POINT ZERO FORUM™
Policymakers | Leaders | Investors
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Reference Materials

Laying foundations for scalable markets in trusted and granular data for green reporting

This document provides a short summary of and links to relevant background materials. It is organised by sections aligned with the layout of the roundtable sessions.

1) The current landscape for compliance and voluntary sustainability reporting initiatives

The proliferation of regulatory, voluntary, and market-led sustainability reporting standards and frameworks across the globe generates demand for data on various indicators, including energy consumption, GHG emissions, waste, pollutants, nature, and social metrics. These frameworks often require the reporting entity to measure and report on the footprint of their own activities (scope 1 & 2) and those of upstream and downstream business partners, users, and suppliers (3).

Reporting requirements have a direct impact on financial markets. Investors are increasingly incentivised or required to consider the performance of a business on social, environmental, and governance metrics in their decision-making process. The credibility of a range of green financial products hinges on the quality and robustness of data, which is used to substantiate compliance with disclosure rules and principles such as the Green/Social/Transition Bond Principles from the International Capital Market Association (ICMA), the UN Principles for Responsible Investment (PRI) and an increasing number of non-financial disclosure regulations.

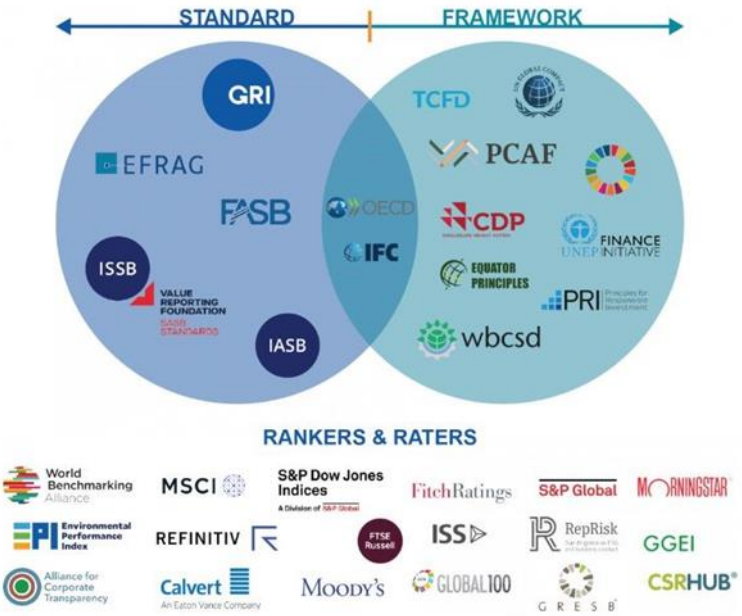

Figure 1: ESG Ecosystem Map

Most mandatory reporting requirements align with or complement market-led initiatives like ISSB, TCFD, and the latest TNFD. The emergence of regulatory requirements and consolidation efforts of voluntary frameworks under the IFRS should bring more standardisation and clarity for all stakeholders.

The need for a clearer understanding of economic actors' environmental and social impact has led to an evolving ecosystem of platforms, data collection and analysis entities. These service providers play a crucial role in assisting companies in navigating the complexity of reporting obligations, including their regional and sector-specific nuances.

In this complex environment that is continuously shaping and evolving, with still many differences in standards, frameworks and methodologies, investors and corporations will increasingly be concerned with the accuracy, comparability and legal trust that can be put into the data they use to report on or monitor compliance with legal and financial commitments.

Regulations Overview

Jurisdictions	**Start**				
EU	2024	Corporate Sustainability Reporting Directive (CSRD)	Sustainable Finance Disclosure Regulation (SFDR)	Corporate Sustainability Due Diligence Directive (CSDDD)	EU Taxonomy Regulation
US	2025	SEC Climate Disclosure Standards			
India	2023	Business Responsibility and Sustainability Report (BRSR)			
Canada	2027	Canadian Sustainability Disclosure Standards (CSDS)	Climate Investment Taxonomy Regulation		
Japan	2023	Sustainability Perspective and Measures			
UK	2024	Sustainability Disclosure Requirements (SDR)			
Switzerland	2024	ESG reporting under Swiss Code of Obligations (CO)			
Singapore	2025	Climate-Related Disclosures (CRD)	Green Taxonomy		
Australia	2024	Climate-Related Financial Disclosure			
Hongkong & China mainland	2022	Disclosure of Enterprise Environmental Information			
UAE	2022	Corporate Governance Code for Public Joint Stock Companies	Sustainable Finance Regulatory Framework		

References

ICMA	https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/
UN PRI	https://www.unpri.org/
TCFD	https://www.fsb-tcfd.org/
ISSB	https://www.ifrs.org/groups/international-sustainability-standards-board/
TNFD	https://tnfd.global/
UN PRI	https://www.unpri.org/
ESG metric in investment	https://www.investeurope.eu/invest-europe-esg-reporting-guidelines/esg-reporting-template/
ESG Reporting (PWC)	https://www.pwc.com/sk/en/environmental-social-and-corporate-governance-esg/esg-reporting.html
ESD Data (Elevandi)	https://www.elevandi.io/insights/how-to-build-trust-in-esg-data-and-disclosures
ESG framework overview	https://www.esgflo.com/blog-articles/navigating-2024-landscape-of-esg-regulations-and-frameworks
Figure 1	https://www.esginvestor.net/credible-reporting-of-sustainability-impacts-benefits-all-stakeholders/

2) Harmonisation efforts to enhance cross-border information exchange and data quality

Recognising the challenges of access to and usage of granular and comparable data, several collaborative multi-party initiatives have emerged to forge more scalable data ecosystems. These include PACT from the WBCSD, which works towards consolidated common best practices for data collection, analysis, and exchange.

The prescribed rigueur on measurement, analysis and reporting processes varies among frameworks. These differences can lead to extensive divergence between the reported data and the ground truth. Calling to attention these variations and their effect on the reliability and accuracy of the final indicator, PACT provides a system to assess the quality of reported indicators. This is crucial to inform decision-makers of the confidence level with which they can rely on the reported metrics.

Many vital stakeholders are spread across emerging and developing markets. With fast-growing economies, these markets are critical to climate and sustainability objectives. However, as highlighted in Project Savanna, capacity constraints and underdeveloped engagement with global policymakers and industry leaders pose significant challenges for navigating the complexities of ESG metrics. Yet, considering these entities' scope 1 & 2 emissions are the scope 3 emissions of companies downstream, poor data quality upstream undermines the reliability of the reporting all downward the value chain. The significance of this challenge is further highlighted by the OECD, which identifies “access to data” as a critical constraint for SMEs' ESG assessment. Additionally, considering that disclosure of ESG data at a granular level can reveal sensitive information about a business, which, if disclosed, could alter its competitiveness, companies must recognise clear benefits of sharing these data.

Technology can help expend data granularity and integrity and support the creation of market incentives encouraging participants to share data of high quality - creating the backbone for a scalable and trusted ecosystem for data capture, analysis, and exchange, which improves the reliability, comparability, and usability of reported data.

References

PACT – Pathfinder framework	https://wbcsd.org/resources/pathfinder-framework-version-2-0/
WBCSD	
Project Savana	https://www.elevandi.io/insights/project-savannah-maximising-the-potential-of-digital-esg-credentials-for-msmes
Climate Data RT	https://www.elevandi.io/hubfs/Elevandi%20website/content%20hub/The%20Climate%20Data%20Roundtable/The-Climate-Data-Roundtable-KPMG.pdf
OECD – Financing SMEs for Sustainability	https://www.oecd.org/cfe/smes/SME%20activity%20report%202024-final.pdf

3) Decentralised Machine Identity Registry to increase measurement data quality and incentivise data sharing in the Ledger Economy

Internet of Things (IoT) can help increase ESG data quality and granularity by digitalising many operations and processes, such as measuring energy and water consumption. In the data economy, the development of decentralised architectures opens new possibilities for data monetisation, incentivising granular data sharing between ecosystem players. With their more nuanced approaches to data access, reading, and analysis, these architectures and privacy-enhancing technologies can significantly enhance privacy control while enabling data to be more widely mobilised beyond proprietary and centralised networks.

Despite many attempts to promote more data sharing through open networks, usage remains very low. Challenges in these new systems revolve around establishing trust in providers, ensuring the provenance and veracity of data, and enabling actors to exercise appropriate control over it. Calzolari's paper on machine data and market explores these challenges, namely the heterogeneity of data produced and the ill-defined ownership "property right." An ISO technical working group (TR307) is investigating how digital identifiers of subjects and objects, credential verification protocols, and tokenisation can be implemented for instilling trust and interoperability in decentralised work are progressing. However, supervisors charged with consumer protection duty are concerned about permissionless decentralised networks' governance. Market-led principles and incentives may need to be adopted to unlock the potential of broader data sharing. GLEIF, known for its trust framework for internationally interoperable legal identity, is emerging with its verifiable LEI as a crucial part of the future architecture for managing the identity of legal entities.

With a trusted way to identify machines in a network and a mechanism to incentivise data exchange, machine-issued data can be leveraged to increase the granularity and quality of measurement. At the same time, well-designed governance mechanisms in digital public infrastructure should create incentives that satisfy the self-interest of all stakeholders to drive the adoption and funding of these new market structures. The role of digitalisation in driving the green transition is understood by public agencies supporting it through regulations and funding schemes. This technological symbiosis has immense potential to support MSMEs in measuring their carbon footprint at the source and increasing the quality of the shared data points throughout the value chain. Furthermore, these new ecosystems reduce the complexity and cost of validating data integrity for third-party assurance providers and foster the emergence of ledger-based financial infrastructures. Trusted

independent identifiers and secure ways of linking real-world data to distributed ledgers can unlock the next wave of financial instruments and reduce the risk and cost for financial institutions to create and manage sustainability-linked products.

References:

GLEIF	https://www.gleif.org/en/about/this-is-gleif
EU fund Industry 5.0	https://op.europa.eu/en/publication-detail/-/publication/38a2fa08-728e-11ec-9136-01aa75ed71a1
ISO	https://www.iso.org/standard/81978.html
OECD Digital Economy Papers	https://www.oecd-ilibrary.org/docserver/bf121be4-en.pdf?expires=1718572247&id=id&accname=guest&checksum=CCD342086E0CE36935252378A751FD4B
Machine Data: market and analytics	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4335116
Chainlink on Zero-knowledge Proof	https://chain.link/education/zero-knowledge-proof-zkp
Paper on IoT and Industry 4.0	https://www.digitaltwinconsortium.org/wp-content/uploads/sites/3/2022/10/Assuring-Trustworthiness-in-Dynamic-Systems.pdf
NEXT-GENERATION DIGITAL PUBLIC INFRASTRUCTURE	https://www.elevandi.io/hubfs/Next%20Generation%20Digital%20Public%20Infrastructure.pdf
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DPI	https://aioti.eu/wp-content/uploads/2023/09/AIOTI-Carbon-Footprint-Methodology-Report-Final-R2.0.pdf
IOSCO and IMF papers on trust and governance in DeFI	https://www.iosco.org/library/pubdocs/pdf/IOSCOPD754.pdf