MILKEN INSTITUTE

FINANCIAL INNOVATIONS LAB®

# Meeting Business Goals through ESG Data Optimization and Technology in Southeast Asia

# ABOUT

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# INTRODUCTION

The financial markets are paying ever-increasing attention to environmental, social, and governance (ESG) factors, the nonfinancial metrics that affect financial performance. These criteria now undergird the rapid growth worldwide of sustainable finance—from green bonds and loans to impact tokens. Thus, two decades after the launch of the UN Global Compact, ESG has finally gone mainstream, far beyond early niche groups of socially-minded investors. At its core is the idea that business goals and sustainability goals are mutually supportive and that delivering maximum financial returns to shareholders cannot be a company's sole objective in a globalized world. Instead, firms should take a multistakeholder approach and seek positive outcomes for the environment, employees, customers, suppliers, and their communities while also returning value for investors.

Whether as capital providers or managers of risk, financial institutions (FIs) will play a key role in the ESG strategies of the portfolio companies with which they do business. FIs will also see increased regulatory pressure, shareholder activism, and demands from consumers and employees to align their business practices with ESG objectives.

A company's ESG reputation can affect its long-term viability, no matter its size. The COVID-19 pandemic has only accelerated this trend, particularly with respect to socially conscious investing and issues of global inequality. In fact, at the beginning of 2020, global sustainable investment rose to US$35.3 trillion, a 15 percent increase in just two years (2018–2020).[1] This shifting investor sentiment and allocation of capital presents a tremendous opportunity for FIs that thoughtfully align their business practices with ESG criteria. FIs can achieve their business goals while influencing portfolio companies and advancing positive social and environmental outcomes. There is also business and reputational risk for those FIs that fail to meet the moment.

Even in the Asia-Pacific, where COVID-19 has battered economic growth to its slowest pace since the 1960s, 79 percent of investors increased their ESG investments "significantly" or "moderately" in direct response to the pandemic, according to MSCI's 2021 global institutional investor survey.[2]

Southeast Asian nations have joined other countries in making commitments to mitigate, halt, and/or reverse the degrading effects of climate change. The 26th UN Climate Change Conference of the Parties (COP26), held in November 2021, brought together over a hundred world leaders pledging, even beyond the main climate pact negotiations, to halt and mitigate deforestation and cut methane gas emissions by 30 percent by 2030.[3] Nowhere is the risk of climate change more important than in Asia, where it threatens a loss of 26.5 percent of gross domestic product by 2048.[4]

In an encouraging sign for the region, key drivers like institutional investor demand for ESG integration, technological innovation, and regulatory compliance requirements have moved ESG into the mainstream there, too.[5] Yet significant gaps persist between interest and implementation. HSBC Asset Management's 2021 sustainable investing survey across Hong Kong, mainland China, and Singapore finds that while an average of 84 percent of investors believe ESG issues are "central" to managing their investments, "only 26 percent of their investments explicitly consider ESG factors."[6]

To close gaps that prevent them from adapting to and capitalizing on ESG investment strategies, FIs in Southeast Asia must find ways to optimize available datasets and amplify their analysis and decision-making capabilities through emerging technologies, such as artificial intelligence (AI) and remote sensing. They must also access higher-quality, more synthesized, and more granular ESG data to assess risks better, identify opportunities, and more effectively allocate capital to address the immense societal challenges ahead. In much of the region, and for varying reasons, data collection remains a time-consuming and labor-intensive task, but disruptive technologies can much more rapidly generate and categorize verifiable and transparent data and enable scalable, sustainable finance.

Beginning in late 2020, with the support of Google Cloud, the Milken Institute embarked on a two-part Financial Innovations Lab ("Lab") series, exploring the role of technology in improving the resilience and function of Southeast Asia's financial systems, including how FIs can achieve their ESG objectives through improved access and utilization of data and technology tools. This second virtual Lab took place in November 2021 and brought together regional and international banking executives, technology experts, financial regulators, and multilateral organizations to develop recommendations. The following summary distills the discussion and additional research, laying out potential paths forward in three crucial areas of concern: data availability, credibility, and usability.

# ISSUES AND PERSPECTIVES

## Types of ESG Data

ESG data encompass a wide range of topics. Data in the environmental pillar include carbon emissions, waste disposal, and natural resource preservation or destruction, among other metrics. Social issues relate to how a business interacts with its employees, clients and consumers, suppliers, and others, including labor practices, worker safety and health, and diversity and inclusion. Governance data encompass how firms operate to ensure ethical and legal business practices, such as a board's demographic profile, conflicts of interest, and the rules designed to avoid bribery and fraud.

ESG data originate from several sources, including self-reported information disclosed directly from corporations or other organizations and third-party material gathered by external stakeholders like non-governmental organizations (NGOs), academic institutions, or governmental agencies. Alternative data can draw from non-traditional sources like app analytics, news feeds, satellite images, or company review sites.[7] Most of the data that inform ESG analysis are self-reported, and corporations often communicate this information through yearly sustainability reports or financial disclosures. Unfortunately, the voluntary nature of this disclosure and the lack of internationally recognized reporting standards results in ESG data that may be inconsistent, difficult to compare across companies, and sometimes overly favorable to the firm (i.e., greenwashing).

Third-party and alternative data can help fill gaps and combat greenwashing. For some years now, institutional investors, especially hedge funds, have combed alternative datasets for signals of potential stock movements to gain alpha (i.e., returns that beat the market average). Beyond the improved financial returns, investors and fund managers can integrate alternative data with self-reported data to gain a clearer picture of ESG performance—for example, to track asset-level environmental risk in a loan portfolio.

A host of organizations have undertaken efforts globally to develop frameworks of consistent disclosure standards. Of note, during COP26, the International Financial Reporting Standards Foundation announced the formation of the International Sustainability Standards Board that will work to establish "a comprehensive global baseline of high-quality sustainability disclosure standards to meet investors' information needs."[8]

FIs also possess considerable internal historical information with ESG applications, from loan portfolios and investments to underwriting activities. This underutilized information could help inform business decisions if analyzed through an ESG lens, such as examining a company's financial performance as it went through extreme weather events like flooding.

## The Market for ESG Data Providers

The thriving market for ESG data shows no sign of slowing; A 2020 study projected that the market for ESG data and indexes could reach nearly US$1 billion in 2021.[9] In response to demand, the ecosystem of providers has mushroomed, with many new entrants alongside the well-established data providers who are themselves consolidating with large financial services organizations. As of 2018, according to one source, there were more than 600 ESG ratings and rankings available worldwide, and the number was still growing.[10] The providers of these assessments play an integral role for FIs, ensuring ready access and usability of ESG information.[11]

ESG data providers offer an array of products and services, including raw data, ratings, scores, and dashboards for visualization. This includes generalist credit rating agencies like Moody's, Bloomberg, and MSCI, which have expanded their scope to incorporate material nonfinancial factors into credit ratings and offer separate ESG rankings.[12] Other firms specialize in ESG data (e.g., Arabesque and Sustainalytics), provide customizable ESG factors (e.g., LSEG/Refinitiv), or report pillar-specific data (e.g., just the "E" factor—including firms like Carbon4 Finance and S&P Global TruCost).[13]

When determining a company's ESG rating or score, providers analyze its primary data, self-reported or otherwise, and apply their own methodologies for assessing the organization's ESG risks and performance relative to industry peers. The final ESG score can theoretically help investors and other stakeholders understand ESG risk and allocate capital accordingly. Additionally, the company can use its rating as a benchmarking tool to inform internal decision making and catalyze investment in sustainability initiatives.

Given that the large majority of providers employ a proprietary approach to analyze the materiality of ESG factors, build statistical models, and select the weighting of ESG factors, same-company ratings often differ by data provider. For example, some providers may include a company's lobbying efforts when determining a rating, while others do not.[14]

It is important to recognize that there is subjectivity inherently in ESG, and some level of inconsistency is expected and reflects different methodologies and ways of thinking. This may present a significant challenge to less seasoned data users and ESG investors who are not familiar with the subjectivity and limitations of ESG scores. In response to divergent results, some FIs, particularly investment firms and asset managers, develop internal ESG evaluation methodologies using the raw ESG data sourced from data providers but not the ratings.[15] This in-house approach to ESG research is predicated on the assumption that the FI's staff are sufficiently trained in ESG data analysis, which is not the case for some smaller or regional firms.

## Existing and Emerging Technologies

Corporations, data providers, and FIs collect, organize, analyze, and interpret vast amounts of ESG data to develop material insights, make business decisions, and provide accurate disclosures. Analyzing ESG data can be time-consuming and resource-intensive, dependent upon analysts who manually populate spreadsheets with hard-to-access data. Fortunately, new technologies can effectively streamline processes, fill in data gaps, and maximize the value of ESG information. For example, natural language processing and

machine learning (ML), both subsets of AI, can automate the extraction of data from unstructured sources like PDFs.[16] This technology is also critical for retrieving useful historical or emerging market information only available in paper documents (e.g., a bill of lading document used in shipping to prove contract of carriage and receipt of goods).

Additionally, natural language processing enables sentiment analysis, a helpful tool for identifying and weighting large volumes of opinions expressed about a company or topic. The technology quickly makes sense of unstructured data from diverse sources like traditional media, social media posts, and company review sites. Machine learning enhances the effectiveness of sentiment analysis by training the program to decipher tone and other nuances of language.[17]

Several emerging technologies show considerable potential for advancing a broad spectrum of ESG initiatives. Blockchain, the distributed database technology that ensures tamper-proof and transparent record keeping, is well suited for ESG applications. Potential use cases include improved supply chain traceability to combat issues like human rights abuses or facilitate transparent and reliable ESG reporting.[18]

The evolving field of geospatial technology, rooted in humankind's earliest mapmaking efforts, now offers specialized sensing, imaging, processing, and mapping tools with potential for ESG use.[19] These tools (e.g., satellites, drones, and remote sensors) capture vast amounts of geospatial (localized) data daily from all corners of the globe. Combining these alternative datasets with AI and cloud technologies provides analytical pathways for robust insights and predictive models. The burgeoning field of "spatial finance," for example, uses geospatial data "to better measure and manage environment-related risks, as well as a vast range of other factors that affect risk and return in different asset classes."[20] Geospatial data lend themselves naturally to the environmental dimension of ESG, including analysis of specific climate risks at an asset level, and biodiversity or environmental degradation risk from business operations. Additionally, geospatial data can play an essential role in social and governance initiatives like tracking labor violations within supply chains and ESG reporting, respectively.[21]

## Regulatory Environment

Against a backdrop of rapid growth in sustainable finance, regulatory developments and voluntary ESG reporting guidelines have proliferated across the globe. Several well-established frameworks and standards are utilized globally, including the Global Reporting Initiative (GRI) standards, Sustainability Accounting Standards Board (SASB), and more recently, the UN's Sustainable Development Goals (SDGs). Several notable initiatives, such as the Financial Stability Board's Task Force on Climate-Related Financial Disclosures (TCFD), which made its final recommendations in 2017, also directly target climate issues. And in 2020, the Basel Committee established the Task Force on Climate-related Financial Risks (TFCR) to ensure a steady global financial system in an era of mounting climate risks.

However, as mentioned earlier, despite existing frameworks and standards, no consensus exists yet on how businesses and data providers should measure and disclose ESG data. Even accounting for regional variation is challenging; the numerous voluntary frameworks that offer ESG assessment and reporting standards often do not facilitate easy comparisons, despite their outward similarity.

To further complicate matters, regulatory authorities worldwide are strengthening their prudential regulations and supervisory practices. Data from ECOFACT's Policy Outlook show that the number of SDG-related regulatory developments has tripled from 2016 to 2019.[22]

Asia is no exception to this trend, though its regulatory development depends on each country's embrace of sustainable finance. While most of Southeast Asia falls into the very early stages of ESG investment and finance, the markets, and the related regulatory environment, are more advanced in Indonesia, Malaysia, the Philippines, Singapore, and Thailand.[23] Recent ESG-related key developments and initiatives include:

**Indonesia:** In early 2021, the Indonesian Financial Service Authority published Phase II (2021–2025) of its Sustainable Finance Roadmap.[24] The roadmap includes plans to strengthen the regulatory framework around sustainable finance and reporting and create a sustainable finance task force.

**Malaysia:** In early 2021, Bank Negara Malaysia (BNM) and Securities Commission Malaysia jointly announced the voluntary implementation of climate-related disclosures recommended by the TCFD.[25] In April 2021, BNM also issued a Climate Change and Principle-based Taxonomy guidance document for FIs.[26]

**Philippines:** The country's Securities and Exchange Commission requires publicly listed companies to submit sustainability reports by 2023. In October 2021, Bangko Sentral ng Pilipinas updated the Environmental and Social Risk Management Framework to ensure that banks monitor and mitigate environmental and social risks from credit exposures and business operations.[27]

**Singapore:** In May 2021, the Monetary Authority of Singapore's (MAS) Green Finance Industry Taskforce published a detailed implementation guide for climate-related disclosures by FIs, which also aligns with the TCFD recommendations. This built on other initiatives under the Green Finance Action Plan announced in 2020. In December 2021, the Singapore Exchange proposed a list of core ESG metrics as guidance to assist issuers in providing, and investors in accessing, an aligned set of ESG data.[28]

**Thailand:** The Bank of Thailand announced a series of sustainable finance initiatives in August 2021 that include developing a practical taxonomy, improving the data environment, and developing incentives for fundraisers and investors.[29]

In conjunction with COP26, the **Association of Southeast Asian Nations (ASEAN)** announced the release of its Taxonomy for Sustainable Finance so that member countries would have a common language.[30] This was a positive first step, but national efforts will largely determine progress toward this goal.

## ESG Adoption by Southeast Asian Financial Institutions

In a 2019 regional economic report, the UN estimated that the Asia Pacific needed an additional US$1.5 trillion annually to meet the SDGs by 2030.[31] Fortunately, Asia's financial sector is seeing a surge in ESG-related investments, in addition to the increased attention from governments. According to the Morningstar Global Sustainable Fund Flows report for Q3 2021, Asia ex-Japan had attracted a net inflow of US$8.1 billion, an eightfold increase in just three years. Sustainable fund assets in the region grew to US$61.3 billion in the same period, with China, South Korea, and Taiwan as the leading markets.[32]

However, significant disparity in ESG integration activities persists among the diverse FIs in Asia. Meanwhile, global banks and asset managers like Deutsche Bank and HSBC have made headlines for their latest ESG consolidation efforts there, and regional players with fewer resources tend to fall behind. The World Wildlife Fund's Sustainable Banking Assessment (SUSBA) tool assesses and tracks the integration of ESG in bank products and portfolios and reports significantly slower progress in Southeast Asia[33] than in Australia and sampled European countries.[34]

# BARRIERS

Interviews with stakeholders and experts identified several critical barriers to the broad pursuit of ESG business goals by FIs in Southeast Asia. Though not an exhaustive list, these are data-specific challenges that could benefit from innovative approaches to data disclosure and application-utilizing technology. They include **availability, credibility, and usability**, each of which the Lab addressed.

## Availability

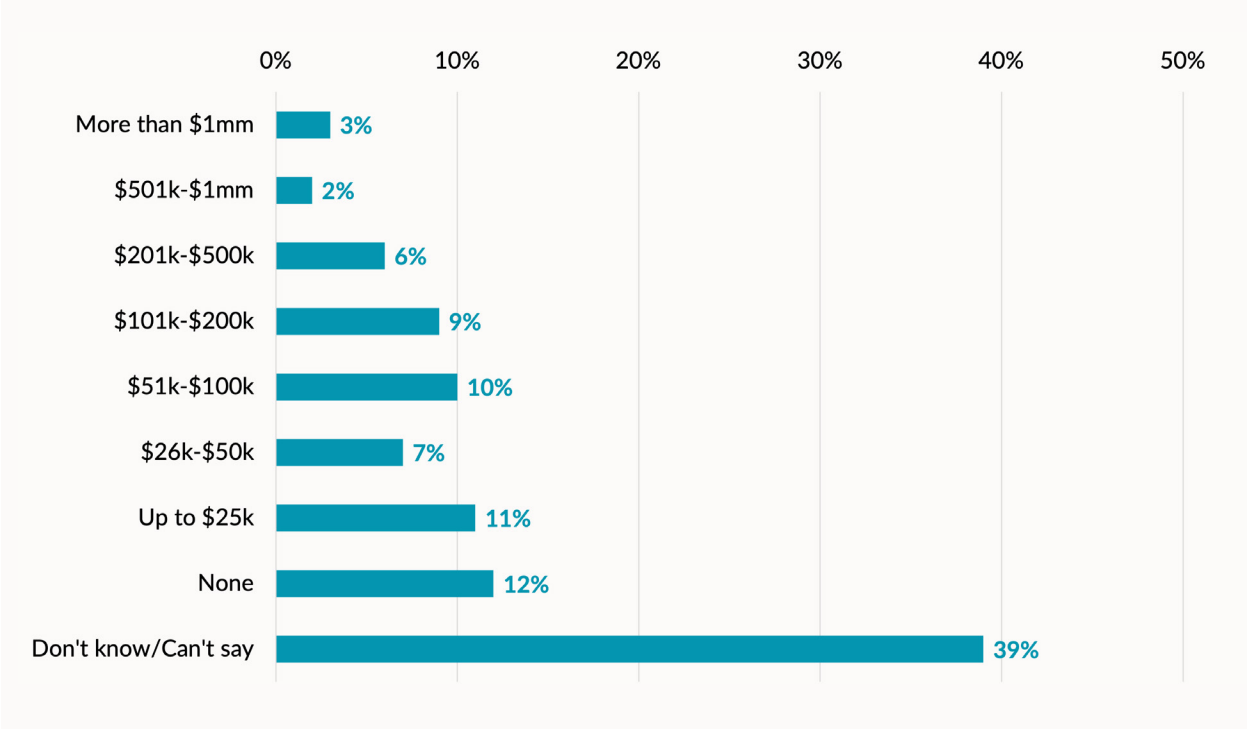
As more corporations, investors, FIs, and other stakeholders expand their ESG efforts, access to high-quality, timely, and comparable data assumes greater importance. A 2021 Capital Group survey of global investors on ESG investing found that 27 percent of respondents cited the barriers to access as a top challenge.[35] Lab participants noted the lack of granular data as a particular concern. Granular data may include Scope 3 greenhouse gas emissions (i.e., the emissions occurring along a firm's value chain,[36] which are difficult to measure). Granular data could also include the breakdown of labor market information, such as employee health outcomes in specific occupations or locales.

Moreover, data are not equally available for the three pillars. A recent study found that while 70 percent of ESG data providers offered environmental data, only 20 percent offered data on governance, and a mere 5 percent could furnish social data.[37] One reason for the severe lack of social data is that they are often qualitative, making quantification and comparability of social issues challenging for investors, though not impossible.[38] The lack of S-factor data underscores the diverse and sometimes shrouded nature of topics that fall within this category, whose cornerstone is human rights, according to the UN.[39] It can be a challenge to measure corporate responsibility and socially relevant business practices.

Notably, the COVID-19 pandemic brought increased focus to the social dimension of ESG by exposing the global economic vulnerability related to public health issues. As a result, the issuance of social bonds jumped sevenfold between 2019 and 2020, reaching a record US$147.7 billion globally. Unfortunately, the available social data do not match this growing interest among stakeholders.

Spending on third-party ESG data has grown tremendously over recent years, with annual subscriptions and fees sometimes reaching tens or hundreds of thousands of dollars. Smaller and regional Southeast Asia FIs may experience data availability issues stemming from cost barriers and a lack of negotiating power. Their costs can also balloon because, as previously noted, data providers use proprietary methods, requiring subscriptions to numerous providers for the complete market analyses.[40] Additionally, the large ESG data providers dominate the market and wield considerable pricing power, with complex fee and licensing structures that often lack transparency or justification.[41] In a recent study of over 200 global investors, UBS Evidence Lab found that 20 percent of respondents expected to spend US$100,000 to over US$1 million on ESG data in 2021 (see Figure 1 below). Some participants felt that this additional cost would be straining for smaller FIs. Additionally, 68 percent indicated that they currently use up to 5 ESG ratings, research, data, and analytics providers, and 11 percent use up to 10 providers.[42]

**Figure 1: Expected Total External Spend on ESG Data in 2021**




*Source: UBS Evidence Lab© UBS (2022). All rights reserved and reproduced with permission.*

Internally, FIs must also contend with their own data availability challenges, particularly regarding historical information with ESG relevance that is not digitized, organized, or formatted for easy access or use. Their business units, meanwhile, often function in silos without adequate processes and technologies for broad data sharing.

## Credibility

Beyond the lack of access to vital ESG data, FIs can find it hard to ensure that the data they use are credible. Many challenges arise from the original source data. Notably, public companies that do report their ESG information often don't seek independent auditing (e.g., from a public CPA firm). A 2021 survey by the Center for Audit Quality shows that roughly 47 percent of S&P 500 companies (236) supplied neither independent assurance statements nor verification statements in support of their 2020 reported ESG metrics. Of those who did, 6 percent used firms specializing in company audits focused on process adherence, while the rest had assurance statements from other providers, including consultancies that conduct social audits or engineering firms that provide onsite inspections.[43] This variation in verification provider may be attributed to the specific needs of a company or sector (e.g., engineering firms are more suited to review the operations of carbon-intensive industries). Difficulties arise when a public company forgoes any form of audit of its ESG information.

FIs must also be savvy enough to distinguish among third-party data providers for vendors and services most appropriate to their needs. Providers differ by areas of focus, collection and application of data points and metrics, geographical coverage, update frequency, fee structures, etc. Consequently, the selection process can be time-consuming and costly if the chosen datasets and services fail to meet expectations. Also, herd mentality may come into play where FIs eager to showcase their ESG credentials may gravitate toward the most popular providers even if these may not fit their long-term needs.

## Usability

FIs face the cumbersome and laborious task of curating and harmonizing ESG data gathered from multiple internal and external sources. Technology solutions are needed to efficiently organize and visualize vast amounts of data to inform business decisions and meet reporting requirements adequately. Existing technological capabilities within FIs may not suit these tasks, especially for those not yet utilizing cloud-based architectures with scalable storage and computing power. Thus, FIs may need external solutions or services to ensure the usability of critical ESG data.

In addition to technical challenges, some FIs face a skills and training gap that can limit the utilization of internal and third-party data. Sustainable finance is a complex research and investment area, requiring a deep understanding of ESG pillars, technology know-how, applied knowledge of Asian markets, and core banking skills. According to HSBC's 2021 Sustainable Financing and Investing Survey, 41 percent of Asian investors say that a shortage of staff expertise hinders their ESG investing initiatives. The lack of trained personnel was the No. 1 reason respondents did not pursue ESG investing more fully and broadly, beating out data availability and comparability concerns.[44] Also, the huge demand for talent has pumped salaries skyward. Training/reskilling current staff entails considerable investments in time and resources. Financial firms may need easy-to-use technology tools to help overcome the talent gap.

Finally, financial firms must ensure that their ESG data, technology tools, and workforce abilities all keep pace with an evolving regulatory environment. Regulatory approaches to ESG disclosure and related guidance vary across regions, which is particularly difficult for FIs active in multiple jurisdictions. Financial centers across Asia have established ESG regulations, but there is a need for more consistency and coordination.[45] Until a globally aligned ESG standard emerges, financial firms must dedicate resources and technology to manage their ESG data correctly and achieve regulatory adherence.

# INNOVATIVE SOLUTIONS

During the Lab, participants examined the data and technology challenges facing the region's financial firms as they incorporate ESG criteria into all aspects of their business. During these conversations, three themes emerged as potential pathways forward:

1. **Leverage technology to analyze *existing* datasets**
2. **Make greater use of alternative data**
3. **Engage different data platforms**

All three solutions could address the availability, credibility, or usability of ESG data, depending on the user's objective and implementation strategy. From accelerating ESG integration plans to creating and scaling new sustainable financial products, participants at the Lab discussed the following emerging ESG data and technology solutions.

## 1. Leverage Technology to Analyze Existing Datasets

### *Primary barrier addressed: Usability*

As noted earlier, banks sit on massive amounts of data, much of it in non-digital, hard-copy form. This is especially true for FIs in emerging markets or business units (trade finance, for example), making it laborious to find the data from which to extract ESG applications. Lab participants agreed that digitizing and optimizing this existing "messy" data are a top concern, even trumping the need for additional data. Fortunately, AI-powered optical character recognition can extract text from scanned files and images and convert them into data processing formats so FIs can build data lakes (repositories for unstructured as well as structured data that can be extracted and sorted for use as needed) for faster processing and analysis.

Lab participants shared their experiences with technologies that integrate current and older datasets for backtesting, relating how they were able to identify innovative ESG insights to improve decision making through analysis of historical information. Most had partnered with technology firms to assist these efforts. Truvalue Labs and other technology firms provide ready-made ESG analytical tools to examine proprietary historical data. They use AI, specifically natural language processing, to handle unstructured data, running sentiment analysis on multiple material ESG topics before deriving a useful score for a financial analyst.

Some participants, however, opted to build their own technological tools, explaining that current products don't meet their needs. In such cases, FIs can leverage open-source tools or create custom solutions to match their unique requirements. Firms with large historical datasets can develop and "train" data analysis tools to offer insights in areas like social impacts and emerging markets that lack data. For instance, the International Finance Corporation (IFC) developed the Machine Learning ESG Analyst (MALENA), which, once trained, can provide ESG information for emerging markets. MALENA can also provide ESG risk analytics insights and sentiment analysis at scale.[46]

**NEXT STEPS:**

- FIs should invest in technology to help them build data lakes to contain their "messy" data. This will create a foundation for quicker and more robust analysis (e.g., for developing sustainability-linked financial products). With a data lake, FIs can utilize AI, big data, and ML to monitor their portfolio companies' ESG performance better and actively incentivize them to pursue sustainable outcomes.
- FIs should develop data-focused strategies that include management and governance frameworks (e.g., define data retention and deletion policies, and identify high-impact business units or asset classes for ESG integration).
- It is crucial to establish the right workplace culture and proper governance by communicating and demonstrating the benefits of the new technologies (e.g., introducing change management to train employees and emphasize how technology improves decision making while allaying fears of staff redundancy).

## 2. Make Greater Use of Alternative Data

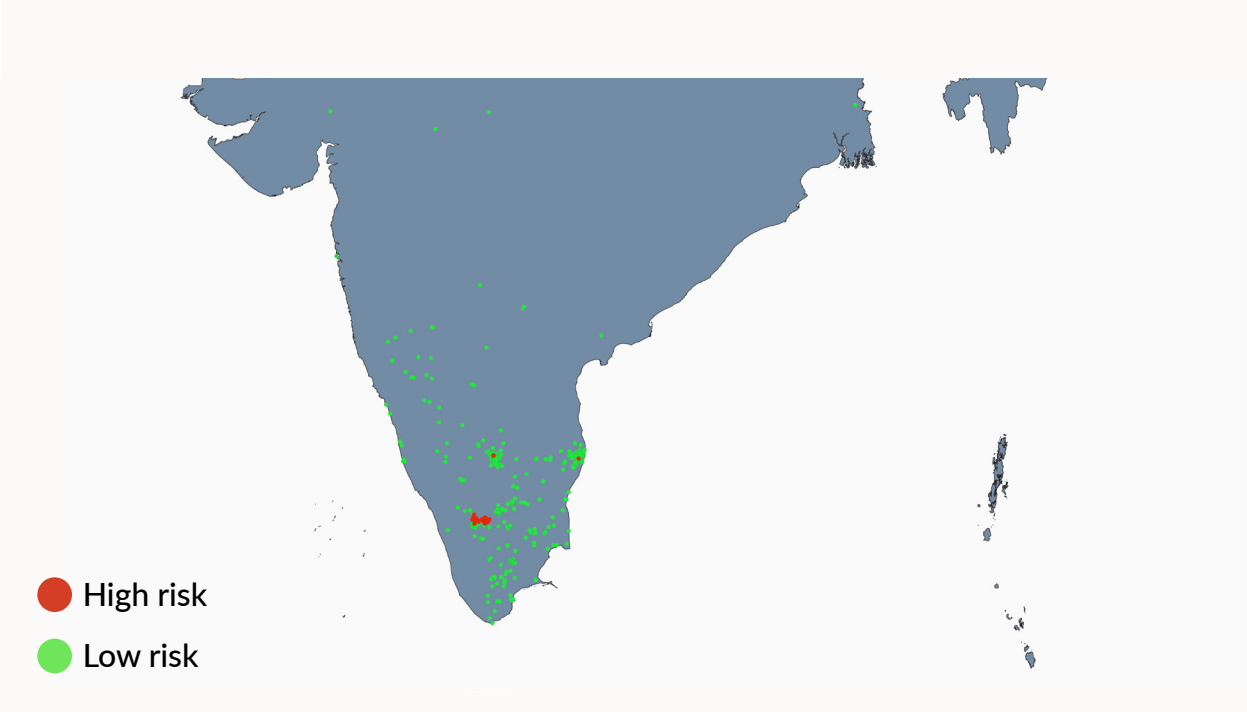
### *Primary barriers addressed: Availability and Usability*

Given the limited availability of self-reported ESG data and the related challenge of greenwashing, alternative data can offer timely and salient insights. They are particularly useful for identifying and tracking hard-to-verify activities, for example, those related to labor or to environmental issues along supply chains. Satellite imagery can clarify these underreported topics by showing labor exploitation of migrant communities or how operations along the supply chain affect the surrounding natural environment.

Lab participants widely agreed that collaboration and partnerships are fundamental to accessing and maximizing the ESG potential of many alternative datasets. NGOs and academic institutions regularly develop new research and aggregate vast troves of data on diverse topics with the potential for ESG application. And cloud service providers or manufacturers of smart devices gather information with uses that extend far beyond their immediate business concerns. The challenge is taking these data beyond their academic or narrow business applications.

The Global Fund to End Modern Slavery (GFEMS) has developed a Forced Labor Automatic Risk Estimator (FLARE), a technology tool to predict and assess forced labor risk at the firm level using open-source data, even without the participation of the firms under review. As a test case, the fund explored the apparel production industry in India using alternative data and a machine learning algorithm and achieved 80 percent accuracy in identifying companies with a significant risk of forced labor abuses. Similar techniques could apply to other sectors where forced labor is a concern. Collaboration was critical in accessing the needed data, and partnerships with private-sector organizations will be essential to test FLARE's real-world application further. See example visualization below, Figure 2.

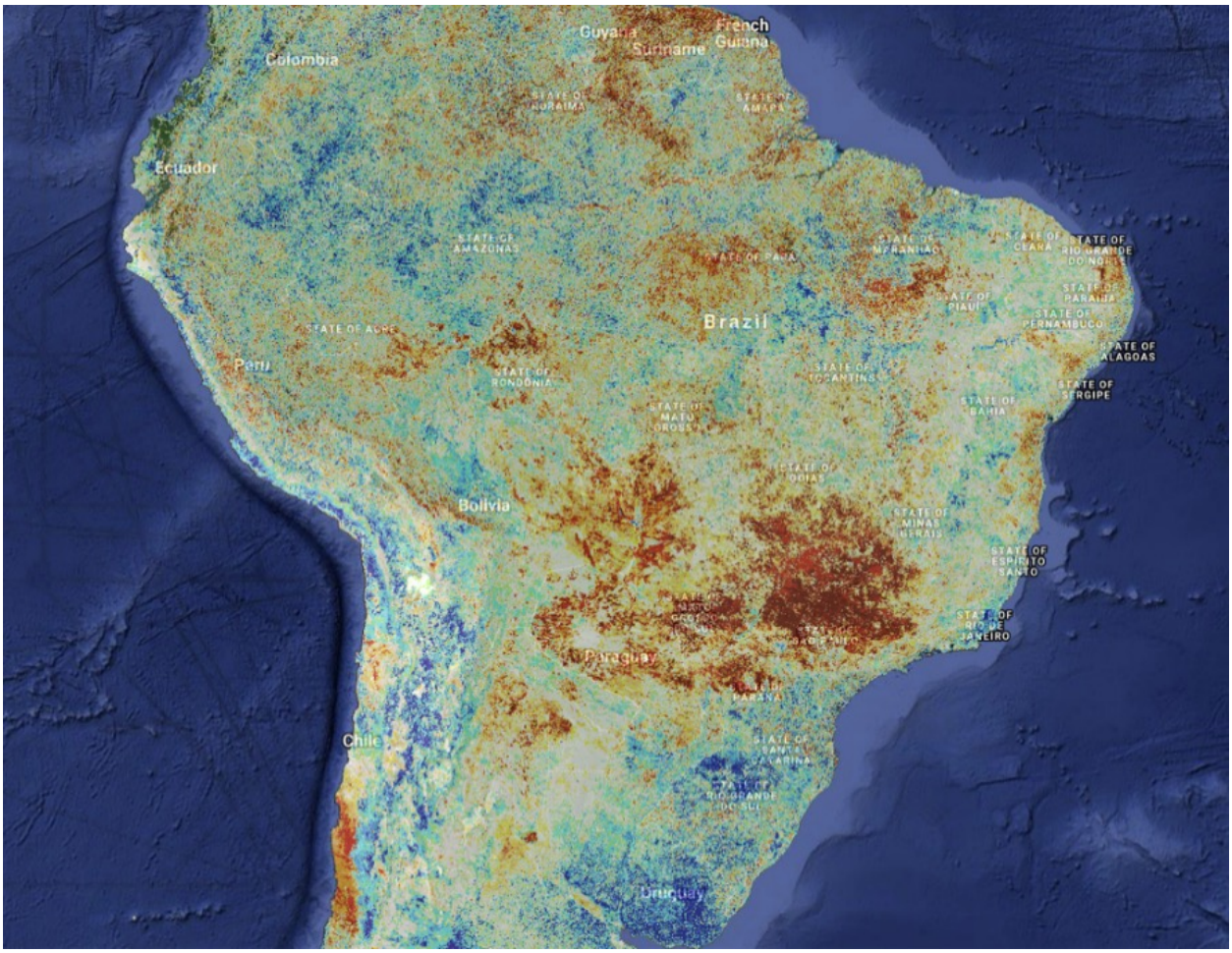
**Figure 2: Predicted Highest and Lowest Risk Garment Firms in Southern India**




*Source: GFEMS*

Climate Engine, a provider of Earth observation (EO) and climate data and analytics, is another technology that maximizes the value of alternative data. In partnership with Google Earth Engine, Climate Engine translates raw EO data into actionable insights in real time.[47] For instance, manufacturers of consumer goods can use satellite imagery in sustainable commodity sourcing (e.g., to monitor the ecosystems of palm-oil plantations).[48] Offering technical and business support services, Climate Engine engages with a host of science and data source partners, including NASA, The Nature Conservancy, the US Forest Service, the European Centre for Medium-Range Weather Forecasts, and others.[49] The datasets can inform decision making around issues such as physical asset risk, agricultural production, natural resource management, water conservation, and net-zero goals.[50] See example visualization below, Figure 3.

**Figure 3: Difference in Vegetation Robustness, Fall 2021 vs. Preview 20 Years**




Normalized Difference in Vegetation Index (NDVI)
Maroon = low vegetation Deep blue = robust vegetation

*Source: Climate Engine*

## NEXT STEPS

- Governmental agencies or industry organizations can identify the areas where NGOs and research institutions possess valuable datasets, including human rights abuses, regional and local sustainable development projects, and various equity issues.
- In order to improve the quality of information gathered by NGOs around the areas of concern, governmental agencies or industry organizations could provide them with support (e.g., a grant program or technical assistance) and facilitate the private-sector connections needed to bring the data to market.

## 3. Engage Different Data Platforms

### *Primary barriers addressed: Availability, Credibility, and Usability*

Lab participants expressed strong support for convenient, user-friendly pathways for ESG data disclosure, as well as opportunities for easy access to diverse data sources and analytic services. Central to both priorities are data platforms.

Many regional banks that we spoke with desire data provider platforms that bring together a range of data resources and act as a marketplace. Ideally, these would feature quality ESG data vendors on neutral platforms that allow easy review of a broad selection of providers based on FIs' most essential criteria, like geographical coverage, update frequency, and fee structure. Several such platforms already exist; Substantive Research's ESG Data Provider Dashboard is one example. It features over 140 vetted ESG data providers with functionality for easy comparison of providers, allowing FIs to effectively allocate research budgets in a timely manner.[51] This platform is only available to Substantive Research clients, which limits its reach. FIs in Southeast Asia would benefit from similar options that are easily accessible and geared toward the regional markets.

Additionally, Lab participants expressed a desire for transparency from data providers, including disclosure of the methodologies and data sources used to determine ESG scores (e.g., carbon emissions rather than an aggregate "E" score) and show the sources of data for interoperability with the framework or values of choice. A marketplace platform should indicate vendors that offer defined levels of transparency.

Equally important to FIs are robust ESG data disclosure platforms that could provide a manageable way for corporations of all sizes to report their ESG performance, even if they lack staff highly trained in ESG. Broad utilization of these platforms would increase the volume of overall disclosures across sectors while improving the standardization and comparability of data. Experts from the Lab agreed that it is paramount that these disclosure platforms become commonplace and encompass certain key principles.

Data disclosure platforms should be:

- ESG framework agnostic;
- low cost, with a focus on public good;
- intuitive and easy to use for non-experts;
- collaborative, accessible for business partners who can provide their own data points;
- easily audited;
- complementary to and interoperable with other platforms; and
- transparent (e.g., includes sources of data).

Several notable public- and private-sector organizations have developed their own data disclosure platforms. On the private-sector side, data provider Arabesque recently introduced the ESG Book, a free cloud-based ESG data disclosure platform designed to support the Ten Principals of the UN Global Compact[52] and function as a "public good" that improves sustainability data's global availability and quality.[53] In a similar vein, DiginexESG is a data disclosure platform designed to facilitate affordable and expedited ESG reporting by companies of all sizes, regardless of internal ESG expertise. The platform is

blockchain-enabled, easing credibility concerns by making data traceable and auditable while also providing tools for ESG reporting by external business partners (e.g., clients within a bank's loan portfolio),[54] thus helping to expand the number of small and medium-size enterprises that provide ESG disclosures. It will be important to understand what would incentivize companies to provide data to these platforms.

Public-sector entities are equally engaged, developing data platforms that aim to improve the ESG data ecosystem through a streamlined disclosure process. Project Greenprint, by the Monetary Authority of Singapore, is one such initiative. It plans to establish four common-use sustainable finance data platforms, including one that will focus on ESG data disclosure and "enable mapping to internationally aligned reporting frameworks and promote data consistency and comparability."[55]

**NEXT STEPS:**

- Further analysis of cost barriers that impede ESG adoption could benefit FIs with limited resources, particularly regional banks. Financial firms and central banks could explore the issues within individual markets and the potential avenues for financial support by relevant governmental agencies, development finance institutions, or industry organizations.
- Public- and private-sector stakeholders, including governmental agencies, regulators, ESG data providers, and banks, should explore approaches for incentivizing (or mandating) companies to provide data in a common format (e.g., XBRL) to data disclosure platforms.
- Coordination is needed among entities developing data disclosure platforms to ensure that they are in fact interoperable and work towards a global ESG data governance sharing system.

# CONCLUSION

ESG integration has gone mainstream, but many FIs in Southeast Asia lag behind their peers, particularly regional banks. Stakeholders face challenges accessing and analyzing credible and useful ESG information, including non-digitized or improperly formatted internal historical records that hold valuable insights. Moreover, acquiring ESG data and services from third-party providers can stretch the resources of some organizations. Adequate data may not even exist for some companies, sectors, or locales. Fortunately, existing and emerging technology tools can help bridge these gaps and enable the thorough examination of diverse datasets that further ESG business goals.

The Financial Innovations Lab brought together an engaged group of experts who outlined how organizations can leverage these technologies to digitize, organize, and analyze existing large swaths of information. Our conversations also made clear that collaboration is essential for bringing high-value alternative datasets to market, allowing multisectoral stakeholders to analyze the information and produce new insights.

Data platforms will play a crucial role in scaling ESG data disclosure among organizations of all sizes and ensuring that FIs have easy access to the information and tools they need to help countries meet bold sustainability goals. The Milken Institute supports continued dialogue and collaboration among private- and public-sector organizations to expedite the adoption of ESG by the entire Southeast Asia financial sector. The Institute will continue to provide a forum for these essential conversations.

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