking co-finance with government or climate funds?		Which entities:
Do your potential metrics align with NAP indicators?		Which NAP indicators:
Could alignment strengthen client engagement or deal flow?		How:

HIGH = 5–6 Yes (explicit NAP alignment)
MEDIUM = 3–4 Yes (monitor NAP indicators)
LOW = 0–2 Yes (focus on commercial drivers)

Filter 3: Where will measurement inform decisions?

Concentrate effort where results will change financing actions. This filter ensures resources focus on segments where impact evidence has highest decision-utility. Scoping requires explicitly connecting each potential measurement area to specific decisions: pricing adjustments, covenant structures, exposure limits, product scaling, client engagement priorities.

High-decision leverage	Low decision leverage
Products requiring performance verification (sustainability-linked loans with A&R KPIs)	Diversified retail portfolios where individual outcomes don't affect strategy
Exposures approaching internal limits where risk mitigation evidence matters	Short-tenor financing with minimal climate exposure during loan period
Pilot programmes where evidence determines scaling decisions	Commoditized products with inflexible pricing/terms
Regulatory/investor requests for climate risk integration demonstration	Legacy exposures in run-off without ongoing relationship
Client demand for A&R financing structures	Sectors exiting for reasons unrelated to climate

For your HIGH-priority segments from Filter 1, answer:

Question	Yes/no	If yes, specify how measurement will support decision-making
Are we developing products requiring verified A&R performance?		
Could measurement inform pricing, covenants, or tenor adjustments?		
Will evidence determine whether we scale this segment?		
Do regulators/investors specifically request climate integration evidence here?		
Have clients requested A&R financing with impact metrics?		
Are we approaching exposure limits where resilience affects allocation?		

3.2 Applying the filters

Select 1–2 segments scoring high on all three filters as your initial focus and assess where to start, what can be integrated at a later stage or deferred.

Example prioritization:

Segment	Climate materiality (Filter 1)	Country exposure (Filter 2)	Decision-usefulness (Filter 3)	Priority
Large agriculture clients, flood-prone regions	High (USD 1.8B, frequent events)	High (Vietnam: 18% portfolio, market leader, strong NAP)	High (SLL pipeline, covenant structures)	**Start here**
Coastal real estate, cities	Medium (USD 800M, moderate exposure)	High (Philippines: 12% portfolio, NAP priority)	Medium (underwriting standards review)	**Phase 2**
SME retail lending, diverse	Low-Medium (USD 1.2B, dispersed)	Medium (Thailand: 22% portfolio)	Low (commoditized terms)	**Defer or simplify**

3.3 Defining your pilot scope

Once priority areas are identified, formalize scope using this template. Complete before proceeding to section 4.

Scope Element	Guidance	Your scope	Example—Commercial bank in APAC Developing SLL structure with pricing linked to operational resilience
Priority Segment	Specific segment description		Large-scale rice and fruit production in flood-prone river deltas
Geographic Boundaries	Specific regions, not broad areas		Vietnam (Mekong Delta: An Giang, Dong Thap, Can Tho provinces); Thailand (Central Plains: Suphan Buri, Ayutthaya provinces)
Client Selection Criteria	Size threshold Data requirement Relationship type #clients/projects included		Size: exposures >USD 5M; assets >USD 50M valuation Data: operational reporting systems, geocoded farms Type: direct lending, existing relationship Count: 5–10 clients/projects for 12-month pilot
Exclusions	What you're NOT measuring and why		Financial intermediary on-lending (no visibility); clients <USD 5M (measurement cost > value); livestock/aquaculture (different hazard profiles)
Baseline Period	When/how you establish pre-intervention performance		2020–2024 historical monsoon season performance (downtime, losses)
Output Tracking Period	When outputs will be delivered and verified		2025–2026 infrastructure commissioning
Outcome Measurement Window	Specific hazard seasons/events		2026–2027 monsoon seasons (June-October each year)
Decision Review Point	When evidence will inform scaling decision		Q4 2027 (determines scaling to next 50 clients)
Measurement Depth	☐ Outputs only ☐ Outputs + Outcomes ☐ Full pathway (including impacts)		☐ Outputs + Outcomes

4. Results indicators: Institution-specific modules

This section provides tailored guidance for four institution types, each reflecting how they use results indicators in practice. Each module includes typical use cases, implementation approach, a decision table linking evidence to actions, and practical examples.

The decision tables in each module show example indicators that illustrate the types of metrics institutions commonly track. These examples:

- Demonstrate the range of indicators possible at each pathway stage (Output/Outcome/Impact);
- Show typical units of measurement and data sources; and
- Illustrate how evidence connects to decisions.

The indicators in these tables are not prescriptive requirements. You will select and specify your actual indicators in **The Companion**, adapting the examples to your specific portfolio, data availability, and decision needs.

4.1 Commercial banks

This module applies to commercial banking business lines where use-of-proceeds can be identified and climate adaptation measures can be tracked, this includes corporate and institutional banking, specialized A&R products for SMEs and specialized products for retail and consumer banking.

Typical use cases

Corporate and institutional banking:

- Sustainability-linked loans with pricing or covenants tied to verified operational resilience KPIs
- Project finance for climate-resilient infrastructure requiring milestone-based impact verification
- Green bonds and climate-labelled debt requiring use-of-proceeds tracking and investor reporting
- Concentrated exposures (>USD 50M single name or >15% sector concentration) in climate-vulnerable sectors where resilience performance informs credit limits

SME banking:

- Specialized agricultural finance with adaptation components (drought-resistant inputs, irrigation systems, climate advisory bundled with credit)
- SME green credit lines requiring evidence of resilience investments
- Disaster recovery and business continuity lending where adaptation measures are explicit loan conditions.

Retail and consumer banking:

- Green mortgage programmes offering rate discounts for verified home resilience upgrades
- On-bill financing for distributed renewable energy and backup power systems
- Home improvement loans explicitly designated for flood protection, cooling systems, or storm resilience

Decision table: Evidence to credit actions

This table shows how banks translate measurement results into concrete credit decisions. Use it as a template, adapting indicators to your specific portfolio segments.

Evidence type	What to capture	Indicator examples	Example uom	Typical data sources	Decision use	Action	Review cadence	Guardrails
Output (delivered)	Financed measures commissioned to a resilience standard	% critical sites upgraded; drainage/pumping capacity installed; backup power commissioned	% of critical assets; # systems; MW backup; m³/s drainage	EPC close-out; lender TA reports; completion certificates	Release tranches; mark as "eligible A&R"; set outcome KPIs for next season	If commissioned: release final tranche, update MIS tagging, establish outcome monitoring plan	At commissioning; quarter-end	Only count commissioned (not ordered). Name the standard/spec referenced
Outcome (performance)	Continuity & recovery through hazard windows	Operational downtime; recovery time; incident rate; supply chain interruptions	Hours downtime; Days to recover; Incidents/site/season	Borrower O&M logs; time-stamped alerts; inspection notes	Pricing/limits/tenor/covenants adjustments tied to repeatable outcomes	If performance ≤ baseline: maintain or improve terms. If performance > baseline: tighten covenants, require improvements, or reduce exposure	Event-based; quarterly roll-up	Match metrics to documented hazard periods; use like-for-like cohorts for comparison
Impact (ultimate effect)	Borrower/community benefit where credibly linked	Essential services maintained; local economic activity preserved	Customer-hours served; USD avoided loss (narrative calc)	Post-event reports; municipal/utilities data	Narrative use; small tilts for relationship value; no over-attribution	Use in client case studies and stakeholder reporting; may inform sector strategy; do not use for pricing/limits	Annual/after significant events	Add one-sentence counterfactual; clearly mark attribution limits

Use **Companion** to formalize your metric selection and identify how you will measure each indicator.

Practical example: Agricultural lending

Context: Regional bank with USD 800M exposure to large-scale rice and fruit producers in South-east Asia's flood-prone river deltas. Developing SLL structure with pricing linked to operational resilience.

Scoping: 50 largest clients (representing USD 450M), all with seasonal production cycles, geocoded farms, and existing yield/downtime reporting.

Metrics selected:

- **Output:**
  - % of critical infrastructure (pumping, drainage, storage) upgraded to flood-resilient specifications (target: 80% within 2 years)
  - Hectares under climate-adaptive water management practices (target: 15,000 ha)
- **Outcome:**
  - Production downtime days during monsoon flooding (target: ≤ 5 days vs. 12-day historical average)
  - Post-harvest loss rate during flood season (target: ≤ 8% vs. 15% baseline)
- **Impact (optional):**
  - Smallholder out-grower income stability (narrative assessment for 3 anchor clients with extensive out-grower networks)

Decision rules:

Performance Result	Credit Action
Downtime ≤ 5 days for 2 consecutive seasons	Pricing: -25 bps; Covenant: relax quarterly DSCR requirement
Downtime 6–8 days	Pricing/covenants: Maintain current terms; increase monitoring
Downtime > 8 days	Pricing: +25 bps or covenant tightening; require capex plan for further upgrades

Implementation timeline:

- Month 1–3: Client onboarding, baseline data collection, SLL documentation
- Month 4–18: Output tracking (infrastructure commissioning)
- Month 12–36: Outcome measurement (two full monsoon seasons)
- Month 36: Pricing/covenant adjustments based on demonstrated performance; scale to next 50 clients

Business case: Improved credit risk assessment (fewer downgrades during flood events); pricing differentiation for resilient operators; regulatory evidence of climate risk integration; pipeline for scaling SLL product.

4.2 Development finance institutions

Development finance institutions (DFIs) in this Toolkit refers to bilateral and multilateral development banks and development finance companies. These organizations have dual mandates: achieving acceptable financial returns and contributing to sustainable development outcomes.

This module applies to direct project finance, direct corporate lending and blended finance facilities

Direct project finance:

- Climate-resilient infrastructure (transport, energy, water, coastal protection) requiring demonstration of development effectiveness for board approval
- National/regional adaptation programmes where DFI financing must align with government priorities and contribute to NAP implementation
- Public-private partnerships requiring impact evidence to justify concessional terms or risk-sharing structures

Direct corporate lending:

- Corporate facilities where adaptation components must be justified to boards and donor governments with quantified development outcomes
- Sustainability-linked loans where pricing or terms are tied to verified resilience performance across corporate operations
- Supply chain resilience programmes requiring measurable improvements in climate risk management across multiple facilities

Blended finance facilities:

- Concessional finance where below-market terms require verified development results justifying subsidy levels
- First-loss or guarantee facilities requiring demonstrated additionality and development impact for continued deployment
- Co-financing arrangements with climate funds requiring compliance with fund impact frameworks

Decision table: Evidence to development decisions

Evidence type	What to capture	Indicator examples	Example uom	Typical data sources	Decision use	Action	Review cadence	Guardrails
Output (delivered)	Delivery of works, plans, systems, finance	% plan actions commissioned; resilience standard met; MEL/EWS operational; co-finance mobilized	% actions; # systems live; USD mobilized	Supervision MIS; adoption decrees; operator screenshots; finance records	Disbursement release; milestone completion; trigger outcome monitoring	If delivered: release next tranche, mark milestone achieved, establish outcome baselines and monitoring plan	Supervision cycle; milestone dates	Count only operational systems and adopted plans; verify through site visits or third-party
Outcome (performance)	Service reliability & continuity through alerts/ events	Unplanned outage hours; people with reliable access; continuity for priority users (health/ water/transport)	Hours; % population served during alerts; Service-hours	Operator dashboards; regulator reports; incident logs	Scale-up, concessional features, replication or course-correction	If outcomes ≥ targets: prepare additional phase financing, document for replication. If < targets: require remediation plan before further disbursement	Event-based; semi-annual/ annual	Align windows to hazard alerts; document exclusions (planned maintenance); compare to non-project counterfactual
Impact (ultimate effect)	Durable benefits credibly linked to outcomes	Economic loss avoided (narrative calc); households/ services maintained; investor confidence (repeat participation)	USD avoided loss; Households with continuous service	Independent evaluations; PDNA excerpts; beneficiary surveys	Case studies; mobilization stories; programme design refinement	Use in board reporting, donor communications, sector strategy reviews; inform future project design and target-setting	Annual; after major events	Provide simple counterfactual; mark shared attribution with government/ other financiers

Use The **Companion** to set indicators and track measurement

Practical example: Coastal infrastructure resilience

Context: DFI financing climate-resilient port upgrades in small island developing states, where ports are economic lifelines vulnerable to cyclones and sea-level rise.

Scoping: 3 projects (USD 120M committed), Fiji, Vanuatu, Solomon Islands. Implementation 2024–2026; outcome measurement through 2028; impact evaluation 2029.

Metrics selected:

- **Output:**
  - % of critical port infrastructure meeting "Build Back Better" resilience standards (target: 100%)
  - Km of coastal protection commissioned (target: 8 km across 3 ports)
  - Port operators trained on climate risk management and MEL systems (target: 45 staff)
- **Outcome:**
  - Port operational hours maintained during Category 3+ cyclones (target: ≥ 90% operational capacity restored within 72 hours)
  - Cargo throughput continuity during/post-cyclone events (target: ≤ 20% reduction vs. baseline during event month)
  - Insurance claims reduction for port assets (target: 40% reduction vs. pre-project storm damage costs)
- **Impact:**
  - National GDP impact: economic activity maintained through import/export continuity (modelled counterfactual: estimated USD 180M avoided GDP loss over 10 years based on historical cyclone disruption costs)
  - Population served: 250,000 people maintaining access to essential imports (food, medicine, fuel)

Decision rules:

Performance Result	DFI Action
Outputs 100% achieved + outcomes ≥ 90% targets in first 2 cyclone seasons	Board approval for Phase 2 (additional USD 80M) extending to three more countries
Outputs 100% achieved + outcomes 70–89% targets	Delay scale-up; commission technical study on performance gaps; require remediation before Phase 2
Outputs < 90% or outcomes < 70%	Halt Phase 2; classify project as "partly successful"; conduct lessons-learned review before similar future investments

Implementation timeline:

- Year 0–2: Construction, output verification at commissioning
- Year 2–4: Outcome monitoring through minimum 2 cyclone seasons (may extend if no major events)
- Year 5: Independent impact evaluation with counterfactual modelling

Business case: Demonstrated development impact required for board approval and donor reporting; evidence base for scaling resilience investments across Pacific region; contribution to national NAP priorities (documented co-benefit for government reporting); learning on effective resilience standards (informing future project design).

4.3 Insurance and reinsurance companies

This module applies to insurance underwriting activities where adaptation measures by policyholders may reduce claims and where insurers can measure loss experience to validate resilience benefits.

Typical use cases

- Commercial property and casualty: Policies covering commercial buildings, industrial facilities, infrastructure where risk engineering assessments document adaptation measures and claims data validates effectiveness
- Agricultural insurance: Named peril and parametric/index products where loss experience correlates with adaptation practices (drought-resistant varieties, irrigation, climate advisory services)
- Parametric/index insurance: Weather-index or catastrophe-index products where trigger accuracy and payout speed can be measured, especially when bundled with adaptation services
- Catastrophe bonds and ILS: Where issuance documentation specifies adaptation components and performance can be tracked
- Specialty lines: Marine insurance for climate-resilient ports, business interruption with resilience premium discounts, supply chain insurance with climate risk mitigation

Decision table: Evidence to underwriting & investment actions

Evidence type	What to capture	Indicator examples	Example uom	Typical data sources	Decision use	Action	Review cadence	Guardrails
Output (delivered)	Risk controls verified; programmes live	% risks completing engineer recs; % portfolio with EWS; parametric covers active	% of insured locations; # policies; % with EWS	Risk engineering reports; policy admin; broker attestations	Endorsements/credits for controls; eligibility for products	If controls verified: issue endorsement with premium credit (e.g., -15% for certified flood barriers); mark as eligible for parametric cover	At binding/ renewal; mid-term checks for high-value risks	Require evidence of completion (photos, certificates); conduct spot verifications for largest risks
Outcome (performance)	Loss experience & operational return in events	Claim frequency/ severity in triggered seasons vs matched cohorts; claim closure time; BI days avoided	Claims per 100 risks; USD/claim; Days to close; Days to restore	Claims system; actuarial extracts; event cohorts	Adjust premiums/terms/ deductibles; reinsurance cession/loads	If loss ratio ≤ target: maintain/expand programme, reduce reinsurance cession. If loss ratio > target: reprice, adjust terms, or non-renew segment	Event-based; renewal cycle	Use matched cohorts (same hazard exposure); control for exposure drift and inflation; minimum 2-year experience
Impact (ultimate effect)	Broader protection & stability indicators	Protection gap (coverage %) in segment; continuity of critical services among insureds	% assets covered; Service-hours maintained	Market stats; sector regulators; client attestations	Portfolio narrative; product strategy; targeted growth	Use in stakeholder reporting and product development business cases; inform government partnerships on protection gap reduction	Annual	Attribute to programme plus market context; avoid over-claiming sole causation

Practical example: Parametric drought insurance for agriculture

Context: Regional insurer offering parametric drought insurance to commercial farms in East Africa, bundled with access to climate advisory services (planting date optimization, variety selection).

Scoping: Three-country pilot (Kenya, Tanzania, Ethiopia), 500 commercial farms covering 75,000 hectares, USD 8M premium, Three-year programme.

Metrics selected:

- **Output**:
  - % of insured farms receiving and acting on climate advisory services (target: 70% uptake)
  - Parametric index accuracy: Correlation between index triggers and actual farm-level yield losses (target: $R^2 \geq 0.75$)
- **Outcome:**
  - Claim payout speed: Days from trigger to farmer payment (target: ≤ 7 days vs. 45-day industry average for indemnity)
  - Loss ratio: Claims paid ÷ premiums earned (target: 60–70%, demonstrating viability)
  - Farmer recovery time: Months to return to full production post-drought (target: 1 season vs. 2–3 season historical average)
- **Impact:**
  - Farm business continuity: % of insured farms avoiding distress sales of assets (target: 80% vs. 45% uninsured comparison group)
  - Household welfare: % maintaining children in school and food security during drought (target: Measured through sample survey, 200 households)

Decision rules:

Performance Result	Insurer Action
Loss ratio 60–70% + payout speed ≤ 7 days + uptake ≥ 70%	Scale to additional 1,500 farms; explore reinsurance optimization to improve pricing
Loss ratio 55–75% but uptake < 50%	Maintain current portfolio; invest in farmer education and advisory service improvements before scaling
Loss ratio > 80% for 2 consecutive years	Reprice (+20–30% premium) or redesign index to reduce basis risk; consider exit if not viable at higher premium

Implementation timeline:

- Year 1: Pilot 500 farms, establish baselines, test advisory service delivery
- Year 2–3: Outcome measurement through 2 full drought seasons
- Year 3: Impact survey (200 households), business case for scaling
- Year 4+: Scale or pivot based on viability evidence

Business case: Improved loss ratios through risk reduction (advisory services reduce claim frequency), faster claims payment differentiates product and improves client retention, protection gap reduction serves social mission and government partnerships, proven model attracts reinsurance and impact investor co-investment.

4.4 Asset managers and asset owners

This module applies to institutions managing capital through securities investments or direct holdings, where measurement depends primarily on issuer disclosure and engagement effectiveness. Asset managers use A&R performance data primarily to inform stewardship decisions and allocation strategies, with limited ability to verify impact claims independently:

Typical use cases

Private equity and infrastructure funds:

- Portfolio company operational resilience tracking (uptime during climate events, EBITDA volatility, recovery speed) informing valuation adjustments and exit timing
- Board-level engagement using performance data to drive capex decisions, management incentive structures, and operational improvements
- Due diligence for new investments incorporating climate resilience as value driver, with post-acquisition measurement validating investment thesis
- LP reporting demonstrating portfolio resilience as differentiated value proposition, supported by verified operational data

Direct real estate:

- Asset-level performance monitoring through hazard periods: building systems continuity, tenant retention rates, insurance claims experience, recovery costs
- Portfolio construction using resilience performance to inform geographic allocation, property type selection, and climate risk concentration limits
- Asset management decisions (retrofit investments, tenant selection, insurance structures) informed by historical climate performance patterns

Decision table: Evidence to allocation & stewardship actions

Evidence type	What to capture	Indicator examples	Example uom	Typical data sources	Decision use	Action	Review cadence	Guardrails
Output (delivered)	Issuer has financed and completed specific resilience measures or governance	% critical sites upgraded to named standard; board-approved capex milestones completed; EWS/system go-live; supplier standards adopted at Tier 1	% of sites; % of milestones; # systems; yes/no (standard met)	Capex trackers, completion certificates, third-party audits, certification letters, board papers	Screening and engagement anchor; log completion vs. plans; set expectations for outcome disclosure	If outputs delivered: maintain/increase position, set engagement priority on outcome reporting for next season. If outputs delayed: engage on timeline, consider underweight if persistent delays	At financial close/ milestone dates; pre- and post-hazard season	Treat as delivery evidence only; do not infer performance; require clear naming of standards/ scope; maintain register of "promised vs. delivered"
Outcome (performance)	Operational/ financial performance through hazard alerts or events, relative to peers or prior seasons	Operational outage hours during alerts; backlog recovery time; incident rates at upgraded vs non-upgraded sites; insurer/broker assessment of controls; variance of key operating KPIs during events	Hours; days; incidents per site; qualitative broker letter; stability index for KPI variance	O&M/SCADA logs, production reports, event timelines from authorities, broker/insurer notes, supplier compliance data	Allocation & stewardship: maintain or escalate asks based on repeatable performance; reflect sustained operational steadiness in internal risk view	If performance strong: maintain/ overweight position, highlight in engagement as positive example. If performance weak: escalate engagement (board-level if appropriate), consider underweight, vote against management on climate competence	Event-based and quarterly/ annual roll-ups	Match performance windows to documented hazard periods; prefer like-for-like cohorts; note one-off confounders (maintenance, strikes, demand shocks)

Evidence type	What to capture	Indicator examples	Example uom	Typical data sources	Decision use	Action	Review cadence	Guardrails
Impact (ultimate effect)	Credible evidence that issuer's measures contributed to durable benefits for people/ economy/ ecosystems	Services for priority users maintained through events (water/health/logis-tics continuity); value preserved in exposed regions (narrative with method); ecosystem buffering maintained where issuer relies on NbS	People/clients served; continuity hours; qualitative impact case with method; benefit category (Economic/ Social/Environ-mental)	Post-event assessments, regulator/ utility reports, independent evaluations, issuer impact notes with methods	Narrative & escalation: use in case stud-ies and to set longer-term engagement asks; do not over-attribute; treat as shared contribution	Use selectively in client reporting and thematic fund narratives; inform long-term sector allocation views; do not use for short-term buy/sell decisions	Annual or after significant events	Require one-sentence counterfactual; only cite impacts where Output Outcome evidence already logged; mark attri-bution limits clearly

Use The **Companion** to set indicators and track measuremen

Practical example: Infrastructure equity fund

Context: Private equity fund (USD 800M AUM) with 12 portfolio companies operating ports, toll roads, and utilities across Southeast Asia and Africa. Fund markets climate resilience as differentiated value proposition to LPs.

Scoping: Focus on eight companies with highest climate exposure (coastal/flood-prone locations), representing USD 600M invested capital. All have operational monitoring systems and regular reporting.

Metrics selected:

- **Output**:
  - % of critical infrastructure assets upgraded to defined resilience standards within three years post-acquisition (target: 75%)
  - Board-approved climate risk management plans implemented (target: 100% of portfolio companies within Year 1)
- **Outcome:**
  - Operational availability during extreme weather: % uptime during documented climate events vs. comparable regional peers (target: ≥ 95% vs. peer median 87%)
  - EBITDA volatility: Coefficient of variation in quarterly EBITDA for climate-exposed assets vs. baseline volatility pre-upgrades (target: ≤ 15% reduction in volatility)
  - Recovery time: Days to return to > 90% operational capacity following disruption events (target: ≤ 5 days vs. 12-day peer average)
- **Impact**:
  - Economic continuity: For 2–3 anchor portfolio companies with strong outcome evidence, narrative assessment of regional economic value sustained through climate events (e.g., port maintaining cargo throughput enabling USD Xm trade during typhoon season)

Decision rules:

Performance Evidence	Fund Action
Company shows strong outcome performance (uptime ≥ 95%, recovery ≤ 5 days) for 2+ events	Highlight in LP reporting as resilience outperformer; consider follow-on investment; use management team as advisors for other portfolio companies
Company shows mixed performance (outcomes within peer range but not outperforming)	Standard engagement on continuous improvement; maintain position; do not highlight as resilience exemplar
Company shows weak performance (uptime < peer median, recovery > 10 days) despite output investments	Escalate to board level; require remediation plan; consider management changes if persistent underperformance; inform future acquisition screening

Implementation timeline:

- Year 0–1: Output tracking (resilience plan adoption, capex deployment)
- Year 1–3: Outcome measurement across multiple climate events
- Year 3–4: Selective impact assessment for 2–3 companies with strongest evidence; inform fund successor strategy

Business case: LP differentiation (evidence-backed resilience claims vs. aspirational narratives); improved operational performance (reduced EBITDA volatility enhances exit valuations); risk management (early identification of underperformers enables intervention); sector knowledge (proven approaches inform future deal sourcing and due diligence).

4.5 Adapting modules to your context

The modules provide templates, not rigid prescriptions. Adapt them by:

- **Adjusting indicators:** The tables show examples. Select metrics matching your portfolio characteristics, data availability, and decision needs.
- **Modifying decision rules:** The thresholds and actions shown are illustrative. Set your own based on risk appetite, competitive dynamics, and institutional culture.
- **Scaling progressively:** All examples show mature implementations. Start smaller, with 5 clients instead of 50, and/or 1 country instead of 3, 'outputs + outcomes' instead of full pathway. Prove value before scaling.
- **Combining approaches:** Institutions with diverse business lines (e.g., commercial bank with development finance arm, insurer with large investment portfolio) should apply multiple modules to different activities.

The Toolkit's flexibility enables starting simply and building sophistication as capability grows, data improves, and business cases strengthen.

Operationalizing with The Companion →Results Indicators tab: Regardless of institution type, moving from indicator concepts to operational measurement requires specification. The **Companion** provides the structured format for this translation.

5. Practice indicators: measuring institutional capability

Section 4 established how to measure real-world resilience improvements through results indicators: what gets built (outputs), how it performs (outcomes), and who benefits (impacts). This section addresses the complementary question: how do you track whether your institution is systematically building the capacity to identify, finance, and measure A&R effectively?

Practice Indicators measure institutional actions and capabilities, i.e. the processes, coverage, and systems that enable results and help to demonstrate whether you're building a sustainable approach. They complement results indicators by demonstrating that you have credible processes enabling the outcomes you report.

Note for UNEP FI member institutions

If your institution follows the UNEP FI Principles for Responsible Banking (PRB) or a similar impact management framework, you will probably have already completed key foundational steps:

- Impact analysis to identify where your portfolio intersects with climate impacts
- Target setting for priority impact areas, potentially including adaptation and resilience
- Governance structures for monitoring progress toward targets

For institutions new to impact management: Practice Indicators provide a roadmap for building measurement capability from the ground up. Start here to establish prerequisites before committing to comprehensive results measurement.

For institutions with mature impact frameworks: Practice Indicators demonstrate progression from strategic commitment to operational reality, providing evidence that A&R is embedded in a business-as-usual approach, rather than managed as a separate initiative.

5.1 Practice indicator categories

Practice indicators may be organized into four categories aligned with the UNEP FI Impact Protocol and Practical Guidance on Implementing Adaptation and Resilience for Banks, with each measuring a different dimension of institutional capability.

As you review these categories, consider not only operational capability but also whether your practices prevent maladaptation and advance social inclusion. Effective A&R measurement must assess whether interventions avoid harming vulnerable populations or exacerbating existing inequalities.

Category	What it measures	Why it matters	Common data sources	Social dimensions
1. Portfolio Composition & Financial Flows	Scalability of A&R financing across portfolio segments and geographies	Tracks whether A&R financing is growing and reaching priority segments; enables reporting on capital deployed; Identifies information quality on adaptation needs and what infrastructural elements are supporting scalability of financing	Core banking/investment systems, disbursement reports, portfolio management systems, reporting and disclosure datasets	Does financing reach climate-vulnerable populations and geographies? Are you measuring financing flows to women-led businesses, smallholders, informal sector, low-income communities? What information is being gathered on these areas?
2. Capacity and Skills	Number of colleagues hired/trained in climate adaptation and physical risk analysis; quality and frequency of training and skills development on risk and opportunity management	Builds capacity to leverage information and make it decision-useful, not just reporting-aligned. Showcases institutional commitment to understanding and identifying competitive, effective adaptation financing and investment deals.	Monitoring on Third Party training resources used/leveraged. Feedback/reporting from colleagues on knowledge gaps and challenges; internal evaluations of adaptation deal-flow performance relative to internal baselines	Does your investment team understand recognize social risks associated with financed adaptation solutions? Is the firm iteratively reviewing its investment strategy to avoid stranded assets and maladaptation risk across population/workforce contexts?

Category	What it measures	Why it matters	Common data sources	Social dimensions
3. Client Engagement	Frequency, quality, and outcomes of interactions with clients/issuers on climate risk and adaptation	Systematic engagement builds client capacity and deal flow; quality of dialogue affects client behaviour and data availability; engagement outcomes indicate influence	CRM systems, relationship manager activity logs, engagement tracking databases, client satisfaction surveys	Do conversations address differential climate impacts across gender, age, income? Are vulnerable client segments receiving adequate support and technical assistance?
4. Internal Process Integration	Integration of A&R considerations into decision-making frameworks, risk management systems, and operational procedures	Systematic integration demonstrates business-as-usual embedding vs. ad hoc approaches; provides regulatory evidence of climate risk management.	Credit policy documents, risk assessment templates, credit committee records, audit/compliance reports	Do policies require assessment of impacts on vulnerable populations? Are safeguards in place to prevent maladaptation or harm? Do risk frameworks consider social vulnerability?
5. Advocacy and Partnerships	External collaborations, industry participation, and policy engagement supporting A&R financing ecosystem	Individual institutions cannot solve data gaps, methodology challenges, or market barriers alone; partnerships multiply impact through shared infrastructure and standards; advocacy shapes enabling environment	Partnership agreements, industry initiative participation records, policy submission logs, technical assistance programmes	Do partnerships include organizations representing vulnerable communities? Does advocacy address equitable access to adaptation finance? Are you collaborating with local/grassroots organizations?

5.2 Evidence-to-decisions logic for practice indicators

Similar to results indicators, practice indicators inform decisions when you establish clear links between indicator signals and institutional actions. This table shows how to interpret common indicator signals and what actions typically follow:

Category	If indicator shows...	What it means	Typical actions
Portfolio composition & financial flows (includes data and infra & coverage and scale categories)	A&R financing <50% of annual target for agriculture-focused deals at mid-year	Pipeline insufficient or conversion rate low	Investigate barriers: pricing competitiveness? Client awareness? Credit process friction? Increase business development resources, adjust targets if market constraints identified
	A&R financing concentrated in 1–2 sectors, absent in priority segments	Uneven capability or market development	Replicate successful approaches from strong sectors to lagging areas; targeted staff training; partnership development in underserved segments
(Coverage and scale)	Scale of adaptation-linked finance within portfolio growing >50% YoY without verification or capacity scaling	Quality risk, growth outpacing controls	Slow origination growth until verification capability catches up; increase M&E budget; hire impact specialists
(Data and infrastructure)	Portfolio data coverage >30% complete vs target	Insufficient risk and resilience data achieved to identify needs and opportunities	Commit to portfolio-wide reporting; support risk analytics with reliable data; use for regulatory/investor disclosure
Client engagement	<40% of priority clients engaged annually	Insufficient relationship coverage	Increase RM capacity; create engagement toolkits; set engagement targets in performance reviews; prioritize highest-exposure clients
	Engagement frequency high but outcomes low (few clients implementing recommendations)	Quality issue, dialogue not translating to action	Investigate barriers: TA needed? Financing terms? Provide technical assistance; bundle advisory with financing; adjust recommendations to client context

Category	If indicator shows...	What it means	Typical actions
	Client satisfaction with A&R support >75%	Strong value proposition	Use testimonials for marketing; expand service offerings; document best practices for replication
Internal policies & processes	Climate risk assessment in <40% of in-scope credit decisions	Systematic implementation failure	Audit process for barriers; enforce policy with accountability; address root causes (training, tools, workload); senior management intervention
	Policy updated but application inconsistent across regions/departments	Integration incomplete	Standardize training; embed in templates and systems; regional/departmental accountability; peer review mechanisms
	>90% compliance with A&R assessment requirements	Strong institutionalization	Scale to additional segments; use as regulatory evidence; shift focus from adoption to quality/refinement
Advocacy & partnerships	Active partnerships <2	Limited external leverage	Identify partnership gaps: data providers? Technical experts? Industry peers? Budget resources; assign staff time; join relevant initiatives
	Partnerships established but underutilized	Relationship not activated	Assign clear owners; set usage targets; integrate into workflows; regular partnership review meetings
	Policy submissions or industry contributions >3 annually	Strong sector leadership position	Publicize thought leadership; attract partnership opportunities; use for client/investor differentiation

5.3 Selecting your practice indicators

Selecting practice indicators requires balancing strategic priorities, data feasibility, and institutional capacity. This process translates your Section 3 scoping decisions into specific capability metrics you track using The Companion.

Selection process

Step 1: Review section 3 priorities and scope

If you completed section 3's prioritization framework, you identified where climate exposure is material, which geographies are priorities, and where results inform decisions. Practice Indicators should track whether you are building capability in those priority areas.

Before selecting indicators, review your scoping decisions:

- **Priority segments** (from section 3): Which portfolio segments, geographies, and sectors are you measuring?
- **Current capability gaps:** Where are your critical weaknesses? Portfolio tracking? Client engagement? Process integration? Partnership infrastructure?
- **Business drivers:** What's driving your A&R work? Regulatory compliance? Risk management? Product development? External reporting commitments?
- **PRB/impact management status:** If following PRB or similar framework, which impact management stages have you completed? Are gaps in analysis, targeting, implementation, or monitoring?

Step 2: Apply selection criteria

For each candidate indicator, test against different criteria:

Check	Ask yourself
☐	Alignment: Does this indicator track capability in your Section 3 priority areas?
☐	Feasibility: Can you actually track this with existing or creatable data sources?
☐	Decision-usefulness: Will tracking this indicator inform specific decisions?
☐	Capacity-appropriate: Is tracking realistic given current systems and capacity?
☐	Social dimension: Does this indicator help you understand impacts on vulnerable populations or identify potential maladaptation risks?

Step 3: Institution-specific prioritization

Different institution types should emphasize different indicator categories based on their mandates and business models:

Institution type	Emphasize these categories	Rationale
Development finance institutions	Portfolio composition, advocacy & partnerships	Impact mandate requires demonstrating scale (portfolio) and ecosystem building (partnerships); client engagement and processes typically mature
Commercial banks	Internal policies & processes, portfolio composition	Risk management focus requires systematic process integration; Need to demonstrate climate risk embedded in credit decisions; Scaling financing volumes demonstrates commitment
Insurance/reinsurance	Portfolio composition, client engagement	Portfolio tracking demonstrates underwriting approach; Unique claims validation reduces need for extensive process indicators
Asset managers	Client engagement, internal policies & processes	Limited direct control requires engagement effectiveness; Integration into investment process is key decision lever; Portfolio composition secondary to stewardship quality.

This does not mean ignoring other categories. All institutions need some coverage across categories, but emphasis should match institutional context.

Step 4: Balance across leading and lagging indicators

Select indicators providing both leading (early signals of capability development) and lagging (confirmation of institutionalization) signals:

Category	Example leading indicators	Example lagging indicators
Portfolio composition	Pipeline value of A&R projects in due diligence; Client inquiries for A&R products	A&R finance disbursed annually; % portfolio with A&R measures
Client engagement	Number of engagement conversations held; Engagement training completion rates	% clients implementing recommended measures; Client satisfaction scores
Internal policies	Policy adoption date; Staff training completion rates	% credit decisions including climate assessment; Audit compliance rates
Advocacy & partnerships	Active partnership agreements signed; Industry initiative participation	Joint publications or tools developed; Policy influence outcomes

Use The Companion to document your indicator selection

Example: Regional commercial bank implementing Practice Indicators

Context: Pacific Regional Bank (USD 8.5B assets) identified two priority segments from section 3: agriculture/smallholder lending (USD 2.8B, flood-prone river deltas) and coastal tourism (USD 1.5B, typhoon/sea-level rise vulnerable). Business drivers: central bank regulatory requirement for climate risk integration (deadline: end 2026), IFC co-financing opportunity requiring impact measurement (USD 200M facility), board commitment to "USD 500M annual A&R financing by 2028". The bank is in Year 1 of implementation.

Current capability assessment (baseline as of December 2025):

Dimension	Current state	Gap analysis
Portfolio composition	~USD 120M annual A&R-relevant financing identified retrospectively (not tagged systematically)	Volume exists but not tracked; Cannot aggregate or report reliably
Capacity and skills	No clear A&R ownership; no formal training or tools on adaptation metrics or hazard data	Limited capability to screen/structure A&R; relies on ad hoc judgement
Client engagement	Ad hoc conversations; no systematic approach or documentation	No structured dialogue; missed opportunities to build awareness and pipeline
Internal policies	5% of credit decisions include climate assessment (ad hoc, no standard methodology); Policy exists but not enforced	Almost no systematic integration; Cannot demonstrate regulatory compliance
Advocacy & partnerships	No technical partnerships; No climate data provider relationships	No external expertise; Data gaps block measurement; Working in isolation

Selected indicators (Eight total across four categories):

Category	Indicator	Baseline	Year 1 target	Why selected
Portfolio composition (coverage and scale)	A&R finance in scalable/programmatic structures (% of annual A&R finance)A&R finance disbursed (annual, USD M)	10%~ USD 120M	30% USD 180M	Shows shift from one-off deals to scalable structures; enables replication and crowding-in of capital Board commitment tracking; IFC facility requirement; regulatory reporting
Portfolio composition (data and infra)	% priority portfolio with systematic climate risk assessment	5%	60%	Core regulatory requirement; central to strategy; enables risk-based allocation
Capacity and skills	Dedicated A&R specialists FTEs (#)	0	2	Ensures sustained ownership; core to pipeline and execution
Capacity and skills	% A&R-relevant deals with documented screening	0%	70%	Evidences applied capability; links training to transac-tional quality
Client engagement	Priority client engagement conversations (# annually)	Unmea-sured	120 (60 ag + 60 tourism)	Build awareness and pipeline; systematic coverage of high-exposure segments
Client engagement	Client inquiry rate for A&R products (quarterly)	Unmea-sured	15% QoQ growth	Leading indicator of demand and market readiness
Internal policies	Climate risk in credit policy (Yes/No)	No	Yes (Q1 2026)	Policy foundation enables enforcement; quick win; regulatory expectation
Internal policies	Staff training completion (% of 180 target staff)	12%	85%	Essential for systematic integration; training programme ready to deploy
Advocacy & partnerships	Active technical partnerships (#)	0	3	No internal expertise; verification requires external capacity; data access critical
Advocacy & partnerships	Climate data coverage (% priority portfolio)	35%	75%	Regulatory requirement impossible without data; enables risk assessment

Result: Pacific Regional Bank has eight practice indicators documented in The Companion, balancing leading (data, capacity) and lagging (integration, scale, quality) indicators, with clear baselines, realistic Year 1 targets tied to business drivers, and explicit resource commitments and risk mitigation.

6. Implementation roadmap and next steps

This Toolkit has provided a structured approach to measuring adaptation and resilience impact across different financial institution types. This final section translates the framework into actionable implementation guidance tailored to your institution type and positions your measurement work within the broader adaptation finance landscape.

6.1 Implementation roadmap by institution type

Use the roadmap for your institution type to sequence actions and allocate resources effectively.

6.1.1 Commercial banks

Step	Guidance	Key deliverables
1. Identify in-scope facilities	Review portfolio and flag facilities where: (a) proceeds are designated for specific A&R measures, (b) you have direct client relationships enabling data access, and (c) climate exposure is material to credit risk. Use MIS tagging to track these separately.	Tagged portfolio segment (USD-value and # facilities); Priority list of 10–20 pilot clients
2. Embed data requirements in facility agreements	Include specific A&R data provisions in loan documentation: operational metrics to be reported, reporting frequency (quarterly/annual), verification approach (self-reported vs. third-party), and performance thresholds. Negotiate data rights during origination, not after disbursement.	Standard A&R data clauses; Relationship manager guidance on negotiation
3. Establish baseline and targets	Before disbursement, document: current performance (e.g., existing downtime during flood season), financed measures (what will be built/implemented), expected improvement (target performance post-implementation). Use baseline for comparison when measuring outcomes.	Baseline documentation for each pilot facility; Target performance metrics in credit files
4. Track outputs during implementation	Monitor delivery milestones: procurement completion, construction progress, commissioning dates, completion certificates. Verify outputs before marking measures as "delivered" or releasing final tranches.	Output verification reports; Disbursement linked to milestones
5. Measure outcomes after climate exposure	Collect operational performance data during/after relevant climate events: downtime hours, recovery time, incident reports, insurance claims. Compare against baseline and non-adapted peer facilities where possible.	Outcome performance data; Comparative analysis vs. baseline/peers
6. Link results to credit decisions	At renewal or review: use performance data to adjust pricing (±25–50bps typical range), modify covenants, inform exposure appetite, or require remediation if underperforming. Document decisions in credit papers.	Credit decisions informed by A&R performance; Documentation in credit memos
7. Scale through standardization	After piloting with 5–10 clients, create: standard data request templates, simplified reporting formats, decision matrices for common performance patterns, streamlined verification protocols. Roll out to broader portfolio using standardized approach.	Standardized templates; Training materials; 50+ facilities tracked

6.1.2 Development finance institutions

Step	Guidance	Key deliverables
1. Establish ex-ante impact projections during appraisal	During project preparation, quantify expected outputs, outcomes, and impacts with clear targets: infrastructure to be built, populations to benefit, performance improvements anticipated. Document impact pathway logic and assumptions. These projections justify financing terms and board approval.	Impact projections in board paper; Theory of change; Baseline studies
2. Integrate measurement into legal agreements	Include comprehensive M&E requirements in financing agreements: specific indicators, measurement methods, data sources, reporting frequency (quarterly/annual), verification approach, evaluation timeline. Establish borrower obligations for data provision and third-party evaluation access.	M&E framework annexed to loan agreement; Borrower reporting obligations
3. Set up project-level M&E systems	Work with implementing entities to establish: baseline data collection (before intervention), output tracking systems (procurement, construction, commissioning), outcome monitoring protocols (operational performance indicators), data quality assurance processes. Budget M&E costs explicitly (typically 1–3% of project value).	M&E manual; Baseline report; Data collection systems operational
4. Track outputs during supervision	Monitor delivery through implementation: milestone completion, procurement progress, construction quality, commissioning verification, capacity building completion. Document delays or scope changes. Verify outputs before disbursement tranches and at project completion.	Supervision reports; Output verification; Project completion report
5. Measure outcomes post-completion	Allow sufficient time for climate. Collect operational performance data during relevant hazard periods: service continuity, downtime patterns, user access maintained, recovery speed. Compare against baseline and counterfactual (similar non-project areas or pre-intervention conditions).	Outcome monitoring reports; Performance data during climate events; Beneficiary surveys
6. Conduct impact evaluation	At 3–5 years post-completion, commission independent evaluation: verify outcome achievement, assess ultimate beneficiary impacts (lives protected, livelihoods sustained, economic value preserved), document attribution challenges and co-contributing factors, generate lessons learned.	Impact evaluation report; Lessons learned brief; Contribution to project database
7. Link results to institutional decisions	Use measurement results to inform: scale-up or replication decisions (if outcomes strong), course-correction or remediation (if underperforming), sector strategy refinement (what works where), future project design standards, external reporting to boards and donors.	Sector strategy updates; Project design standards; Board reports; Donor reporting

6.1.3 Insurance and reinsurance companies

Step	Guidance	Key deliverables
1. Integrate A&R into risk engineering protocols	Expand standard risk assessment surveys to explicitly document adaptation measures: flood protection systems, structural upgrades, backup power, emergency response plans, climate monitoring systems. Use structured fields in policy administration systems enabling portfolio-level analysis of adaptation prevalence.	Updated risk assessment forms; Policy admin system fields for A&R measures
2. Establish control groups for comparison	Identify comparison cohorts: policyholders with similar exposure but without documented adaptation measures, or same policyholders in periods before/after implementing measures. Ensure hazard exposure is comparable (same flood zone, similar building type, equivalent climate stress). Control groups enable attribution of loss differences to adaptation rather than exposure variation.	Control group definitions; Matched cohort analysis framework
3. Track loss experience systematically	Link claims data to adaptation indicators: calculate loss ratios, claim frequency, and average severity for adapted vs. non-adapted risks. Time-stamp adaptation implementation to enable before/after analysis. Track performance through multiple hazard seasons (minimum 2–3 years) to establish patterns rather than single-event observations.	Loss experience dashboards; Adapted vs. non-adapted cohort reports
4. Align measurement windows to hazard periods	Define specific measurement windows matching climate hazard seasons: monsoon periods, cyclone seasons, drought years, extreme heat summers. Track claims filed during/immediately after these periods. Compare performance only within matched hazard windows to avoid confounding from different event severities.	Hazard calendar; Event-aligned loss reports
5. Validate with actuarial analysis	Use actuarial methods to test statistical significance: Are loss ratio differences between adapted/non-adapted groups significant? Does relationship hold across multiple years? Are results consistent across different geographies or hazard types? Document confidence intervals and sample size limitations.	Actuarial validation report; Statistical significance testing; Confidence intervals
6. Link results to underwriting decisions	Use validated loss experience to inform: premium discounts or surcharges (typically ±10–25% based on verified controls), coverage terms and conditions, risk selection and portfolio composition targets, product development (e.g., expanding programmes showing positive results), reinsurance purchasing strategies.	Updated pricing guidelines; Product expansion decisions; Portfolio composition targets

Step	Guidance	Key deliverables
7. Feed findings back to risk engineering	Update risk engineering protocols based on observed effectiveness: promote measures showing strong loss reduction, deprioritize measures with weak evidence, refine assessment criteria to focus on highest-value controls. Create feedback loop between claims experience and underwriting standards.	Revised risk engineering standards; Recommended controls list
8. Scale through product integration	After validating approach with pilot portfolios (100–500 policies over 2–3 years), integrate into standard products: automated premium adjustments based on verified controls.	Scaled product offerings; Automated pricing tools.

6.1.4 Asset managers and asset owners

Step	Guidance	Key deliverables
1. Prioritize based on influence and visibility	Focus measurement on holdings where you have: (a) operational data access (private investments, direct real estate), (b) material position size justifying effort, and (c) ability to influence issuer practices through board seats, lending covenants, or engagement.	Priority holdings list (20–30 names); Influence assessment matrix
2. Standardize issuer data requests	Create consistent ESG questionnaires or engagement letters requesting specific operational resilience metrics: facility-level climate hazard exposure, operational continuity during documented events (uptime %, downtime hours, recovery time), capex allocated to adaptation measures, governance structures for climate risk. Issue annually or at each engagement touchpoint.	Standardized A&R data request template; Engagement letter template
3. Integrate into investment process	Embed A&R assessment at key decision points: due diligence (assess current resilience and improvement plans), investment committee (include resilience in risk assessment), ownership period (monitor operational performance quarterly/annually), exit planning (resilience performance affects valuation and buyer appeal). Document how resilience assessment influenced each decision.	IC memo template with A&R section; Due diligence checklist; Decision documentation
4. Track performance during climate events	Identify when portfolio holdings experience climate stress. Request operational updates within 30–60 days post-event: what disruptions occurred, how quickly operations recovered, financial impacts (lost revenue, recovery costs), lessons learned and adaptation responses. Compare across similar holdings.	Event impact database; Portfolio company performance records
5. Build issuer scorecards	Rate issuers on A&R performance using available data: quality of climate risk disclosure (comprehensive/partial/minimal), operational resilience evidence (strong/moderate/weak based on event performance), management responsiveness to engagement (leading/adequate/lagging). Update scores annually and use to prioritize engagement and inform allocation.	A&R scorecard methodology; Issuer ratings database; Annual score updates
6. Link measurement to investment actions	Establish decision rules connecting performance to actions: Strong resilience + transparent disclosure → maintain/increase position, feature in engagement case studies. Moderate performance → continue engagement with specific improvement requests, maintain position with increased monitoring. Weak performance or poor disclosure → escalate engagement, reduce position, or divest if no improvement after 2–3 years.	Investment policy incorporating A&R criteria; Decision triggers documented

Step	Guidance	Key deliverables
7. Leverage for stewardship	Use accumulated performance data in: annual engagement meetings (cite specific operational data, compare to peers), voting decisions (support/oppose director elections based on climate risk governance), public statements or collaborative engagements (industry initiatives requiring common disclosure standards), client/LP reporting (demonstrate how resilience assessment informs portfolio management).	Engagement meeting agendas with A&R topics; Voting policy updates; LP reports featuring A&R
8. Scale through aggregation	Standardized data requests sent to broader portfolio (top 50–100 holdings)	Portfolio-wide A&R assessment

6.2 Common implementation challenges and how to address them

This Toolkit recognizes potential challenges in the implementation of impact measurement approach. A few common barriers as well as the potential solutions can be seen below:

Challenge	Why it occurs	How to address it
Data availability gaps	Climate-vulnerable geographies often lack monitoring infrastructure; clients resist reporting burdens	Start where data exists; negotiate data requirements into financing agreements; partner with technical providers; accept measurement gaps honestly rather than manufacturing precision
Attribution complexity	Multiple actors contribute to resilience; counterfactuals are inherently uncertain	Prioritize outputs and outcomes with clear attribution; reserve impact claims for cases with strong evidence; use contribution framing rather than sole attribution
Measurement costs exceed perceived benefits	Sophisticated approaches require resources; benefits accrue over time; early stages show costs before benefits	Start narrowly to demonstrate value before scaling; leverage existing data and processes; build costs into product pricing; focus on decision-usefulness, not comprehensiveness
Client resistance to disclosure	Operational data viewed as commercially sensitive; reporting seen as compliance burden	Frame as risk management partnership; offer reciprocal value (advisory services, pricing benefits); standardize requests to reduce burden; ensure confidentiality
Indicator fatigue	Too many metrics dilute focus; tracking becomes end rather than means	retire indicators not informing decisions; quarterly relevance review
Greenwashing concerns	Pressure to demonstrate impact before evidence exists; selective reporting of successes	Establish verification requirements before making external claims; report honestly on limitations; use third-party validation for material claims; document attribution assumptions

6.3 Final thoughts

The need for adaptation and resilience financing is scaling rapidly, driven by accelerating climate impacts, regulatory momentum, and growing recognition that resilience is fundamental to economic stability. The institutions that build credible measurement approaches now, however modest initially, will be positioned to scale responsibly, attract capital on favourable terms, manage emerging risks effectively, and demonstrate genuine impact.

This Toolkit does not solve every measurement challenge. What this framework does provide is a structured, institution-specific approach to generating decision-useful evidence proportional to your capabilities and needs.

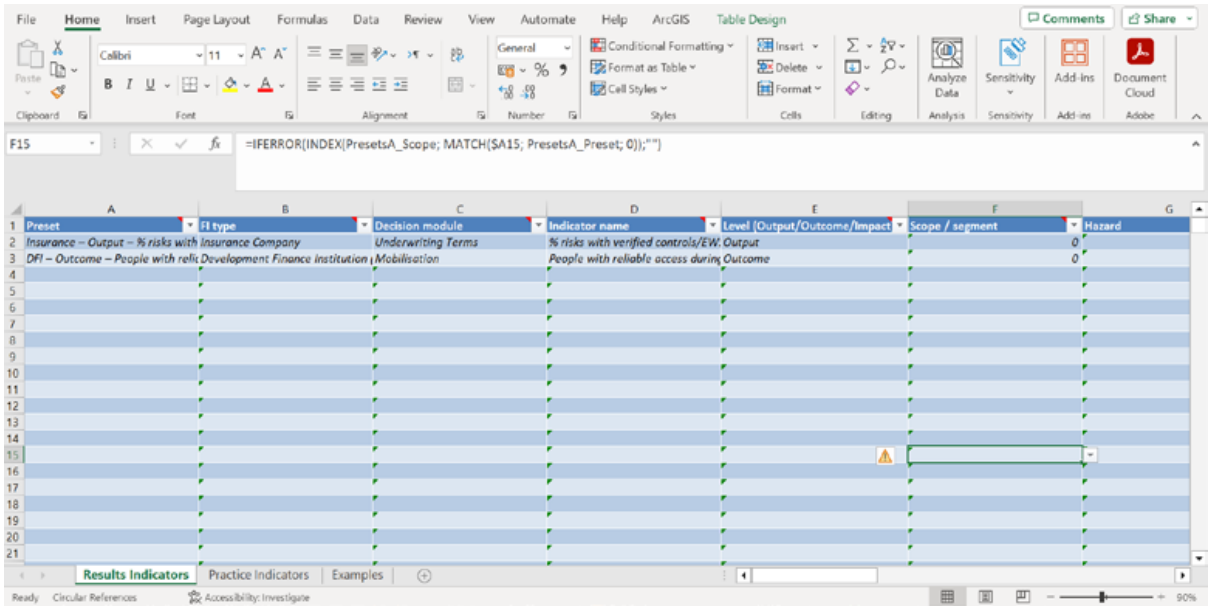
Your adaptation finance journey begins with understanding where climate risk matters in your portfolio, what you can realistically measure, and what actions will follow from that measurement. The rest depends on your commitment to systematic implementation and continuous learning.

Annex 1. Using The Companion

The Companion can be accessed in two formats an Excel file and a WebApp File.

Using the Excel file

1. Open the Excel file
2. Enable macros if prompted (required for dropdowns and formulas)
3. You will see three worksheet tabs at the bottom:
   - Results indicators: Main workspace for results indicators
   - Practice indicators: Main workspace for practice indicators
   - Examples: Reference examples from global frameworks



Results Indicators Sheet

The Results Indicators sheet contains 21 columns for indicator definition:

Column	Description
A: Preset	Select from pre-configured indicators or leave blank for custom
B: FI Type	Type of financial institution (Bank, Insurer, DFI, etc.)
C: Decision Module	Business decision this indicator informs (Pricing, Limits, etc.)
D: Indicator Name	Clear, descriptive name for the indicator
E: Level	Output, Outcome, or Impact
F: Scope/Segment	Portfolio segment or geographic scope
G: Hazard	Climate hazard being tracked (Flood, Drought, Heatwave, etc.)
H: Unit of Measure	%, hours, people, hectares, USD, etc.
I: Numerator	What is being counted or measured
J: Denominator	Total population or baseline for percentage calculations
K: Event Window	Time period for outcome measurement (for Outcome level only)
L–M: Baseline	Starting point measurement (period and value)
N–O: Target	Goal to achieve (period and value)
P: Data Source	System or database where data is collected
Q: Owner	Person or team responsible for tracking
R: Frequency	How often measured (Quarterly, Annual, Event-based, etc.)
S: Decision Rule	Optional: How indicator triggers business decisions
T: Evidence Links	Supporting documentation or research
U: Next Review	Date for next indicator review

Working with Results Indicators

The quickest way to begin is using pre-configured indicator templates:

Step 1: Select a preset

1. Navigate to the Results Indicators sheet
2. In any empty row, click on cell A (Preset column)
3. Click the dropdown arrow to see available presets:
   - Bank presets (e.g., '% critical sites commissioned to standard')
   - Insurance presets (e.g., 'Claims frequency/severity')
   - DFI presets (e.g., 'People with reliable access during alerts')
   - Asset Manager presets (e.g., 'Outage hours at critical sites')

Step 2: Auto-population

When you select a preset, Excel formulas automatically populate columns B through R with pre-configured values including FI type, indicator name, level, unit of measure, and frequency.

Step 3: Customize your indicator

Review and adjust the auto-populated fields to match your institution's context:

- Modify the scope/segment to reflect your portfolio structure
- Set baseline and target values based on your data
- Assign ownership to the appropriate team or individual
- Specify your actual data source system

Creating a custom indicator

For indicators not covered by presets:

1. Leave the Preset column (A) blank or select 'Custom...'
2. Fill in all required columns manually

Pro Tip: Use the Examples sheet as a reference for indicator naming conventions and level classification from recognized frameworks

Practice Indicators sheet

The Practice Indicators sheet contains 27 columns organized into key areas:

Core definition columns

- Category (data & infra, coverage & scale, process integration, etc.)
- Metric type (leading or lagging indicator)
- Indicator name and detailed definition
- Unit of measure, numerator, denominator, and calculation method

Data management columns

- Data source and owner
- Collection frequency and coverage scope
- Data quality score (optional, 1–5 scale)

Target setting columns

- Baseline value and date
- Year 1 target and mid-term target
- Progress tracking (computed column)
- On-track status (yes/no, auto-calculated)

Governance columns

- Evidence-to-decision link
- Verification method
- Review cadence and status
- Last updated date and notes

Working with practice indicators

Practice indicators help you track the institutional capabilities needed to deliver A&R results.

Step 1: Select from pre-configured indicators

Click the preset dropdown (Column A) to choose from 15+ practice indicators.

Step 2: Auto-population

Once you select a preset, columns B through Y automatically populate with predefined values including category, metric type, definition, calculation method, and suggested targets.

Step 3: Customize for your institution

Essential fields to customize:

- Coverage (Column N): Define your scope (e.g., 'All loan officers', 'Priority portfolio')
- Baseline Value (Column O): Enter your current performance
- Baseline Date (Column P): Record when baseline was measured
- Target (Year 1) (Column Q): Set your 12-month goal
- Target (Mid-term) (Column R): Set your 2–3 year goal
- Data Source (Column K): Specify your actual system
- Owner (Column L): Assign to responsible person/team

Using the web app

How the two sections work together:

Section A: Results captures the metrics that should influence money or terms pricing, limits, tenor, underwriting, allocation, concessionality, etc.

Section B: Practice indicators tracks your institutional capability across five areas: Data & Infra, Capacity & Skills, Process Integration, Coverage & Scale, Quality & Verification.

Step-by-step Section A (results)

1. Choose a concrete scope where a decision could change (deal/site/issuer/segment/portfolio) and the primary hazard that matters there.
2. Select a Level: Output (delivery evidence), Outcome (performance during real events), or Impact (longer-term effect on people/planet/economy). Prefer Outcomes for decisions.
3. (Optional) Apply a Results preset from the dropdown. It fills common fields including FI type, Decision module, Owner, Level, Indicator name, UoM, Numerator/Denominator, and (for Outcomes) an Event window scaffold. Edit as needed.

4. Make it re-computable: write the Unit clearly (hours, %, index, days, currency, people); specify Numerator and (if relevant) Denominator so anyone can rebuild the number from source data.
5. Wire to a decision: set the Decision module (Pricing, Limits, Tenor, Covenants, Underwriting, Reinsurance, Allocation Tilt, Engagement, Concessionality, Mobilization, Eligibility/Labelling). Name the Data source and Owner. Choose a Frequency. Add an Evidence link and Next review date.
6. For Outcomes: fill the Event window with official alert IDs or start/end timestamps; use the same hazard you named in the row.
7. Use a short Bundle ID to group related Output/Outcome rows for the same scope, e.g. COASTAL_RD_2025_A.

Step-by-step Section B (practice)

1. Pick a category: Data & Infra, Capacity & Skills, Process Integration, Coverage & Scale, or Quality & Verification.
2. Set metric type: Leading (capability/effort) or Lagging (realised performance).
3. Describe the indicator and its definition. Specify Unit, Numerator/Denominator (if applicable), and the Method (e.g., Covered ÷ In-scope × 100).
4. Administration: add Data source, Owner, Frequency, Coverage (Scope), Baseline value/date, and Targets (Year 1, Mid-term).
5. Governance: Write the Evidence-to-Decision note (what happens if results are above/below threshold), set Verification, optional Data quality (1-5), Review cadence, Status, Last updated, and Notes.
6. (Optional) Apply a practice preset to seed a typical practice target for your category; tailor to your institution.

Using the app: controls and tips

- **Add row:** Inserts a blank row at the end of the selected section.
- **Duplicate last:** Copies the last row; useful when creating pairs of Output/Outcome for the same bundle.
- **Clear:** Wipes the section and inserts one blank row.
- **Results presets:** Choose a preset; it fills all relevant fields in the selected (or last) Results row.
- **Practice presets:** Choose a preset; it fills the selected (or last) Practice row.
- **Import CSV (Results A):** Loads rows into Results. The importer accepts both the full Table-A headers and common library headers such as Indicator, Pathway Level, Example UoM, and Source/Framework.
- **Typing custom values:** Every dropdown includes custom…. selecting it reveals a text input; type your value.
- **Dates:** The "Next review date" cell allows a native date picker when you choose a custom date.

UN environment programme

finance initiative

UNEP Finance Initiative (UNEP FI) brings together a large network of banks, insurers and investors that catalyses 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 establishing the world's foremost sustainability frameworks that help the finance industry address global environmental, social and governance challenges.

Convened by a Geneva, Switzerland-based secretariat, more than 500 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 the sustainability frameworks within their industries using practical guidance and tools to position their businesses for the transition to a sustainable and inclusive economy.

Founded in 1992, UNEP FI was the first initiative to engage the finance sector on sustainability. Today, the Initiative cultivates leadership and advances 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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UN Environment Programme Finance Initiative