White Paper

Crafting the Digital Sustainability Reporting Ecosystem

Financial Centers Driving Sustainable Finance through Public-Private Collaboration and Data Innovation

WORLD ALLIANCE
of International Financial Centers

The North Star for a Smart Sustainability Data Ecosystem

Imagine a world where financial, sustainability, carbon, and climate data flow effortlessly, like water from a tap.

In that world, everyone has access to the information they need to make timely and well-informed decisions. The trusted, audited data empowers individuals, consumers, and organizations to take informed action.

Businesses can leverage this data to optimize their resources for commercial development and sustainability performance, while governments and investors can confidently develop and implement effective climate policies and investment strategies for ***supporting sustainable financial markets.***

At the heart of this vision is fully integrating sustainability data with traditional financial information, which requires an ***open smart data ecosystem****, ensuring reliability and fostering a more transparent and trustworthy market.*

This vision is the "North Star" that guides us.

WORLD ALLIANCE of International Financial Centers

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Foreword

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Leading the Digital Transformation of Sustainable Business Information

As businesses escalate their sustainability reporting, World Alliance of International Financial Centers (WAIFC) members can play a transformative role in improving the quality and usability of information needed for decision-making and attracting investment. This transformation can be realized by harnessing the power of digital technology, a key focus of this white paper.

The vision is to support a "North Star" where financial, sustainability, carbon, and climate-related data flow seamlessly through the avenues of digital sustainability reporting and open data exchange standards. Adopting these technologies and standards promises to streamline processes, enhance transparency, and facilitate better-informed decision-making. Meeting market needs assures a more efficient future for sustainable finance.

Governments, regulators, policymakers, sustainability standards boards, corporate entities, and investors seek best to use the planet's precious and valuable resources. Financial Centers are at the crossroads of this change. As we guide capital towards investment, for example, we take on the exposures of costly, unprecedented natural disasters, such as wildfires and floods, which result in asset impairment, supply chain disruptions, and operational losses. At the same time, the momentum to forestall the worst anticipated destruction creates the pressures of transformation risks, which serve as drivers to reconsider natural resource management, energy production, and the delivery of goods and services. Our stakeholders want us to consider the risks, behave as exemplary global citizens, and drive capital to new opportunities.

Assessing these risks and opportunities and taking the right action requires trustworthy and relevant information—in readily available, consistent, usable digital form. Globally, governments and regulators are enacting new reporting mandates and guidelines intended to deliver the requisite information. But more is needed. While these new reporting regulations are essential to the solution, we must consider how this information is delivered.

Broadly, these new disclosure rules directly affect only the largest international companies and leave out much of the market of private, SMEs (small and medium enterprises) companies and the needs of emerging markets. However, large corporations are increasingly required to report their Scope 3 emissions, which often necessitates collecting detailed environmental data from their suppliers, many of whom are SMEs. As part of these supply chains, SMEs are expected to provide information on their own emissions and environmental practices. This can be challenging for SMEs lacking the resources, expertise, or infrastructure to accurately track and report such data.

Our vision is to bring about the means to track and deliver information about climate and other sustainability topics from the clients of international financial Centers digitally. Only in this way can risks and opportunities be assessed based on trusted data and powerful analytical tools supported by adopting open, machine-readable financial and sustainability data standards. By enabling easy access, sharing, and analysis of data, these standards can significantly enhance transparency, comparability, and efficiency in sustainability reporting. There is no time to lose.

Shortly after WAIFC was formed in 2018, our Board of Directors established its business agenda: What topics would be of worldwide significance to all members? These include diversity and inclusion, changes in financial technology and regulation, the greening of supply chain finance, the future of financial Centers, and, as we see here, sustainable finance.

For WAIFC members and their ecosystems, the development of sustainability reporting is necessary for various reasons that can be summed up as:

- **Enhancing Reputation:** A solid commitment to sustainability reporting enhances the reputation of International Financial Centers (IFCs) and their member institutions, attracting responsible businesses and investors.
- **Reducing Risks:** Contributing to long-term financial stability, sustainability reporting helps identify and manage sustainability and climate risks.
- **Investment Opportunities:** By promoting transparency in sustainability performance, IFCs' members can unlock new investment opportunities in the green and sustainable sectors.

Background

The International Financial Centers System

There are several challenges that financial services firms face, which are very similar to those of corporate entities. Sustainability is one such challenge. It can be defined as a strategy to provide development that meets the needs of the present without jeopardizing the ability of future generations to thrive. Sustainability takes into account the risk posed by climate change and the urgent need to transition to a low-carbon economy. It also considers risks to biodiversity, methods to eliminate pollution, and how to minimize human impact on the planet. There is a strong need and demand for growth in sustainable finance, and there will be challenges associated with achieving it, as well as opportunities presented by it. This transformation is happening simultaneously with other complex market changes, such as financial inclusion, digital transformation, technological innovation, and the progressive addition of artificial intelligence and data analytics.

International financial Centers (IFCs), as the hubs of the global finance industry, have been responding to these interconnected challenges. They shape the dialogue between societies, companies, and financial service providers on addressing and implementing large-scale change.

The only possible way of responding to this multifaceted reworking of financial services is by having the clearest information bases for decision-making. This requires reliable, standardized, and comparable digitized data across the world.

Equally, because sustainability policies, innovation, and decision-making all run on data, IFC leaders and their constituents are uniquely positioned to advocate for and help develop smart, efficient, and broad-based sustainability reporting practices.

Dual role of Financial Centers

Some financial Centers, such as the Qatar Financial Centre (QFC), play a dual role as financial hubs and business registries. The Companies Registration Office (CRO), as per Qatar's Companies Regulations, is the key entity responsible for maintaining a register of Limited Liability Companies, Limited Liability Partnerships, and Branches. The QFC Authority publicly provides details of all firms licensed by it, including their permitted activities, waivers, modifications granted, and disciplinary actions taken. Both business registers and financial Centers play a crucial role in the data ecosystem supporting financial markets.

Business registries serve a critical role in promoting transparency and accountability by collecting and disseminating data on all legal business entities in their respective jurisdictions. They provide a centralized source of trustworthy information on companies, including company legal status, ownership, management and, in most parts of the world, financial details. This accessibility fosters trust among investors, regulators, and the public, ensuring that all businesses, small and large, operate within the legal framework and adhere to regulatory requirements. Moreover, by offering transparency, business registries, like security market regulators, play a key role in controlling fraud and corruption, through the accessibility of information without having to prove legal interest to obtain it, thereby enhancing the security of the business environment. Business registries also support economic stability and facilitate informed decision-making in the marketplace. Overall, their functions are vital for maintaining the integrity and efficiency of the business environment.

How WAIFC can play a leading role in Sustainability Reporting

Given sustainability policies, innovation, and decision-making all run on data, IFC leaders and their constituents are in a unique position to advocate for and help lead the way in developing smart, efficient, and broad-based sustainability reporting practices.

As businesses advance on sustainability reporting, members of the WAIFC can play a transformative role in improving the quality and usability of the data and information needed for decision-making and investment. This can be achieved by harnessing the power of digital technology to build a smart sustainability data ecosystem. This possibility is the focus of this white paper.

With these objectives in mind, WAIFC sent its first delegation to COP28 (December 2023, UAE) and conducted a roundtable in the Dubai International Financial Centre (a member of WAIFC), with various stakeholders and subject experts, to develop a path forward for sustainability reporting.

"Sustainability work" is so broad and complex and those involved in its development can easily lose focus and direction. WAIFC chose an approach to be informative and relevant, while at the same time making sure that this recommended path would be practical, executable and pertinent to its more than 20 members. As work on sustainability progressed with a working group in 2023 ahead of the Dubai meetings, the focus area for WAIFC remained on improving and standardizing data. This goal became essential to measure progress towards climate change adjustment and to have far better decision-making tools for the businesses in their members' jurisdictions.

A summary of the meetings WAIFC held ahead of COP28

At its April 2023 meeting in London, the WAIFC Board agreed to the approach proposed by the Sustainable Finance working group and authorized WAIFC to participate and collaborate with relevant entities during COP28 in December 2023. It affirmed that taking an active role in the climate debate would elevate WAIFC's position and provide the organization with an opportunity to use the influence it wields to create a positive impact on the work members do for businesses in their jurisdictions.

After the London meetings and ahead of the New York AGM, the working party held webinars and circulated a member-wide questionnaire to gather as much information as members could provide on climate work in their respective cities. It also initiated discussions about reporting standards with Liv Watson, Senior Advisor on Digitization for the Capitals Coalition.

October 2023: WAIFC Annual General Meeting Round-table Discussion, New York City.

During the AGM, members attended a round table discussion co-facilitated by Liv Watson and Louisa Durkin, the Tracking Lead at the Climate Champions Team. The discussion focused on the current practices adopted by businesses and institutions to report on sustainability and carbon disclosures. Given the current inadequacies in the reporting landscape it was evident that IFCs can play a role and impact the evolving landscape of digital sustainability reporting. It was also clear that WAIFC and its members could have a significant impact and be a strong and effective voice for sustainability and climate change.

December 2023: Round Table Discussion at the Dubai International Financial Center (DIFC), Dubai.

On December 5, 2023, WAIFC facilitated a round table discussion among representatives from multiple sustainability frameworks, standards-setters, and disclosure platforms, including ISSB, CDP, XBRL, Icebreaker One, and California Carbon Accountable together with representatives from many IFCs. For more detailed information about the round table discussions and the topics covered by each participating organization, please refer to Appendix A: Roundtable Discussion.

The discussion explored how IFCs can effectively contribute to the acceleration of digital transformation and foster a more coherent and efficient sustainability data ecosystem. The event was co-chaired by Abdul Rahim Osman, the Head of Communications and Senior Project Manager (Sustainable Finance) for WAIFC, and Liv Watson. Participants then saw presentations and contributions by:

- John Turner, CEO - XBRL International, Inc.
- Nicolette Bartlett, Chief Impact Officer - CDP
- Catherine Atkin, Chair Stanford CodeX Climate Data Policy Initiative
- Gavin Starks, CEO - Icebreaker One
- Alya ALZarouni, COO - DIFC
- Jessica Skedd, Green and Sustainable Finance Policy Manager - TheCityUK
- Dr. Soongoo Ahn, Senior Manager - Busan Finance Center
- Hortense Mudenge, Chief Strategy Officer - Rwanda Finance

These discussions focused on the evolving landscape of sustainability reporting, explored a range of critical topics such as mandatory carbon disclosures, voluntary disclosure platforms, advancements in SME reporting, the influence of the IFRS Foundation and the International Sustainability Standards Board (ISSB), and the transformative potential of XBRL for digital reporting.

The results of these discussions, including the round table in Dubai over the past year, are summarized in this white paper, along with five key recommendations for consideration. They highlight how international collaboration, and innovative digital solutions can enhance the quality and accessibility of information, empowering stakeholders globally to adopt sustainable practices. Delving into these use cases further demonstrates their implications and the inspiring lessons they offer for advancing global sustainability efforts.

Aims of this White Paper

The aims of this paper are to:

1. Outline a set of recommendations to which IFCs can adopt and drive within their financial center jurisdictions;
2. Advance the 2023 recommendations with further research, define new goals in 2025, and lead thinking in our industry;
3. Form strong collaborations with partners to enhance the sustainability reporting ecosystem;
4. Work with private and public sector stakeholders to further the discourse;
5. Facilitate global exchange amongst financial Centers to drive the strategic use and deployment of digital tools; and
6. Limit the data divide by ensuring that all institutions benefit from a unified sustainability reporting ecosystem.

WAIFC and its members can play an important role in supporting a unified digital sustainability reporting infrastructure and advancing financially sustainable markets with its members. By leveraging their influence and resources, they can drive the adoption of digital standardized reporting practices, promote transparency, and ensure that sustainability data is accurate, accessible, and actionable. A unified approach is essential for achieving the 17 Sustainable Development Goals and fostering a global green transition.

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WAIFC members alongside Capitals Coalition and participating entities at the Roundtable at COP28, in the DIFC, Dubai

Executive Summary

Financial Risk and Climate Change: Urgent Call to Action
for IFCs' Leaders and Members

The escalating climate crisis, driven by factors such as burning fossil fuels, deforestation, industrial processes, waste management, land use changes, and agricultural practices, necessitates a complete overhaul of global economic systems. While these activities are the primary drivers of the crisis, more readily available and consistent corporate sustainability data is needed to address it effectively. Access to high-quality sustainability data is crucial as the world unites to comprehend the impact of environmental exploitation and degradation and to help chart a path forward.

As sustainability policies, innovation, and decision-making increasingly rely on data, International Financial Centre (IFC) leaders and their constituents are uniquely positioned to advocate for and spearhead the development of smart, efficient, and interoperable sustainability reporting ecosystems. The transition to a low-carbon, resilient, and equitable economy presents a complex landscape of risks, opportunities, and challenges for the global financial sector. Achieving the ambitious goals of the Paris Agreement and the UN Sustainable Development Goals demands a fundamental restructuring of the global economy. This transformation will profoundly impact how financial institutions allocate capital, manage risks, and serve clients.

Members of the WAIFC, a network of financial Centers in over 20 cities around the world, can work collaboratively and productively to remedy the global challenges of reducing the growing impacts of climate change by promoting enhanced transparency and better financial and sustainability reporting by their constituent businesses. The alliance can successfully facilitate and position itself to direct the evolution of the financial markets to respond to climate-related financial risks and opportunities.

As a result of an evaluation in 2024 of several decades of groundbreaking financial technological transformation and market understanding regarding sustainability reporting practices, WAIFC decided to focus its energies on encouraging and supporting its members to improve sustainability reporting, particularly through the adoption of standards and digital infrastructure. WAIFC and its members are uniquely positioned to coordinate globally and work directly with their local constituents to address the

the risks posed by the use of sustainability data that is of inadequate quality. For corporate management, without access to high-quality sustainability data, they are limited in their ability to set sustainable business objectives and see them through with sound capital allocation decisions. Similarly, for capital market investors, poor data means they cannot compare projects and other investment opportunities across industries and regions.

WAIFC has chosen to address the digital sustainability data problem by assessing the role of IFCs in supporting the North Star Vision Dialog advanced by the DSD Project Dialog hosted by the Capitals Coalition[1]. Through this dialogue, WAIFC can help improve the quality of corporate information for strategic decision-making by mobilizing financial services sector actors and their partners in their jurisdictions. At the same time, the availability of clean, well-structured, and high-quality data will make an important contribution to the information that must be gathered to prescribe, measure, and achieve meaningful progress towards decarbonization leading to net zero carbon emissions.

IFCs can play an important role both in their markets and globally by championing a unified digital sustainability reporting infrastructure and data ecosystem. Recommendations include:

- **Advocate for Standards Adoption:** WAIFC, with the backing of its members, should advocate directly for the adoption and mandatory use of open digital sustainability standards by governments and regulatory bodies to formalize the role of digital solutions in enhancing transparency, accountability, and comparability.
- **Collaborate with Sustainability Standards Boards for a "Seat at the Table":** WAIFC, on behalf of the IFC community, should partner directly with the ISSB, EFRAG, and GRI on their capacity-building programs. WAIFC's initiatives can contribute to the continuous improvement of sustainability reporting standards, and its expertise and insights - as well as its deep local presence in many jurisdictions - are crucial in this process. By working together, WAIFC can enhance communication and coordination and enable an efficient exchange of knowledge and resources that benefits all parties involved.
- **Coordinate to Deliver a Policy Playbook for Domestic Best Practices:** WAIFC and its members, should develop common principles and materials for IFCs to collaborate effectively with regulators, investors, and businesses for the development and promotion of best practices for consistent reporting. WAIFC and its members should advocate for policies that support the digitization of sustainability reporting and harmonize regulations across different jurisdictions to ensure consistent adoption and uptake in different regions.

[1] ***Capitals Coalition hosts the Digital Sustainability Disclosures Project (The DSD project), a three-year collaborative initiative***. *https://capitalscoalition.org/project/digitalizing-sustainability-data*

- **Support Innovation via Research and Development:** WAIFC will benefit from advocating for, and funding research initiatives focused on creating integrated digital platforms for sustainability reporting and analysis that enable seamless data aggregation. This will ensure comprehensive and accurate ESG assessments. WAIFC and its members should help drive innovation in the financial industry to ensure they stay at the forefront of sustainable and scalable practices.

- **Invest in Integrated Digital Platforms:** WAIFC can be an active catalyst in supporting the building of innovative and adoptive existing digital tools in sustainability reporting technologies. This will support financial Centers and institutions in leveraging data transparency and auditability. WAIFC and its members should actively participate in the global dialogue to facilitate the development of needed solutions for integrated platforms. They should invite relevant organizations including those who have the skills and capabilities to build such tools, into the discourse.

- **Facilitate Implementation:** WAIFC should facilitate workshops, training sessions, and collaborative initiatives with standards boards, securities regulators, and business registers to help financial Centers and institutions implement standards effectively. Digital tools can be integrated into these initiatives to provide practical guidance on adopting and utilizing sustainable reporting technologies.

- **Invest in Capacity Building and Training of Professionals in the Financial Sector:** Launch initiatives to build capacity and provide training on digital sustainability reporting tools, particularly in emerging markets, by partnering with educational institutions and technology providers to offer programs that enhance the skills and knowledge of professionals in the financial sector. In doing so, ensure that no region is left behind.

- **Invest in Capacity Building and Training of Board Directors and Business Leaders:** Enhancing the skills and knowledge of professionals in the financial sector is only half of the equation to integrating sustainability data with financial information. For directors to make informed decisions, they need to be able to understand the data and the impact their decisions will have on the business and society at large. Many companies have collected data, done scenario planning, and even reported data in sustainability reports and on websites, only to see management and the boards of directors not taking the scenarios and data into account in their business decision making. It is not until board directors and management understand the meaning behind the data that the data will fully be valued by the directors. The sustainability, climate and nature related competencies of management and board directors also influence the market. A director or executive who does not fully understand the data and the information the data reveals

reveals will not be able to communicate effectively with the financial market actors and convince them about the best short and long-term financial decisions. Only by ensuring that directors are educated to understand the data will sustainable governance be upheld, and finance will flow to the companies that truly will help transform economies, countries and lives.

- **Endorse Open Data Exchange Standards:** Advocate for the adoption of open data exchange standards to enhance interoperability and data sharing amongst financial Centers. WAFIC should lead the efforts to establish common protocols that enable seamless integration and exchange of ESG data across different platforms and jurisdictions. This will promote transparency and reduce data silos.

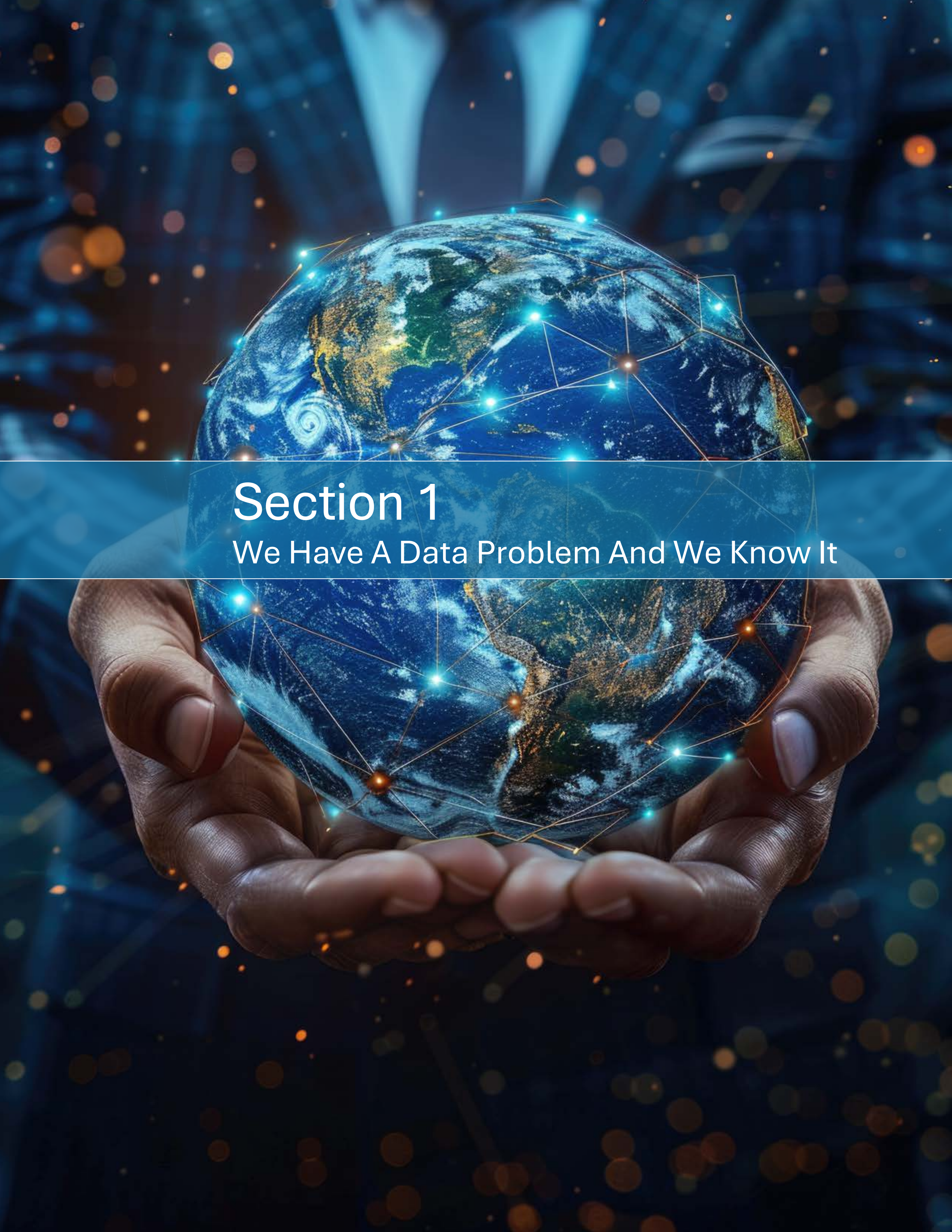
- **Foster Public-Private Partnerships:** WAIFC should facilitate the creation of public-private partnerships to drive the development and implementation of digital ESG reporting tools. By bringing together governments, financial institutions, technology providers, and academic institutions, WAIFC can create a collaborative environment that encourages innovation, knowledge sharing, and resource pooling. Ensuring that all stakeholders benefit from improved ESG reporting practices, these partnerships can focus on developing integrated platforms that enhance data accuracy, transparency, and accessibility.

- **Establish a Smart Data Taskforce:** WAIFC should consider forming a Smart Data Taskforce comprising members and invited data experts. This taskforce would be tasked with developing a blueprint for financial Centers to actively engage in and shape the development of a smart data ecosystem that supports sustainable finance. By leveraging collective expertise, the taskforce can guide the integration of cutting-edge technologies, data standards, and best practices, ensuring that financial Centers are well-positioned to influence and lead in the evolving landscape of sustainable finance.

WAIFC has the influence through the reach of its member base to facilitate global exchange among financial Centers and proactively drive the strategic use and deployment of digital tools. By taking the lead, WAIFC can bridge the data divide and ensure member institutions benefit from a unified smart sustainability reporting ecosystem that supports smart decision making and unlocks sustainable finance. The time to act is now!

Section 1

We Have A Data Problem And We Know It



Section1

We Have A Data Problem And We Know It

“Climate change is the Tragedy of the Horizon. We don’t need an army of actuaries to tell us that the catastrophic impacts of climate change will be felt beyond the traditional horizons of most actors – imposing a cost on future generations that the current generation has no direct incentive to fix.”

Mark Carney
former Governor of the Bank of England
former Chair, Financial Stability Board (2015)

Mark Carney, former Governor of the Bank of England, coined the term 'Tragedy of the Horizon' in 2015 to describe climate change. It refers to the delayed and often severe consequences of climate change that extend beyond the immediate concerns of current generations. His remarks echo the 'tragedy of the commons' warning from the 1960s[2], updated for our current reality in which the future impacts of climate change are likely to occur beyond the typical planning horizon of most actors today.

The urgent truth is that the repercussions of today's decisions - and failures to make the right ones - will burden future generations. Yet, blind to the impending dangers, we navigate this existential challenge without reliable and transparent data on the climate and environmental impacts of companies and other entities. What is needed is a guiding vision, a "North Star," for a smart data ecosystem that makes data discoverable in machine-readable and human-readable data formats, so that corporate decision-makers and investors can mitigate the risks of catastrophic climate consequences while increasing development and economic prosperity. Immediate action is imperative so that we can avoid failures and steer towards a sustainable future that will safeguard future generations. Machine-readable data refers to information formatted so computers can easily process and interpret it without manual intervention. This kind of data is structured, standardized, and encoded using formats allowing software programs to extract, manipulate, and analyze the information. In the context of business reporting, machine-readable data allows for efficient data exchange, automated reporting processes, and, most importantly, seamless integration across different systems.

[2] ***The Tragedy of the Commons Garrett Hardin (1968):***
https://web.physics.utah.edu/~detar/phys4910/readings/community/page95.htm

During the 2008 - 2009 "Great Financial Crisis" ('GFC'), we learned about the importance of taking immediate action on digital reporting. The failure to have standardized and interoperable data for banks, dealers, and securities markets, based on digital financial reporting standards and infrastructure, led to catastrophic consequences.

This lesson from the GFC (see sidebar) carries significant weight. It was a pivotal moment in understanding the importance of trusted data. The crisis exposed how the absence of standardized digital reporting regimes had devastating consequences. The movement towards globally accepted standards, such as the Legal Entity Identifier (ISO 17442, *Financial services — Legal entity identifier (LEI)*)[3], and open data standards, such as XBRL (eXtensible Business Reporting Language)[4], showed how markets and their stakeholders benefit from global initiatives to improve data. International and national actors and the public and private sectors can stabilize and manage the financial system more effectively through better data.

*A **LEI** is a 20-digit alphanumeric code that uniquely identifies a legal entity participating in financial transactions. It acts as a barcode for businesses, offering clarity and transparency. More importantly, LEIs play a crucial role in reducing risk and enhancing efficiency for regulators, investors, and other market participants in accurately identifying the parties involved in financial transactions, making the financial landscape more secure and efficient. VLEIs (Verifiable Legal Entity Identifiers) is a newer type of digital identity that builds upon the existing concept of Legal Entity Identifiers (LEIs).*

***XBRL** is a freely available global open data standard for exchanging business information, mandated for digital reporting by securities regulators, banking regulators, business registrars, and other authorities. It allows the expression of semantics commonly required in business reporting, promoting transparency and consistency across the financial landscape.*

LEIs and XBRL are examples of digital data standards and global digital identity frameworks that have demonstrated how markets and their stakeholders benefit from improved machine-readable data. With better data, international and national actors, along with the public and private sectors, can stabilize and manage the financial system more effectively.

These remedies helped mitigate the failures of the GFC meltdown, where inconsistencies in open digital data standards, a lack of common and clear global definitions of key data elements, and a lack of consensus on best practices spawned a toxic ecosystem of fragmented information that fails to support investment-data-driven decision making. Even more importantly, they can help prevent future crises.

[3] ***About LEIs:*** *https://www.gleif.org/en/about-lei/introducing-the-legal-entity-identifier-lei*
[4] ***About XBRL:*** *https://www.xbrl.org/*

Time is Running Out: The "failure of data interoperability" challenge

In 2023, there were an estimated 359 million[5] registered companies worldwide, yet only a tiny fraction—approximately 23,000—actively engaged in voluntary sustainability data collection initiatives like CDP and GRI (with a new GRI digital reporting disclosure platform launching in January 2025). Additionally, some are impacted by regulatory mandates from oil & gas, environmental, water, and other authorities. While these numbers will increase as sustainability reporting becomes a global mandatory requirement, the current low participation underscores the magnitude of the task of making reporting universal.

The reality today is that digital financial and sustainability reporting—often referred to as environmental, social, and governance (ESG) data—relies on a complex web of technologies: hardware, software, and semantic artifacts (definitions, schemas, taxonomies, artificial intelligence, and ontologies). Implementing and using these systems demands domain expertise, technical sophistication, and substantial capital.

As highlighted in the IMA publication, "A Digital Transformation Brief: Business Reporting in the Fourth Industrial Revolution [6]", today's highly fragmented information ecosystem is incredibly wasteful despite the availability of technology and tools that can alleviate these costs. The Transformation Brief cites data from IFAC and other sources on the staggering financial impact of these inefficiencies on businesses, markets, and the overall economy. For instance, IFAC estimated that in 2018, fragmentation within the financial services sector alone cost $780 billion annually. Clearly, there are enormous potential gains across the entire information ecosystem if authorities, standard-setters, and stakeholders either mandate or incentivize the adoption and further development of valuable technologies.

In addition, far too few companies integrate sustainability reporting into their traditional general ledger, assets, liabilities, and capital accounts. The emerging concept of a Green Ledger is a direct response to the growing awareness of the intricate link between environmental sustainability and financial performance. A Green Ledger unifies carbon and financial accounting into a single system, enabling comprehensive tracking, reporting, and verification of both environmental and financial impacts. This integrated digital record aligns traditional financial metrics with crucial sustainability indicators like carbon emissions and resource consumption. While a global standard for Green Ledgers is yet to be established, pioneers like SAP have already incorporated Green Ledger functionalities into their applications. SAP's Green Ledger[7] envisions a future where carbon accounting becomes transparent and manageable. By applying financial

[5] ***Statista**: https://www.statista.com/statistics/1260686/global-companies/*

[6] ***A Digital Transformation Brief**: Business Reporting in The Fourth Industrial Revolution: https://www.imanet.org/research-publications/white-paper/a-digital-transformation-brief-business-reporting-in-the-fourth-industrial-revolution*

[7] ***About SAP's Green Ledger**: https://www.sap.com/assetdetail/2023/05/52ec66b4-727e-0010-bca6-c68f7e60039b.html*

principles to emissions data, a Green Ledger provides a holistic view of a company's carbon footprint and empowers effective control measures. Organizations must proactively prepare for the Green Ledger era to capitalize on these benefits.

On the usage side, the lack of standardization and infrastructure to support data aggregation complicates data analysis and comparison, obstructing the flow of capital necessary for a green transition. Without high-quality data analysis to fuel their decision-making tools, governments, agencies, and researchers cannot evaluate and refine their policies or their monitoring and enforcement activities.

Navigating sustainability reporting without innovation built on an open smart data ecosystem is like sailing on a cloudy night without a North Star – a perilous journey with no clear direction. The absence of a guiding framework, particularly one rooted in interoperability, risks leaving many companies adrift, struggling to align with the global green agenda and the transition toward a Net Zero Economy. This lack of coherence and direction hampers individual companies and undermines collective progress on sustainability goals. What is needed is a North Star vision for IFCs, backed by a blueprint, to provide direction.

Addressing the Thirst for Sustainability Insights

The transition to a resilient, low-carbon, and equitable economic model brings with it a host of new risks, challenges, and opportunities for the global financial sector. Achieving the targets of the Paris Agreement[8] and the UN Sustainable Development Goals (SDGs) necessitates foundational changes in the structure and function of the global economy. These changes have profound implications for how financial institutions allocate capital, manage risks, and deliver services to clients. Now more than ever, it is evident that realizing these goals requires trusted data to support a comprehensive transformation in economic practices and financial strategies worldwide.

Investment decisions based on data analysis are critical to a regulator's effectiveness and a financial center's competitiveness. Regulators are inundated with data, making it challenging to identify crucial information. For instance, the UK Central Bank receives over 65 billion data points annually related to firms. As Mark Carney, Governor of the Bank of England, stated on June 20, 2019, "This is the new frontier of regulatory efficiency and effectiveness.[9]" To put this into context, reviewing all this data would require each supervisor to read Shakespeare's complete works twice a week, every week. Paraphrasing Coleridge's Ancient Mariner, who finds himself adrift on the ocean with "water, water everywhere, but not a drop to drink," today's businesses face a similar dilemma with data: "data, data everywhere, but nowhere a byte to drink." Despite the

[8] ***About The Paris Agreement Treaty:*** *https://unfccc.int/process-and-meetings/the-paris-agreement?gad_source=1&gclid=Cj0KCQjwq_G1BhCSARIsACc7Nxo54FY-GzR2FbIqRKRyfcQbkR6cFAaXAlw_u_aUhwQZAhSWswQTUywaAs6kEALw_wcB*

[9] ***Speech given by Mark Carney, Governor of the Bank of England:*** *https://www.bankofengland.co.uk/-/media/boe/files/speech/2019/enable-empower-ensure-a-new-finance-for-the-new-economy-speech-by-mark-carney*

abundance of sustainability data available, the lack of coordination and a common vocabulary among various schemes, taxonomies, forms, and mandates results in a chaotic data landscape.

This disarray, characterized by multiple and mutually incompatible proprietary data formats, underscores the urgency of adhering to the globally adopted FAIR Data Principles: Findability, Accessibility, Interoperability, and Reusability of data[10]. These principles, emphasizing machine-actionability, are essential for computer systems to automatically find, access, share, and reuse data with minimal human intervention. This capability is crucial due to the ever-increasing volume, complexity, and speed of data creation, necessitating heavy computational support for effective data management.

The average business today can't afford—and thus doesn't have access to—sustainability data flows in a useful, comparable, machine-readable format that lends itself to reliable, data-driven decision making and matching accountability modeling. To add to the complexity, some data necessary for assessing risks related to climate change and other sustainability topics doesn't exist. In other cases, it exists but is out of reach, locked in external private repositories or siloed data vaults such as local hard drives. And some of the relevant data is available but may not be suitable to be machine-readable in a timely manner. The existing data and regulatory fragmentation carry high data management costs for organizations—money that could be better spent on impactful sustainable initiatives.

The fragmented portfolio of data formats (e.g., CSV, JSON, XML, YAML, XBRL, RDF, PDF, SDMX. etc.) across sectors, regulations, and technologies diminishes the value of collected data, creating a fundamental data dilemma. In the same way that saltwater cannot quench thirst; fragmented data standards choke the ability of decision-makers and analysts to extract insights for business management and development. To be useful, sustainability data must be standardized and follow a common vocabulary and metrics throughout its life cycle. Information should be validated and quality-checked in order to enable seamless integration and analysis at each stage of the data life cycle. In a data supply chain life cycle, information flows similarly to that of an assembly line in manufacturing. Each piece of information moves from one station (or stage) to another, transitioning from the provider to the consumer. This process ensures that data is systematically refined, validated, and utilized, ultimately contributing to the integrity of the final product. The idea is simple: if regulators collected digital machine-readable and human-readable data rather than documents, and if they collaborated to use the same open data format for the same data, then compliance, oversight and transparency would all get cheaper and easier.

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[10] ***About the FAIR Guiding Principles for scientific data management and stewardship***: https://www.go-fair.org/fair-principles/

These organizational challenges, when juxtaposed with the need for a seamless user experience, underscore a pressing need for change. The European Commission[11] found that information users are grappling with similar issues in accessing, consuming, and analyzing sustainability data reported by companies. The root cause? A lack of sufficient digitization and easy access to the information. This universal dissatisfaction with the current state of the sustainability information ecosystem signals an urgent need for transformation. These implications are that no one is happy with the sustainability data ecosystem's status quo.

With rising demands, a critical question arises: How can WAIFC members influence an operating environment to help the private sector comply with these statutory digital sustainability data requirements, and meet investor expectations in the face of increasing data processing costs for reporting and disclosures?

Addressing Fragmentation: Emerging Standardization Efforts and Ongoing Challenges

Sustainability reporting standards and frameworks are high-level guidelines or approaches that provide organizations with a structure to identify, assess, and report on sustainability issues relevant to their operations. These standards and frameworks allow companies to benchmark their performance against industry peers and global best practices and to communicate their progress to stakeholders, including investors, regulators, customers, and employees.

The International Sustainability Standards Board[12] (ISSB)'s IFRS S1 and IFRS S2 and the European Financial Reporting Advisory Group's European Sustainability Reporting Standards (ESRS)[13] spearhead new initiatives to simplify and standardize digital sustainability reporting.

This is in response to the historical inconsistencies and fragmentation that have long plagued digital sustainability reporting. Through the adoption of the XBRL[14] open data format, these standards are making sustainability data both machine and human-readable, thereby enhancing its usability and accessibility across various stakeholders. The aim is to create a more unified and comparable framework for organizations worldwide.

In addition to these efforts, frameworks like the Global Reporting Initiative (GRI) are also

[11] ***Letter request by Valdis Dombrovskis, EXECUTIVE VICE-PRESIDENT (2019-2024)*** *https://www.efrag.org/sites/default/files/sites/webpublishing/SiteAssets/Letter%20EVP%20annexNFRD%20%20technical%20mandate%202020.pdf*

[12] ***About the International Sustainability Standards Board:*** *https://www.ifrs.org/groups/international-sustainability-standards-board/*

[13] ***About the European Sustainability Reporting Standards:*** *https://www.efrag.org/Activities/2010051123028442/Sustainability-reporting-standards-roadmap*

[14] ***About XBRL Open Data Standard:*** *https://www.xbrl.org/the-standard/what/what-is-xbrl/*

being integrated into this broader push for standardization. The GRI has long been a cornerstone in sustainability reporting, providing guidelines that many organizations have relied upon to disclose their environmental, social, and governance (ESG) data. However, the lack of consistency across different reporting standards and formats has often led to data comparability and reliability challenges.

Today's collaboration among ISSB, ESRS, and GRI represents a significant step towards resolving these issues. By converging around the XBRL format, these organizations are not only simplifying the reporting process for companies but are also ensuring that sustainability data can be easily shared, analyzed, and utilized by regulators, investors, and other stakeholders. This alignment is expected to drive greater transparency, improve decision-making, and ultimately contribute to more sustainable business practices on a global scale.

The ISSB focuses on investor needs by highlighting the material financial implications of sustainability. EFRAG's ESRS takes a broader approach, requiring companies to report on environmental and societal impacts. GRI, with its long history, offers comprehensive standards for various stakeholders. These efforts represent significant progress toward tackling fragmented reporting. Recently, GRI and IFRS Foundation announced a collaboration to deliver full interoperability that enables seamless sustainability reporting, building upon a Memorandum of Understanding[15] signed in 2022. GRI and EFRAG, following a successful three-year partnership, signed a new MOU, which substantiates the benefits of the alignment achieved between the two standards.

The new MOU[16] includes collaboration on standards and guidance development, facilitating education and training, and setting the grounds for the interoperability of the XBRL taxonomies. XBRL taxonomies are essentially standardized dictionaries for business data. They define specific business concepts and their relationships, providing a common language for sustainability and financial reporting. By assigning unique tags defined by the standards boards to these concepts, XBRL enables computers to automatically process, analyze, and compare sustainability and financial information. This tagging process, often referred to as 'fact tagging,' transforms raw data into structured, machine-readable information.

This is not to be confused with a Green Classification taxonomy which is a system that categorizes economic activities based on their environmental impact, serving as a framework for determining whether an activity contributes to environmental objectives. Commission exemplifies this system. While green classification taxonomies

[15] ***IFRS Foundation and GRI MOU:*** *https://www.globalreporting.org/news/news-center/ifrs-foundation-and-gri-to-align-capital-market-and-multi-stakeholder-standards/*

[16] ***EFRAG and GRI enhance collaboration with deeper ties:*** *https://www.globalreporting.org/news/news-center/efrag-and-gri-enhance-collaboration-with-deeper-ties/*

and XBRL serve different purposes, there is a strong synergy between the two, as XBRL can digitally represent the data required by green classification taxonomies. This combination is essential for creating a comprehensive, standardized, and machine-readable approach to sustainability reporting.

In November 2022, EFRAG initiated two additional projects to develop digital sustainability reporting standards for SMEs. The first aims to create a simplified standard for listed SMEs, small banks, and captive insurers under the EU Corporate Sustainability Reporting Directive (CSRD). In contrast, the second focuses on a voluntary standard for other SMEs. EFRAG launched public consultations and field tests for both standards in early 2024. EFRAG is reviewing feedback and refining the standards, with final drafts expected by the end of 2024 and the basis of conclusions for the voluntary standard in February 2025.[17]

These samples of international standard-setting bodies and initiatives play a crucial role in developing digital sustainability standards and trust frameworks that promote transparency, consistency, and comparability across the financial sector. By incorporating digital sustainability reporting considerations into their standards, frameworks, guidelines, and recommendations, these standards boards help ensure that financial institutions not only manage sustainability risks effectively but also play a significant role in contributing to global sustainability goals.

The regulatory landscape has become more comprehensive and broader in scope, with supervisory reporting becoming far more granular in the wake of the last global financial crisis. While these post-crisis regulatory reforms were necessary to increase the resilience of financial institutions, restore financial stability, and rebuild trust in the financial system, businesses have expressed concerns about the challenges posed by the complexity and cost of sustainability reporting.

With rising demands for sustainability data, a critical question arises: How can WAIFC facilitate the alignment and interoperability of emerging digital sustainability reporting standards, such as those from ISSB, ESRS, and GRI, to address the fragmentation and challenges in digital sustainability reporting for financial institutions?

Addressing the Path to a Trusted Sustainable Data Future

Trusted data is the goal that guides our future decisions and towards which we must navigate using our North Star or, in bad weather or by day, our compass. It allows us to track our current state and measure the past.

[17] ***EFRAG SME Standards:*** *https://www.efrag.org/en/sustainability-reporting/esrs-workstreams/smes*

Trust requires auditing. Just as financial audits build trust in a company's financial health, independent assurance plays a vital role in sustainability reporting. Verifying the accuracy and credibility of sustainability data is crucial. In financial reporting, auditors ensure that financial statements reflect a company's performance and health according to recognized standards. This verification process builds trust among the users of these statements. Similarly, assurance is essential in sustainability reporting to validate the accuracy and credibility of sustainability data and how it is reported. Therefore, systems must be designed to capture, process, and integrate sustainability data seamlessly alongside financial data, providing a comprehensive view of an organization's overall integrated value.

A new proposed standard called ISSA 5000, General Requirements for Sustainability Assurance Engagements[18], will serve as a comprehensive, standalone global standard for any sustainability assurance engagement. It applies to sustainability information across all topics and frameworks, including the newly released IFRS Sustainability Disclosure Standards S1 and S2. Designed to be profession-agnostic, the standard supports use by both professional accountants and non-accountant assurance practitioners. The final standard is expected to be issued before the end of 2024.

The industry still lacks a comprehensive assurance standard for XBRL in response to the increased focus and use of digital reporting for both financial and non-financial information. There is a need for a subject-matter-specific standard that builds on and supplements the application of ISAE 3000 (Revised) for these assurance engagements.

Publishing a digital corporate report involves "tagging," which means marking up disclosures by selecting appropriate XBRL elements for each data point. The newer Inline XBRL format allows for embedding XBRL tagging within a human-readable web page. While assigning tags to data intended for dissemination and disclosure may appear standardized, it varies significantly based on each company's approach and the sophistication of the software they use. Importantly, this process requires professional judgment from those involved in corporate reporting. Professionals must use their knowledge of the business and relevant disclosure standards to interpret and apply the appropriate taxonomy—machine-readable definitions—to disclosure points.

Without proper professional audit and assurance literature supporting the jurisdictional use of digital disclosure mechanisms, an increasing proportion of disclosures relied upon by diverse users will lack independent assessment and oversight. This creates a risk that digital disclosures may materially differ from the human-readable versions, with such discrepancies going undetected. Therefore, the corporate reporting ecosystem should include high-quality assurance standard for

[18]***About ISSA 5000, General Requirements for Sustainability Assurance Engagements:*** *https://www.ifac.org/knowledge-gateway/discussion/strengthening-confidence-and-trust-iaasb-proposes-new-standard-sustainability-assurance*

digital disclosures. Concurrently, these standards should enable the independent review of all types of digital disclosures. While this presents a learning curve for audit and accounting professionals, experience in the US and Europe confirms that completing assurance over a company's digital disclosures is not onerous. What is needed are the standards to govern this work.

Financial centers are at the forefront of driving change through regulatory and developmental initiatives, including green finance, digital transformation, and skills development. Climate change necessitates a systemic overhaul of economies and societies, impacting every sector from energy to individuals. The scale of this challenge is unprecedented. Moving beyond a mere technical upgrade, supporting a Smart Digital Sustainability Reporting Data Ecosystem with open digital standardized reporting is crucial for advancing the green finance agenda. The North Star Initiative, which can be supported by International Financial Centers (IFCs) and in places where they serve as business registries, paves the way for a more sustainable and transparent financial data infrastructure. The time for action is now.

With the rising demand for trusted sustainability data, a critical question emerges: How can the WAIFC support developing and implementing high-quality assurance standards for digital sustainability reporting, such as the proposed ISSA 5000, to ensure trust and accuracy in sustainability data across financial centers?

Addressing the Accessibility Problem of Sustainability Corporate Reported Data

The global corporate reporting landscape is fragmented, hindering access to critical financial and sustainability data. Disparate local and global registries create significant challenges for stakeholders such as investors, creditors, and other stakeholders seeking comprehensive corporate information. Companies, too, struggle to reach a global audience due to the limitations of existing reporting mechanisms. The urgent need for discoverable, standardized, and machine-readable data has become increasingly apparent. To address this challenge, innovative regional initiatives are emerging as potential solutions.

The following sections explore exemplary models that are driving progress in this area.

The European Single Access Point (ESAP)

The European Single Access Point (ESAP)[19] is a centralized platform designed to provide seamless access to comprehensive financial and sustainability-related data on European companies and investment products. By connecting data from various national regulatory authorities into a single, user-friendly interface, ESAP wants to empower investors to make informed decisions through easy comparison and analysis.

[19] ***About the European Single Access Point (ESAP):*** *https://www.europarl.europa.eu/legislative-train/theme-an-economy-that-works-for-people/file-european-single-access-point*

This ambitious initiative aligns with the EU's goals of fostering a green transition and a robust digital finance ecosystem, promoting transparency, and standardizing data formats for efficient machine processing. ESAP is a shining example of how regional initiatives with policy support can simplify access to crucial data, providing a seamless and convenient user experience.

The Interconnection of EU Business Registers (BRIS)

The Interconnection of EU Business Registers (BRIS)[20] is another EU system established by the European Union to improve access to and sharing of all legal entities' information across its member states. By connecting national business registers, BRIS enables seamless cross-border retrieval of crucial company data. This enhanced transparency, legal certainty, and efficiency are vital for the proper functioning of the EU's internal market.

BRIS offers several key features. It provides easy access to company information stored in business registers across the EU, including details like registration, legal status, and financial statements. The system also harmonizes the way company information is reported and accessed, ensuring consistency and reliability. Additionally, BRIS facilitates cooperation between national business registers by enabling the exchange of information on cross-border business activities. Operating under EU Directive 2012/17/EU, BRIS makes company information accessible to businesses, public authorities, and citizens through the European e-Justice Portal. Ultimately, BRIS is a cornerstone of a more integrated and transparent European business environment, making it easier for businesses and authorities to operate across borders demonstrating a regional approach to data access.

Regional Approach in the Western Balkans

Another prime example of a regional initiative is the collaboration in the Western Balkans. In 2019, North Macedonia and Serbia spearheaded the creation of the Regional Business Registry Platform, BIFIDEX (www.bifidex.com) facilitating real-time business intelligence from all the companies in Southeast Europe funded by the European Bank for Reconstruction and Development (EBRD)[21]. This platform and the data sharing governance model framework facilitates the exchange of corporate and financial data among companies in the region. Following its establishment, Albania, Montenegro, and Bosnia and Herzegovina joined the platform, expanding its reach and capabilities. BIFIDEX today provides data and services for over 1 million companies and 1.7 million individuals. It offers free access and basic identification for all interested parties, promoting transparency and cross-border business activities and is endorsed and supported by the governments of participating countries. BIFIDEX stands as a testament to the success of regional collaborations. Its impact is strengthening, and it

[20] ***About BRIS:*** *https://e-justice.europa.eu/content_business_registers_at_european_level-105-en.do*

[21] ***About the EBRD BIFIDX funded project:*** *https://www.ebrd.com/news/2019/western-balkans-regional-business-registry-goes-online-.html*

is encouraging other countries to join, reassuring the audience about the potential of such initiatives in enhancing corporate data accessibility. BIFIDEX tomorrow is seeking to bring sustainability data into the platform in the next phase to support the regional agenda to align with the EU statutory reporting regime.

The Singapore's ESGenome Green Financing Project

On the other side of the globe, Singapore's new ESGenome[22] digital disclosure portal offers a solution tailored for Environmental, Social, and Governance (ESG) reporting. Launched by the Monetary Authority of Singapore (MAS) and Singapore Exchange (SGX Group) as part of Project Greenprint, ESGenome enables companies to report ESG data efficiently. This Software-as-a-Service (SaaS) solution provides a cost-effective approach, allowing companies to disclose ESG metrics mapped across global standards with a one-time input for each metric, ensuring maximum value for investment. ESGenome simplifies the disclosure process and promotes efficient capital mobilization toward sustainable companies and projects.

Global Approach for a Net-Zero Data Public Utility

The Net-Zero Data Public Utility (NZDPU)[23] is a global initiative aimed at creating a centralized repository for company-level climate data. The goal is to enhance transparency, accessibility, and standardization of climate data to accelerate the transition to a net-zero economy for free. The NZDPU was initiated by the Climate Data Steering Committee (CDSC)[24], a group founded by French President Emmanuel Macron and Michael R. Bloomberg. The CDSC oversees the NZDPU's ongoing development, ensuring its alignment with global climate goals and maintaining its credibility. This governance structure ensures that the NZDPU is managed transparently and in the best welfare interests of its users.

Global Voluntary Approach: CDP

CDP's global leadership in environmental disclosure, backed by over 800 institutional investors managing assets exceeding $100 trillion[25] is inspiring. Its platform empowers investors to assess environmental risks and opportunities within their portfolios, fostering transparency and accountability. CDP's role in promoting voluntary disclosure is instrumental in advancing global climate action and highlighting industry best practices. The CDP questionnaire[26] also helps companies align with global standards and upcoming regulatory mandates around the world.

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[22] ***About the Singapore's ESGenome Green Financing Project:*** *https://www.mas.gov.sg/news/media-releases/2022/mas-and-sgx-group-launch-esgenome-disclosure-portal-to-streamline-sustainability-reporting-and-enhance-investor-access-to-esg-data*

[23] ***About the Net-Zero Data Public Utility (NZDPU): https://nzdpu.com/home***

[24] ***About the Climate Data Steering Committee (CDSC):*** https://www.climatedatasc.org/

[25] ***About CDP's Capital Market Signatories:*** *https://www.cdp.net/en/investor/signatories-and-members*

[26] **About the CDP questionnaire:** https://www.cdp.net/en/guidance

In conclusion to where matters now stand, the development of single access points or central repositories for corporate data, whether through country-specific initiatives, regional or global collaborations like CDP, Net-Zero Data Public Utility (NZDPU), Business and Financial Data Exchange (BIFIDEX), European Single Access Point (ESAP), or the Business Registers Interconnection System (BRIS)[27], is crucial for enhancing transparency and efficiency in financial markets. These initiatives facilitate better investment decisions, promote cross-border business activities, and support economic integration. As these models evolve, they offer valuable insights and frameworks for other regions looking to develop similar centralized data platforms.

New Innovations Are Coming

Perseus - Automating Emissions Reporting for SME Finance

The UK's Perseus Project[28], a significant leap in the automation of emissions reporting, is tailored specifically to Small and Medium Enterprises (SMEs). Led by Icebreaker One, the project addresses the challenges that SMEs face in accurately collecting and reporting their carbon emissions data. Given that SMEs often need more resources and expertise for comprehensive sustainability reporting, Perseus aims to simplify this process through automation. The project enables SMEs to monitor their emissions more efficiently and effectively by streamlining data collection, particularly in energy usage. This automation not only reduces the reporting burden on SMEs but also ensures that the data is reliable and verifiable, a crucial factor for accessing green finance opportunities, providing confidence and reassurance to all stakeholders.

Perseus is poised to be a game-changer in unlocking finance for SMEs by making it simpler for them to showcase their commitment to sustainability. In its initial phase, the project concentrates on automating access to electricity data, enabling SMEs to monitor their energy-related emissions and share this information with financial institutions. This transparency is increasingly sought after by banks and investors who are eager to support environmentally responsible businesses. By providing accurate emissions data, SMEs can position themselves better to access green finance products, such as loans and grants, often linked to favorable terms for sustainable practices. Ultimately, Perseus is more than just a reporting tool; it's a catalyst for change. By making it easier for SMEs to access green finance, the project will be contributing to a broader economic shift towards sustainability.

An XBRL International's GR.ID Framework

To address the challenge of data discoverability, new and innovative solutions are emerging. One such example is XBRL International's Global Reporting Identifier (GR.ID) framework, which takes a simple yet powerful approach, making data discoverable rather than merely collecting it.

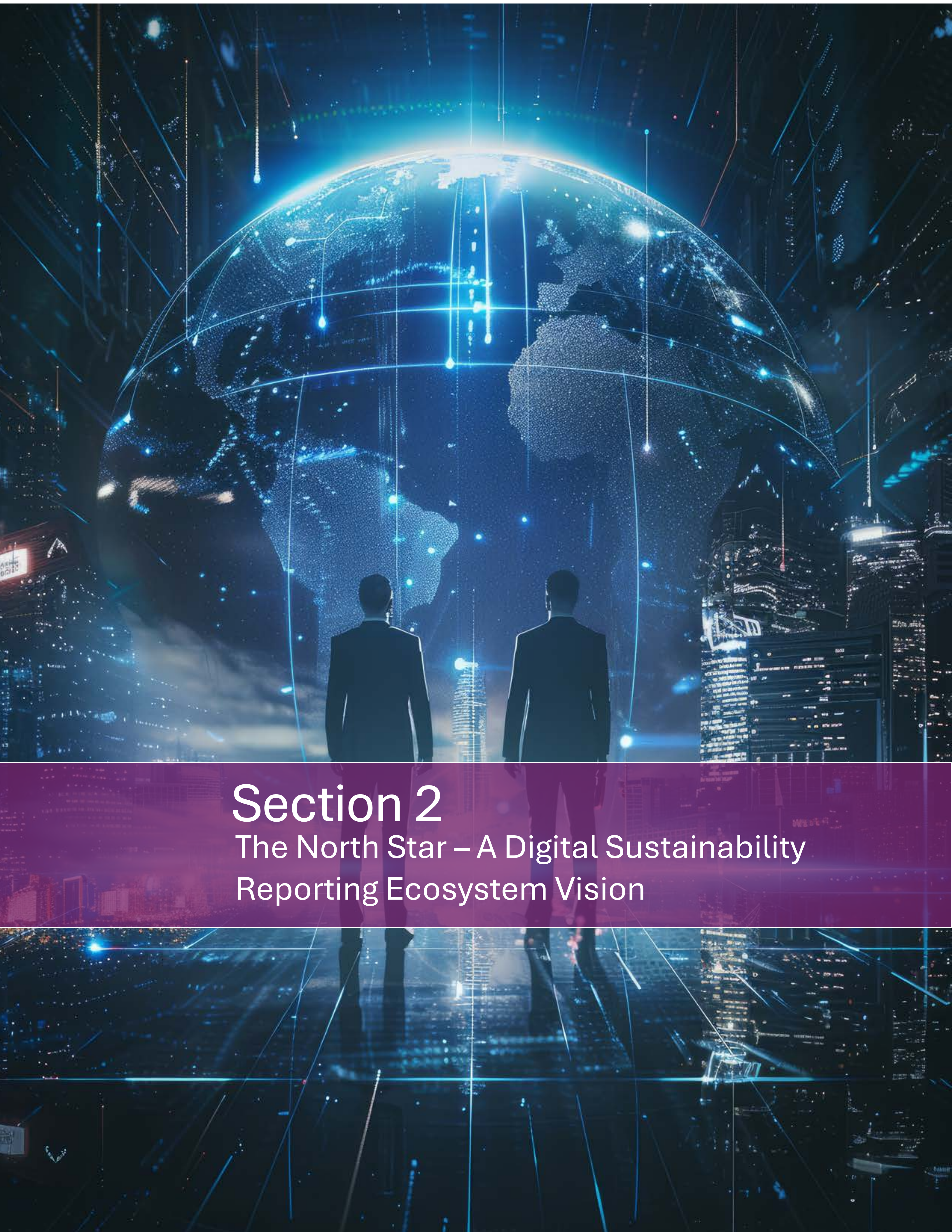
Regardless of whether reports are public or private, freely available or behind a paywall, GR.ID ensures that every report is discoverable and accessible globally. When

[27] ***About the Business Registers Interconnection System (BRIS):*** https://e-justice.europa.eu/content_business_registers_at_european_level-105-en.do
[28] ***About the Perseus Paper***: https://docs.google.com/document/d/1s--yqMm5nTi9LCreq-XROAIj2nc6mGEADVaFF7Xdikg/edit

implemented by regulators, GR.ID offers the highest level of trust, guaranteeing the report's origin from the filing company. XBRL International's GR.ID framework, by prioritizing data discoverability and accessibility, aligns with the philosophical underpinnings of the 'North Star' data ecosystem. It bypasses the need for centralized data collection, acting as a central access point that connects users to the original data source (repositories) regardless of location. It perfectly aligns with the vision of a 'North Star' data ecosystem, where information is readily discoverable, accessible, and standardized, eliminating the need to search through multiple repositories.

With rising demands for trusted discoverable data, a critical question arises: How can WAIFC leverage regional initiatives like Europe's ESAP, Singapore's ESGenome, and the Western Balkans' BIFIDEX to address the global accessibility problem of sustainability corporate reported data and promote the development of a comprehensive and standardized smart data ecosystem?

We recognize we have a serious data problem that is holding us back, and there are current solutions. Now this white paper moves forward with a framework to encompass our thinking and our actions, The North Star.



Section 2

The North Star – A Digital Sustainability Reporting Ecosystem Vision

Section 2

The North Star – A Digital Sustainability Reporting Data Ecosystem Vision

The North Star envisions a future where sustainability and financial data flow seamlessly and reliably as water through standardized pipes. This vision is built on the idea that accessible, high-quality data is the lifeblood of a transparent and trustworthy financial system. Achieving this requires a transformative journey guided by strong leadership from policymakers, regulators, standards boards, financial centers, and other key stakeholders, with unprecedented collaboration between the public and private sectors.

Comprehensive, standardized data is the linchpin for advancing global sustainability goals and ensuring all stakeholders have the information they need to make informed decisions. By integrating public and private sector financing, the North Star's Digital Sustainability Reporting Data Ecosystem Framework (hereinafter "Framework") enhances transparency and reduces risks for investors, reinforcing the broader trust in the global financial system.

To fully realize this vision, it is crucial to understand the foundational principles that underpin this framework. The following section examines the core tenets that form the backbone of the North Star Framework, highlighting the essential components of this smart digital sustainability reporting data ecosystem.

Core Tenets of a Smart Digital Sustainability Reporting Data Ecosystem Framework

Core Tenets of a Smart Digital Sustainability Reporting Data Ecosystem Framework

The following tenets serve as guiding principles for the Smart Digital Sustainability Reporting Data Ecosystem Framework:

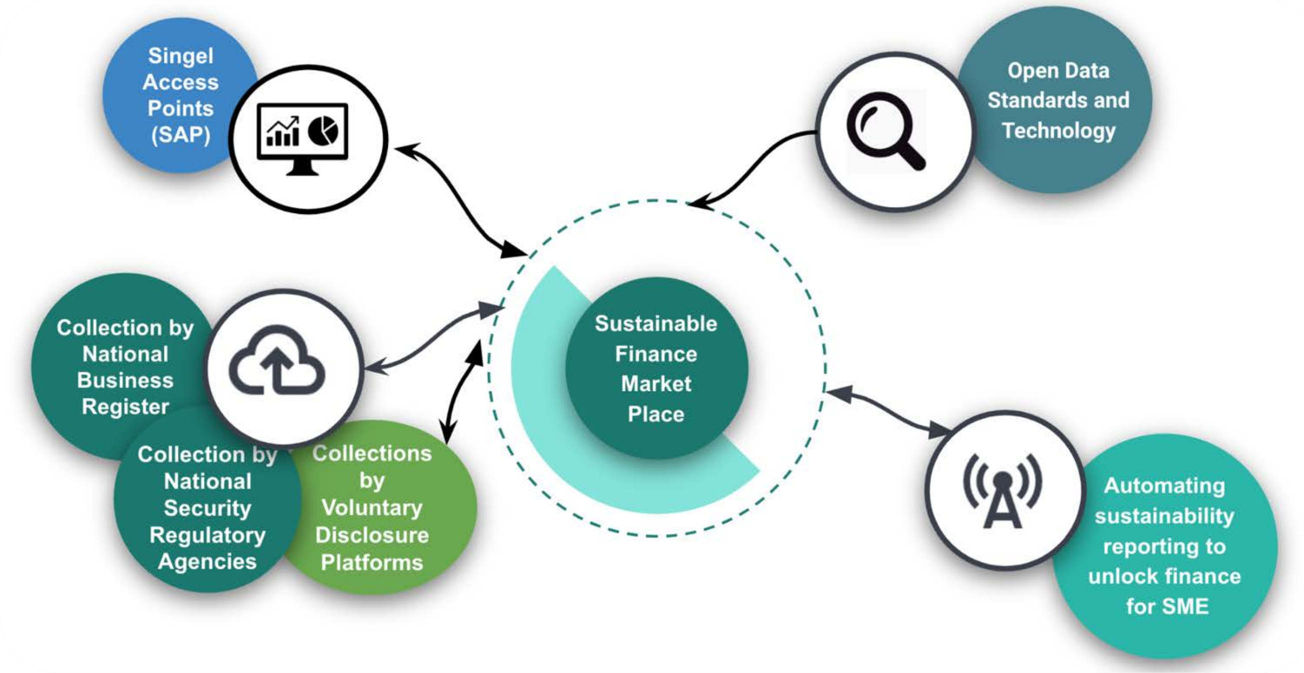
1. **Data-Driven Decision-Making**: The framework underscores the critical role of high-quality, accessible data in enabling informed decision-making, which is essential for financial and sustainability performance. The open data ecosystem is designed around the FAIR Data Principles framework (*i.e.,* ensuring data is Findable, Accessible, Interoperable, and Reusable).
2. **Digital Transformation:** A digital-first approach is essential for accelerating sustainability practices. It leverages open-source data models and open data standards to streamline processes, enhance efficiency, and improve data analysis and reporting capabilities. This transformation will require unprecedented collaboration to establish an Open Digital Data Interoperability Framework.

3. **Supply Chain Transparency**: Recognizing the interconnectedness of global supply chains, the framework emphasizes the need for comprehensive sustainability and carbon accounting across the entire value chain. Interconnectedness promotes accountability and drives sustainable practices throughout the supplier network.
4. **Global Collaborative Governance:** The framework underscores the global nature of sustainability challenges, emphasizing the importance of international cooperation and the inclusion of all countries, particularly emerging economies. It advocates for a collaborative governance design that ensures seamless, efficient, and trusted data exchange within the ecosystem.
5. **Sustainable Finance Marketplace**: The framework enables the exchange of financial products aligned with the Paris Agreement, NDCs, UN Sustainable Development Goals (SDGs), which serve as a comprehensive blueprint for peace, prosperity, and sustainable development across 17 goals and 169 targets. These financial marketplaces channel capital toward projects and companies that actively contribute to sustainable development, ensuring that investments are directed towards initiatives that promote a better future for people and the planet.
6. **Assurance-Ready Data**: Data is integrated with financial and other relevant information, enhancing trust levels in both the market and society.
7. **Technical Interoperability**: The framework bridges differences between sustainability standard setters, accommodating localization and variations embedded in software that is accessible to all—from MSMEs to multinationals. It also fosters an open data model for data exchange between systems, ensuring inclusivity and broad stakeholder benefit from the North Star Framework.
8. **Technological Innovation**: The Framework leverages advanced technologies such as AI, machine learning, and blockchain to automate emissions reporting for SMEs, making sustainability more accessible to a broader range of businesses.

Building Blocks of the Digital Sustainability Reporting Data Ecosystems Framework

To bring the vision of the North Star Vision to life, it is crucial to understand the foundational elements - or building blocks - that will form the backbone of a Smart Digital Reporting Data Ecosystem Framework, a system of significant importance, ensuring that the principles and goals outlined in the frameworks can be effectively implemented. By ensuring they have these building blocks in place, IFCs can drive change required to support a seamless, trustworthy, and inclusive flow of sustainability and financial data across industries and borders. Let us dive into the key building blocks that will shape this ecosystem.

Graph 1 illustrates the interconnected roles and components of the North Star data ecosystem, emphasizing its role in driving transparency, fostering collaboration, and aligning financial practices with sustainable development goals.



In the following section, each interconnected component is analyzed in terms of its role and impact.

I. The Role of Sustainability Finance Market Places

Financial markets play an important role in the global economy by facilitating the efficient allocation of capital, fostering innovation, and driving economic growth. These markets act as a crucial intermediary between savers and borrowers, enabling the flow of funds to investments. They provide a platform for price discovery, risk management, and liquidity, which are essential for the stability and development of economies. Moreover, financial markets are increasingly instrumental in addressing global challenges, such as sustainability and climate change, by directing capital towards green and socially responsible investments. Below, we explore key market trends reinforcing the development and success of sustainability finance marketplaces.

Key frameworks supporting these marketplaces are Green Taxonomies, which are being developed around the world. The EU Green Taxonomy for Sustainable Activities[29] is an example. This taxonomy provides a clear and standardized classification system for identifying environmentally sustainable economic activities, making it a crucial component in scaling up sustainable investments across Europe

[29] ***About the EU taxonomy for sustainable activities:*** https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en

and beyond. By establishing clear criteria, the EU Green Taxonomy helps investors and businesses make informed decisions aligning with global environmental objectives. On the other side of the globe, China has developed its own green taxonomy, which is used to guide the issuance of green bonds. The Green Bond taxonomy catalog specifies which projects qualify as green, helping to standardize the green bond market in China and ensure that funds are directed towards environmentally beneficial projects.

Additionally, initiatives like the Monetary Authority of Singapore's Project Greenprint[30] and the EU Green Deal[31] are instrumental in adopting sustainable finance practices. Project Greenprint, for example, leverages technology to facilitate the flow of trusted ESG (Environmental, Social, and Governance) data, further enabling the growth of sustainability finance in the Asia-Pacific region.

Development banks also play a significant role in this finance marketplace data ecosystem. The European Bank for Reconstruction and Development (EBRD), through its Green Economy Transition (GET)[32] 2021-2025, is leading efforts to increase green financing and achieve substantial greenhouse gas emission reductions. The GET is designed to help economies where the EBRD works build green, low carbon and resilient economies. This and other EBRD initiatives are vital in coordinating and mobilizing resources to finance sustainable projects across its member countries and supporting the collection of the corporate data to assess and monitor its investments. To effectively allocate resources and monitor the impact of its investments, the EBRD requires comprehensive corporate data.

Other regions are also making noteworthy contributions to green finance. South Korea has demonstrated a strong commitment to combating climate change, announcing a $313 billion green financing plan to reduce greenhouse gas emissions by 40% from 2018 levels by 2030. In the Middle East and North Africa (MENA) region, Qatar similarly prioritizes sustainability, pledging to cut emissions by 24% and generate 20% of its energy from solar power by 2030.

These efforts are part of a broader global movement driven by the Paris Agreement, where countries are collaborating to address climate change. The UNFCCC's[33] global stock take, as mandated by the Paris Agreement[34], serves as a

[30] ***About the Singapore's Greenprint Project:*** *https://www.mas.gov.sg/development/fintech/green-fintech*
[31] ***About the European Green Deal:*** *https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en*
[32] ***About the EBRD's Green Economy Transition (GET):*** *https://www.ebrd.com/what-we-do/get.html#:~:text=The%20Green%20Economy%20Transition%20(GET)%202021%2D25%20is%20the,annual%20business%20volume%20by%202025.*
[33] ***About the UNFCCC's global stocktake:*** *https://unfccc.int/topics/global-stocktake*
[34] ***About the Paris Agreement:*** *https://unfccc.int/process-and-meetings/the-paris-agreement?gad_source=1&gclid=Cj0KCQjwzva1BhD3ARIsADQuPnUhLOYOZoyln_J06JZvFIFOu_3MupklamcvrA3q222ZS*

comprehensive assessment of the world's progress toward its climate goals. This process allows countries and stakeholders to identify areas of improvement, close gaps, and foster collaboration on solutions that will safeguard our planet's future.

Companies also have a critical role to play. As the globe's largest companies are required to incorporate supply chain impacts into mandated disclosure they are increasingly focused on sustainability of their suppliers. Companies like Walmart have been early leaders in supply chain sustainability innovation space. Walmart's sustainable supply chain finance program[35] offers better financing rates to suppliers who adopt environmentally friendly practices. This innovative approach incentivizes suppliers to reduce their environmental impact and supports Walmart's broader sustainability goals, creating a ripple effect throughout its supply chain.

In conclusion, sustainable financial marketplaces are the backbone of economic growth, and their effectiveness relies heavily on the availability of trusted data. An integrated, transparent, and data-driven market not only supports the growth of existing companies but also fosters the development of new enterprises, contributing to a robust and sustainable economy. WAIFC members could collaborate to develop best practices in these marketplaces, promote open digital data standards, and enhance the global impact of sustainable finance.

II. The Role of Corporate Disclosure Platforms in Financial Markets

Corporate disclosure platforms are integral to the financial ecosystem, playing a crucial role in facilitating the flow of information, enhancing investor protection, and promoting market integrity. These platforms can be broadly categorized into two types: regulated disclosure platforms, such as the U.S. Securities and Exchange Commission (SEC) and various business registers such as the UK Company House, and voluntary corporate disclosure platforms, such as the Carbon Disclosure Project (CDP) and the Global Reporting Initiative (GRI). The fundamental differences between these platforms lie in their legal requirements, purpose, and the scope of data they collect, yet their combined impact on market integrity is significant, ensuring the stability and trustworthiness of the market.

Regulated disclosure platforms are the bedrock of financial markets, ensuring the integrity of the system by centralizing the collection and distribution of corporate disclosures. This centralization guarantees all market participants, from institutional to retail investors, have equal and timely access to information, thereby preventing potential information gaps that could disrupt the market. Moreover, the transparent disclosure facilitated by these platforms significantly reduces

[35] ***A Case Study of Walmart's Green Supply Chain Management Program:***
https://www.linkedin.com/pulse/strategies-managing-sustainable-digitally-enhanced-supply-shenavar-ylkce/

information asymmetry, empowering investors to make informed decisions based on reliable data. When investors have access to comprehensive, accurate, and timely information, they are better equipped to evaluate risks and opportunities, leading to more confident investment decisions that ultimately support a stable financial system.

Furthermore, by participating in voluntary disclosure initiatives, companies demonstrate their commitment to sustainability and corporate responsibility, which can drive innovation and improvement in ESG practices. These platforms create a feedback loop where companies are recognized and rewarded for their sustainability efforts, motivating others to follow suit and continuously improve their practices. This feedback loop is a continuous process where the actions of one party influence the actions of another, leading to a cycle of improvement. As more companies engage with voluntary disclosure platforms, these platforms can help shape and influence global standards for sustainability reporting. The widespread adoption of frameworks like those provided by CDP and GRI sets benchmarks that can eventually inform and harmonize regulatory approaches, leading to a more cohesive global system of sustainability reporting.

In summary, regulated disclosure platforms are mandatory and legally enforced, primarily focused on financial and material information, with some regulators around the world starting the coverage of sustainability reporting into their legal systems. In contrast, voluntary corporate disclosure platforms are optional, driven by corporate responsibility and stakeholder pressure, and characterized by a broader focus on detailed ESG reporting and sustainability metrics. While regulated disclosure platforms are essential for market stability, voluntary platforms play an important role in driving sustainability and providing a more complete picture of corporate performance. Integrating more voluntary disclosure data into regulatory frameworks could enhance the overall effectiveness of the disclosure ecosystem.

Through its global network, WAIFC can encourage greater participation by its members in both regulated and voluntary disclosure platforms by highlighting the benefits of transparency, investor trust, and corporate accountability. By promoting the value of comprehensive disclosure practices, WAIFC can help drive broader adoption of sustainability reporting across markets.

III. The Role of Single Access Points

The corporate disclosure data landscape is often fragmented, with crucial information scattered across multiple platforms, databases, and reporting systems. This dispersion leads to inefficiencies, data inconsistencies, and increased costs for users seeking to access and analyze corporate data. Single Access Points address these challenges by centralizing corporate disclosures into a unified platform. As one-stop repositories for financial, regulatory, and sustainability-related information, Single Access Points are accessible through a single interface, streamlining data access and significantly enhancing data quality, thereby bolstering confidence in financial markets. Examples of successful regulatory-driven SAPs include European Single Access Point[36] (ESAP) and BIFIDEX.

Single Access Points contribute to the financial ecosystem in several keyways. First, by streamlining data access and efficiency, Single Access Points reduce the need for stakeholders to navigate multiple platforms, saving time and resources. This centralized approach enables quicker, more efficient access to crucial information, enhancing the overall efficiency of financial operations. Moreover, Single Access Points enhance data quality and consistency by standardizing data collection and reporting processes. This standardization plays a crucial role in maintaining market integrity, as it minimizes discrepancies and ensures that data is accurate and reliable, supporting robust analysis and informed decision-making.

Another critical contribution of a Single Access Point is their role in building trust and confidence in financial markets. By making corporate data more accessible and comparable, Single Access Points promote transparency, which fosters trust among market participants and aids regulators in monitoring compliance and enforcing standards. Single Access Points also enable comprehensive analysis and global harmonization by integrating non-financial data and ESG metrics alongside traditional financial data. This comprehensive approach allows for a holistic analysis of corporate performance, making stakeholders better informed about companies' operations and sustainability practices.

WAIFC can play a pivotal role in advancing the adoption of Single Access Points by facilitating dialogue among its members to harmonize data collection and reporting standards across jurisdictions. By championing Single Access Points, WAIFC and its members can promote standardized processes that reduce inconsistencies, ensuring the accuracy and reliability of data needed for robust analysis and informed decision-making. Additionally, WAIFC and its members can advocate for integrating non-financial data and ESG metrics within Single Access Points, enabling a more comprehensive evaluation of corporate performance and further upholding market integrity.

IV. The Role of Automating Emissions Reporting to Unlock Finance for SME

Automating emissions reporting is a game-changer for Small and Medium Enterprises (SMEs), unlocking finance and creating new growth opportunities. By

[36] ***About EU's SAP**: https://www.europarl.europa.eu/legislative-train/theme-an-economy-that-works-for-people/file-european-single-access-point*

addressing the complexity and resource intensity of measuring and managing GHG emissions, this process streamlines sustainability efforts, reduces time and costs, and allows SMEs to focus on their core business activities. It simplifies compliance with environmental regulations and positions SMEs to better compete in a market increasingly driven by sustainability.

Efforts to develop low-cost and automated GHG emissions collection for SMEs are taking place at the local, regional and national levels to ensure global competitiveness and there is great value in ensuring consistency across jurisdictions. By leveraging a standardized framework for data collection, regions can ensure consistency and accuracy in emissions reporting across different industries and sectors. The framework's flexibility allows it to be tailored to various types of environmental data, making it a powerful tool for governments and financial institutions worldwide to support the global transition to a sustainable economy.

The proposed North Star Vision is designed to empower SMEs, allowing them to self-select into the program and demonstrate their commitment to sustainability. By providing their utility or environmental agency data directly to a secure portal, SMEs can seamlessly integrate environmental data into the financial assessment process. This not only makes them able to respond to increasing demands from their customers and more able to take advantage of green finance opportunities but also enables banks to assess the environmental risks and opportunities associated with lending to SMEs, thereby supporting the broader goal of achieving net zero emissions.

The success of such a framework is exemplified by the UK's Perseus initiative, which aims to automate sustainability reporting for every small business in the country to accelerate emissions reduction. In its first phase, Perseus will focus on automating access to SME electricity data, allowing these businesses to see their emissions from energy use and share it with their banks to unlock green finance. This initiative aligns with the UK Green Finance Strategy, highlighting the importance of automating SME sustainability reporting nationally. By building on existing platforms like Open Banking and Open Energy, this program not only aids SME engagement in the transition to net zero but also helps banks manage their own net-zero strategies, including managing risks and unlocking opportunities for access to capital. This approach serves as a model for other regions seeking to integrate sustainability into their financial systems, ultimately supporting a global shift towards a more sustainable and resilient economy.

Realizing the North Star Vision is not a task for a single entity but a concerted effort that requires collaboration from all stakeholders. There must be collaboration to work together to develop a consensus for an Open Digital Data Interoperability Framework tailored to corporate reporting needs. Governments in countries such as Australia and the Netherlands have established the Standard Business Reporting (SBR)[37] Regime to reduce the reporting burden on companies. SBR is a standard for the digital exchange of business reports that allows businesses to capture information once and use it for multiple reports to government agencies and banks. An SBR program can save businesses time and money by reducing the need to re-enter information for multiple reporting obligations. SBR can also help standardize terminology across government agencies, easing the burden on businesses.

Interoperability is not just a technical requirement, but a key aspect of the comprehensive set of open data standards and guidelines that govern how companies interact and exchange data. It ensures that different systems can communicate and share information in real-time, fostering greater efficiency, accuracy, and consistency in corporate reporting across global platforms. The benefits of interoperability are numerous, including breaking down data silos, connecting disparate systems, and achieving a unified view of data. Data sharing and collaboration facilitate informed decision-making, enhance operational efficiency, and drive sustainable investments, making it a goal worth pursuing.

The North Star Vision significantly emphasizes the FAIR Data Principles: Findability, Accessibility, Interoperability, and Reusability of Data. These principles are the guiding light in the development of our framework, ensuring that data is not only available and accessible but also usable across different contexts and systems, providing stakeholders with a robust and reliable framework.

For interoperability to be fully realized, four key layers must be addressed: legal, organizational, semantic, and technical. Legal interoperability involves establishing the necessary legal, policy, and regulatory frameworks to define the scope of data exchange while ensuring compliance with privacy and data protection requirements.

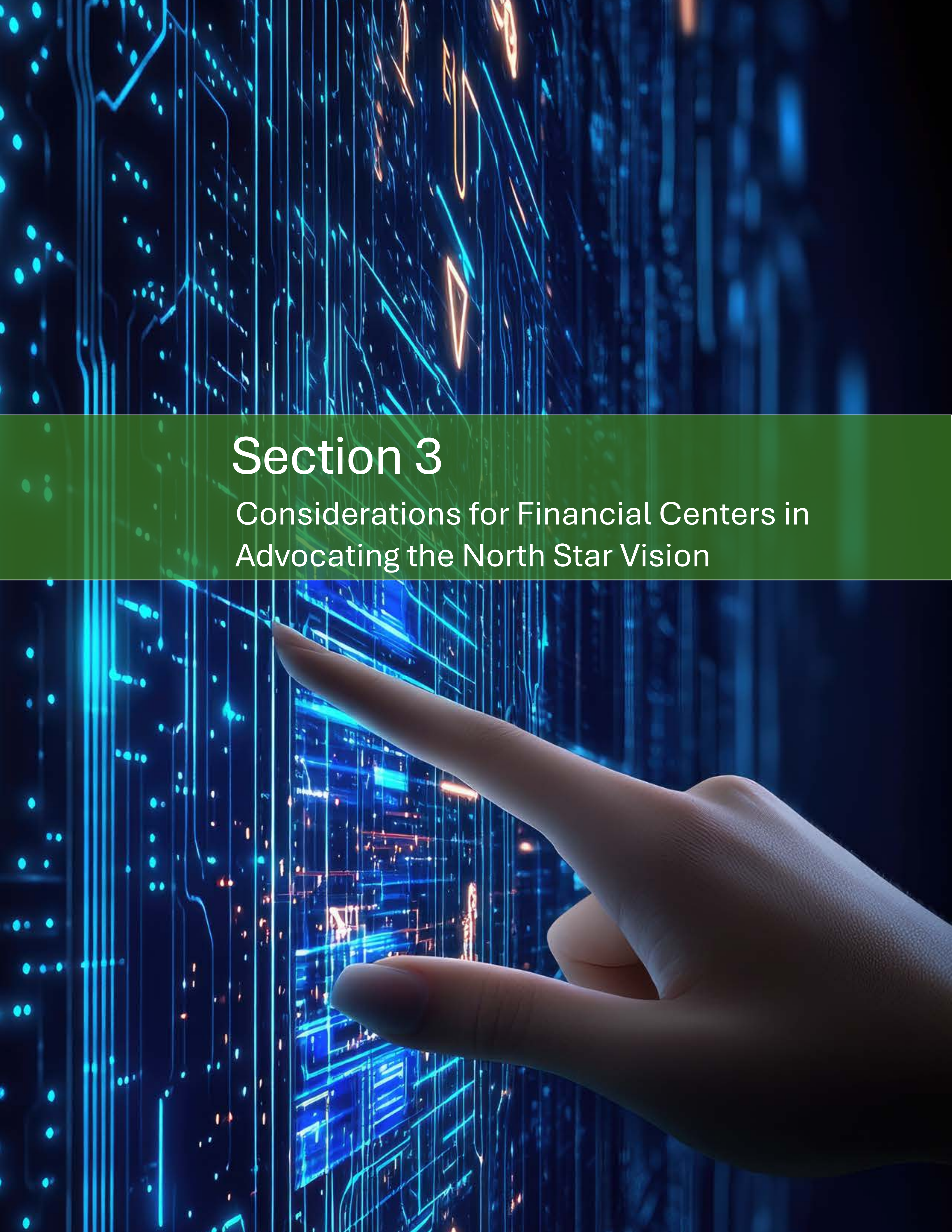
Integrated public service governance across these four layers is essential to ensuring the interoperability framework's usability, security, privacy, and performance. This governance defines organizational structures, roles, and responsibilities, sets interoperability requirements, manages changes, and ensures business continuity through disaster recovery plans.

[37] ***About SBR:*** *https://docs.google.com/document/d/1rgPpt1AjB5_DYBhT6GOjuuZdDEr0XwNx/edit*

However, the challenge of open-source information technology is not merely technological. Achieving true interoperability is a journey that requires the concerted effort of stakeholders across sectors and borders. Their alignment on standards, sharing of resources, and collective work towards a unified goal are vital for building a sustainable, efficient, and transparent global reporting ecosystem. WAIFC can advance this agenda by facilitating dialogue among its member financial centers to assess the willingness of its members to promote an Open Digital Data Interoperability Framework

Section 3

Considerations for Financial Centers in Advocating the North Star Vision



Section 3

Considerations for Financial Centers in Advocating the North Star Vision

We understand the data problem. The North Star gives us a framework to address it. This white paper now moves on to ideas about how WAIFC members can move ahead in their jurisdictions with the work required.

As WAIFC and its members consider advocating the North Star vision, several key questions must be addressed. How can financial centers further enhance their role in promoting sustainable finance? What steps are necessary to ensure the interoperability and integrity of data within this smart data ecosystem? And how can WAIFC members collaborate more effectively to build a unified, global approach to sustainability reporting and finance? Addressing these questions will be essential for advancing the North Star vision and realizing its potential to transform global finance in support of sustainable development.

Question 1.

How can financial centers lead the way in empowering sustainable finance through smart, open, and trusted data ecosystems that ensure the integrity and trustworthiness of sustainability data?

The problem is “too complex” for the industry to solve independently and demands coordinated, consensus-based efforts among WAIFC, its members and their ecosystems. To address this, WAIFC and its members could establish a dedicated "Sustainability Data Work Stream" composed of its members and global experts. This work stream would develop a blueprint and governance model to encourage member states to make their data accessible, reliable, digitally interoperable, and discoverable through a single access point. The focus would be on preparing members to standardize digital data formats and adopt open technical protocols, facilitating seamless data exchange and ensuring the consistency and trustworthiness of sustainability data across jurisdictions.

By proactively establishing a dedicated Sustainability Data Work Stream, WAIFC and its members can position themselves as global leaders in supporting trusted data for sustainable finance. This initiative, which would become a collaborative effort among members and invited global data experts, will enhance the integrity and trustworthiness of sustainability data, accelerating the transition to a low-carbon economy. By addressing the critical challenge of data interoperability and standardization, WAIFC and its members can empower financial institutions to make informed decisions, mitigate risks, and seize opportunities in the sustainable finance landscape, making everyone involved feel included and part of a larger mission.

Question 2.

How can financial centers influence and advocate for digital sustainability standards?

WAIFC and its members can play a pivotal role in influencing and advocating for the development and adoption of globally recognized digital sustainability standards through several strategic initiatives. The following are some of the ways to make a further impact:

- Develop a "Position Paper" that outlines the importance of developing and adopting globally recognized digital sustainability standards. This paper, which will include a detailed analysis of the current digital sustainability landscape, WAIFC and its members stance, goals, and recommended actions for achieving standardized digital sustainability reporting, would serve as a foundational document.
- Actively participate in public consultations on sustainability standards. By providing expert insights and feedback, WAIFC and its members can help shape the standards' development and facilitate market adoption.
- Formalize Memoranda of Understanding (MOUs) with leading standard-setting bodies. These MOUs, which outline the terms of cooperation, including joint research, development of standards, and coordinated advocacy efforts, could significantly enhance WAIFC and its members' influence and reach in the sustainability standard-setting arena.
- Launch advocacy campaigns to raise awareness about the importance of standardized digital sustainability reporting. These campaigns can target financial institutions, policymakers, and the broader public to gather support for the adoption of digital sustainability standards.
- Partner directly with the ISSB, EFRAG, GRI, and XBRL on their capacity-building programs.

Question 3.

Are there other initiatives which financial centers should partner on to accelerate the market adoption of digital sustainability reporting?

A strategic approach to implementation should include initiatives to improve the utility and relevance of structured data for all investors. By forging strategic partnerships, WAIFC and its members can significantly enhance its role in accelerating the market adoption of digital sustainability reporting and promoting informed decision-making and sustainable investments, paving the way for a more sustainable future. Here are some potential key partnerships WAIFC and its members should consider, each offering unique benefits for both and the partner organization:

- **CDP:** CDP plays a crucial role in promoting the voluntary disclosure of environmental data, encouraging transparency and improvements in environmental performance. Partnering with CDP would align WAIFC with a globally recognized platform that influences many organizations worldwide, enhancing the visibility and comparability of sustainability data. WAIFC members can gain from participating in CDP programs.
- **Net-Zero Data Public Utility (NZDPU):** The NZDPU is designed to be integrated with the UN Framework Convention on Climate Change's Global Climate Action Portal. It aims to provide a comprehensive and transparent repository of net-zero commitments and progress. Partnering with NZDPU would enable WAIFC to support global climate action initiatives, ensuring that data related to net-zero commitments is accessible, reliable, and consistent.
- **European Securities and Markets Authority (ESMA):** ESMA's Single Access Point initiative aims to provide a unified portal for accessing financial and sustainability data across Europe. Partnering with ESMA would not only enable WAIFC and its members to align with European regulatory standards but also offer a streamlined, accessible platform for global investors to obtain reliable ESG data, instilling confidence in the credibility of the data.
- **BIFIDEX (Business and Financial Data Exchange):** BIFIDEX is a service delivery platform that combines financial and statutory information from registry sources. By learning from the lessons learned in developing a regional approach to a single access point for corporate data in the Western Balkans through BIFIDEX, WAIFC and its members could integrate a comprehensive, innovative data accessibility framework, significantly enhancing the overall utility of the data for investors and stakeholders.

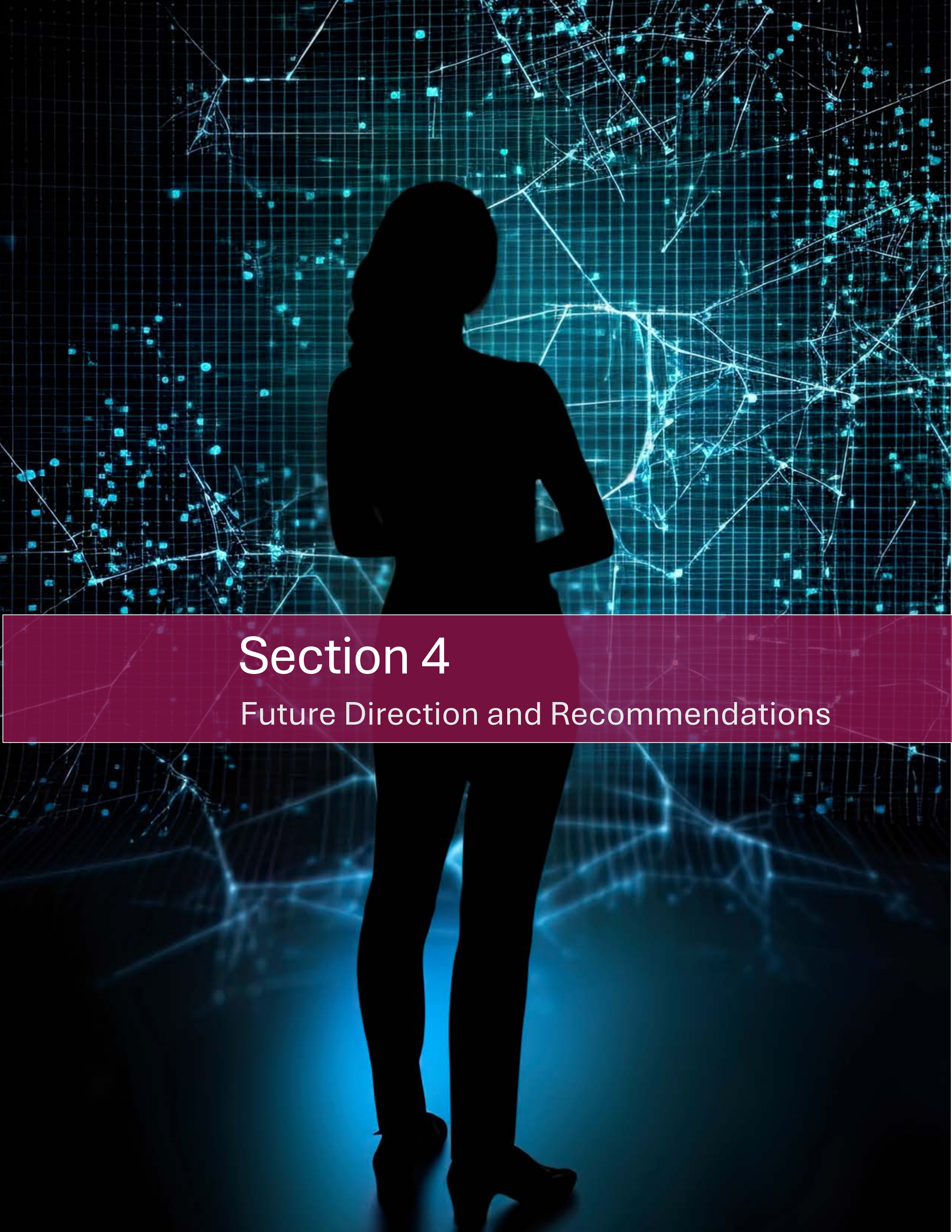
Question 4:

What policy and regulatory changes are needed to support the adoption of sustainable finance practices within financial centers?

Policy and regulatory changes needed to support the adoption of sustainable finance practices in financial centers include mandating standardized sustainability reporting, providing incentives for green investments, harmonizing regulations across jurisdictions, and supporting the development of digital reporting infrastructures. WAIFC and its members can advocate for these changes by engaging with policymakers and aligning with international sustainability standards. Elements of a policy agenda could include:

- Development of common principles and materials for WAIFC's members to communicate effectively with regulators, investors, and businesses for the development and promotion of best practices for consistent digital reporting. WAIFC should advocate for policies that support the digitization of sustainability reporting and harmonize regulations across different jurisdictions to ensure consistent adoption and uptake in different regions.

- Mapping the policy landscape and identifying opportunities and best practices for adoption in other places. In Europe, for example, the European Securities and Markets Authority (**ESMA**) requires that sustainability and financial reporting is filed in The European Single Electronic Format (ESEF) that mandates that XBRL is the electronic reporting format in which issuers whose securities are admitted to trading on EU regulated markets must prepare their annual financial reports to facilitate accessibility, analysis and comparability of annual financial reports. Abu Dhabi Securities Exchange (ADX) has enhanced its electronic financial disclosure system using XBRL to improve transparency, efficiency, and data accessibility for listed companies, investors, and securities dealers. Aligned with international best practices, the upgraded system enables faster and more accurate financial data analysis through taxonomy updates compliant with IFRS.



Section 4

Future Direction and Recommendations

Section 4

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With rising demands for action, the critical question arises: how can WAIFC members create an operating environment to help the private sector comply with these statutory digital requirements while also meeting investor expectations in the face of increasing data processing costs for reporting and disclosures?

Today's powerful technologies resolve costly fragmentation in sustainability reporting and bring the right information forward for meaningful change. IFCs are uniquely positioned to operationalize this transformation, support their members and constituents, and realize efficiencies throughout the information ecosystem by instituting practical and impactful solutions, as the following recommendations provide.

WAIFC and its members' influence and position in the financial industry provide an opportunity for it to help members collaborate and exchange ideas on this subject, mobilize resources towards actively investing in, promote and incentivize the deployment of digital tools and help promote adoption of global reporting frameworks.

1. **Promoting Awareness:** WAIFC and its members are well-positioned to raise awareness and coordinate action among its members and financial institutions about the importance of reliable, accurate, scalable digital solutions for better quality sustainability information.
2. **Advocate for Standards Adoption:** WAIFC, with the backing of its members, should advocate directly for the adoption and mandatory use of open digital sustainability standards by governments and regulatory bodies to formalize the role of digital solutions in enhancing transparency, accountability, and comparability.
3. **Collaborate with Sustainability Standards Boards for a "Seat at the Table":** WAIFC and its members should partner directly with the ISSB, EFRAG, and GRI on their capacity-building programs. Together, they can contribute to the continuous improvement of sustainability reporting standards, and their expertise and insights - and with deep local presence in many jurisdictions - could be of great influence in this process. By working together, WAIFC and its members can enhance communication and coordination and enable an efficient exchange of knowledge and resources that benefits all parties involved.
4. **Coordinate to Deliver a Policy Playbook for Domestic Best Practices:** WAIFC and its members should develop common principles and materials for IFCs to collaborate effectively with regulators, investors, and businesses for the development and promotion of best practices for consistent reporting. WAIFC and

its members should advocate for policies that support the digitization of sustainability reporting and harmonize regulations across different jurisdictions to ensure consistent adoption and uptake in different regions.

5. **Support Innovation via Research and Development:** WAIFC and its members will benefit from advocating for research initiatives focused on creating integrated digital platforms for sustainability reporting and analysis that enable seamless data aggregation. This will ensure comprehensive and accurate ESG assessments. WAIFC and its members should help drive innovation in the financial industry to ensure members stay at the forefront of sustainable and scalable practices.
6. **Invest in Integrated Digital Platforms:** WAIFC and its members can be active catalysts in supporting the building of innovative and adaptive existing digital tools in sustainability reporting technologies. This will help financial centers and institutions leverage data transparency and auditability. WAIFC should actively participate in the global dialogue to facilitate the development of needed solutions for integrated platforms. They should invite relevant organizations, including those with the skills and capabilities to build such tools, into the discourse.
7. **Facilitate Implementation:** WAIFC and its members should facilitate workshops, training sessions, and collaborative initiatives with standards boards, security regulators, and business registers to help financial centers and institutions implement standards effectively. Digital tools can be integrated into these initiatives to provide practical guidance on adopting and utilizing sustainable reporting technologies.
8. **Invest in Capacity Building and Training:** Launch initiatives to build capacity and provide training on digital sustainability reporting tools, particularly in emerging markets, by partnering with educational institutions and technology providers to offer programs that enhance the skills and knowledge of financial sector professionals. In doing so, ensure that no region is left behind.
9. **Invest in Capacity Building and Training of Board Directors and Business Leaders:** Enhancing the skills and knowledge of professionals in the financial sector is only half of the equation to integrating sustainability data with financial information. For directors to make informed decisions, they need to be able to understand the data and the impact their decisions will have on the business and society at large. Many companies have collected data, done scenario planning, and even reported data in sustainability reports and on websites, only to see management and the boards of directors not considering the scenarios and data in their business decision-making. It is not until board directors and management understand the meaning behind the data that the data will fully be valued by the directors. Management and board directors' sustainability, climate, and nature related competencies also influence the market. A director or executive who does not fully understand the data and the information the data reveals will not be able

to communicate effectively with financial market actors and convince them about the best short and long-term financial decisions. Only by ensuring that directors are educated to understand the data will sustainable governance be upheld, and finance will flow to the companies that truly will help transform economies, countries, and lives.

10. **Endorse Open Data Exchange Standard**s: Advocate for adopting open data exchange standards to enhance interoperability and data sharing amongst financial centers. WAFIC and its members should lead the efforts to establish common protocols that enable seamless integration and exchange of ESG data across different platforms and jurisdictions. This will promote transparency and reduce the number of data silos.
11. **Foster Public-Private Partnerships:** WAIFC and its members should facilitate the creation of public-private partnerships to drive the development and implementation of digital ESG reporting tools. By bringing together governments, financial institutions, technology providers, and academic institutions, WAIFC and its members can create a collaborative environment that encourages innovation, knowledge sharing, and resource pooling. These partnerships can focus on developing integrated platforms that enhance data accuracy, transparency, and accessibility, ensuring that all stakeholders benefit from improved ESG reporting practices.
12. **Establish a Smart Data Taskforce:** WAIFC and its members should consider forming a Smart Data Taskforce comprising members and invited data experts. This task force would be tasked with developing a blueprint for financial centers to actively engage in and shape the development of a smart data ecosystem that supports sustainable finance. By leveraging collective expertise, the task force can guide the integration of cutting-edge technologies, data standards, and best practices, ensuring that financial centers are well-positioned to influence and lead in the evolving landscape of sustainable finance.

In conclusion, WAIFC and its members stand at the forefront of a critical movement to revolutionize sustainability reporting by adopting and promoting digital solutions. By fostering public-private partnerships, advocating for open data exchange standards, and investing in capacity building and innovation, WAIFC and its members can significantly influence the global transition to more transparent, accurate, and accessible sustainability and financial data.

Through strategic collaboration with sustainability standards boards, regulators and policymakers and developing a Smart Data Taskforce, WAIFC and its members can uniquely position themselves to embrace a digital-first approach to sustainability and financial reporting. This comprehensive strategy is designed to be inclusive, aligning with the global push forwards a more sustainable future. By taking these actions, WAIFC and its members can influence the establishment of a robust open digital infrastructure that supports the ongoing evolution of sustainability reporting. This, in turn, will contribute to a more sustainable and equitable global economy, offering a promising future for all.

About the World Alliance of International Financial Centers

About the World Alliance of International Financial Centers

The World Alliance of International Financial Centers (WAIFC) is a non-profit organization based in Belgium, dedicated to fostering cooperation among leading international financial centers across the globe. With members comprising government agencies, associations, and institutions focused on the development and promotion of their respective financial centers, WAIFC's mission encompasses several critical areas of focus and activities:

Roles and Activities:

1. **Facilitating Cooperation**: WAIFC serves as a platform for its members to cooperate on various projects and initiatives, fostering a collaborative environment where financial centers can share insights, challenges, and strategies.
2. **Exchanging of Best Practices**: The organization promotes the sharing of best practices among its members, enabling them to enhance their services, regulatory frameworks, and overall efficiency.
3. **Communicating with the Public**: WAIFC engages in communication efforts to inform the general public about the roles and importance of financial centers in global economic growth and sustainability.
4. **Initiating Value-Driven Projects:** WAIFC is project-driven, focusing on areas such as financial technology (FinTech), green investment, infrastructure, support for SMEs, and the role of financial centers in financing the economy. These projects aim to address current challenges and opportunities within the global financial landscape.
5. **Bridging to the Real Economy and Broader Society:** The organization recognizes the interconnectedness of the financial world, the real economy, and the society at large. For instance, advocating for partnerships between financial institutions and art and cultural organizations to support emerging artists and foster a vibrant cultural ecosystem within financial centers.

6. **Innovating FinTech**: WAIFC actively supports the development of FinTech ecosystems, facilitating discussions with regulators, establishing attractive spaces for innovation, and fostering international cooperation among FinTech companies.

7. **Promoting Green Transformation and Sustainable Finance**: Addressing environmental challenges, WAIFC promotes the green transformation of supply chains and the development of sustainable finance practices, emphasizing the role of financial centers in supporting these initiatives.

8. **Supporting Women in Finance**: The organization is committed to promoting gender diversity and equity within the finance industry, launching initiatives to address issues such as pay gaps and representation in senior management.

9. **Recognizing Young Academics**: WAIFC encourages research on the financial sector's contribution to sustainable socio-economic development through the Young Academic Award, which rewards young scholars for their innovative work in relevant areas.

Purpose and Mission

WAIFC's overarching mission is to create a global network of financial centers that propagate best financial practices, facilitate access to financial services, and respect cultural and operational diversity. By fostering cooperation and facilitating the exchange of best practices, WAIFC aims to enhance the efficiency and effectiveness of financial centers worldwide, contributing to economic growth and sustainability.

In summary, WAIFC plays a pivotal role in shaping the future of global finance by promoting collaboration, innovation, and sustainable practices within the international financial community.

Appendices

Appendix A: Roundtable Discussion Summary

As noted in the opening Background section (p.7), the WAIFC-convened round table discussions [during 2023 and the year of COP28]. These discussions focused on the evolving landscape of sustainability reporting. These sessions explored a range of critical topics, including mandatory carbon disclosures, voluntary disclosure platforms, advancements in SME reporting, the influence of the IFRS Foundation and the International ISSB, and the transformative potential of XBRL for digital reporting.

This series was designed to provide WAIFC members with insights and briefings on best practices, empowering them to effectively navigate this increasingly important aspect the need to accelerate the adoption with new innovative ideas and solution. Highlighting the key takeaways and potential implications for WAIFC members, the following sections delve deeper into each of these discussions.

1. California's New Mandatory Corporate Disclosure Laws

This round-table session, led by Catherine Atkin, a key architect of California's transformative climate legislation, aimed to provide insights into the global trends in a new and emerging environment for GHG emissions and broader climate risk regulatory mandates. In 2023, California enacted two landmark laws: Senate Bill 253, the California Climate Data Accountability Act (CCDAA) and Senate Bill 261, the Climate Risk Financial Reporting Act (CRFRA). When implemented in 2026, these laws, championed by Governor Gavin Newsom, will not only significantly enhance corporate climate accountability and financial transparency within California but also will have a profound impact beyond the state's borders. These new disclosure laws are influencing businesses and supply chains across the globe, making WAIFC members part of a significant global

The CCDAA requires US public and private companies with more than $1 billion in annual revenues that do business in the state of California to file annual reports publicly disclosing their direct (Scope 1), indirect (Scope 2), and supply chain (Scope 3) greenhouse gas (GHG) emissions in conformity with the GHG Protocol, the globally recognized GHG emissions accounting and reporting standard. The CRFRA applies to these same companies but imposes a lower revenue threshold of $500 million and requires the posting of a climate risk disclosure report aligned with the TCFD on the company website on a biannual basis. Non-compliance with these laws can lead to severe penalties and reputational damage, making it imperative for companies to meet the requirements of both laws. Under the CCDAA, the California Air Resources Board ("CARB") must promulgate implementing regulations by January 1, 2025, and reporting for Scope 1 and Scope 2 emissions may begin as early as January 1, 2026, with Scope 3 emissions reporting starting as early as one year later on January 1, 2027. Reporting entities will be required to account for acquisitions, divestments, mergers, and other corporate structural changes. Under the CCDAA a reporting entity's Scope 1 and 2 emissions must be reviewed by an independent assurance provider at a limited assurance level beginning in 2026 and examined at a reasonable assurance level beginning in 2030. Scope 3 emissions must be reviewed at a limited assurance level beginning in 2030 with CARB having the discretion to impose an assurance requirement before then.

These two pieces of legislation are part of a growing global trend towards mandatory climate reporting. This movement aligns with other significant developments, such as the recently finalized Securities and Exchange Commission's (SEC) climate disclosure rule in the United States and the European Union's Corporate Sustainability Reporting Directive (CSRD) that will collectively impact more than 50,000 companies across the globe. Together, these initiatives represent a coordinated international effort to require the integration of climate considerations into corporate governance and financial reporting.

The inclusion of mandatory full Scope 3 emissions by the largest US companies - with an estimated combined revenues of over 30 trillion dollars - will have a profound global impact and impact on value chains across the globe. By aligning state-level action with international standards, including the EU's CSRD and the ISSB, California is reinforcing its leadership in environmental regulation, and advocating for greater transparency and accountability in how companies assess and disclose climate-related risks and impacts.

Under the CCDAA, the California Air Resources Board (CARB) has been entrusted with a crucial task. As part of promulgating regulations, the CARB must identify a third-party emission reporting entity that will establish and manage a new digital registry, a public platform designed to enhance transparency and accountability. This platform must allow the public, including investors, consumers and policymakers to easily access reported data for review and analysis of corporate disclosure. CARB's experience in administering cutting edge environmental and climate programs - including the state's Cap and Trade and Low Carbon Fuel Standards programs - bode well for the successful implementation of the CCDAA.

The CCDAA requires that emissions reporting minimizes the duplication of efforts by reporting companies, and there is strong interest and momentum for taking a digital-first approach in the state that is home to Silicon Valley by requiring that data disclosure be tagged in XBRL. The discussion underscored the significance of standardizing climate data reporting and thinking digital first, as sustainability and carbon accounting are going digital. ISSB, ESRS, SEC and GRI have developed digital XBRL reporting taxonomies (the digital clone for the standards), allowing companies mandated to disclose data in the Xtensible Business Reporting Language (XBRL), and ensuring that emissions and financial data are unequivocally machine-readable and discoverable. iXBRL (Inline eXtensible Business Reporting Language) is an extension of XBRL. It allows for the embedding of XBRL tags directly into HTML documents. This makes it possible to create reports that combine both human-readable text and machine-readable data.

Such precision supports accurate, cost-effective reporting and analysis and, upon implementation, would empower companies in WAIFC member jurisdictions in their reporting processes. Standardization would also reduce companies' reporting burdens and the potential for errors, particularly if companies are required to report similar data types to multiple regulatory bodies or release voluntary disclosures.

2. CDP - Voluntary Disclosure Platform and Reporting

In her role as the Chief Impact Officer at CDP, Nicolette Bartlett led the discussion on the significant role of CDP in sustainability reporting and its global importance. CDP, formerly known as the Carbon Disclosure Project, operates as a non-profit organization that provides a global disclosure platform for companies, cities, and regions to report their environmental impact voluntarily.

CDP, a voluntary environmental disclosure platform, pioneered investor pressure to influence corporate reporting on environmental impact starting around the year 2000. The CDP platform, through its CDP Questionnaire, has served entities aiming to manage and mitigate their environmental risks and opportunities related to climate change, water security, deforestation, and plastics These efforts are contributing to a global movement toward sustainability.

CDP has played a pivotal role in shaping global environmental strategies, by engaging directly with over 23,000 companies, encompassing two-thirds of global market capitalization as well as with more than 1,100 cities, states, and regions. These entities actively disclose environmental information through CDP. This extensive participation underscores the platform's global influence and positions the audience as part of a respected and influential network contributing to a sustainable future.

The session delved into the specific benefits that WAIFC members can gain from participating in CDP programs. Members can enhance their transparency and risk management by engaging with CDP, preparing for regulatory compliance, and contributing to a sustainable global economy.

Nicolette Bartlett highlighted how CDP's initiatives, such as the CDP Supply Chain Program and the Net Zero Asset Managers Initiative, provide practical tools for entities to improve their environmental performance and align with broader sustainability goals. These initiatives offer a clear path towards a more sustainable future, empowering entities to make a tangible difference.

CDP's close collaboration with sustainability standards boards ensures that their disclosure platform and the CDP Questionnaire are aligned with rigorous global standards. This alignment not only supports companies on their journey toward statutory reporting regimes but also, reassuring WAIFC members about credibility and reliance, provides them with a valuable resource.

3. The Perseus Project - Revolutionizing SME Sustainability Reporting

The Perseus Project, led by Icebreaker One, marks a significant advancement in simplifying carbon reporting for Small and Medium Enterprises (SMEs). These enterprises often struggle. The project significantly enhances the streamlining of carbon reporting for these SMEs. SMEs play a pivotal role in any economy, and with over 5.5 million in the UK, they substantially contribute to the country's emissions.

Yet due to limited resources and expertise, these businesses often struggle with collecting, preparing, and disclosing carbon emissions data. Facilitating the easy sharing of accurate and verifiable data that underlies emissions calculations, Perseus is designed to automate sustainability reporting.

In its initial phase, Perseus will focus on automating access to SME electricity data in the UK. This will allow SMEs to monitor the emissions from their energy usage and share this information with their banks to access green finance opportunities.

During the discussion, it was noted that these SMEs account for nearly half of the business-related greenhouse gas emissions in the UK. This significant impact underscores the urgent need for precise and actionable carbon reporting to drive effective environmental action and influence policy changes.

The initial phase of Perseus, set to begin in 2024, will focus on automating access to SMEs' electricity data. This automation will empower SMEs to monitor their energy use emissions and select to share this information with their banks, thereby unlocking opportunities for green financing and demonstrating their crucial role in the Perseus Project.

The round-table discussion highlighted the importance of collaboration in driving change. The UK government, trade bodies, and not-for-profit entities actively promote national engagement, with participation from the international community, to amplify the global impact. A vital aspect of this initiative is the improvement in data capture, automated analysis for decarbonization, and detailed insights that help reduce risks and facilitate access to finance.

The roundtable concluded with a strong consensus that initiatives like Perseus could support coordinated efforts in their jurisdictions by the World Alliance of International Financial Centers (WAIFC). The participants committed to advancing the agenda of improved sustainability reporting, both within the UK and on an international scale. This commitment underscores the transformative potential of the Perseus Project in leading change toward a more sustainable future.

4. The IFRS Foundation and the International Sustainability Standards Board (ISSB)

The session, led by the IFRS Foundation, through its newly established International Sustainability Standards Board (ISSB), addressed the potential, significant impact that future sustainability reporting standards will have on WAIFC member's firms. ISSB offers substantial value to the WAIFC for several reasons:

Enhanced Global Transparency and Accountability: The ISSB has released two IFRS Sustainability Disclosure Standards (IFRS S1 & S2), which provide a global baseline for disclosing sustainability-related risks and opportunities. This includes climate-related disclosures aligned with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Such standardized disclosures enhance transparency and accountability, fostering trust and confidence in global financial markets. For members of the WAIFC, this means more reliable data to guide investment decisions and policy making.

Facilitation of Better Investment Decisions: By standardizing the reporting of sustainability-related information, the ISSB enables investors to better understand and evaluate companies' environmental, social, and governance (ESG) performance. This clarity supports WAIFC members in making more informed investment choices, crucial for directing capital towards sustainable initiatives and achieving broader economic goals.

Improved Risk Management: The adoption of ISSB standards helps companies within the jurisdictions of WAIFC members to identify and manage sustainability risks more effectively than they are currently doing. This is crucial in a business environment in which unforeseen ESG risks can affect financial performance and stability. Through better risk management, businesses can safeguard their long-term interests and contribute to a more stable economic environment.

Standardization and Consistency Across Jurisdictions: The ISSB's efforts to establish a global baseline for sustainability reporting mean that financial centers can benefit from enhanced market efficiency and comparability. This standardization helps eliminate inconsistencies and fragmentation in sustainability reporting, which have historically created barriers to truly global financial analyses and hindered the assessment of cross-border investment opportunities.

Support for Future Developments and Digital Reporting: The ISSB's ongoing focus on expanding standards to cover additional ESG factors, such as biodiversity, ecosystems, and human capital, promises to keep financial centers at the forefront of sustainability issues. Additionally, promoting digital disclosures through XBRL adoption improves the accessibility and analysis of data and thereby aligns with the digital transformation goals of many financial centers. This forward-looking approach ensures that WAIFC members remain competitive and adaptable to new challenges and opportunities in sustainability reporting.

By engaging with the IFRS Foundation and supporting the adoption of ISSB standards, the WAIFS can facilitate a more integrated, transparent, and sustainable global financial system. This alignment with global standards not only enhances the operational efficiency of financial centers but also boosts their strategic relevance in global finance.

5. XBRL - The Digital Transformation of Sustainability Reporting Standards

XBRL International, a global non-profit promoting business transparency, is driving the shift towards digital sustainability disclosures. It works closely with sustainability standards boards, such as **the Global Reporting Initiative (GRI)** and the **International Sustainability Standards Board** (**ISSB**), to establish a common digital reporting standard (XBRL) for these disclosures. This collaboration seeks global consistency and facilitates analysis, as these boards are key stakeholders in the sustainability reporting landscape.

During the session, John Turner, CEO of XBRL International, underscored the necessity for comparable sustainability frameworks and digital reporting methods. XBRL addresses this by offering a tagging system for financial and sustainability data. Enhancing their confidence in the reporting process, companies utilizing XBRL can rest assured that their data is accessible and can be precisely analyzed by both humans and machines.

Mr. Turner emphasized that sustainability conceptual frameworks, rules, and standards must be comparable to ensure that technical approaches to digital disclosures are as consistent as possible. He provided an overview of XBRL, which is a standard that defines how to add computer-readable to human-readable business data. By publishing reports with XBRL tags, which is a standard that defines how to add computer-readable tags to human-readable business data. By publishing reports with XBRL tags, companies can ensure that their data is accessible and accurately analyzed by both machines and humans. Sustainability reporting in this digital format, offering greater flexibility and interoperability, supports both human readability and machine processability. Reports using the XBRL standard facilitate richer sustainability data that is easily readable by humans and can be consumed and analyzed by machines.

Over the past three years, XBRL International has been coordinating with standards boards to develop proposed digital reporting best practices, and the next phase is to establish digital alignment between diverse XBRL sustainability digital reporting taxonomies. This initiative, supported by philanthropy, has been made possible through the generous contributions of the Tipping Point Fund on Impact Investment, the Porticus Foundation, Climate Works and the Impact Management Project, with additional support and assistance from the Capitals Coalition. This collaborative effort underscores the value placed on the contributions of their partners.

XBRL International's commitment to establish a global standard for digital sustainability disclosures is pivotal for financial centers worldwide. By advocating for the adoption of the Inline eXtensible Business Reporting Language (iXBRL), XBRL International facilitates a unified approach to reporting that enhances transparency, consistency, and comparability across international markets. This is crucial for stakeholders within the WAIFC who rely on accurate and accessible business data to drive investment decisions and regulatory compliance.

Appendix B: A Use Case for a Global and Regional Standardize Business Reporting

The world is at a crucial moment in addressing climate change and sustainable development, with data and transparency at the heart of an intelligent, effective global response. Two remarkable use cases — arising from different parts of the world and addressing distinct challenges — illustrate the transformative power of digital integration and open data access in driving sustainability and economic growth and in doing so, underscore the potential global impact.

Case 1 BIFIDEX: First, as detailed below, we turn to the Western Balkans, a region that, despite its strategic importance to Europe, has long faced significant developmental and environmental challenges. The establishment of the Regional Business Registry Portal—BIFIDEX—is a prime example of how digitalization can bridge the information gap and foster sustainable economic practices. This initiative enhances transparency and paves the way for a more integrated and resilient economic framework in the region.

Case 2: NZDPU: In contrast, but with a complementary goal, the Net-Zero Data Public Utility (NZDPU) initiative spearheaded by global leaders exemplifies how leveraging high-quality climate data can transform our approach to climate action and sustainable finance worldwide. The NZDPU initiative addresses the urgent need for standardized, accessible, and transparent climate data to inform decisions that lead to a sustainable, net-zero global economy.

Both cases, as detailed, underscore the critical role of data in driving informed decisions and strategic actions that are essential for sustainable development and climate resilience. They highlight how international collaboration, and innovative digital solutions can enhance the quality and accessibility of information significantly, thereby empowering stakeholders globally to make more informed decisions and adopt sustainable practices. Exploring these use cases further demonstrates their implications and the inspiring lessons they offer for global sustainability efforts.

1. **The Western Balkans: Regional Business Registry Portal – BIFIDEX**

   Due to its relative underdevelopment compared to the rest of Europe, the Western Balkans region[1] presents a uniquely fertile soil for using digital sustainability reporting to drive sustainable economic development. Significantly, the Western Balkans faces a pronounced gap in its infrastructure and understanding of statutory reporting, which includes corporate and financial, while sustainability reporting is at its infant stage. This region is a virtual black hole for data about micro, small, and medium size enterprises (MSMEs). Some corporate and financial data is intermittently available, while sustainability data is exceedingly scarce. As a recent paper of the World Bank Group points out:

> *"Despite the significant physical and transition risks as well as their proximity and economic linkages to the European market, governments across the region lack comprehensive strategies and roadmaps to tackle climate and environmental risks. Green taxonomies, a key enabler for the creation of a green loan and bond market, are yet to be developed, while disclosure requirements for large corporates and other economic agents have not been introduced. And banking supervisors are only beginning to take a closer look at the exposure of financial institutions to climate risks."*[1]

Under the auspices of the Berlin Process,[1] in 2019 the business registries of Serbia and North Macedonia, subsequently joined by Albania, Bosnia and Herzegovina, and Montenegro, launched the BIFIDEX. This eco-system of official regulators provides real time corporate and financial data on over one million companies (large corporate and SMEs), while serving as a public good that facilitates access to information, exchange of good practices and advocacy for and implementation of common reporting standards, aligned with global practices.

The next phase of development of the platform emphasizes the need to address the lack of structured approach to sustainability reporting, through a joint regional approach. Setting the standards for SDG reporting and providing the necessary tools will create the much overdue data and metrics, as a basis for informed policy development towards achieving the declared Sustainable Development Goals of the participating economies. It will, moreover, aid companies from the region to transparently declare their sustainability practices, on either voluntary or mandatory basis, thus gaining access to the much-needed green financing.

Being underdeveloped poses a unique opportunity for the region to excel based on lessons learned in other jurisdictions, by adopting a "Digital-Only" principle, adhering to standards and practices addressing the current global fragmented landscape void of the present "digital plumbing" deficiencies.

The success story in the Balkans has significant "replication" potential, on that offers an approach that could be tailored to other underdeveloped regions worldwide, contributing to the global action for sustainable development and growth. Regionalization can also serve as a use case for Financial Centers that can through cooperation provide synergies and widen their offer, as opposed to competing for the same clients.

International financial centers can significantly benefit from these initiatives and others by ensuring consistent, high-quality sustainability reporting across global markets.

Building on the use cases highlighted in this white paper, international financial centers can promote and support the digital transformation of a global standardized framework for sustainability reporting. This transparency empowers investors to make informed decisions and incentivizes companies to prioritize environmental stewardship. A collaborative approach ensures consistent, high-quality reporting across global markets.

2. Use Case: Enhancing Global Climate Data Transparency and Accessibility through the Net-Zero Data Public Utility (NZDPU)

The Climate Data Steering Committee (CDSC), led by French President Emmanuel Macron and Michael R. Bloomberg, launched the NZDPU in June 2022. This initiative addresses the challenge of inaccessible and non-standardized climate data that is hindering effective climate action and sustainable finance.

The NZDPU, built on the foundation of core climate data from CDP, is a game-changer. Empowering companies to manage climate risks and transition towards sustainable practices, it provides transparent and actionable insights. Policymakers can develop effective strategies, and the public will gain access to vital information. As more companies report data through CDP and other platforms, the initiative is set to grow significantly which will amplify its impact.

The NZDPU has garnered widespread support, a testament to its importance. Over 700 capital market signatories, representing a vast amount of managed assets, have endorsed the call for environmental data from thousands of companies worldwide. This global backing underscores the necessity and relevance of the NZDPU in the current climate and financial landscape.

This widespread recognition of the importance of environmental information disclosure underscores the necessity and relevance of the NZDPU. The Net-Zero Data Public Utility is a pivotal resource in the global effort to promote transparency and standardization in climate data. Its integration with organizations' strategic objectives like WAIFC showcases how data-driven initiatives can enhance sustainable finance, accelerating the path towards a resilient, net-zero global economy.

A variation on this global effort to promote data transparency and standardization is further bolstered by collaborations between the Monetary Authority of Singapore (MAS) and Singapore Exchange (SGX Group). Their Project Greenprint aims to mobilize capital towards sustainable projects on their platform.

Glossary of Key Terms

1. **Sustainability Reporting**: The practice of measuring, disclosing, and being accountable for organizational performance toward sustainability goals, including environmental, social, and governance (ESG) metrics.
2. **WAIFC (World Alliance of International Financial Centers)**: An alliance of global financial centers working to enhance the role of international financial hubs in promoting sustainable finance and improved data practices.
3. **North Star**: A guiding vision for seamless integration of financial, sustainability, carbon, and climate-related data through digital sustainability reporting and open data exchange standards.
4. **Digital Sustainability Reporting**: The use of digital technologies and open data standards to improve the quality, accessibility, and transparency of sustainability data.
5. **Open Data Exchange Standards**: Common frameworks that enable the seamless sharing and analysis of data, promoting transparency, comparability, and efficiency in data reporting.
6. **Scope 3 Emissions**: Indirect emissions that occur in a company's value chain, including emissions from suppliers and other activities not directly controlled by the reporting company.
7. **Financial Centers (IFCs)**: Hubs of financial services that play a dual role in facilitating capital flow and supporting data ecosystems through business registries and financial markets.
8. **Transformation Risks**: Risks associated with the transition to a sustainable economy, including changes in resource management, energy production, and business operations driven by climate policies.
9. **Sustainability Standards Boards**: Organizations such as ISSB, GRI, and EFRAG that develop and maintain standards for sustainability reporting, ensuring consistency and comparability of data.
10. **Machine-Readable Data**: Data formatted in a way that can be easily processed by a computer, enabling automated analysis and integration into digital reporting systems.

11. **Sustainable Finance**: Financial services that consider environmental, social, and governance (ESG) criteria to promote sustainable economic growth.
12. **Business Registries**: Official bodies that maintain records of legal business entities, supporting transparency and accountability in the marketplace.
13. **Carbon Disclosures**: Reporting of greenhouse gas emissions and other carbon-related activities by companies, often required by regulatory bodies or voluntary standards.
14. **Artificial Intelligence (AI) and Data Analytics**: Technologies used to analyze large datasets, identify patterns, and support decision-making, particularly in the context of sustainability reporting.
15. **Greening of Supply Chain Finance**: Efforts to make financial services in supply chains more sustainable by considering environmental and social factors.
16. **Transformation of Financial Services**: Ongoing changes in the finance industry driven by technological innovation, digital transformation, and evolving regulatory requirements.
17. **COP28**: The 28th United Nations Climate Change Conference, held in 2023, where global leaders and stakeholders discuss climate action and policies.
18. **Tokenized Data**: Data represented in a digital token format on a blockchain, enhancing security, transparency, and traceability in data reporting.
19. **XBRL (eXtensible Business Reporting Language)**: A global standard for exchanging business information in a machine-readable format, commonly used for financial and sustainability reporting.
20. **Supply Chain Disruptions**: Interruptions in the flow of goods and services due to environmental, geopolitical, or operational challenges, often exacerbated by climate change.

WAIFC Worldwide

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WORLD ALLIANCE
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