

SUSTAINABLE SUPPLY CHAINS: THE ACCOUNTANT'S ROLE IN A REGULATED WORLD

A Sustainability's thought leadership paper examining how finance professionals can lead the transition to transparent, compliant, and resilient global supply chains in an era of mandatory ESG regulation.



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ABOUT THIS PAPER

This paper examines the evolving role of finance and accounting professionals in managing, measuring, and reporting on supply chain sustainability across an era of mandatory ESG disclosure. Drawing on regulatory analysis across six major jurisdictions – including the EU, UK, USA, Australia, Japan, and Singapore – corporate case evidence from leading multinationals, and emerging AI governance frameworks, it addresses how sustainable supply chains are defined, measured, and assured under frameworks including IFRS S1/S2, CSRD, CSDDD, and ISSA 5000. The paper is intended for CFOs, finance directors, sustainability officers, procurement leaders, and policymakers seeking actionable intelligence for building resilient, transparent, and compliant supply chains. While every effort has been made to ensure accuracy and currency of the information presented, this paper is provided for informational and educational purposes only. It does not constitute legal, financial, or regulatory advice. Sustainadility accepts no liability for decisions made on the basis of this paper. Data cited from third-party sources has been independently verified where possible; however, readers are advised to consult primary sources for regulatory compliance purposes. All intellectual property in this paper remains the exclusive property of Sustainadility.

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Sustainadility is the architect of high-performance sustainability transitions – a data-driven firm that uniquely bridges Shariah compliance, ESG standards, and global capital markets. Operating across sovereign, institutional, and corporate stakeholders, Sustainadility transforms disconnected data into high-fidelity digital replicas of assets and project pipelines, enabling real-time compliance with both ESG and Shariah requirements. Its three integrated capabilities – Technology, Data, and Advisory – work in concert to build credible transition plans, unlock Islamic and climate finance, and deliver measurable environmental and financial outcomes. From digital twins that make infrastructure investment-ready, to predictive analytics that anticipate regulatory and market shifts, Sustainadility equips organisations to lead – not merely respond to – the global sustainability imperative.

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ABOUT CLIMENA

Climena is the Middle East's leading end-to-end ESG partner – purpose-built to turn sustainability mandates into measurable competitive advantage and bankable investment opportunities. Aligned with Vision 2030, UAE Net Zero 2050, and the Saudi Green Initiative, Climena delivers enterprise-grade digital twins for real-time Scope 1–3 carbon accounting, automated regulatory disclosure for ADX, DFM, and Tadawul, and proprietary models that quantify climate-related value-at-stake. Its capital formation expertise spans Green Bonds, Green Sukuk, blended finance, and carbon credit monetisation – unlocking access to a projected US\$2 trillion regional sustainable investment market. Where others offer compliance, Climena delivers transformation: converting ESG obligations into green CAPEX pipelines, circular economy integration, and investor-ready projects with verifiable financial returns.

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THE FINANCE PROFESSION'S DEFINING DECADE HAS ARRIVED

The accountancy profession has always been the backbone of trust in business. We have built the systems that verify, the frameworks that govern, and the standards that protect. But the world has changed – and our profession must change with it. Supply chains now carry not just goods, but risk: climate risk, human rights risk, regulatory risk, and reputational risk. These are no longer soft concerns. They are hard financial exposures. ESG-focused assets under management have surpassed US\$30 trillion. Supply chain disruptions cost large organisations an average of US\$184 million annually. And over 75% of corporate emissions sit not within a company's walls – but deep in the supply chains that most finance teams have never scrutinised. The era of looking away is over.

Mandatory disclosure is no longer coming – it is here. The CSRD, CSDDD, IFRS S1 and S2, and ISSA 5000 have fundamentally redrawn the boundaries of financial accountability. Organisations that treat this as a compliance burden will fall behind. Those that treat it as a strategic opportunity will lead. AI is already transforming the economics of sustainability reporting – reducing Scope 3 measurement costs by up to 40%, enabling real-time supplier risk monitoring, and turning annual reports into continuous intelligence. Yet only one in four organisations currently harnesses this capability. The gap between those who act and those who wait is widening every quarter. This paper is your roadmap. The question is simple: will your organisation lead this transition – or be led by it?

Faraz Khan MBE
Partner, Sustainability

EXECUTIVE SUMMARY

Supply chain sustainability has become the defining compliance and value-creation challenge of the decade – and the finance function is at its epicentre.

KEY STATISTICS

US\$30T

ESG assets under management globally

75%+

of corporate emissions sit in supply chains

US\$184M

average annual cost of supply chain disruption

40%

Scope 3 cost reduction achievable through AI

KEY FINDINGS

REGULATORY CONVERGENCE

CSRD, CSDDD, IFRS S1/S2 and ISSA 5000 are creating a de facto global standard. Finance teams treating these as separate exercises will face compounding costs.

SCOPE 3 IS THE UNRESOLVED CHALLENGE

Over 75% of emissions sit in supply chains most finance teams have never audited. ISSA 5000 assurance requirements will expose data quality gaps rapidly.

HUMAN RIGHTS RISK IS UNDERPRICED

Forced labour exposure in Tier 2–3 suppliers carries direct liability under CSDDD, UFLPA, and the UK Modern Slavery Act. Most finance teams have not yet quantified this.

AI IS BIFURCATING THE LANDSCAPE

Organisations using AI achieve real-time Scope 3 tracking and automated risk scoring. The 75% not yet using AI face a widening assurance liability.

The findings of this paper demand a fundamental reorientation of the finance function: from compliance executor to strategic ESG architect.

The convergence of mandatory disclosure, investor pressure, and AI-enabled reporting creates a narrow window of strategic advantage for organisations that act decisively. The following analysis translates the paper's four key findings into concrete imperatives, differentiated by audience and time horizon.

Immediate Priority

FOR THE CFO & FINANCE DIRECTOR

The finance function must assume ownership of ESG data governance – not as a support function, but as the primary custodian of material non-financial information. This means establishing internal controls over Scope 3 data collection, commissioning supply chain mapping to Tier 2 and beyond, and building the audit trail infrastructure required for ISSA 5000 limited assurance. CFOs who delay will face a compressed, high-cost remediation cycle as regulatory deadlines converge between 2025 and 2027.

Action: Commission a Scope 3 data readiness assessment and appoint a dedicated ESG data controller within the next reporting cycle.

Governance Imperative

FOR THE BOARD & AUDIT COMMITTEE

Board-level accountability for supply chain sustainability is no longer discretionary. Under CSDDD, directors face personal liability for failure to implement adequate due diligence. Audit committees must extend oversight to ESG data integrity, AI governance, and supplier compliance monitoring – applying the same rigour to sustainability disclosures as to financial statements.

Action: Integrate supply chain ESG risk into the board risk register and establish a quarterly sustainability assurance review with the external auditor.

Systemic Risk

FOR POLICYMAKERS & STANDARD-SETTERS

The current regulatory architecture creates a structural asymmetry: large multinationals face stringent disclosure requirements, while their Tier 2 and Tier 3 suppliers in developing economies receive minimal capacity-building support. Without intervention, this will drive supply chain concentration and exclude SME suppliers from global value chains.

Action: Develop phased compliance pathways and co-funded capacity-building programmes for SME suppliers in high-risk manufacturing jurisdictions.

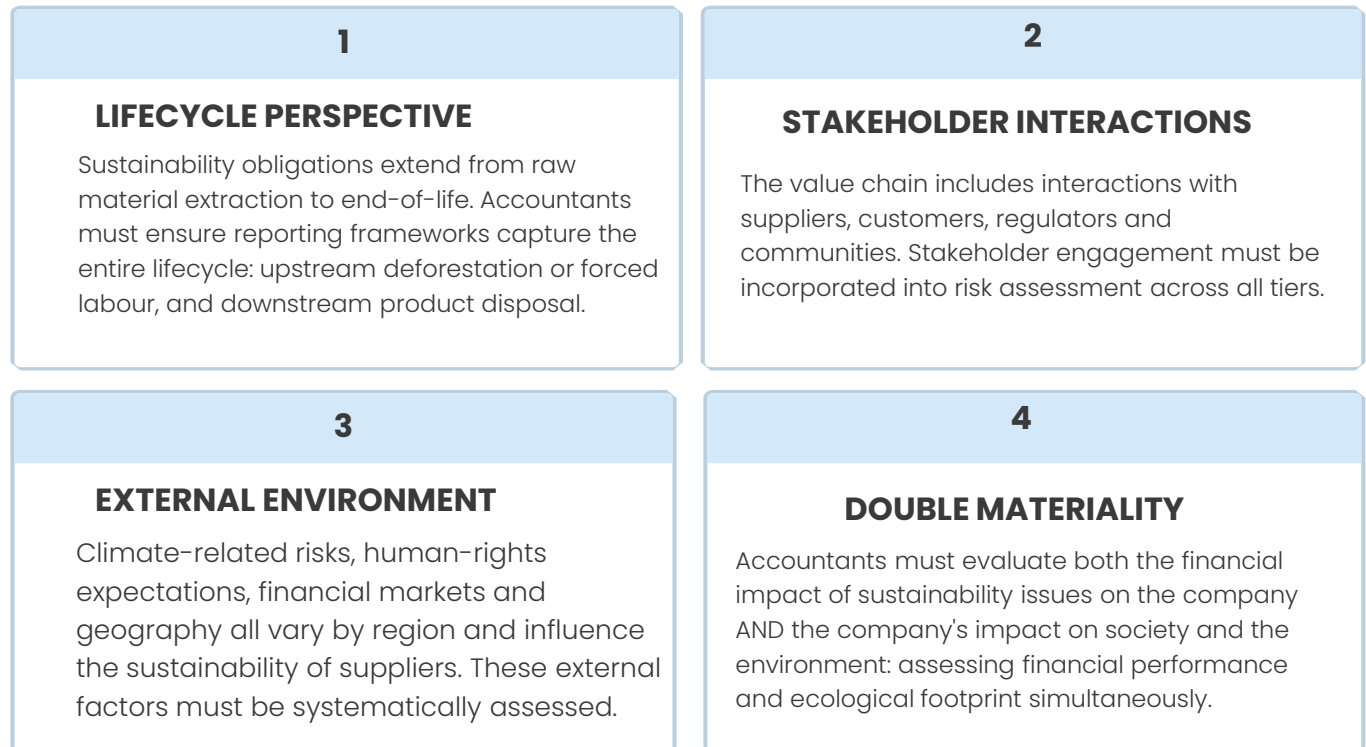
Strategic Imperative: Organisations that invest now in ESG data infrastructure, responsible AI governance, and cross-functional sustainability leadership will not merely achieve compliance – they will define the competitive standard. The window for proactive advantage is closing. The cost of inaction will exceed the cost of investment by an order of magnitude within three years.

DEFINING SUSTAINABLE SUPPLY CHAINS & THEIR FINANCIAL IMPERATIVE

Modern supply chains span far beyond a single entity's legal boundaries. The ISSB positions accountants at the centre of supply chain sustainability: requiring finance functions to track resource flows, evaluate externalities, and quantify risks across diverse suppliers and geographies.

1.1 THE ISSB VALUE-CHAIN FRAMEWORK

The International Sustainability Standards Board (ISSB) defines a value chain as all interactions, resources and relationships an entity uses and depends on to create its products or services: from conception to delivery, consumption and end-of-life. This broad definition means that a sustainable supply chain assesses and manages ESG risks across the entire lifecycle, not only within an entity's operations but throughout every tier of suppliers and customers.



Finance Function Implications

MAPPING THE VALUE CHAIN: A PRACTICAL STARTING POINT

For most organisations, the ISSB value-chain framework requires a fundamental expansion of the finance function's data perimeter. Accountants must work with procurement, operations, and sustainability teams to map supplier tiers: identifying which Tier 1, Tier 2, and Tier 3 relationships carry material ESG risk. The ISSB acknowledges that complete primary data across all tiers is not always feasible; however, it requires entities to disclose the extent of value-chain coverage and the estimation methods used where primary data is unavailable. This creates an immediate obligation to document methodology, not just outcomes.

DOUBLE MATERIALITY IN PRACTICE: THE ESRS LENS

The European Sustainability Reporting Standards (ESRS), which operationalise CSRD, require companies to apply double materiality assessment as the foundation of their sustainability reporting. This means finance teams must conduct, and document, a structured process to identify: (1) which sustainability topics create financial risks or opportunities for the entity (financial materiality), and (2) which of the entity's activities create significant impacts on people or the environment (impact materiality). Both dimensions must be assessed across the full value chain, not merely within the reporting entity's direct operations.

Key Implication: The ISSB value-chain framework is not a reporting template, it is a risk identification methodology. Finance professionals who treat it as a disclosure exercise rather than a strategic risk management tool will systematically underreport material exposures and face assurance challenges under ISSA 5000.

1.2 FROM VOLUNTARY TO REGULATED: THE FINANCIAL IMPERATIVE

Historically, supply chain sustainability was a voluntary CSR initiative. Several powerful trends have shifted it to a regulated, business-critical priority with direct financial consequences.

Market & Stakeholder Drivers

INVESTOR PRESSURE

US\$30 trillion in ESG-focused assets under management in 2023. Investors penalise companies with opaque supply chains, raising the cost of capital.

Failure to disclose supply chain ESG data is increasingly treated as a governance red flag, not merely a reporting gap.

CONSUMER EXPECTATIONS

73% of consumers willing to pay premiums for verified sustainable products. Reputation risk from supply chain abuses directly translates into revenue risk.

Brand equity built over decades can be erased within weeks by a single Tier 2 supplier scandal.

Financial & Legal Consequences

COST OF CAPITAL & VALUATION

Deloitte research: a 10-point increase in ESG rating can raise enterprise value by ~5% and reduce weighted average cost of capital by lowering beta.

ESG rating improvements are no longer soft metrics: they are directly priced into debt covenants and equity multiples.

LEGAL CONSEQUENCES

Fines up to 5% of global turnover under CSDDD; 2% under Germany's LkSG. Non-compliance can lead to import bans, exclusion from public tenders, or lawsuits.

Director liability under CSDDD means personal exposure for senior finance leaders who fail to implement adequate due diligence systems.

OPERATIONAL DISRUPTION

US\$184M average annual cost of supply chain incidents. Sustainability due diligence reduces frequency and severity of disruptions by up to 40%.

ESG due diligence is now a risk management tool, not a CSR exercise, the ROI is measurable.

ASSET VALUATIONS

Asset impairment may result if supply chain disruptions or regulatory penalties undermine operations. Transition risks could devalue carbon-intensive assets.

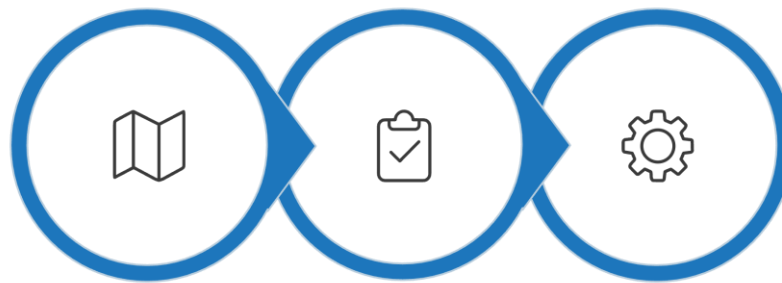
Auditors are increasingly required to assess climate-related asset impairment, finance teams must be prepared to defend valuations under scrutiny.

The Compounding Effect: These six forces do not operate in isolation: they interact and amplify each other, creating a risk multiplier effect that makes delayed action exponentially more costly.

"Sustainability is no longer optional. Finance leaders face direct financial consequences if supply chain risks remain unmanaged: from cost structures and asset valuations to risk exposures and capital market penalties."

1.3 RESPONSIBLE PROCUREMENT: THE FINANCE TEAM'S ENTRY POINT

Responsible procurement provides a tangible pathway for finance professionals to embed sustainability into supply chain management. A comprehensive due-diligence approach involves three interconnected stages.



VISIBILITY

ASSESSMENT

ACTION

This three-stage workflow ties directly to the ISSB value-chain definition, extending due diligence beyond direct suppliers to sub-suppliers and engaging multiple functions including procurement, legal, finance, and sustainability.

SUPPLIER CODES OF CONDUCT

Set expectations for labour practices (no child or forced labour), human rights, anti-corruption, GHG emissions reduction, waste management, and community impact. Finance teams ensure contractual clauses and payment terms incentivise compliance.

ESG QUESTIONNAIRES

Require suppliers to disclose information on labour practices, safety standards, GHG emissions, water usage, waste disposal, hazardous materials management, and governance structures. Due diligence should cover four categories: environmental impact, human rights and labour, governance/anti-corruption, and community engagement.

FINANCE TEAM RESPONSIBILITIES

- Review ESG questionnaire responses and seek evidence (certifications, audits)
- Integrate findings into risk assessments and provisioning
- Design weighted scoring prioritising high-risk areas (forced labour, high emissions)
- Invest in supply chain mapping tools for Tier-2 and Tier-3 visibility
- Quantify ESG risks in monetary terms to inform budgeting
- Monitor improvement and track financial impact of corrective actions

SECTION 2: THE GLOBAL REGULATORY LANDSCAPE: FROM VOLUNTARY FRAMEWORKS TO MANDATORY OBLIGATIONS

Supply chain sustainability is now regulated through a patchwork of national and regional laws. Accountants must understand the scope, thresholds, reporting requirements and penalties of each regime to ensure compliance and create strategic advantage.



2.1 KEY MANDATORY REGULATIONS: GLOBAL OVERVIEW

The following exhibit summarises the principal regulatory regimes governing supply chain sustainability across major jurisdictions: a critical reference for finance professionals operating globally.

Exhibit 1: Key Mandatory Supply Chain Sustainability Regulations by Jurisdiction (2024–2029)

1	EUROPEAN UNION CSDDD  In Force: 2027–2029 (phased)  Scope: >1,000 employees & €450M turnover; non-EU companies with €450M EU revenue  Penalties: Up to 5% of global turnover; civil liability for directors	2	EUROPEAN UNION CSRD / ESRS  In Force: From January 2024  Scope: Large EU companies meeting size thresholds; phased expansion to SMEs  Penalties: Up to €10M or 5% of turnover (member state dependent)	3	GERMANY LKSG – SUPPLY CHAIN ACT  In Force: 2023 (>3,000 employees); expanded to >1,000 in 2024  Scope: German-headquartered companies and their global supply chains  Penalties: Up to €8M or 2% of annual turnover; exclusion from public procurement
4	UK / AUSTRALIA MODERN SLAVERY ACTS  In Force: UK 2015 / Australia 2018  Scope: UK: ≥£36M turnover; Australia: ≥AUD 100M turnover  Penalties: Reforms pending; injunctions and civil penalties planned	5	CANADA BILL S-211  In Force: January 2024  Scope: Listed entities or those with ≥C\$20M assets, ≥C\$40M revenue, or ≥250 employees  Penalties: Fines up to C\$250,000	6	UNITED STATES UFLPA – UYGHUR FORCED LABOR PREVENTION ACT  In Force: 2022  Scope: All goods with Xinjiang nexus; no de minimis exception  Penalties: Import detention; US\$1.3B in goods detained in FY2024
7	UNITED STATES SEC CLIMATE DISCLOSURE RULE  In Force: 2025–2033 (phased)  Scope: Large and accelerated filers; Scope 1 & 2 mandatory; Scope 3 not required  Penalties: SEC enforcement; financial restatement risk	9	JAPAN HUMAN RIGHTS DUE DILIGENCE GUIDELINES  In Force: 2023 (voluntary; mandatory legislation expected)  Scope: All companies — influential across Japanese supply chains globally  Penalties: Reputational; mandatory legislation under active discussion		

 **Compliance Alert:** The CSDDD is expected to supersede Germany's LkSG, aligning national law with EU requirements. Finance teams must monitor the phased implementation timeline and prepare data systems well in advance of enforcement dates.

2.2 EU DEEP DIVE: CSDDD & CSRD

CORPORATE SUSTAINABILITY DUE DILIGENCE DIRECTIVE (CSDDD)

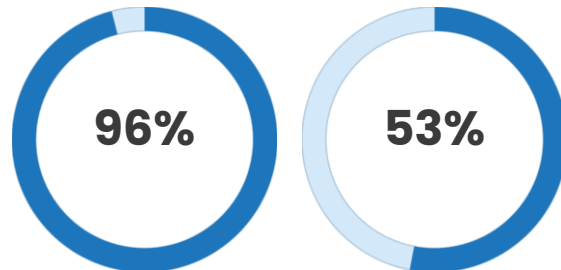
The CSDDD requires large EU and non-EU companies operating in the EU to identify, prevent, mitigate and account for adverse human-rights and environmental impacts across their operations and value chain. Key obligations include:

- Integrate due diligence into corporate policies and governance
- Identify actual and potential adverse impacts across the value chain
- Prevent or mitigate identified impacts with concrete action plans
- Establish accessible complaint mechanisms for affected individuals
- Monitor effectiveness and publicly communicate results
- Adopt climate transition plans aligned with the Paris Agreement

Accountant Implication: The directive forces finance functions to collect supplier data beyond Tier 1, calculate value-chain GHG emissions, and budget for remediation. New cost categories include due-diligence staffing, supplier audits, and potential penalty provisions.

CSRD & ESRS: SCOPE 3 REPORTING GAP

The CSRD vastly expands sustainability reporting. ESRS E1 requires disclosure of Scope 3 GHG emissions and methodology. The data gap is stark:



SUPPLY CHAIN EMISSIONS

Estimated share of emissions in the supply chain for carbon-intensive sectors like packaged food

FULL SCOPE 3 REPORTERS

Share of companies currently reporting full Scope 3 emissions, leaving nearly half non-compliant

The CSRD mandates limited assurance (moving to reasonable assurance by 2028) for reported sustainability data, linking directly to ISSA 5000 standards. Reports must address both financial materiality and impact materiality, requiring accountants to integrate sustainability metrics into financial statements.

Finance Function Readiness: What CSDDD & CSRD Demand Right Now

Data Architecture

Finance teams must build supplier data collection systems capable of capturing primary activity data at Tier 2 and Tier 3 level. Spend-based Scope 3 estimates will not satisfy ESRS E1 disclosure requirements or ISSA 5000 limited assurance standards beyond 2025.

Budget Provisioning

CSDDD compliance introduces new cost categories that must be reflected in financial planning: supplier audit programmes, remediation action plans, grievance mechanism infrastructure, and potential penalty provisions. These are not one-off costs, they are recurring operational expenditures.

Timeline Urgency

With CSRD reporting beginning for large companies from January 2024 and CSDDD phased enforcement starting 2027, the preparation window is narrower than it appears. Companies that begin data infrastructure investment in 2025 will face a compressed, high-cost remediation cycle.

2.3 ISSB STANDARDS & ISSA 5000: THE GLOBAL ASSURANCE ARCHITECTURE



IFRS S1 – GENERAL REQUIREMENTS

Requires entities to disclose significant sustainability-related risks and opportunities that could reasonably affect cash flows or enterprise value. Disclosures must cover governance, strategy, risk management and metrics/targets. Adopted across UK, Canada, Australia, Japan, Middle East and Africa.



IFRS S2 – CLIMATE DISCLOSURES

Sets climate-specific requirements including Scope 1, 2 and (if material) Scope 3 GHG emissions, transition plans and climate resilience. Emphasises value-chain information, emissions from suppliers and customers, and requires entities to consider dependencies across the value chain.



ISSA 5000 – SUSTAINABILITY ASSURANCE

Issued by IAASB in 2024, effective December 2026. More than double the requirements of ISAE 3000. Scales requirements for both limited and reasonable assurance. Introduces granular materiality thresholds and requires understanding of internal control over sustainability information even in limited assurance engagements.

"ISSA 5000 will support the CSRD's assurance requirements and create a common assurance baseline across jurisdictions. Accountants will need to engage assurance providers early, strengthen internal control over sustainability data, and prepare for more detailed audits."



Assurance Readiness: What IFRS S1, S2 & ISSA 5000 Require of Finance Teams

Internal Controls Over Sustainability Data

ISSA 5000 requires assurance providers to understand and evaluate internal controls over sustainability information, even under limited assurance. Finance teams must document data collection processes, approval workflows, and estimation methodologies to the same standard as financial reporting controls. Absence of documented controls will be a primary assurance qualification risk.

Scope 3 Materiality Assessment

IFRS S2 requires Scope 3 disclosure where material, but materiality determination itself must be documented and defensible. Finance teams cannot simply omit Scope 3 on grounds of data difficulty; they must demonstrate a structured materiality assessment process. For most organisations in carbon-intensive sectors, Scope 3 materiality is not a question of if, but of how much and by when.

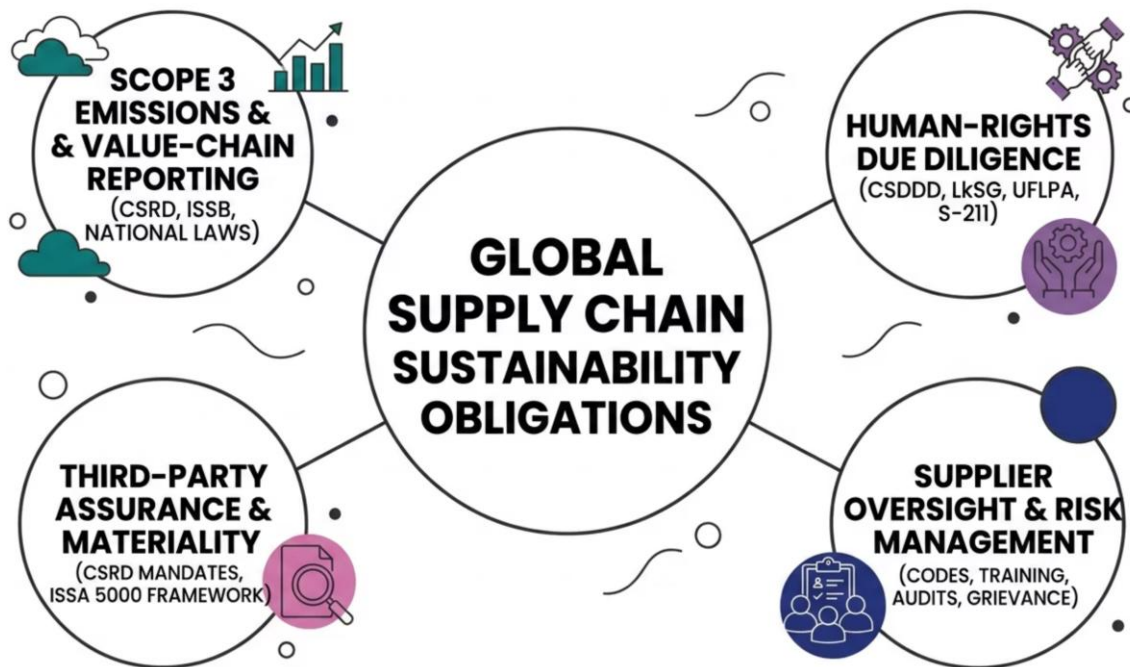
The Limited-to-Reasonable Assurance Transition

CSRD mandates limited assurance from 2024, transitioning to reasonable assurance by 2028. This is not a minor technical upgrade, reasonable assurance requires substantially more evidence, testing, and control documentation. Organisations that treat limited assurance as the end state will face a disruptive and costly transition. The time to build reasonable-assurance-ready infrastructure is now.

2.4 CONVERGING OBLIGATIONS ACROSS REGIONAL REGIMES

Despite regional variation, five obligations are consistently appearing across all major regulatory frameworks: creating a de facto global standard that finance teams must address.

Exhibit 2: Five Converging Supply Chain Sustainability Obligations Across Global Regulatory Regimes



- ✓ **Strategic Opportunity:** This convergence enables organisations to build a single, integrated ESG data architecture that satisfies multiple regulatory regimes simultaneously, reducing duplication and creating competitive advantage through superior data quality.

2.5 AI GOVERNANCE: THE EMERGING REGULATORY LAYER

AI governance is transitioning from voluntary best practice to enforceable obligation, with direct financial and reputational consequences for supply-chain participants.

REGULATORY LANDSCAPE

The EU AI Act (enforceable 2024/2025) classifies AI systems by risk. High-risk systems, including those used for procurement, credit scoring or employee selection, must meet strict requirements around transparency, explainability, data governance and human oversight.

€35M

40+

MAX EU AI ACT FINE

Or 7% of global annual turnover, whichever is higher

International standards (ISO 42001, NIST AI RMF) offer voluntary guidance but are increasingly demanded by procurement teams and insurers.

U.S. STATE AI LAWS

Enacted or proposed; no federal law yet

FINANCE FUNCTION OBLIGATIONS

HUMAN-IN-THE-LOOP CONTROLS

Ensure AI-driven decisions have appropriate human oversight and escalation mechanisms. Governance question: can the organisation demonstrate oversight over AI that materially affects the value chain?

CROSS-FUNCTIONAL GOVERNANCE

Finance must budget for AI governance investments, model validation, bias testing, third-party assurance, and evaluate potential liabilities.

CONTINUOUS OVERSIGHT

Autonomous systems adapt over time. One-off assessments are insufficient; continuous monitoring is required.

⊗ **Shadow AI Risk:** Unauthorised AI tools deployed by suppliers introduce risks including biased outputs, unreliable decisions and data leakage. Without transparency into these tools, companies cannot provide credible assurance to regulators or customers.

SECTION 3: SUSTAINABILITY PRACTICES IN GLOBAL SUPPLY CHAINS: REGIONAL PERSPECTIVES

Manufacturing hubs in Asia and Europe underpin many global supply chains. Vietnam, India, China and Türkiye collectively export trillions of dollars of goods. As ESG obligations tighten, companies must understand and monitor conditions across Tier 1, Tier 2 and Tier 3 suppliers.

3.1 CASCADING ESG OBLIGATIONS: REGIONAL MANUFACTURING HUBS

ESG compliance obligations are cascading from multinational buyers to Tier 1, 2 and 3 suppliers across key manufacturing hubs: creating uneven readiness and significant compliance risk for finance teams.

VIETNAM – EU DUE DILIGENCE & SUPPLIER READINESS

The CSDDD's phased implementation (from 2028 for companies with >€1B turnover) requires Vietnamese suppliers to embed due-diligence systems into procurement and governance. EU buyers now require documentary evidence including published due-diligence policies, risk registers mapping human-rights and environmental risks, employee contracts and payroll records, environmental permits and monitoring reports, and corrective action records with remediation logs. The CSDDD forces Tier 1 suppliers to cascade requirements to Tier 2 and Tier 3, creating a hierarchy of compliance where large factories invest in sustainability management systems while smaller sub-contractors struggle with documentation.

INDIA – SEDEX RISK ANALYSIS & CIVIL-SOCIETY PRESSURE

Sedex classifies India as medium-to-high risk across textiles, pharmaceuticals and agriculture. In 2019 social audits, 61% of non-compliance findings related to health, safety and hygiene; 13% to management systems; 11% to wages and working hours; and 7% to environmental performance. Over 50% of Asia-Pacific consumers expect businesses to ensure supply chains do not harm the environment or exploit workers. Hero MotoCorp's Green Partner Development Programme, covering 186 suppliers by 2019, demonstrates how corporate initiatives translate into supplier incentives through training, benchmarking and recognition.

CHINA – NATIONAL ESG FRAMEWORKS & IMPORT DEPENDENCIES

China's SASAC 2022 guidelines specify 100 metrics covering GHG emissions, water consumption, energy consumption, waste generation, labour rights and corporate governance. By 2020, 1,450 Chinese companies had published ESG reports, a 291% increase vs 2009. As the EU's largest goods supplier (20.8% of EU imports, worth US\$676B in 2022), China's guidelines reflect foreign buyer expectations. China has pledged to peak carbon emissions by 2030 and achieve carbon neutrality by 2060. Apple reports 100% of cobalt and lithium smelters/refiners in its supply chain participate in third-party audits.

TÜRKİYE – GREEN INVESTMENT & REGULATORY READINESS

Türkiye's HIT-30 programme provides US\$30B in support for 2025–2030, including US\$5B for EVs, US\$4.5B for battery production, US\$5B for semiconductors and US\$4.2B for solar and wind components. Over 60% of electricity capacity already comes from renewables, with plans to quadruple wind and solar to 120 GW by 2035 (requiring US\$108B investment). Türkiye plans to pilot a national ETS in 2026 after adopting a climate law in 2025, positioning it as a 'green sourcing hub' for European corporates.

- ✔ **Strategic Implication:** Finance teams sourcing from these hubs must build region-specific compliance matrices, mapping local regulatory readiness against buyer obligations under CSDDD, CSRD and ISSB standards.

3.2 SUSTAINABILITY PRACTICES: CORPORATE CASE EVIDENCE

Leading multinationals have developed sophisticated supplier sustainability programmes, yet coverage remains uneven. The following exhibit benchmarks key practices across six major corporations spanning technology, automotive, food & beverage, and apparel sectors.

APPLE – TECHNOLOGY

Supplier Code of Conduct & Assessments · 893 independent assessments (2024) · 8M+ employees trained since 2008 · 2.5M in rights training · 99%+ PFRA pass rate · 25 suppliers removed since 2009

IBM / RBA – TECHNOLOGY

Responsible Business Alliance Code · ~2,000 third-party audits across 34 countries · 125 member companies · ~6M workers in 120 countries · Legally binding commitments · Suppliers removed for non-compliance

FORD MOTOR – AUTOMOTIVE

CDP Climate & Water Questionnaires · 11,000 suppliers across 60 countries · 242 CDP Climate, 196 CDP Water questionnaires sent · 84% climate response rate · 71% water response rate

CLIF BAR – FOOD & BEVERAGE

50/50 by 2020 Renewable Energy · 33% market share in health bars · Independent energy experts deployed to suppliers · >90% of assisted suppliers committed to clean power

LEVI STRAUSS – APPAREL

2030 Water Strategy (SBTN-aligned) · Global denim supply chain · Addresses water quantity, quality and resilience · 40% global freshwater needs projected unmet by 2030

HERO MOTOCORP – AUTOMOTIVE

Green Partner Development Programme · 186 suppliers covered by 2019 · Launched 2007 · Training, benchmarking, recognition · Disqualification for non-compliance

KEY FINDING – COVERAGE GAP

- ❗ S&P Global's 2024 Corporate Sustainability Assessment of 10,042 companies found that only 51% publicly disclosed supplier codes of conduct. Environmental topics lag significantly: only 45% mention GHG emissions or energy consumption, and just 29% mention biodiversity.

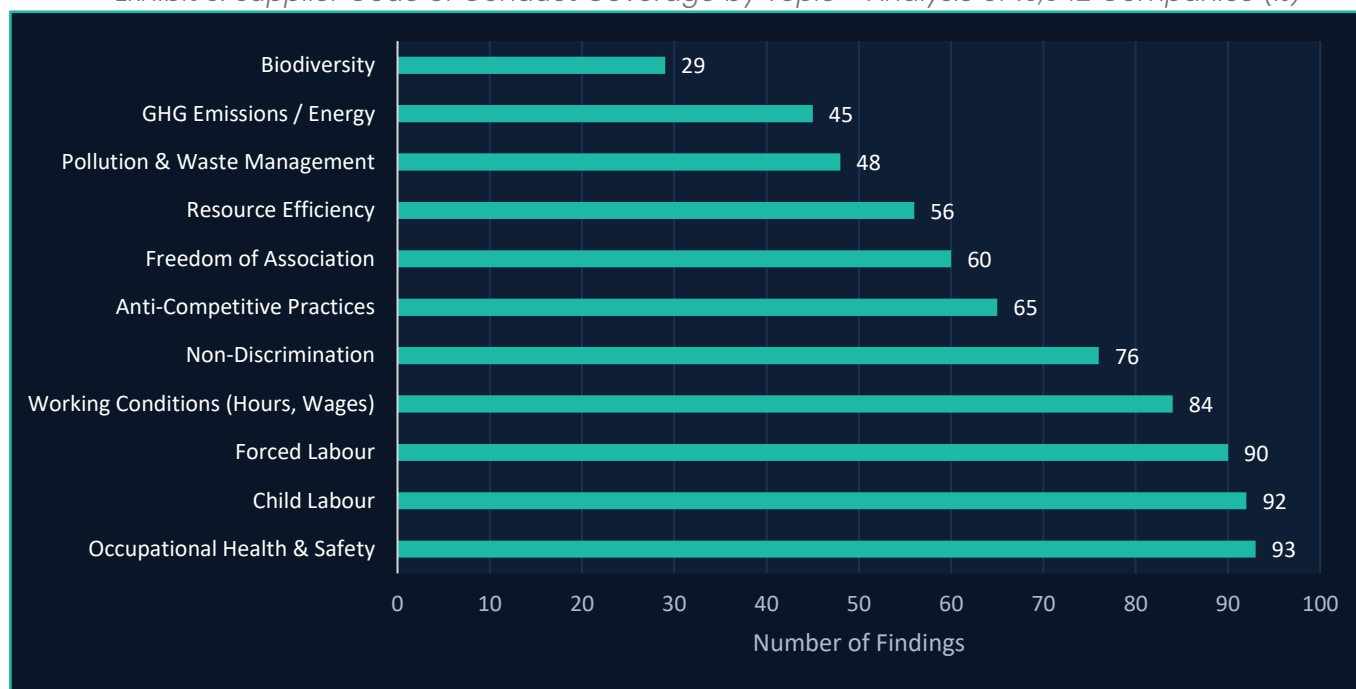
STRATEGIC IMPLICATION

- ✅ Finance teams must move beyond code-of-conduct disclosure toward quantified, auditable supplier ESG metrics, aligned with CSRD, ISSB S1/S2 and ISSA 5000 assurance requirements, to close the gap between leading practice and regulatory expectation.

3.3 SUPPLIER CODE COVERAGE: THE ENVIRONMENTAL GAP

Analysis of supplier codes of conduct across 10,042 companies reveals a significant imbalance: human rights topics are well-covered, but environmental requirements lag far behind regulatory expectations.

Exhibit 3: Supplier Code of Conduct Coverage by Topic – Analysis of 10,042 Companies (%)



This data reveals a critical gap: while human rights topics achieve 84–93% coverage, environmental topics, which are now mandatory under CSRD and CSDDD, achieve only 29–56% coverage. Finance professionals must urgently close this gap by embedding environmental requirements into supplier codes and procurement governance.

WHY THE ENVIRONMENTAL GAP PERSISTS

REGULATORY LAG

Environmental obligations in supplier codes have historically been voluntary. Mandatory requirements under CSRD and CSDDD are recent – most supplier codes predate these frameworks and have not yet been updated.

MEASUREMENT COMPLEXITY

GHG emissions, water consumption and biodiversity metrics require technical expertise and data infrastructure that many suppliers, particularly SMEs in developing markets, do not yet possess.

BUYER INCENTIVE MISALIGNMENT

Procurement teams are typically evaluated on cost and delivery performance. Without explicit ESG KPIs in supplier scorecards, environmental requirements remain aspirational rather than contractual.

PRIORITY ACTIONS FOR FINANCE TEAMS

UPDATE SUPPLIER CODES

Revise supplier codes of conduct to explicitly include GHG emissions targets, energy consumption limits, water stewardship requirements and biodiversity commitments, aligned with ESRS E1–E4 standards.

EMBED ESG IN PROCUREMENT SCORECARDS

Integrate environmental KPIs into supplier evaluation and selection criteria. Link contract renewals and preferred-supplier status to measurable environmental performance improvements.

BUILD SUPPLIER CAPACITY

Provide training, toolkits and data-sharing platforms to help suppliers, especially Tier 2 and Tier 3, meet environmental reporting requirements. Consider co-investment models for high-risk, high-value suppliers.

3.4 WATER RISK: A SYSTEMIC SUPPLY CHAIN THREAT

Water scarcity is emerging as a systemic supply-chain risk: threatening production continuity, raising input costs and triggering regulatory exposure across key manufacturing geographies. Finance teams must integrate water-stress scenarios into enterprise risk frameworks.

CN CHINA – WATER CRISIS INDICATORS

VN VIETNAM – WATER SECURITY CHALLENGES

400+

WATER-DEFICIENT CITIES

Cities in China short of water, with 110 facing serious scarcity

22B M³

ANNUAL OVER-EXTRACTION

Groundwater over-extracted annually; per-capita availability less than one-third of global average

56%

UNSAFE WATER RELIANCE

Rural residents relying on unsafe water sources; only 15% of municipal wastewater treated

6%

GDP GROWTH AT RISK

World Bank projection: water stress could reduce Vietnam's GDP growth annually by 2035

45%

GDP AT RISK

Share of China's GDP from water-scarce provinces, disruptions could raise costs for sourcing companies

3.5%

ADDITIONAL GDP IMPACT

Additional GDP reduction from pollution, compounding the economic risk for supply chains

China's SASAC guidelines now require companies to report water consumption metrics: making water risk a disclosure obligation, not just an operational concern.

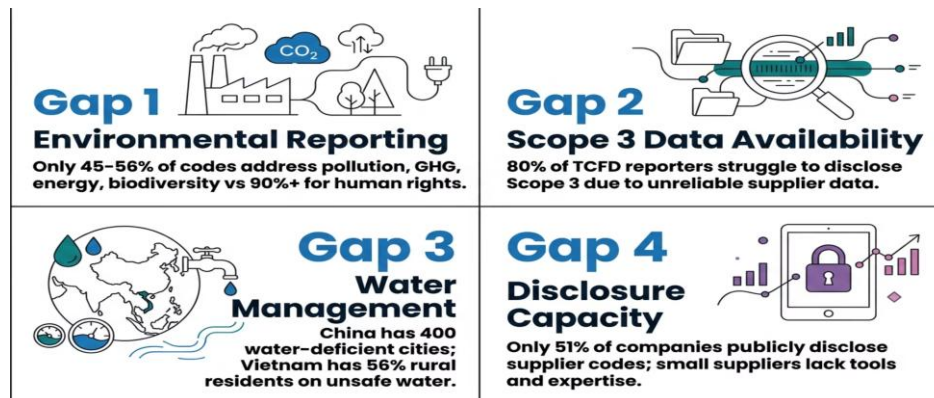
Vietnam's textile and electronics sectors, critical to global supply chains, are concentrated in water-stressed river basins, creating acute sourcing risk for EU and US buyers subject to CSDDD.



Finance Action Required: Indigo Ag reports that U.S. farmland uses over 100 billion gallons of water daily, with a projected 40% global freshwater shortfall by 2030. Levi Strauss's 2030 Water Strategy notes that up to 2.4 billion people could face water shortages by 2025. Finance teams must incorporate water-stress scenarios into enterprise risk management frameworks and model the cost of water infrastructure investments and potential revenue impacts.

3.5 GAPS BETWEEN REGULATORY EXPECTATIONS & SUPPLIER CAPACITY

Despite significant progress, critical gaps persist between regulatory expectations and supplier capabilities, particularly in developing markets. Finance professionals must lead efforts to bridge these gaps.



Finance and accounting teams can play a critical role in bridging these gaps through embedding sustainability into procurement governance, funding capacity building programmes, implementing auditable data systems, conducting financial analysis of sustainability investments, and providing transparent stakeholder communication.

FINANCE FUNCTION IMPLICATIONS

REGULATORY READINESS VS. SUPPLIER REALITY: A MATURITY GAP ANALYSIS

The following matrix maps the four critical gap dimensions against two axes: regulatory urgency (how quickly compliance is being mandated) and supplier readiness (the current capacity of suppliers to comply). Finance teams should prioritise interventions in the high-urgency / low-readiness quadrant.

LOW URGENCY	HIGH URGENCY · LOW READINESS ⚠	HIGH URGENCY · HIGHER READINESS
BIODIVERSITY REPORTING Regulatory frameworks; TNFD disclosure remains voluntary for most jurisdictions through 2026.	SCOPE 3 DATA COLLECTION Mandatory under CSRD and IFRS S2 from 2025–2026, yet 80% of TCFD reporters cite unreliable supplier data as the primary barrier.	HUMAN RIGHTS DUE DILIGENCE Well-embedded in supplier codes (90%+) and supported by established audit frameworks such as SMETA and SA8000.
AI SUPPLY CHAIN AUDITS Governance frameworks are emerging but enforcement timelines remain unclear across most markets.	ENVIRONMENTAL CODE COMPLIANCE Only 45–56% of supplier codes address GHG, pollution and energy, far below the 90%+ coverage seen for human rights obligations.	SUPPLIER CODE DISCLOSURE 51% of companies publicly disclose codes; momentum is building under CSDDD and UK Modern Slavery Act reporting requirements.

QUANTIFYING THE COST OF INACTION

US\$120B+

Estimated annual cost of supply chain disruptions linked to ESG non-compliance and climate events (WEF, 2024)

Sources: World Economic Forum Global Risks Report 2024; Principles for Responsible Investment (PRI) Annual Report 2024; CDP Supply Chain Report 2023.

3–5×

Higher remediation costs when ESG gaps are addressed reactively rather than proactively

40%

Of institutional investors now screen for supply chain ESG risk as part of due diligence (PRI, 2024)

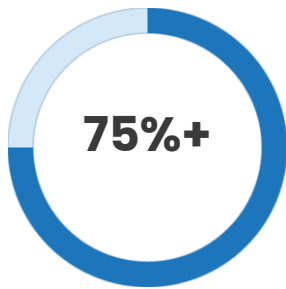
MEASURING & REPORTING ESG RISKS: SCOPE 3, HUMAN RIGHTS & ENVIRONMENTAL IMPACTS

Scope 3 emissions: the indirect GHG emissions associated with upstream and downstream activities, typically account for the majority of a company's carbon footprint. Yet measuring them remains one of the most significant challenges in sustainability reporting.



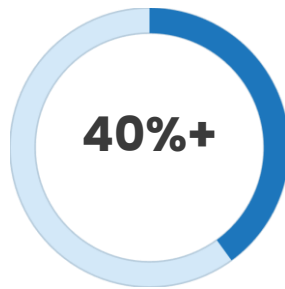
4.1 SCOPE 3 MEASUREMENT: BARRIERS & STRATEGIES

THE DATA GAP PROBLEM



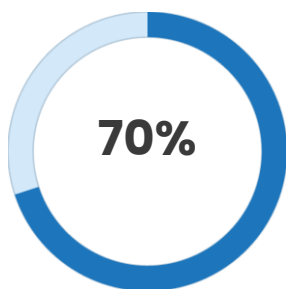
SCOPE 3 DOMINANCE

Share of total corporate emissions typically represented by Scope 3 (MIT Sloan, 2025)



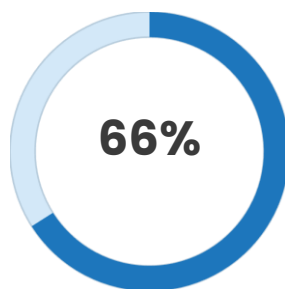
SCOPE 1 & 2 ONLY

Companies tracking only Scope 1 and 2 emissions, leaving the majority of their footprint unmeasured



DATA GAP BARRIER

Organisations citing lack of supplier data as the main barrier to measuring Scope 3



SPREADSHEET RELIANCE

Companies still using spreadsheets to track Scope 3 emissions (MIT Sloan)

STRATEGIES TO OVERCOME MEASUREMENT BARRIERS

01

SPEND-BASED ESTIMATION

When supplier data is unavailable, multiply purchase values by industry-average emission factors. Accuracy improves with primary activity-based data from high-emission categories.

02

CONTRACTUAL DATA-SHARING

Embed emissions-reporting clauses in supplier contracts. Group suppliers by readiness and provide GHG Protocol-aligned tools for those just beginning. Specify deadlines and penalties for non-disclosure.

03

DIGITAL PLATFORMS

Deploy CDP, SupplyShift or blockchain-enabled traceability systems. Ford achieved 84% response rates using CDP questionnaires. Neo's platform integrates with Xero, Sage and QuickBooks for audit-ready reports.

04

SUPPLIER CAPACITY BUILDING

Provide technical assistance and training. Clif Bar hires independent energy experts, over 90% of assisted suppliers committed to clean power. IBM offers tools and training for suppliers lacking resources.

05

PRIORITISE HIGH-IMPACT SUPPLIERS

Focus on suppliers representing the largest portion of spend or emissions. Ford engaged 66% of its spend through CDP questionnaires. Apple prioritises suppliers covering the largest share of manufacturing spend.

4.2 HUMAN RIGHTS DUE DILIGENCE: METRICS & FINANCIAL LINKAGE

KEY METRICS FOR HUMAN RIGHTS REPORTING

Exhibit 4: Human Rights Due Diligence Metrics – Corporate Benchmarking (Apple, IBM, Ford)

Metric Category	Apple (2024)	IBM / Ford
Independent supplier assessments	893 assessments	~2,000 (IBM, 34 countries)
New facility pre-assessments	125 PFRAs; >99% pass rate	31 RBA audits (Ford, 2016)
Suppliers removed for non-compliance	25 mfg + 203 smelters since 2009	Removal policy enforced
Workers trained on rights	2.5M employees (2024)	Management system required
Cumulative training participation	8M+ since 2008	Tools provided to small suppliers
Health & wellness programmes	5.8M empowered since 2017	N/A
Worker feedback channels	1.3M engaged (2024)	Grievance mechanisms required

LINKING HUMAN RIGHTS TO FINANCIAL RISK

Cost of Non-Compliance: Human-rights violations can result in fines, production stoppages or import bans. The U.S. Tariff Act Section 307 prohibits importation of goods made with forced labour.

Revenue Risk: Companies should estimate potential revenue loss if shipments are seized or reputational damage results in customer boycotts.

Procurement Integration: Finance and procurement teams should incorporate human-rights risk scores into supplier selection and pricing. Higher risk may justify price premiums for remediation or require corrective actions before contracts are awarded.

Sedex Data: 61% of non-compliance issues are health- and safety-related: implying potential injury claims and productivity losses that must be provisioned.

4.3 ISSA 5000: ASSURANCE REQUIREMENTS & FINANCE FUNCTION IMPLICATIONS

DATA GOVERNANCE

Implement auditable systems and retention practices.

ASSURANCE ENGAGEMENT

Coordinate with external auditors and practitioners.

CONTROL DESIGN

Establish controls for sustainability data collection.

CONTINUOUS IMPROVEMENT

Use findings to refine methods and supplier engagement.

LIMITED VS. REASONABLE ASSURANCE

ISSA 5000 scales requirements for both limited and reasonable assurance. Reasonable assurance provides a high level of confidence analogous to a financial audit; limited assurance provides a lower but still meaningful level. Entities must prepare for regulators to move from limited to reasonable assurance for sustainability reports: the CSRD mandates this transition by 2028.

Key Requirement: Even limited assurance engagements under ISSA 5000 require assurance providers to understand an entity's internal control over sustainability information, a significantly higher bar than previous standards.

EVIDENCE REQUIRED FOR ISSA 5000 COMPLIANCE

- Documented emissions-calculation models and methodology
- Supplier audit reports and third-party certifications
- Contract clauses requiring data disclosure
- Worker-survey data and grievance resolution records
- Remediation records and corrective action plans
- Environmental permits and monitoring reports
- Internal control documentation and validation logs
- Evidence of risk assessments and materiality determinations

SECTION 5: THE ROLE OF AI & TECHNOLOGY IN SUPPLY-CHAIN SUSTAINABILITY REPORTING

Supply chains generate 60% of global carbon emissions while transportation alone accounts for 37% of energy-related CO₂ output. Traditional sustainability reporting captures these impacts only annually and depends on manual questionnaires and incomplete disclosures. AI-enabled solutions are transforming this landscape.

5.1 AI APPLICATIONS TRANSFORMING SUPPLY-CHAIN SUSTAINABILITY



REAL-TIME SCOPE 3 TRACKING

Machine-learning models ingest freight invoices, bills of lading and supplier datasets to calculate emissions using context-specific emission factors. TraxTech's AI platform automates data collection, identifies appropriate emission factors and generates audit-ready reports aligned with IFRS S2, ESRS E1 and the GHG Protocol. McKinsey estimates AI-powered demand forecasting reduces forecast errors by 20–50%.



SUPPLIER ESG RISK SCORING

Socialsuite's platform scans 2,000+ suppliers, automatically collects ESG policies, human-rights statements and regulatory compliance signals (Modern Slavery Acts, CSRD, CSDDD) and generates supplier-specific risk scores. The AI compresses multi-month engagement into a structured programme with no fees to suppliers, increasing response rates. 72% of supply-chain leaders say automated mitigation is now mandatory.



LABOUR PRACTICE ANOMALY DETECTION

ML models analyse payroll records, working-hour patterns and production output to flag irregularities, unusually low wages, inconsistent hours, high ratios of contract workers or excessive overtime. AI platforms like Project AIMS convert modern-slavery statements into machine-readable data. 27.6 million people are in forced labour and 137.6 million children are in child labour worldwide.



NLP REGULATORY INTELLIGENCE

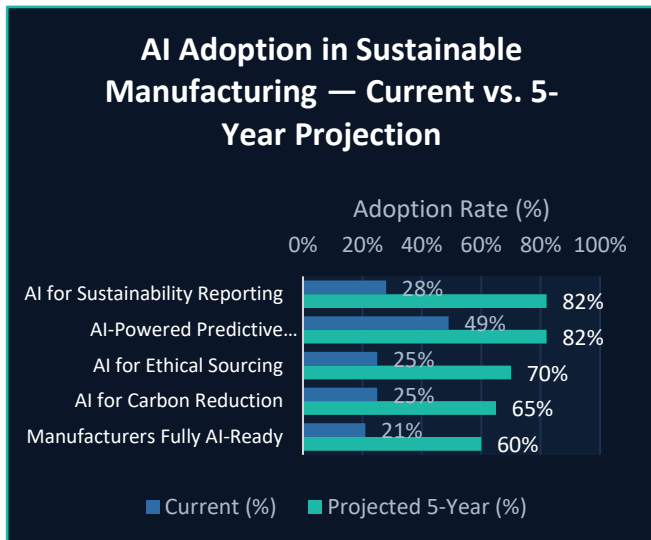
AI models trained on legal corpora automatically interpret new regulations, extract disclosure requirements and map them to internal data structures. NLP parses ESRS requirements, maps company disclosures and creates cross-referencing audit trails. PwC's 2025 survey found AI use for sustainability reporting almost tripled to 28%, up from 11% the previous year.

5.2 AI ADOPTION: STATISTICS & ROI EVIDENCE

AI adoption in supply-chain sustainability is accelerating rapidly, but a significant readiness gap persists between expectation and execution. The data below maps current adoption rates against five-year projections and highlights the ROI case for early movers.

ADOPTION RATES: CURRENT vs. 5-YEAR PROJECTION

Exhibit 5: AI Adoption in Supply-Chain Sustainability – Current vs. 5-Year Projection (%)



ADOPTION LEADERS vs. LAGGARDS

EARLY MOVERS (AI-POWERED PREDICTIVE ANALYTICS: 49%)

Firms already deploying predictive analytics are building competitive moats in supplier risk detection, carbon forecasting, and regulatory pre-emption.

LAGGARDS (MANUFACTURERS FULLY AI-READY: 21%)

The majority of manufacturers remain unprepared for AI-led operations, exposing them to compliance penalties, reputational risk, and margin erosion as regulations tighten.

KEY ROI & READINESS FINDINGS

180%

ROI FROM AI PLATFORM

Verdantix study: IntegrityNext's AI-driven platform delivers 180% ROI by harmonising supplier data and automating risk assessments

75%

EXPECT AI IN TOP 3

Manufacturers expecting AI to rank among top three contributors to operating margins by 2026 (TCS/AWS study)

69%

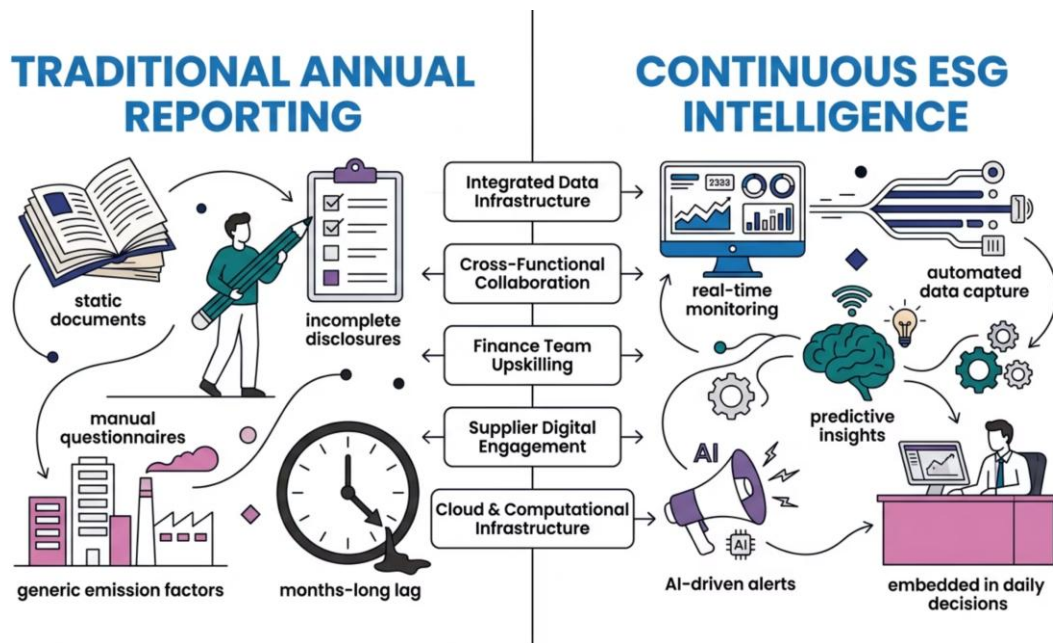
MANUAL DATA HOURS

Compliance teams spending 11+ hours per week manually translating data formats for regulatory submissions

⚠ Readiness Gap: 75% of manufacturers expect AI to drive margins by 2026, yet only 21% report being fully prepared for its adoption. Without addressing data integration and workforce capabilities, AI initiatives will remain pilot projects.

5.3 FROM RETROSPECTIVE REPORTING TO CONTINUOUS ESG INTELLIGENCE

Traditional sustainability reports are static documents produced once per year, often months after the reporting period. AI enables organisations to generate continuous ESG intelligence by automating data collection, enhancing analysis and integrating outputs into daily decision-making.



REGULATORY PRESSURE

IFRS S1/S2 effective January 2024; CSRD first reports in 2025. These regulations demand more granular disclosures and external assurance, accelerating the shift to continuous data collection.

INVESTOR EXPECTATIONS

Over 70% of investors want companies to integrate sustainability directly into business strategy. Companies using sustainability data for strategy, risk management, supply-chain transformation and corporate finance derive the most value.

OPERATIONAL RISK

Supply-chain disruptions lasting longer than one month occur every 3.7 years on average. Without continuous monitoring, companies cannot respond swiftly to climate events, tariff changes, geopolitical risks or supplier performance issues.

5.4 RESPONSIBLE AI ADOPTION: GLOBAL GOVERNANCE FRAMEWORKS

Seven major jurisdictions have enacted or proposed AI governance frameworks — each with distinct enforcement postures. Finance professionals must navigate this patchwork to ensure AI-generated ESG data meets disclosure and assurance standards.

Exhibit 6: Global AI Governance Frameworks — Jurisdiction Comparison and Enforcement Posture

Jurisdiction	Framework	Key Requirements	Status
EU	EU AI Act (2024/1689)	Risk-based classification; risk assessments, human oversight, transparency required for high-risk systems	⚠️ Binding — up to 7% global turnover; effective Aug 2025
USA	Executive Order 14179	Pro-innovation; removes barriers; 40+ state laws creating patchwork	◦ Non-binding on private sector
USA	AI Bill of Rights Blueprint	Pre-deployment testing, data privacy, human alternatives, right to opt out	◦ Voluntary; influences federal procurement
UK	Pro-Innovation AI White Paper	Safety, transparency, fairness, accountability, contestability	◦ Principles-based; sectoral regulators apply
Canada	AIDA (Bill C-27)	Risk assessments, transparency, human oversight; AI Commissioner oversight	⌚ Pending — expected post-2025
China	Generative AI Regulation	Lawful data use, user consent, labelling of AI content; security assessments	⚠️ Binding — in force 2023
International	OECD AI Principles	Inclusive growth, rule of law, transparency, robustness, accountability	◦ Voluntary — global baseline

Binding	Principles-Based	Voluntary
EU AI Act · China GenAI Regulation	UK · Canada · OECD	US Executive Order · AI Bill of Rights

Accountants must ensure AI models provide clear explanations of emissions estimates and risk scores, maintain audit trails for AI-generated data, and document human review of all AI outputs used in sustainability disclosures.

Sources: EU AI Act (Regulation 2024/1689); US Executive Order 14179 (2025); UK DSIT Pro-Innovation AI White Paper; Canadian Bill C-27; China CAC Generative AI Regulation (2023); OECD AI Principles (2023)
 Sustainable Supply Chains: The Accountant's Role in a Regulated World

5.5 INTEGRATING AI OUTPUTS INTO DISCLOSURE FRAMEWORKS

IFRS S1 & S2 INTEGRATION REQUIREMENTS

AI-generated data must align with the GHG Protocol classification (Scopes 1–3), include activity-level documentation and be accompanied by narrative explanation of methodology. Accountants should verify that AI models use approved emission factors, account for data gaps and produce reconciliations between AI estimates and financial statements.

CSRD / ESRs INTEGRATION

After the Omnibus I Directive (February 2025), in-scope companies must have more than 1,000 employees and either EUR 50M turnover or EUR 25M balance sheet. AI outputs must support double materiality, quantifying both financial risks (carbon taxes, supply interruptions) and environmental impacts (deforestation). ESRs cross-referencing demands that narrative disclosures explain the context of each metric; AI tools can automatically map data to ESRs chapters.

ISSA 5000 ASSURANCE INTEGRATION

ISSA 5000 becomes effective December 2026 as the global baseline for verifying CSRD and other sustainability statements. Key features for AI integration:

FLEXIBLE, PRINCIPLES-BASED

Applies to all sustainability topics; supports both limited and reasonable assurance; emphasises outcomes over prescriptive procedures.

DOUBLE MATERIALITY ASSESSMENT

Auditors review how the organisation determines material topics and ensures both qualitative and quantitative disclosures are appropriate.

ENGAGEMENT ACCEPTANCE & PLANNING

Auditors evaluate scope, reporting boundaries and level of assurance; assess internal systems and controls; perform risk assessment including fraud consideration.

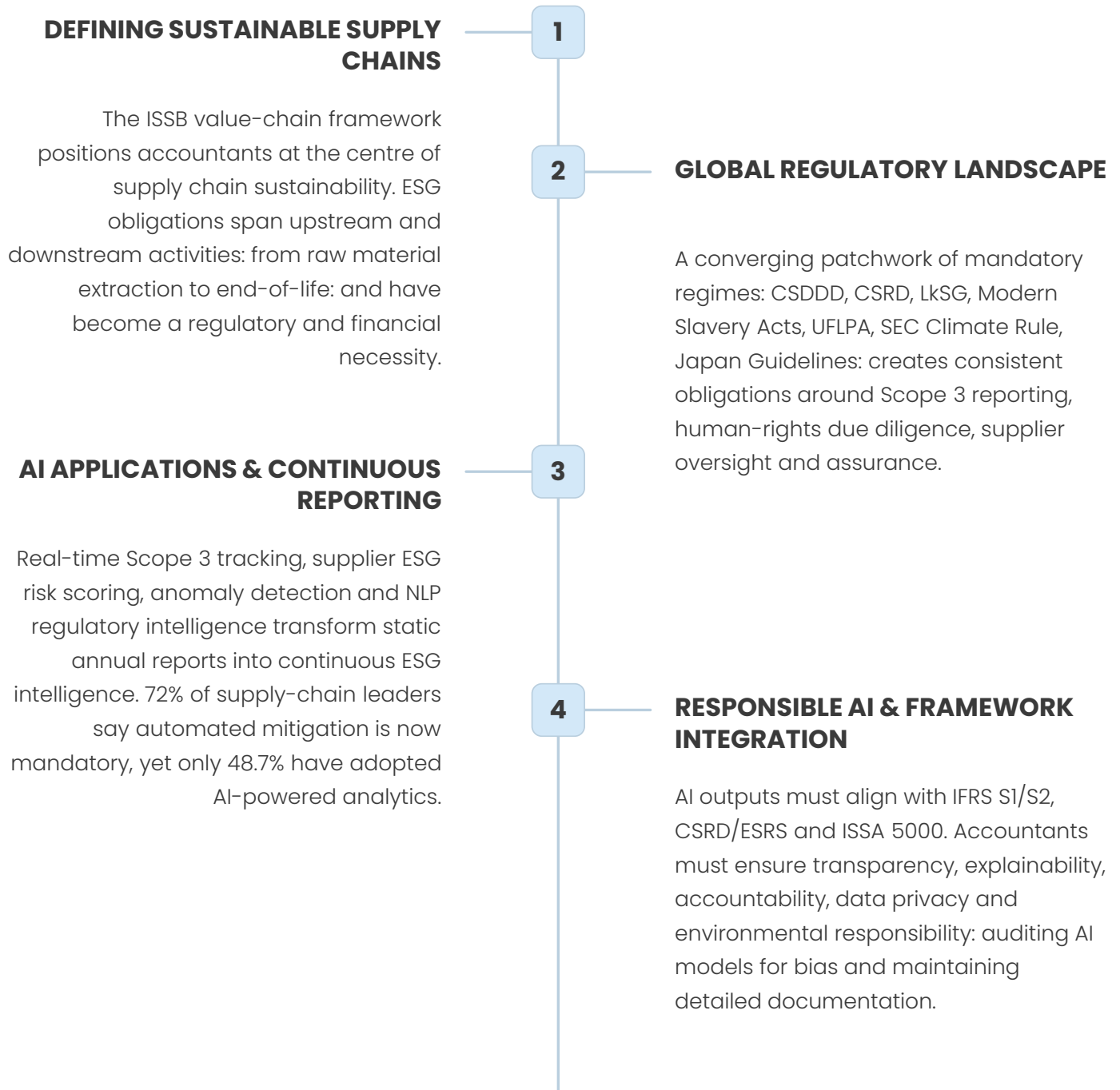
AI AUDIT TRAIL REQUIREMENTS

AI-generated data must be auditable with documented methodology, internal controls and evidence trails. Finance teams should partner with auditors early to validate AI processes.

SECTION 6: CONCLUSION: BUILDING RESILIENT, TRANSPARENT & COMPLIANT SUPPLY CHAINS

The preceding sections demonstrate that supply-chain sustainability is both a strategic necessity and a regulatory imperative. Finance professionals are uniquely positioned to lead this transformation, bridging technical AI solutions and compliance obligations through expertise in internal controls, data assurance and regulatory interpretation.

6.1 SYNTHESIS: FOUR RESEARCH QUESTIONS ANSWERED



"Accountants are uniquely positioned to lead supply-chain sustainability. Rather than acting as passive data reporters, they can become strategic advisors who design data governance frameworks, assess AI risks, engage with suppliers and translate ESG intelligence into financial decision-making."

6.2 STRATEGIC ACTION PLAN FOR FINANCE PROFESSIONALS



DEVELOP AI LITERACY & ETHICAL COMPETENCY

Invest in training on machine learning, data governance and AI ethics. Understand model inputs, outputs, biases, interpretability techniques and regulatory requirements. Only 28% of companies currently use AI for sustainability reporting, significant knowledge gaps must be closed. Upskilling enables accountants to question AI outputs, collaborate with data scientists and ensure ethical use.



ESTABLISH ROBUST DATA GOVERNANCE

Unify supplier, procurement, logistics and financial data. Implement master-data management and data-quality rules. Address privacy, security and retention requirements (GDPR, PIPL, AI Acts). Regular audits should verify data lineage and integrity. Harmonised supplier and product data with explicit evidence hierarchies are essential foundations.



ENGAGE SUPPLIERS THROUGH DIGITAL PLATFORMS

Deploy digital questionnaires, automated risk assessments and shared ledgers to collect data from Tier-1 to Tier-n suppliers. Invest in capacity building for small suppliers in developing markets, providing training on sustainability standards and digital reporting tools. Only 56% of organisations can currently trace material origin to Tier-3 or Tier-4 sources.



PROMOTE CROSS-FUNCTIONAL COLLABORATION

Lead cross-functional governance committees coordinating data collection, AI deployment and regulatory compliance. Align sustainability metrics with financial performance indicators to demonstrate the business case for ESG investments. Organisations deriving value from sustainability data are those that embed it into business strategy, risk management and supply-chain transformation.



PREPARE FOR ASSURANCE & INTEROPERABILITY

With ISSA 5000 effective December 2026, ensure sustainability data is assurance-ready. Map data collection processes to disclosure frameworks, maintain evidence trails and coordinate with auditors early. Design data systems accommodating multiple frameworks (ISSB, CSRD, SEC rules) to reduce duplication and ensure consistency across jurisdictions.

6.3 CHALLENGES & OPPORTUNITIES IN DEVELOPING MARKETS

KEY CHALLENGES

LIMITED DIGITAL INFRASTRUCTURE

Developing-country suppliers may lack resources to implement digital reporting systems. Multinational buyers must provide training, templates and low-cost digital tools.

INFORMAL ECONOMIES & DATA SCARCITY

Many suppliers operate in informal economies where data is scarce. AI can help infer missing information through proxy data (satellite imagery, trade statistics) and imputation models, but ethical considerations are paramount.

FORCED LABOUR PREVALENCE

Walk Free estimated 25 million forced labourers (16 million in the private sector) and US\$354 billion of products at risk imported by G20 countries. Finance professionals must ensure AI risk assessments incorporate human-rights indicators.

STRATEGIC OPPORTUNITIES

GLOBAL FRAMEWORKS AS COMMON LANGUAGE

ISSB and ISSA 5000 offer universal sustainability reporting language. ISSA 5000's flexible, principles-based approach allows auditors to apply the same assurance criteria to suppliers in Asia, Africa or Latin America.

CAPACITY BUILDING NETWORKS

Accountants can collaborate with NGOs, development agencies and local professionals to build reporting capacity. The World Bank's EAASURE programme supports adoption in Eastern Europe and Central Asia, a model for broader replication.

SUSTAINABLE TRANSFORMATION

Developing markets present significant opportunities. Engagement must be supportive rather than punitive, recognising local socio-economic challenges while building long-term compliance capacity.

6.4 POSITIONING THE ACCOUNTANCY PROFESSION AT THE FOREFRONT



GUARDIANS OF DATA INTEGRITY & ASSURANCE

Accountants' traditional expertise in financial reporting, internal controls and assurance uniquely positions them to oversee sustainability data. By applying these disciplines to ESG reporting, they ensure that AI outputs are reliable and compliant with ISSA 5000 and other standards.



STRATEGIC ADVISORS FOR SUSTAINABLE TRANSFORMATION

Accountants can translate ESG metrics into financial impact, advise on investments in low-carbon technologies, guide pricing strategies that reflect carbon costs, and design incentive structures that reward sustainable supplier performance.



ETHICAL STEWARDS OF RESPONSIBLE AI

Accountants can champion responsible AI adoption, developing governance frameworks, performing independent reviews of AI models and advocating for transparency and explainability. By ensuring AI systems respect human rights and environmental considerations, accountants strengthen stakeholder trust.



LEADERS IN GLOBAL STANDARD SETTING

Professional bodies like ACCA have influence in international standard-setting discussions. They can contribute to sustainability reporting and assurance standards, advocate for harmonisation across jurisdictions and provide guidance to practitioners worldwide through training and certification.

6.5 FINAL REFLECTIONS: THE PATH FORWARD

"The transition to sustainable supply chains is underway, but it is uneven and complex. Only a quarter of firms currently use AI for sustainability. Regulations such as IFRS S1/S2 and CSRD impose rigorous disclosure requirements, while ISSA 5000 demands audit-ready data and documented methodologies. Finance professionals and accountants are uniquely equipped to lead this transformation."

Success depends on strong data foundations, cross-functional collaboration, supplier engagement, ethical governance and workforce skills. Finance professionals must move beyond compliance to become strategic advisors who harness AI responsibly, integrate ESG intelligence into business decision-making and advocate for fairness and transparency.

By doing so, they will help create resilient, transparent and compliant supply chains that support a more sustainable and equitable global economy: fulfilling the accountancy profession's core values of integrity, public interest and ethical stewardship.

THE ACCOUNTANT'S MANDATE

01

DEFINE & SCOPE

Apply ISSB value-chain framework across all supplier tiers

02

COMPLY & REPORT

Navigate global regulatory patchwork with integrated data systems

03

MEASURE & ASSURE

Deliver audit-ready Scope 3, human rights and environmental data

04

GOVERN AI RESPONSIBLY

Ensure transparency, explainability and human oversight of AI tools

05

LEAD STRATEGICALLY

Transform ESG intelligence into competitive advantage and stakeholder trust

REFERENCES & SOURCES

- European Commission (2022). *Corporate Sustainability Reporting Directive (CSRD)*. Official Journal of the European Union. [View source →](#)
- European Commission (2024). *Corporate Sustainability Due Diligence Directive (CSDDD)*. Official Journal of the European Union. [View source →](#)
- IFRS Foundation (2023). *IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information*. International Sustainability Standards Board. [View source →](#)
- IFRS Foundation (2023). *IFRS S2 Climate-related Disclosures*. International Sustainability Standards Board. [View source →](#)
- IAASB (2024). *ISSA 5000: International Standard on Sustainability Assurance*. International Auditing and Assurance Standards Board. [View source →](#)
- GHG Protocol (2011). *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*. World Resources Institute & WBCSD. [View source →](#)
- Interos (2023). *Annual Global Supply Chain Report: The Resilience Gap*. Interos Inc. [View source →](#)
- Bloomberg Intelligence (2023). *ESG Assets May Hit \$53 Trillion by 2025*. Bloomberg Professional Services. [View source →](#)
- CDP (2023). *Supply Chain Report 2023: Transparency to Transformation*. Carbon Disclosure Project. [View source →](#)
- McKinsey & Company (2023). *Sustainability in Supply Chains: Seizing the Opportunity*. McKinsey Global Institute. [View source →](#)
- World Economic Forum (2024). *Global Risks Report 2024*. World Economic Forum. [View source →](#)
- PwC (2023). *AI in ESG Reporting: Opportunities and Governance Challenges*. PricewaterhouseCoopers Global. [View source →](#)
- Deloitte (2024). *The Future of Sustainability Reporting: AI, Automation and Assurance*. Deloitte Insights. [View source →](#)
- KPMG (2023). *Survey of Sustainability Reporting 2023*. KPMG International. [View source →](#)
- European Commission (2024). *EU AI Act: Regulation on Artificial Intelligence*. Official Journal of the European Union. [View source →](#)
- UN (2011). *Guiding Principles on Business and Human Rights*. United Nations Human Rights Office. [View source →](#)
- ILO (2022). *World Employment and Social Outlook: Greening with Jobs*. International Labour Organization. [View source →](#)
- US Congress (2021). *Uyghur Forced Labor Prevention Act (UFLPA)*. United States Congress. [View source →](#)
- UK Government (2015). *Modern Slavery Act 2015*. His Majesty's Stationery Office. [View source →](#)
- Saudi Vision 2030 (2016). *Vision 2030 Framework*. Kingdom of Saudi Arabia. [View source →](#)
- UAE Government (2021). *UAE Net Zero by 2050 Strategic Initiative*. United Arab Emirates. [View source →](#)
- Australian Government (2024). *Treasury Laws Amendment Act 2024 – Sustainability Reporting*. Commonwealth of Australia. [View source →](#)
- Japan METI (2022). *Guidelines on Respecting Human Rights in Responsible Supply Chains*. Ministry of Economy, Trade and Industry. [View source →](#)
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