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Perspectives on how tech, data and finance are empowering supply chain leaders and SMEs

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At PwC, our purpose is to build trust in society and solve important problems - this is at the core of everything we do from the value we provide to our clients and society to the decisions we make as a firm.

Our services started with audit and assurance over a century ago. As times change and the issues faced by businesses and individuals evolved, we have developed specialised capabilities in tax, advisory and consulting to help you address emerging new challenges across focus areas like ESG, sustainability and climate change, digital transformation, cyber security and privacy, data, mergers and acquisitions, and more.

In Singapore, we have more than 3,500 partners and staff to help resolve complex issues and identify opportunities for public, private and government organisations to progress. As part of the PwC network with over 364,000 people in 151 countries, we are among the leading professional services networks in the world focusing on helping organisations and individuals create the value they are looking for.

ELEVANDI

Elevandi, established by the Monetary Authority of Singapore, serves as a platform to facilitate an open dialogue between the public and private sectors, aimed at advancing FinTech in the digital economy.

Working closely with governments, founders, investors, and corporate leaders, Elevandi focuses on driving collaboration, education, and the creation of new sources of value at both industry and national levels. Through various initiatives, Elevandi has brought together over 350,000 individuals to propel the growth of FinTech. These initiatives include events, closed-door roundtables, investor programs, educational initiatives, and research endeavours. Elevandi's flagship product is the Singapore FinTech Festival, which runs alongside other prominent platforms such as the Japan FinTech Festival, Point Zero Forum, 3i Africa Summit, Inclusive FinTech Forum, Elevandi Insights Forum, The Capital Meets Policy Dialogue, The Founders Peak, and Green Shoots.

For further information, please visit https://www.elevandi.io.

Gprnt is an open and interoperable data platform that interlinks the financial sector and real economy to facilitate efficiencies in collecting, accessing, and harnessing high-quality ESG data to drive green and transition efforts.

The platform is a culmination of MAS' Project Greenprint and will serve both businesses and corporates as well as financial institutions.

Greenprint will support FIs' seamless data collection and access to verified ESG data by:

- Automating ESG disclosures for businesses large and small, through integration with various public and private data sources, and translate these economic data into ESG-related data outputs;
- Facilitating access to aggregated ESG data, benchmarks and insights from its ecosystem of private and public data; and
- Connecting ESG market solutions to investors, financial institutions, and corporates, to support the needs of users who desire more sophisticated tools or solutions that befit their respective business needs.

Gprnt is launching in phases across 2024 and will focus initially on automating basic climate reporting by SMEs and progressively scale its automation capabilities to support the climate-related disclosure needs of larger corporates.

* The Monetary Authority of Singapore launched Gprnt (pronounced "Greenprint"), an integrated reporting solution that aims to automate and therefore simplify how all businesses, including SMEs report their basic Environment, Social, and Governance information.

Introduction

Progress is being made on sustainability in the round. This can be seen with the growing number of national commitments to reducing carbon emissions globally. Roughly 145 countries representing over 90% of global emissions have announced or are considering net-zero targets as of late 2023[1]. In the private sector, businesses are mobilising. By November 2023, half of the world's largest companies had committed to net zero[2].

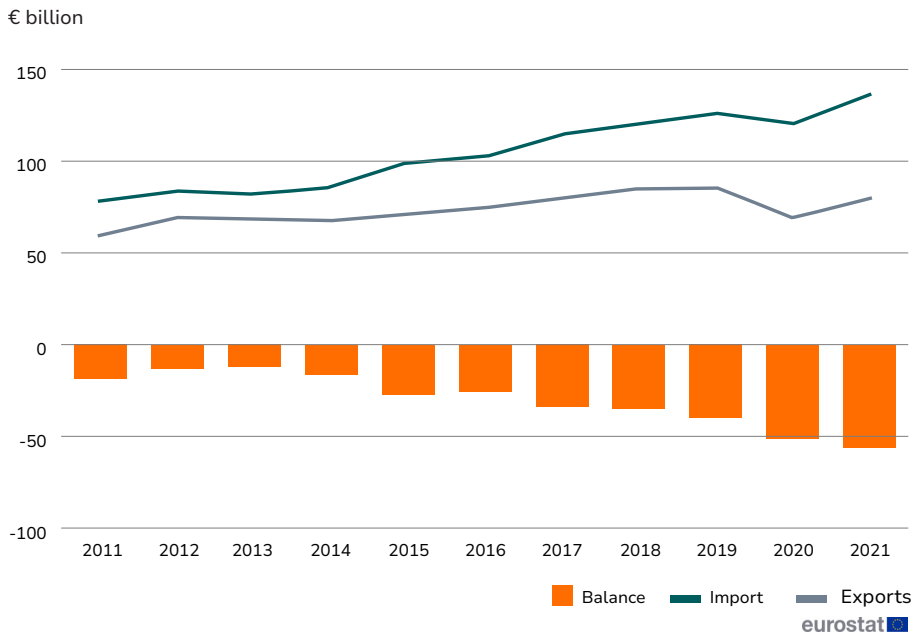
Despite these achievements, 2023 remained the hottest on record[3] with global temperatures continuing to rise. Countries and corporates must accelerate the pace at which they are decarbonising and embrace sustainability more broadly. A failure to do puts global sustainability goals in severe jeopardy.

This situation also puts the sustainability credentials of the Asia-Pacific region in sharp focus as its economic significance grows. For example, as the chart below shows, ASEAN exports to the EU's single market have been growing steadily over the last decade and beyond.[4]

A failure to embrace sustainability in this part of the world risks undermining the pursuit of a cleaner, greener, and more equitable future here, and elsewhere. No one country or company can decarbonise or be truly sustainable in isolation.

The EU has clearly recognised this. The Carbon Border Adjustment Mechanism, European Union Deforestation Regulation, and Corporate Sustainability Due Diligence Directive, once fully implemented, will all place an increased onus on exporters to the EU to demonstrate the sustainability credentials of their goods. A failure to do so may see them shut out of the EU market.

Figure 1: EU trade in goods with ASEAN countries, 2011-2021



Source: Eurostat (2023)-ASEAN-EU International trade in goods statistics

While such legislation may present challenges for businesses within ASEAN countries and the wider APAC region, it may further elevate the importance of sustainability integration as a strategic driver of growth. Their arrival also comes at a time when the region continues to grapple with how businesses large and small can best achieve greater levels of sustainability.

As we reflect on what is possible and necessary here, the role of private finance becomes increasingly significant. In 2022, Mark Carney, Co-Chair of the Glasgow Financial Alliance for Net Zero captured this sentiment effectively: "Finance will not drive the net zero transition on its own. [But] finance is an enabler, a catalyst that will speed what governments and companies initiate."[5] For this enabler and catalyst to be fully utilised, the significant potential inherent within technology, ranging from blockchain to artificial intelligence, cannot be ignored.

This was the context against which participants gathered at the Japan FinTech Festival (JFF) in March 2024, to attend a joint roundtable hosted by PwC and Gprnt.ai. The topic under discussion was: "How can finance empower supply chain leaders and SMEs, leveraging technology and data?". The insights gathered there have since been complemented by feedback supplied via interviews with ten supply chain experts from across the PwC network.

This report attempts to capture the salient points from discussions recently held, together with five key actions for financial institutions' consideration, as they look to address how sustainable business practice here can be improved, to the benefit of the region and global partners.

Why is it difficult to make supply chains sustainable?

In 2020, the World Economic Forum (WEF) launched the "Davos Manifesto", in support of what it called "stakeholder capitalism". At its core was the concept of "corporate global citizenship". This "requires a company to harness its core competencies, its entrepreneurship, skills and relevant resources in collaborative efforts with other companies and stakeholders to improve the state of the world."

If businesses can successfully fulfil the role of effective corporate citizens, society stands a better chance of delivering on key goals such as climate change mitigation, the WEF contends. The corporate world, however, is often extremely complex and has only gotten more so since 2020[6]

Large businesses sit at the centre of diverse supply chains, often irrespective of which sector they operate in. For small- and medium-sized enterprises (SMEs) that perform the role of suppliers, many lack the time and resources to engage with sustainability, which is often seen as immaterial. This delays collective corporate progress on sustainability, in turn limiting financial institutions' ability to meet commitments to improve the sustainability of their own client base and suppliers, made up of businesses large and small.

In a bid to address this, many financial institutions offer sustainable supply chain finance programmes. These typically involve their settling invoices in advance for suppliers (often SMEs) on behalf of buyers (usually larger businesses), for lower financing costs than the suppliers' own source of funds[7].

Figure 2: "Traditional" model of sustainable supply chain finance

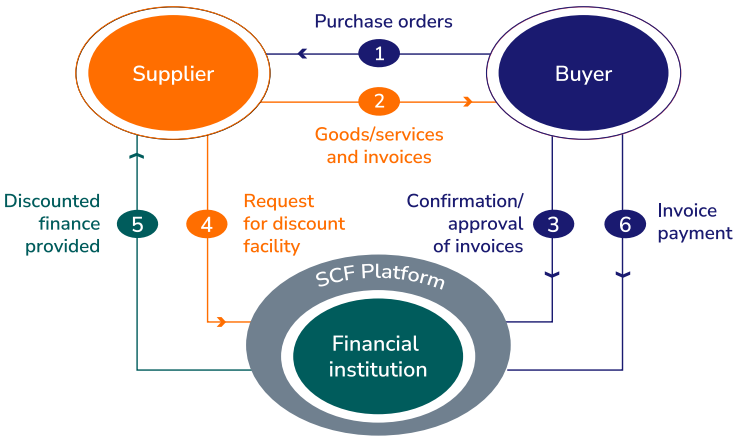
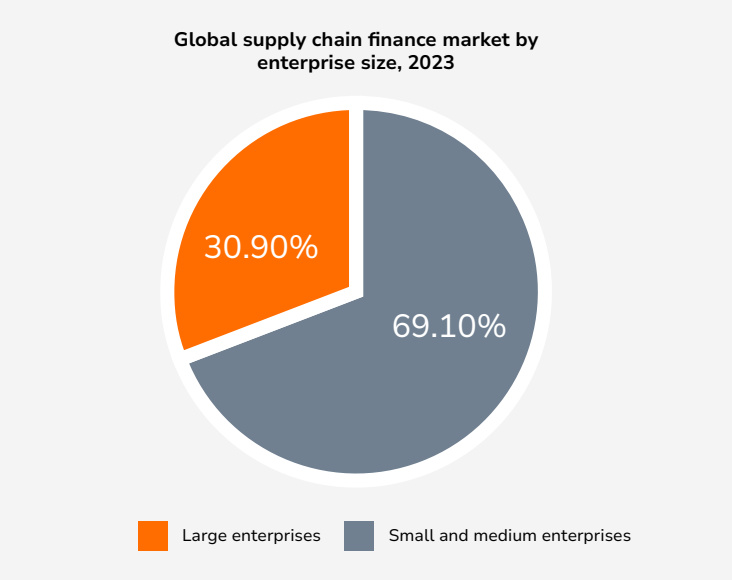


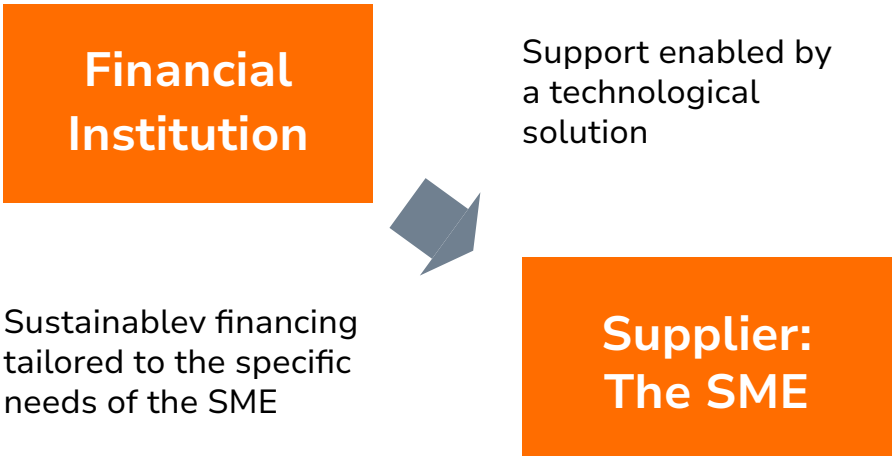
Figure 3: Relative breakdown of the sustainable supply chain finance market



Source: Astuteanalytica, Sustainable Supply Chain Finance Market-Industry Dynamics, Market Size, And Opportunity Forecast To 2032

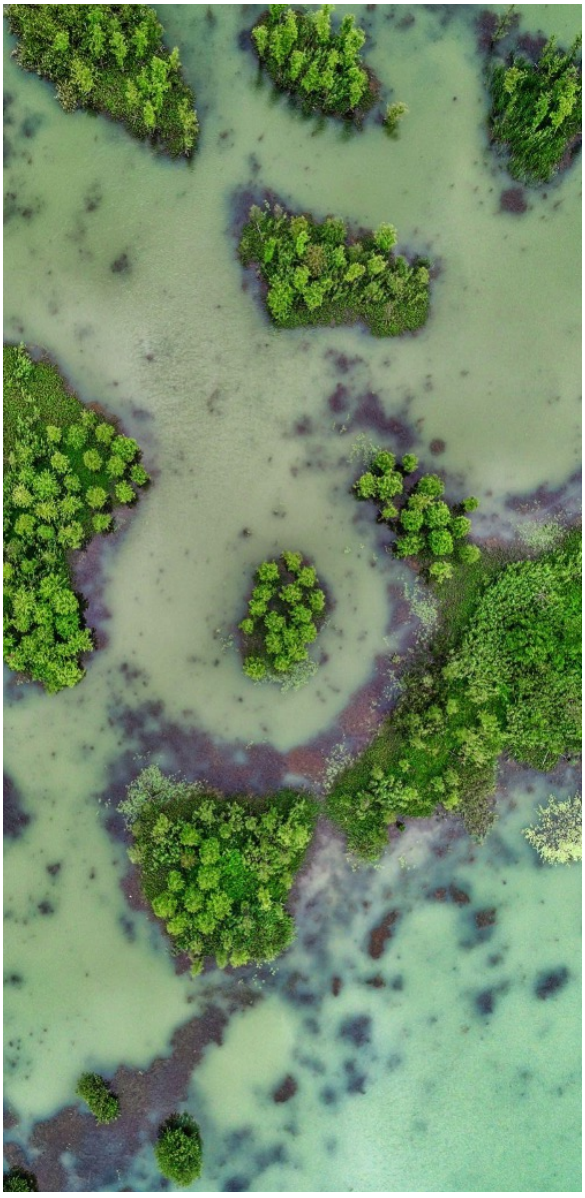
Such financing is often channelled via the buyer, with associated risk premiums leveraging the often-large company's stronger credit profile. The sustainable form of supply chain financing offers more competitive rates to, for example, companies with stronger ESG scores. Done well, this can help integrate increasingly sustainable practices across supply chain participants. However, scale in the market remains relatively limited. PwC experts suggest that opening more credible entry points for financial institutions to target SMEs directly could help accelerate this market's growth. But doing so is not straightforward.

Figure 4: "Disintermediated" model of sustainable supply chain finance



A lack of sustainability awareness/engagement on the part of SMEs can result in a lack of suitable data to inform decision making for financial institutions. Insufficient data means pricing risk becomes more difficult. Consequently, this limits the appetite of banks, for example, to provide targeted sustainable supply chain finance aimed specifically at SMEs.

This creates a very legitimate desire to reduce the amount of effort required by SMEs to respond to questions/surveys of this nature. Anecdotal examples were provided during the JFF roundtable of banks that had pioneered technology solutions aimed at streamlining the sustainability data collection process, only to see their impact fall short of expectations. Again, the rationale for SMEs to engage with such processes - even streamlined - was not clear.



Banks might therefore look towards limiting the range of sustainability information requested from clients. The challenge, however, is that the pursuit of simplicity for respondents can increase the risk of greenwashing. The following example was provided by a roundtable participant to illustrate this:

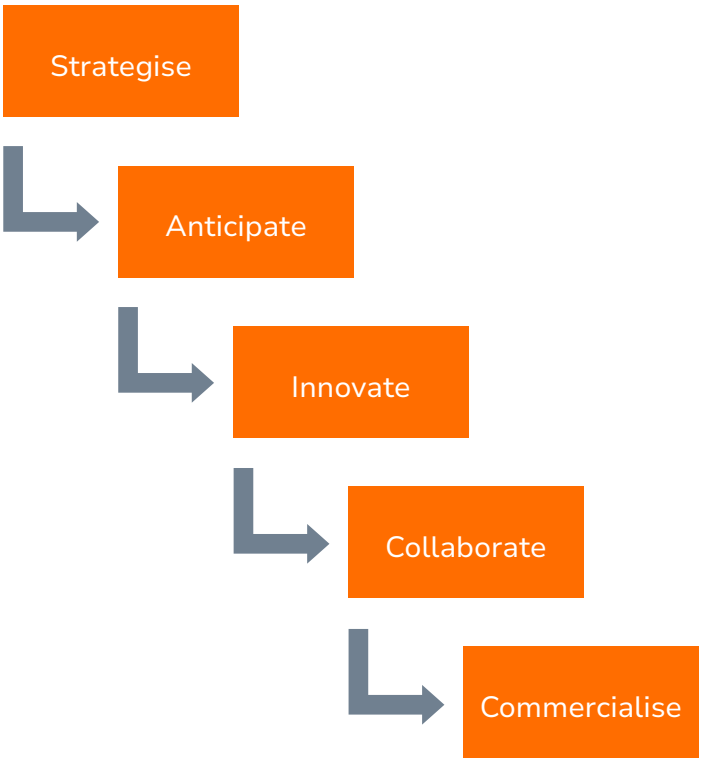
"A survey may ask: "Do you prove ESG training?", in a yes/no format. One could answer – legitimately – yes, even if the answer has only been the case once in the company's lifetime. Conversely, another company may not feel comfortable responding "yes", even though they are giving training, as they do not see themselves doing so to the required standard."

Four years on from its 2020 launch, there remain many obstacles to realising the objectives of the Davos Manifesto. A lack of awareness around the potential upsides to embracing sustainability among SMEs limits the effectiveness of financial institutions looking to streamline sustainability data collection and provide targeted financing. Residual concerns around greenwashing compound an already challenging situation.

Yet, there are reasons to be optimistic. In the twin promises of data and technology, finance can help accelerate progress towards more sustainable supply chains here in Asia-Pacific and globally.

How can data, technology, and finance enable the delivery of more sustainable supply chains?

Considering the challenges highlighted above, debate at the Japan FinTech Festival, and PwC's own insights, this report briefly presents five action points for financial institutions looking to improve the sustainability of their own and their clients' supply chains:



We elaborate on each of these actions in greater detail below.

Strategise: Within financial services, there must be greater emphasis on and understanding of the strategic value in non-traditional data.

In our view, financial institutions must reflect more strategically on how the use of non-traditional (i.e., sustainability) data can best inform commercial decisions affecting supply chain sustainability. The potential extends far beyond sustainable receivables financing. There is clear precedent here. For example, the use of non-traditional data in credit decision making is already being used in Southeast Asia by banks like the Union Bank of the Philippines.

Union Bank uses an alternative data credit scoring and risk model solution, developed by Aboitiz Data Innovation, to interrogate non-traditional data sources. For example, by exploring how the strength of internet bandwidth correlates with credit risk.[8]

We believe that financial institutions might adopt a similar approach for sustainability, simplifying the data collection process by allowing the submission of "raw" information from SMEs, rather than more traditional sources of sustainability data (e.g., emission levels).

The work of the MAS Gprnt initiative is illustrative in this regard, allowing for the assessment of data inputs such as utilities consumption, bookkeeping and payroll solutions, from participating businesses[9]. A GPT4-powered chatbot is then leveraged to support businesses in crafting their sustainability disclosures and recommending actionable insights, considering such data inputs.

Taking this one step further would entail interrogation of a wider set of data points, embracing the proverb: "one man's trash is another man's treasure". Artificial intelligence presents the opportunity for financial institutions to review such data in vast quantities in search of correlations that can provide broader sustainability insights. Such insights can inform the provision of targeted financing to accelerate the pace of sustainability integration, particularly among SMEs.

Action point: Financial institutions should look to identify further correlations within raw, non-traditional data and the sustainability performance or potential of business. Artificial intelligence offers more seamless ways to do this, and the insights arising could be used to scale targeted and impactful sustainable financing flows.

Anticipate: New and emerging legislation from the European Union may deliver a step change in the availability of sustainability data. Preparing for this now presents potential commercial upside.

The amount of data upon which sustainable supply chain financing solutions can be developed may be about to increase considerably.

The European Union is leading the charge when it comes to devising legislation aimed at enhancing the sustainability of its businesses' supply chains. But with ASEAN collectively serving as the EU's third largest trading partner, the extra-territorial impact of key regulations and directives will be keenly felt in this part of the world. While this may present compliance challenges, PwC experts anticipate opportunity upcoming too.

For example, the EU Deforestation Regulation – which kicks into effect on 30 December 2024 – will require in-scope businesses to demonstrate that products sold within the EU's 27 Member States are deforestation free.

Complementing the focus on deforestation is the Corporate Sustainability Due Diligence Directive that will require targeted EU businesses to identify environmental and social issues within their supply chains and take actions to address them.

Following the Directive's passage by the European Parliament in plenary during April 2024, the legislation is set to be adopted in the Official Journal of the European Union, with phased implementation beginning in 2027.

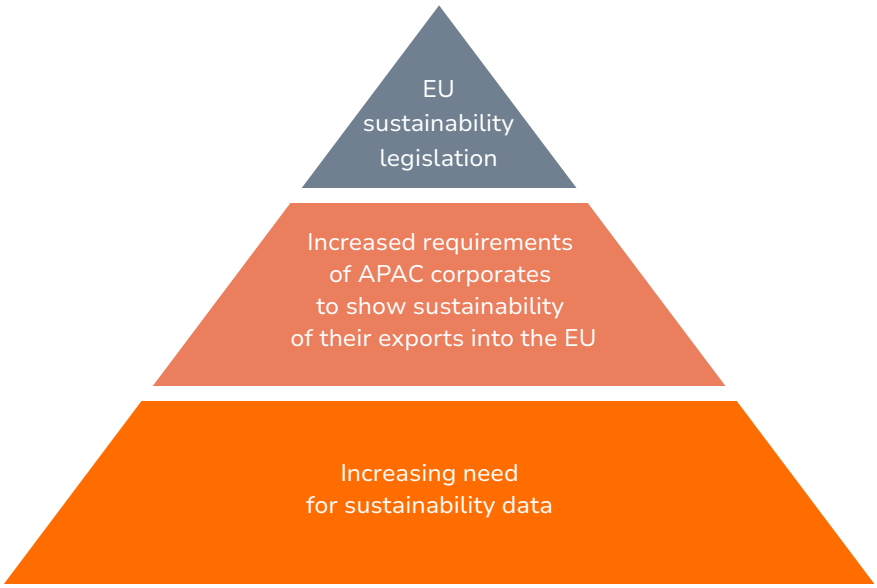
Finally, the EU's Carbon Border Adjustment Mechanism, set to take effect in 2026, will increase the cost of carbon-intensive imports to the EU from third countries.

Common to all three legislative instruments is the emphasis they will place on exporters to the EU verifying their sustainability credentials via high quality data.

For financial institutions in the region, this may not present an immediate compliance challenge, although this may come in due course. But it can also be viewed as a significant opportunity.

The reach of such EU legislation will not – and cannot – stop with large businesses; SME suppliers will need to provide information in turn to ensure the credibility of sustainability claims made by their purchasers.

Figure 5: Compliance with EU legislation must be built on foundations of abundant sustainability data



Financial institutions can anticipate increasing levels of supply chain data forthcoming, derived from legislative initiatives emerging from the EU. Financial institutions best prepared to interrogate and leverage such information in support of their sustainable finance ambitions will be well placed to commercialise latent appetite for sustainable supply chain solutions and scale them.

Action point: Review key EU legislation now in anticipation of the sustainability data they will provide, before assessing how they can inform new sustainable supply chain finance products and solutions.

Innovate: Sustainable finance must continue to channel the best of new technologies, while being mindful of potential challenges

When applied appropriately, technological solutions can address challenges such as sustainability data acquisition, provenance, monitoring for commitments, and reporting – points emphasised by former Monetary Authority of Singapore Managing Director, Ravi Menon, at COP26 in 2021[10]. Three years on, discussions at the Japan FinTech Festival show collecting and using sustainability data often remains labour intensive.

Technological solutions present the potential means of simplification, or at least better interrogation of raw data as mentioned above. They can also source new forms of non-traditional data to inform strategic growth opportunities for financial institutions. For example, climate data derived from satellite imaging can be used to help inform assessments of supply chain vulnerabilities, information that can underpin the provision of targeted interventions to address them.

Swiss private bank Lombard Odier[11] has put this to the test, using remote sensing and satellite data to assess nature-related risks and opportunities and determine the physical impact of climate change on companies it invests in and in their supply chain.

Beyond satellite imaging, blockchain technology can be used to strengthen supply chains and features benefits like enhanced transparency and traceability. Such solutions are not new to financial institutions, having been employed for purposes such as smart contracts and programmable payments.

The wider potential inherent here can be seen in the work of Ubin+, an “expanded collaboration from the Monetary Authority of Singapore with international partners on cross-border foreign exchange settlement using wholesale digital currencies”.[12]

Action point: For financial institutions looking at sourcing new lines of non-traditional data to inform strategic growth, innovations such as satellite imaging can do just that. More longstanding solutions such as blockchain technology continue to offer potential benefits such as enhanced transparency and traceability of transactions. Both should form key parts of sustainable finance innovation programmes.

Collaborate: Sustainability cannot be achieved in isolation; dedicated, collaborative efforts spanning financial institutions, lead suppliers and SMEs are needed to enable progress.

The Davos Manifesto referenced above highlights the importance of "collaborative efforts with other companies and stakeholders to improve the state of the world". Such collaborative efforts can take different forms to address challenges facing the delivery of sustainable supply chains.

Discussions at the Japan FinTech Festival, alongside those with PwC experts, have surfaced examples that might serve as guidance on how new initiatives could develop to accelerate progress here.

Intra-financial services collaboration

In February 2024, the Sustainability Data Standardization Consortium in Japan issued a new handbook to help guide SMEs through the ESG data collection process more seamlessly. Its intended uses are aggregation and clarification of relevant sustainability information to company management and on-site personnel.

This was the result of a collaborative initiative, with the involvement of both regional and national Japanese banks. Considering the positive feedback received on the initiative, a second version is already under development.

The salient point here is the value generated by Japanese banks collaborating at national and regional level to address a commonly shared issue. Regional banks serve as a more effective distribution channel for the handbook, thus increasing the impact of the initiative above and beyond what might have been available had the national banks acted unilaterally.

Inter-sectoral collaboration

In March 2023, Bursa Malaysia provided an update on the development of its Centralised Sustainability Intelligence (CSI) Platform. This Platform is to be used by public listed companies and SMEs alike to assess their carbon emissions impact and disclose standardised ESG data in compliance with both local requirements and global standards.

According to Bursa Malaysia, domestic SMEs will have access to the following:

i) Capacity building to measure, track, and report GHG emissions; and

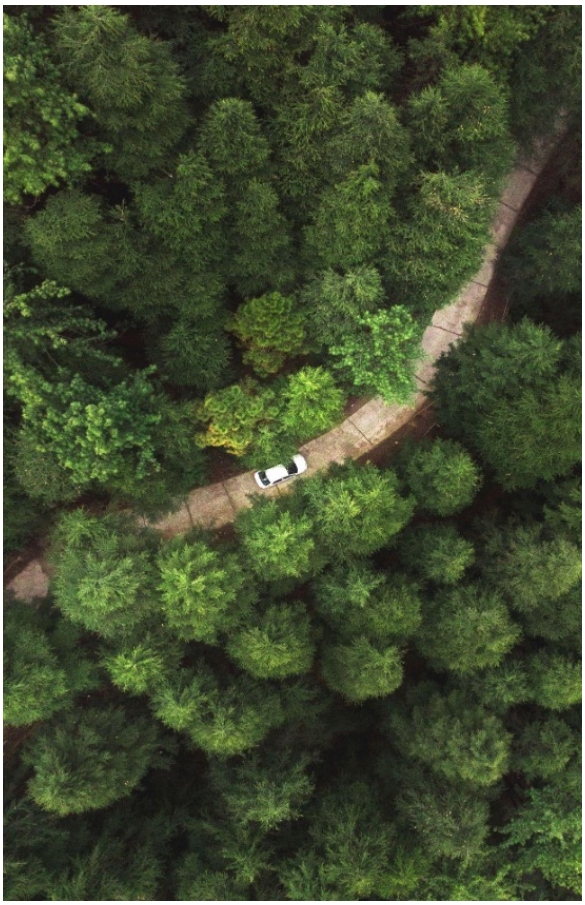
ii) Financing facilities at better rates via the Low Carbon Transition Facility"[13]

The linked Low Carbon Transition Facility allows domestic SMEs access to dedicated sustainable financing opportunities on more competitive terms than is ordinarily available, in part driven by the centralised availability of SME data for participating lenders.

This programme appears to address two of the main issues highlighted during discussion at the Japan FinTech Festival and above: paucity of data and the consequent impact this can have on the availability of dedicated sustainable financing.

Cross-sectoral collaboration enhanced with technological innovation

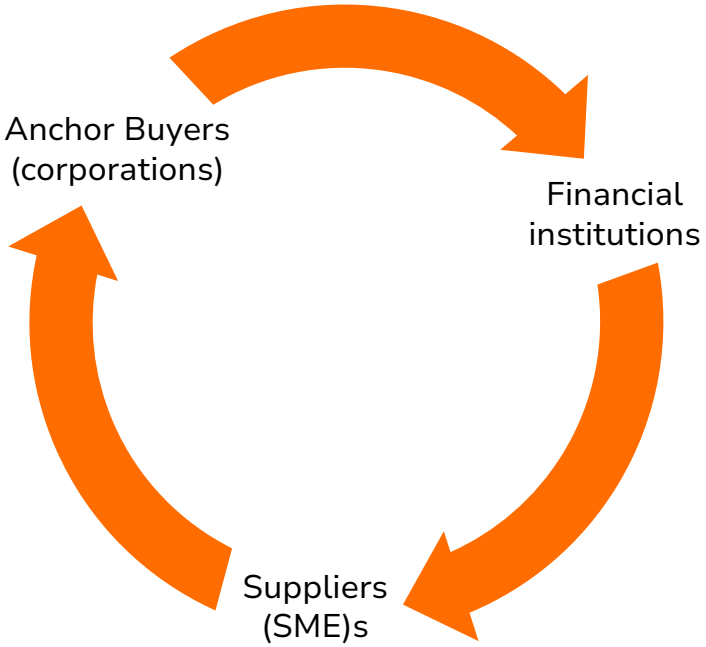
In March 2024, the Bank for International Settlements (BIS) Innovation Hub Hong Kong Centre announced the start of a new project that will apply cutting-edge technologies, such as artificial intelligence and big data, to improve tracking and disclosure of the environmental impact of corporations and their many suppliers.



"Project Symbiosis"[14] recognises that limited data is a challenge for the financial industry when calculating the environmental impact or carbon emissions of the companies they invest in or lend to. Particularly, the lack of comprehensive data from SMEs that form part of large supply chains is particularly acute.

To address this, Project Symbiosis will "explore the use of advanced data techniques to better understand the emissions and impacts on the nature of the supply chains of anchor buyers and financial institutions. The aim is to identify opportunities where new financing can make a positive impact (referred to as "bankable solutions"). By connecting suppliers, anchor buyers and financial institutions, the project aims to create more sustainable supply chains through symbiotic relationships between SMEs and funding sources."

Figure 6: Effective collaboration represents a virtuous circle of engagement



It should also be noted that supply chain composition may differ depending on which sector is being discussed. For example, supply chains within the aviation sector have tended to be more concentrated, as opposed to the apparel industry.

The benefits in collaboration are clear, but a more differentiated sectoral approach, comprising financial institutions, buyers and suppliers, could provide more granular insights around what is needed to unlock greater sustainable supply chain finance flows.

Action point: Taking inspiration from different models of collaboration witnessed, a new 12-month industry pilot programme should be launched, aimed at unpacking the specific sustainable supply chain finance challenges and opportunities for SMEs, in a priority sector such as agriculture.

Commercialise: New forms of financing and strategic supply chain investments already hint at the commercial opportunity in supply chain sustainability

Evidence is already emerging to suggest increasing commercial opportunity in sustainable supply chain financing, in its broader sense.

In October 2023, fashion and design brands company H&M broke new ground by issuing an inaugural EUR 500 million green bond to "support financing of its circularity and climate roadmap"[15].

The bond's proceeds can be used for projects including energy efficiency, specifically "projects related to reducing energy use across our value chain including logistics and supply chains", while for sustainable water and wastewater management, eligible projects are those related to the "reduction of impact on freshwater in our value chain"[16].

According to ESG Today, the issuance was more than 3.5 times oversubscribed, "with a total order book in excess of EUR 1.75 billion"[17].

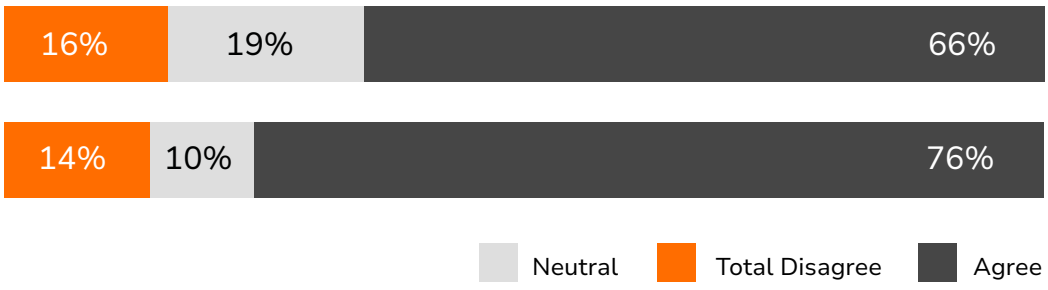
While green bonds are clearly not new sustainable financial instruments, such a high-profile issuance with circularity at its core suggests institutional investor awareness of the significance of supply chain integrity is well developed.

Financing activity is not limited to the fixed income or debt markets, however. Alternative investors are also seeing opportunity here. Impact investor Circulate Capital, based in Singapore, launched in 2018 to invest in solutions for the ocean plastic crisis in South and Southeast Asia.

Further afield, Circularity Capital, based in the United Kingdom, was founded in 2015 with a mission to deliver value for investors by supporting growth and innovation in the circular economy.

Action point: Dedicated financing for businesses looking to enhance their supply chain sustainability is attracting increasing interest. This underscores the commercial opportunity available here, which can be potentially be delivered via collaboration.

Investors may be more open to sustainability that is commonly appreciated - "In thinking about the companies you invest in or cover, please indicate how much you agree or disagree with the following statement - They should make expenditures that address ESG issues relevant to their business even if it reduces short-term profitability"



Source: PwC's Global Investor Survey 2023[20]

Five action points for 2024

Strategise

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Anticipate

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Innovate

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Collaborators

Special thanks to Maria Jessica and Mike Leong of PwC Singapore, for their help in preparing this report.

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References

1 Climate Action Tracker (2023) CAT net zero target evaluations

2 Net Zero Tracker (2023) New analysis: Half of world's largest companies are committed to net zero

3 National Oceanic and Atmospheric Administration (2024) 2023 was the world's warmest year on record, by far

4 Eurostat (2023)- ASEAN-EU International trade in goods statistics

5 Mark Carney (2022) Financing the Net Zero Revolution

6 Klaus Schwab (2008) Global Corporate Citizenship: Working with Governments and Civil Society

7 PwC (2018) Understanding Supply Chain Finance (SCF)

8 The Edge (2023) Revolutionising finance: Leveraging alternative data for inclusion and crime prevention

9 MAS (2023) MAS Launches Digital Platform for Seamless ESG Data Collection and Access

10 Ravi Menon (2021) "Data and Technology for Climate Action" - Keynote Remarks by Mr Ravi Menon, Managing Director, Monetary Authority of Singapore, at COP26 Investor Action on Climate Webinar via Video Conference on 29 June 2021 -

11 The Banker (2022) "Banks Eyes in the Sky"

12 Monetary Authority of Singapore (2022) Ubin+: Advancing Cross-Border Connectivity with Wholesale Digital Currencies

13 Bursa Malaysia (2023) ADVANCING DECARBONISATION EFFORTS FOR SMALL AND MEDIUM ENTERPRISES

14 BIS (2024) Project Symbiosis: AI and big data technologies for supply chain sustainability disclosure

15 H&M Group (2023) H&M Group issues inaugural EUR 500 million green bond to support financing of its circularity and climate roadmap

16 H&M (2023) Sustainable Finance Framework August 2023

17 ESG Today (2023) H&M Issues its First $500 Million Green Bond to Fund Climate, Circularity Goals

18 PwC (2023) Global Investor Survey 2023, Trust, tech and transformation: Navigating investor priorities