Research Intelligence

ESG Startups:

Small steps towards a greater goal



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Introduction



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In 2015, the United Nations presented its vision for the Sustainable Development Goals (SDGs) to the world. These aim to ensure that by 2030, every nation is on the path to sustainable development, their societies are safe and at peace, and substantial progress is being made on reducing emissions of greenhouse gases, thus reducing risks arising from climate change.[1/] However, natural disasters continue to assail the world with ever greater frequency and severity, and surface temperatures trudge forward on their inexorable climb higher; indeed, in July 2023, an unwelcome landmark was reached when the instrumental record of global temperatures hit a new peak.[2/] With the stakes as high as ever but with many wondering whether it will be possible to achieve the SDGs, interest in issues around sustainability is taking on an ever more central role in societal discourse, and one especially important way that this is happening is through the burgeoning interest in 'Environment, Social and Governance', or ESG, issues.

The three pillars of ESG are: (i) the **Environment**, with the focus here being on reducing emissions of greenhouse gases, cutting waste, increasing recycling rates, improving energy efficiency, and acting to develop strategies for addressing climate change; (ii) **Social**, or ensuring equality of employment opportunities, compensating employees fairly, maintaining workplace health and safety, providing employee benefits, and acting responsibly towards supply chains and the wider society; and (iii) **Governance**, which here refers to ensuring that business transactions are ethical, conducting activities with transparency and accountability, carrying out effective risk management, avoiding corruption or conflicts of interest, and maintaining the privacy of stakeholders' data. Although at present, the criteria for judging ESG compliance are somewhat broad and ill-defined, the use of ESG metrics nevertheless provides a framework for managing organizations in a way that reflects the increasing desire for companies to be sustainable and environmentally friendly, and for their activities to be considered within the wider context of their societal impacts.

However, the three legs of the ESG tripod do not carry the same weight, and across the public sector, the private sector, and the banking industry, it is the 'E' of ESG that is most talked-about. In particular, with the World Meteorological Organization (WMO) warning that the crucial 1.5-degree-Celsius guardrail may be breached within the next 5 years, it is efforts to reduce greenhouse gas emissions and so keep global warming below this crucial milestone that have attracted the most attention.

1/ https://sdgs.un.org/2030agenda
2/ https://www.dw.com/en/july-2023-was-the-hottest-month-ever-recorded-eu-confirms/a-66467143

However, **the public and private sectors prioritize the ESG goals in somewhat different ways.** For its part, the government's attention is focused on accountability and transparency, or the 'governance' part of ESG; whereas the private sector typically uses the ESG indicators as a product or market differentiator. For example, companies leveraging digital technologies to build the circular economy[3/] or to facilitate the fair transition to a green economy[4/] may exploit the marketing potential of these moves since compliance with ESG goals may positively affect consumer purchasing decisions for higher-priced products. On the other hand, for the banking sector, ESG indicators are most important for their ability to illuminate a company's financial sustainability, though the legal requirements governing disclosure relating to this may vary substantially from one jurisdiction to another. For example, the EU's Sustainable Finance Disclosures Regulations (SFDRs) are very stringent and cover areas beyond the strictly financial, such as the company's exposure to potential climate-related risks. Banks that fail to comply with these regulations are subject to fines and ratings downgrades.

The ESG principles were first referenced in the 2004 report, 'Who Cares Wins', a joint undertaking by more than 20 global financial institutions and the UN Global Compact. The report proposed integrating the ESG issues into analysis, asset management and securities brokerage services with the twin goals of helping investors make better informed decisions about the sustainability of their investments and providing stakeholders with access to a richer information environment.[5/] These proposals enable businesses to communicate their long-term sustainability policies and goals, providing a data source for analyzing companies' growth potential. In the case of Thailand, the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET) have mandated sustainability reporting for companies registered in Thailand, with guidelines introduced in 2012.[6/] Currently, a 3-year plan is in effect (2022 to 2024) with the ESG indicators now used by the stock exchange to assess corporate sustainability.

Figure 1

SEC Strategic Plan, 2022 to 2024



Source: SEC, Thailand

3/ The 'circular economy' refers to a model of production and consumption that emphasizes reuse and recycling, and through this, it achieves greater value from resource inputs and reduces waste.

4/ The 'fair transition' refers to the goal of transitioning to a green economy in a way that ensures that the environmental impacts of economic activity are minimized, that all stakeholders are as fully involved in decision making and implementation as possible, and that no groups are treated unfairly or are required to shoulder an unreasonable share of the costs associated with this.

5/ https://www.todayesg.com/origin-of-esg-global-compact-who-cares-wins/

6/ https://www.sec.or.th/cgthailand/TH/PublishingImages/Pages/RulesRegulation/Manual/แนวทางการจัดทำรายงานแห่งความยั่งยืน%20set.pdf

At the same time, the steady rush of technological innovation has transformed societies and economies, and as consumer behaviors have undergone revolutionary changes, companies have had to adapt to a ceaseless whirlwind of competition. Against this backdrop, consumer awareness of issues around sustainability has risen substantially, and this has then added to worries over the potential impacts of these digital technologies. The e-Conomy SEA 2022 report by Google, Temasek, and Bain & Company[7/] confirmed some of these fears, showing that **in just 8 years between 2022 and 2030, growth in the digital economy in Southeast Asia will lead to a 3.3-fold increase in greenhouse gas emissions, this having a warming potential equivalent to 20 million tonnes of CO_2 equivalent (CO_2e).** The social impacts of economic growth are also significant and include issues such as unfair employment practices, in particular the worrying tendency of workers in fast fashion suppliers to be *'underpaid and overworked'.* Problems in this area were highlighted in Earth.Org's October 2022 publication 'Fast Fashion: The Danger of Sweatshops'. This showed that **in countries that are centers of production for the fast fashion industry (e.g., Bangladesh, China and India), minimum wages generally cover only 20-50% of basic household expenses. Moreover, employees are often forced to work 14-16 hours per day, seven days a week, in environments that are poor, unhygienic, and unsafe while being subject to verbal and sometimes physical abuse from managers.**[8/] Faced with this situation, companies of all sizes from major corporations to startups have increasingly recognized the importance of aligning with the ESG goals and of moving economic development to a much more sustainable basis. This process has been substantially accelerated by the insistence by regulatory authorities that alongside their annual financial report, companies are also required to release a sustainability report detailing their environmental and sustainability goals.

Generally, companies have responded to shifting interest in sustainability in one of two ways. Companies may focus on their own impacts by overhauling their business processes, cutting their greenhouse gas emissions, and reducing their environmental impacts. Alternatively, they may bring new products and services to the market that help other companies or individuals reduce their own greenhouse gas emissions more rapidly and more effectively. Likewise, on the consumer side of the market, widespread changes in behavior are being seen as individuals and groups switch to purchases of environmentally friendly goods and services that have a beneficial impact on society. **Demand-driven changes like these naturally present an opportunity for companies of all sizes to respond to consumer demand by supplying the market with their new ESG-oriented products and services, an alternative way to achieve the sustainability development goals. However, because startups are more agile and often have their roots in technological innovations and breakthroughs, they are well placed to use technology to amplify their business impacts and so grow very rapidly. This is why in this area, 'ESG startups' are making rapid inroads into the market, allowing them to take on an ever more important role.**

7/ https://www.bain.com/insights/e-conomy-sea-2022/
8/ https://earth.org/sweatshops/

Box 1 Rising Global Interest in Sustainability

Over the past year, worldwide interest in the ESG issues has risen substantially. One example of this is the introduction of the European Sustainability Reporting Standards (ESRS), which came into effect on 31 July, 2023. These specify that corporate non-financial reporting must include information on environmental and social policies, staff treatment, respect for human rights, anti-corruption efforts, and board diversity with regard to age, gender, and educational and occupational backgrounds.[9/] These measures apply to companies that are publicly listed within the EU and that have more than 500 employees, including banks, insurance companies and organizations where this disclosure is considered to be in the public interest. This thus covers around 11,700 companies and commercial groups in the EU, and these will be required to collect this data through the 2024 financial year for publication in 2025. Likewise, despite no longer being a member of the EU, the United Kingdom has adopted similar measures. The UK government recognizes the importance of the ESG goals as part of its attempts to achieve net zero carbon emissions, extend consumer protections, increase the international competitiveness of the UK economy, and stimulate economic growth. The UK Financial Conduct Authority is therefore in the process of drafting new regulations on ESG reporting and rankings, and these are expected to be submitted for approval in Q4 of 2023.[10/] These regulations have four main planks around which reporting on ESG indicators is structured.[11/] These are:

- Transparency: Companies will be required to be open and transparent with regard to data release to stakeholders, and to have procedures in place governing company operations as per the ESG metrics in order to build trust.
- Good governance: Companies will be required to have a clear and transparent organizational structure, thus allowing for the support and implementation of ESG goals.
- Management of conflicts of interest: Companies will be required to put in place appropriate policies to assess and manage risks arising from conflicts of interest.
- Systems and controls: Companies will be required to have quality assurance systems in place as per the ESG metrics. These should prevent the disclosure of personal information and provide procedures to follow when company actions diverge from ESG goals.

However, on the other side of the Atlantic, the situation is somewhat different, and ESG issues have become extremely divisive. Indeed, legislation in some states has attempted to restrict the use of ESG metrics, which critics complain will drag on returns on investment and provide a means by which economic power may be used to establish standards beyond those that are legally mandated. Because the US constitution allows states to legislate on substantive matters independently of one another, this diversity of viewpoints and of legislation presents a worsening problem for companies operating across state lines, which now have to adjust their practices to take into account variations between states' regulatory environments. [12/]

In Asia, companies that were publicly listed in Japan in the previous financial year (from April 1, 2022 to March 31, 2023) have had to report on a number of ESG metrics in their annual securities reports, which were due to be printed by June 2023. These include the company's environmental, social, and employment policies, their respect for human rights, their anti-corruption strategies, and their data and cyber security measures.[13/] Companies also need to lay out a clear strategy for reaching their sustainability goals, and are required to supply quantitative data on areas such as the release of greenhouse gases, employees' gender mix, the rate of uptake of parental leave by male employees, and the extent of the gender pay gap within the organization.

Closer to home, in the ASEAN zone, Singapore has required companies listed on the stock exchange to report on their progress on sustainability since 2017, but from 2022 onwards, this has extended to include matters relating to climate impacts, as per the International Sustainability Standards Board (ISSB). This covers information on how the company is managing exposure to climate risks, how transparent and accountable it has been with regard to the release of data on ESG investments, and how far it has been meeting its requirements for responsible financing.[14/] It is hoped that this will then prevent companies from using ESG standards to 'greenwash'[15/] their activities. In Malaysia, ESG standards have applied to listed companies since 2016, and these were then incorporated into the Twelfth Malaysia Plan (2021-2025). This requires companies to disclose information relating to their sustainable development plans and their climate impacts, thus allowing progress over the previous 3 years to be assessed and a judgement made over whether goals in these areas (if they exist) will be met. These regulations were announced in September 2022, and will come into effect between December 31, 2023 at the earliest and December 31, 2025 at the latest.[16/]

9/ https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

10/ https://www.fca.org.uk/publications/annual-reports/perimeter-report

11/ https://www.fca.org.uk/news/news-stories/code-conduct-esg-data-and-ratings-providers

12/ https://www.thomsonreuters.com/en-us/posts/esg/state-laws/

13/ https://www.morganlewis.com/pubs/2022/12/japan-introduces-mandatory-esg-disclosures-for-public-companies

14/ https://www.ifcreview.com/articles/2023/april/esg-in-singapore-trends-and-developments/

15/ Greenwashing refers to the practice of building a corporate image that misleads investors and consumers into believing that the organization is more committed to environmental stewardship than may in fact be the case.

16/ https://hhq.com.my/publications/company-level-esg-regulatory-expectations-in-malaysia-2/

A positive trend in Europe

As stated above, ESG issues have attracted attention in both the public and private sectors and at all levels of the economy down to that of startups. However, although there is a constant flood of new startups appearing worldwide, only a very few of those that have a business model that deals directly with ESG issues have risen to international prominence. Moreover, because these worries rose to prominence in Europe ahead of other parts of the world—especially when it comes to the climate and the environment—these startups have tended to be concentrated there.

When it comes to raising funds, in addition to looking to the private sector, European startups also have the option of turning to public funds administered by the EU that have been established with the explicit intention of supporting startups operating in the environmental space. For example, the LIFE Programme has funding worth EUR 5.4 billion and supports work in the areas of environmental and biodiversity conservation, the circular economy, quality of life improvements, climate change mitigation and adaptation, and the clean energy transition. In addition, Horizon Europemanages EUR 95.5 billion in funding targeting research and innovation relating to sustainability, while the Innovation Fund manages another EUR 10 billion for investments into green startups and programs that aim to reduce greenhouse gas emissions.[17/] This kind of public-private cooperation has underpinned the success of a number of European ESG startups and in particular, this paper will look at the three companies Plan A, Verkor and Carbon Equity.

Table 1

Successful European ESG Startups

	planA	VERKOR	carbon equity
Established	2017	2021	2021
Head quarters	Berlin, Germany	Grenoble, France	Amsterdam, the Netherlands
Founder(s)	Lubomila Jordanova and Nathan Bonnisseau	Benoit Lemaignan	Jacqueline van den Ende
Key Product	Carbon management SaaS	EV batteries	Providing private equity investment opportunities in companies operating in areas related to the environment and the climate.
Key Success Factors	Early entry to the market and operating with an environmental mindset	Skilled in fundraising and seeking out investment partners	Broad range of investment options
Future Plans	Reduce carbon emissions by 1 Gt per year	To establish a battery gigafactory	To have a positive impact on environmental development

Source: Krungsri Research

17/ https://www.eurocompanyformations.com/blog/obtaining-funding-green-start-ups/

Plan A

Plan A was established in 2017 by Lubomila Jordanova and Nathan Bonnissaeu, with the headquarter in Berlin. The company's principal business activity is the provision of an integrated, comprehensive software as a service (SaaS) pipeline for companies aiming to transition to net zero. Plan A's software helps companies record and analyze data relating to core activities that result in the release of CO_2, and the program then generates suggestions on how these can be reduced. In addition to helping businesses cut their emissions, this service also assists companies with the preparation of sustainability reports and the production of ESG metrics. Since its founding, Plan A has collaborated with over 1,500 businesses and generated over 1,000 suggestions for ways to cut emissions. The company's long-term vision is to facilitate cuts in global CO_2e emissions totaling 1 gigatonne annually.[18/]

Verkor

Verkor is a manufacturer of electric vehicle (EV) batteries and related equipment. The company was established in 2021 by Benoit Lemaignan and is based in Grenoble. Verkor was founded with the goal of developing the EV battery industry and of producing batteries that are sustainable across their complete lifecycle. This includes taking into account the recycling of the metals used in the battery, reducing the CO_2 emissions connected with its production, and recycling these products at the end of their life. The company also aims to green its supply chain all the way back to the mining and smelting of the metals used in battery production. One factor behind Verkor's rapid success has been the company's skill in securing funding, with EUR 100 million raised within a year of its founding.[19/] This has then been used to build a prototype factory and the Verkor Innovation Centre or 'VIC', which opened in June 2023 in Grenoble. This factory is capable of producing batteries with a net capacity of 150 MWh of battery cells per year[20/] and thus qualifies as a 'megafactory'. In addition to its skill in raising funding, Verkor has also proved to be successful in seeking out partners, and the company has formed a long-term relationship with the French auto manufacturer Renault under which it has agreed to supply the company with batteries for use in its EVs. Renault EVs should begin to run on Verkor batteries in 2025.[21/]

Because metals (especially nickel, manganese, cobalt and lithium) are major inputs into the production of EV batteries, the EU authorities have issued regulations covering the labeling of all batteries with a capacity greater than 2 KWh, and these thus now have to clearly state the CO_2 emissions associated with all stages of the battery's production. EU regulations also cover the durability and performance of EV batteries, while the 'digital battery passport' records the origin of recycled metals, how to deal with used batteries, and how far their components may be recycled. Verkor has been adept at responding to these regulations, and to this end, **the company has developed software for tracking the usage of metals across its supply chain, thus keeping the company in line with the industry's legal requirements and allowing it to meet its sustainability goals.**[22/] The company now plans to open a gigafactory in Dunkirk in the north of France employing 1,200 staff and with a production capacity of 16 GWh per year, sufficient to supply 300,000 new EVs annually.[23/] If the factory opens as planned in 2030, it will likely be the world's most modern and efficient EV battery production facility.

18/ https://plana.earth/about

19/ https://www.innovationnewsnetwork.com/verkor-announces-e100m-funding-for-developing-sustainable-battery-cells/13079/

20/ https://verkor.com/en/verkor-innovation-centre-opens-for-business/

21/ https://www.reuters.com/business/autos-transportation/renault-strikes-battery-deal-with-verkor-premium-evs-2023-04-13/

22/ https://verkor.com/en/verkor-chooses-v-trace-a-solution-co-developed-by-optel-and-bureau-veritas-to-ensure-the-traceability-and-sustainability-of-its-supply-chain/

23/ https://verkor.com/en/ambition/

Carbon Equity

Carbon Equity, which was started in 2021 by Jacqueline van den Ende and is based in Amsterdam, provides smaller investors with access to private equity investment opportunities targeting startups operating in areas connected to the environment and the climate. Minimum investments are set at EUR 100,000 and are focused on environmentally friendly activities and climate change adaptation and mitigation. The company's success stems from the range of investment opportunities available to interested parties, which stretch across industry sectors, construction, food, agriculture, energy, transport, and data storage and analytics.[24/] Carbon Equity has invested in several companies including: (i) Kenoby, a Norwegian company sustainably manufacturing recyclable wood alternatives that are more durable than natural wood; (ii) Rondo, a US company producing industrial heat batteries that aims to achieve net zero and which is currently working with Thailand's SCG to develop heat storage materials; and (iii) Funga, a US company that is developing the use of mushrooms and funguses to improve soil quality and sequester atmospheric carbon. At present, Carbon Equity manages funds on behalf of more than 500 investors, and both its client base and total assets under management have increased steadily between Q4 2021 and the present.



24/ https://www.carbonequity.com/climate-tech

ESG Startups in Thailand and ASEAN

Against the backdrop of this international review, Thailand's efforts at sustainable development have resulted in 26 Thai listed companies being selected for inclusion in the Dow Jones Sustainability Index (DJSI),[25/] sufficient to keep Thailand in first place in the ASEAN rankings for 9 consecutive years for this (from 2014 to 2022).[26/] The Stock Exchange of Thailand (SET) has also raised the profile of sustainability issues by releasing the ESG Data Platform in October 2022. This collects and makes available data on ESG metrics for listed companies, though the platform focuses especially on information that is easy to analyze alongside other financial data.[27/] In the future, the SET plans to use data on ESG metrics to evaluate the sustainability of stocks through its Thailand Sustainability Investment (THSI) and as part of the Corporate Governance Report of Thai Listed Companies (CGR). It is hoped that this will then reduce problems connected to the duplication of reporting for listed companies.[28/]

Figure 2

Number of Thai Companies Selected for Inclusion in the DJSI



Source: SET, Thailand

Thai startups that are strongly concentrated on sustainability have started to emerge, though these are not yet listed on the stock market. Among these, three ESG startups have become especially prominent, though in somewhat different areas: **Happy Grocers** has an environmental focus, **Find Folk** is concerned with community sustainability, and **Vulcan Coalition** concerns itself with opening up opportunities for people with disabilities.

25/ Dow The Dow Jones Sustainability Index (DJSI) is a stock index developed by RobecoSAM, experts in sustainable investing, and S&P Dow Jones Indices. The DJSI selects "sustainable stocks of global importance", that is, stocks in leading global companies that are strongly focused on issues connected to sustainability. For more details, please see: https://www.setinvestnow.com/th/knowledge/article/65-investhow-djsi-2021

26/ https://www.set.or.th/th/about/setsource/news-release/article/137-djsi

27/ https://www.set.or.th/th/about/setsource/news-release/article/96-esg-data-platform-

28/ https://fintechnews.sg/64661/thailand/thailand-stock-exchange-launches-an-esg-data-platform/



- ## Happy Grocers

Happy Grocers began life as a student undertaking before growing into a startup distributing organic farm produce. The company was initially set up in 2020 in the middle of the pandemic by Suthasiny Sudprasert and Pattamaphon Damnui with the goal of selling food products while minimizing waste at all stages of production, from farming through to environmentally friendly packaging. The company is thus strongly focused on managing supply chains and ensuring that small-scale farmers receive a fair price for their products, whereas on the demand side, Happy Grocers helps health-conscious consumers access organic fruit and vegetables.[29/] The company's products are distributed through 2 channels: (i) an online platform; and (ii) a grocery truck that sells in front of condominium blocks in Bangkok over the weekend. In its first year of operations, Happy Grocers won the NIA's Startup Thailand League award, and the following year, it was selected for the Impact Collective Accelerator Program.

- ## Vulcan Coalition

Vulcan Coalition is an AI and software company that was founded by Methawee Thatsanasateankit and Niran Pravithana in 2019. The company won the National Innovation Award in 2021 and the Most Creative Business award in 2022 thanks to the skill and ability of its staff, who are disabled. Vulcan Coalition has developed a Thai text-to-speech engine for use by visually impaired individuals as well as creating a voice-activated smart home system. The company's goal is to create work for individuals affected by disabilities, allowing them to exploit their true potential and so to live independently. The company also assists staff in maintaining ownership of the intellectual property associated with the software developed in-house,[30/] thus helping to level the social playing field and ensure equality of opportunity for disabled individuals at work and in day-to-day life. The company's vision is for it to employ 60,000 working-age people with disabilities (PWDs), or around 11% of all working-age PWDs in Thailand. It is hoped that these will work in areas connected with training AI datasets and with digital technology generally, and if the company is successful in these endeavors, it will become the largest data labeling[31/] operation in the Asia-Pacific region.[32/]

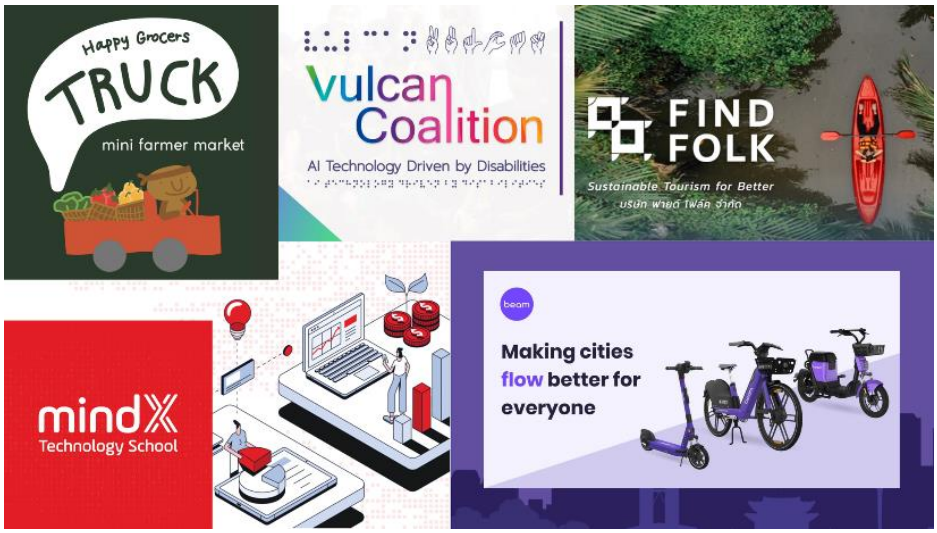
- ## Find Folk

Find Folk is a sustainable tourism business founded in 2018 by Jakkapong Chinkrathok. The company's mission is to balance economic, social, and environmental pressures through sustainable tourism targeting communities across the country. In mid-2023, Find Folk consulted on the development of a tourism brand for the Tha Tien community in Bangkok, which included setting up the Tha Tien Fest. Find Folk's core organizing principles revolve around developing individual talent, improving resources, and stimulating entrepreneurial thinking, all with the goal of raising the quality of the tourism experience, ensuring the highest possible environmental and conservation management, and acting responsibly towards and minimizing impacts on communities in high-tourism areas.[33/] After operating for 3 years, Find Folk made it through to the last round of the UNWTO Global Rural Tourism Startup 2021 competition.

29/ https://readthecloud.co/happy-grocers/
30/ https://readthecloud.co/vulcan-coalition/
31/ Data labeling involves categorizing (labeling) data that is used to train AI and machine learning systems.
32/ https://permanent-jakarta.thaiembassy.org/en/content/meetsocialenterprises
33/ https://readthecloud.co/find-folk/

Figure 3

ESG Startups in the ASEAN Region

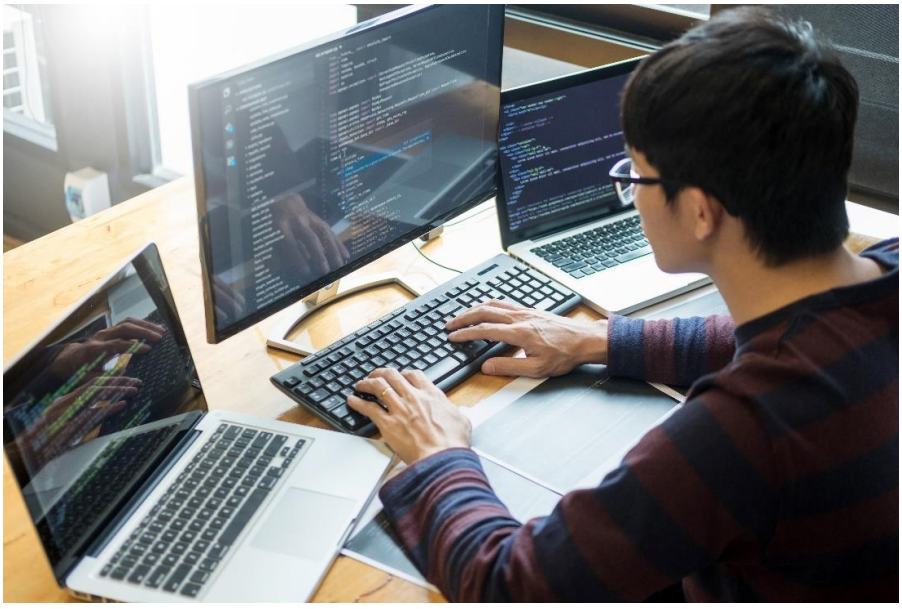


Source: Happy Grocers, Vulcan Coalition, Find Folk, mindX, Ride Beam, Krungsri Research

Apart from Thailand, other countries in ASEAN also have ESG-focused startups that are worth studying. For instance, Singapore, which is a hub for successful startups. One of the more interesting ESG startups to appear there is **Ride Beam, founded in 2018 by Alan Jiang and Deb Gangopadhyay. This micromobility startup rents e-scooters to the public, and by cutting consumption of transport fuels, Ride Beam helps to lessen travel-related environmental impacts, while as a side benefit, travel in major cities using Ride Beam's scooters is also often more convenient and provides better integration with public transport networks.** At present, Ride Beam offers e-scooters for rent in Singapore, Malaysia, Indonesia, Australia, New Zealand, South Korea, Japan, Turkey, and Thailand. Charges are paid by credit card, and internet of things-enabled sensors help to ensure public safety, for example by tracking the scooter's location, calculating the best route to the destination, and detecting pedestrians and automatically controlling the scooter's speed and brakes if this is necessary. Thailand-based operations are handled by Beam Thailand, which rents out scooters in the major tourist areas of Bangkok, Chiang Mai, and Phuket, as well as in universities including Chulalongkorn, Kasetsart, and King Mongkut's Institute of Technology Ladkrabang. Ride Beam has been successful in its core mission of raising awareness about the impacts of transport on pollution levels, and so in Australia, the company has provided 10 million rides on e-scooters and electric bicycles across 27 cities, and as of Q3 2023, a survey showed that 67% of its customers had reduced their car usage as a result.[34/] In 2022, the company also pledged to completely eliminate its consumption of fossil fuel-generated electricity and to replace this with electricity from renewable-certified sources instead. Beyond this, Ride Beam has been successful in working with local organizations and creating job opportunities in local communities.

34/ https://www.ridebeam.com/newsroom/aussies-clock-up-10-million-rides-on-e-scooters-and-e-bikes

In addition to environmentally focused startups, more socially directed companies have also begun to appear in the ASEAN zone, and one example of this is **MindX, a Vietnamese EdTech startup that teaches coding online and that aims to become Southeast Asia's largest such platform. MindX was established by Tung Nguyen, Ha Nguyen and Huy Nguyen in 2015, initially under the name Techkids, to teach students how to code both online and in person. In its first year of operations, enrollment was free but following this, MindX switched to a traditional payments model**, though alongside its teaching operations, the company also helps graduates from its courses find employment in the 200 companies in Singapore, Australia and Thailand with which it has partnered.[35/] To date, over 40,000 students from the MindX Technology School have found work in 20 countries, although some graduates have gone on to establish their own startups.[36/] In 2023, MindX was successful in its series B round of fundraising, attracting an additional USD 15 million with which to fund ongoing business expansion. The company has now set its sights on helping Vietnamese tech workers secure employment abroad, which in addition to providing social and economic opportunities for Vietnamese workers, will contribute to developing the digital skills of the workforce, itself a crucial factor in driving economic growth within the ASEAN region.



35/ https://www.businesstimes.com.sg/companies-markets/vietnamese-education-startup-mindx-bags-us15-million-series-b-funding
36/ https://www.techinasia.com/mindx-secures-15m-scale-tech-education-vietnam

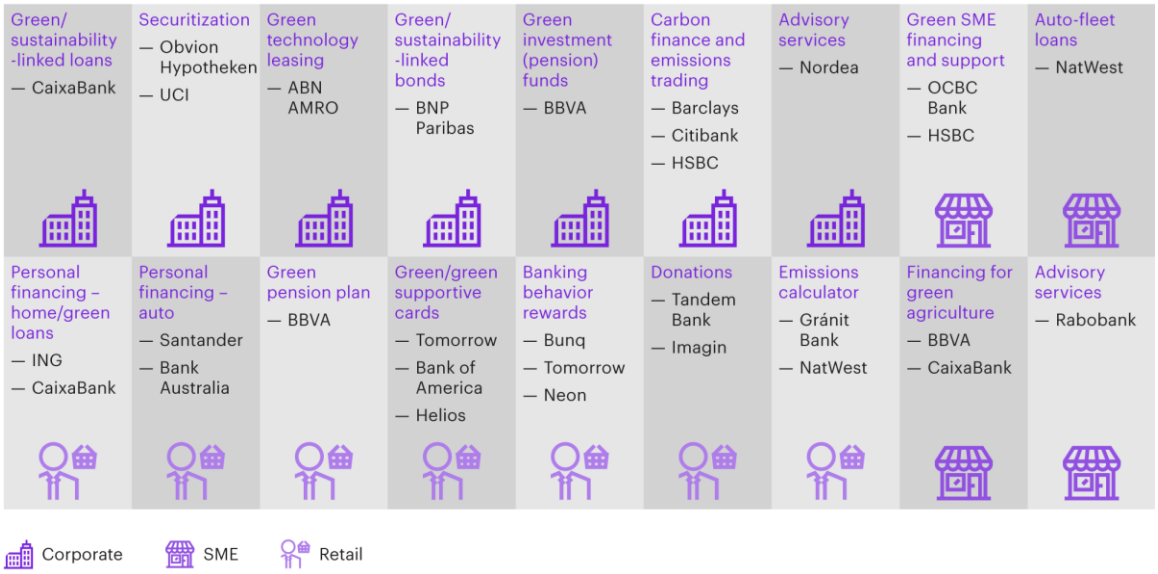
The Banking Sector & ESG Startups

Within the banking industry, rising worries over issues around sustainability have added to the pressure on financial institutions to overhaul their business playbooks across the organization, from front-office activities such as customer-facing service provision and sales through to the whole range of back-office operations. This change in priorities is reflected in research by the data analysts Dun & Bradstreet, which shows that 29 of the 30 largest providers of financial services now say that operating in line with ESG principles is extremely important for their organization.[37/]

On the front-office side of the business, banks around the world have begun to roll out new financial products to partners and customers that aim to address concerns over climate change. Figure 4 outlines some of these, including the issuance of green bonds by banks to raise funds for environmental projects, and acquiring carbon credits that help their corporate clients meet their compliance requirements concerning the release of greenhouse gases.

Figure 4

Products and Strategies used by Financial Institutions Responding to Climate Change



Source: Kearney analysis

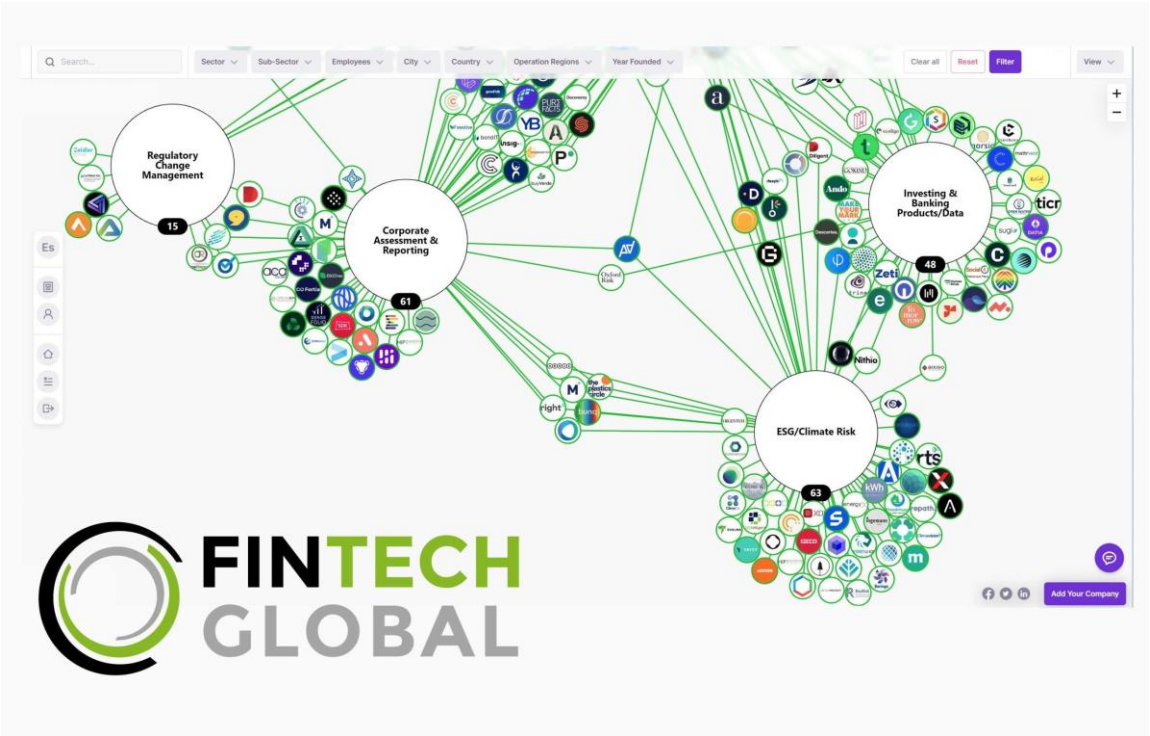
37/ https://www.kearney.com/industry/financial-services/article/-/insights/european-banks-can-and-should-do-more-to-lead-on-esg-issues

With regard to back-office operations, banks and other financial institutions are leveraging new technology to help meet ESG goals, though this can take the form of either developing the appropriate technology themselves or partnering with a FinTech provider. Recently, a survey by HexawareMobiquity of 150 banking executives in the UK showed that 76% had undertaken or were undertaking digital transformation initiatives to drive the transition to a more sustainable business model.[38/]

This points to one major impetus behind the global proliferation in the number of ESG startups, that is, the need for organizations to respond to demands for increased sustainability, and indeed a significant fraction of these startups have been established with the goal of providing services to financial institutions and other similar large-scale organizations exactly to facilitate this transition. These services include assessing the organization's environmental impacts, assisting with reporting on ESG metrics, assessing ESG data, and evaluating supply chains and financial products and services for ESG compliance and sustainability. Growth in this market is reflected in the fact that FinTech Global (a FinTech data provider that tries to match startups with major corporations and thereby making it easier for the latter to meet their ESG goals) lists details on 309 ESG-focused FinTech operations.[39/]

Figure 5

FinTech Global's Interactive ESG FinTech Market Map



Source: FinTech Global

38/ https://www.intelligentcio.com/eu/2023/06/20/report-finds-sustainability-deprioritised-as-banks-respond-to-the-economic-crisis/

39/ Updated as of September 17, 2023. Retrieved from https://fintech.global/esg-companies/

Box 2 How can ESG Startups Help Financial Institutions?

Ever-expanding awareness of and interest in ESG issues is impacting the regulatory environment, and financial institutions around the world are now having to adapt to these changing circumstances by placing sustainability issues centerstage in their business strategies and in the design of new financial services and products. With this in the background, FinTech Global has identified an opportunity to create a platform that centralizes data on ESG startups globally (inclusion is voluntary), and this is then presented in the ESG FinTech Market Map that highlights the tech companies offering solutions in the areas of climate risk, ESG assessment and reporting, ESG Intelligence & Data Analytics, supply chain screening, development of new banking products, or regulatory change management. The Market Map categorizes companies according to their area of operations and the types of products and services that they make available to financial institutions.

Over 2022 and 2023, interest from ESG startups in the platform surged. Most companies listed on the website offer a range of products and services that promise to address ESG-related issues, but here we consider only examples of ESG startups that are able to help financial institutions, specifically with regard to the release of greenhouse gases (Table 2).

Table 2

Startups Offering Products/Services to Financial Institutions Related to Scopes of Carbon Emissions

Scopes	Scope 1 Direct Emissions	Scope 2 Energy Indirect Emissions	Scope 3 All Other Indirect Emissions
Explanation	Direct greenhouse gas emissions from owned or controlled sources into the atmosphere by the organization, e.g., from factories, offices, machinery, equipment, vehicles, etc.	Indirect greenhouse gas emissions associated with the generation of electricity, heat, or steam that an organization purchases or consumes	Indirect emissions throughout the entire value chain of an organization, e.g., from the production of purchased goods and services, transportation-related activities, employee commuting, and waste disposal.
Example ESG startups listed on the FinTech Market Map	**- Sweep (for Finance)** collates real-time data on corporate greenhouse gas emissions from companies included in financial institutions' investment portfolios. This then allows them to cooperate to reduce these emissions.[40/]	**- Baringa Partners** offers management consultancy services with particular expertise in the areas of energy, finance, and public services. The company helps clients understand, develop and implement business strategies, and consults on topics related to environmentally friendly energy.[41/]	**- Lune Climate** helps banks' SME and retail customers assess the greenhouse gas emissions that occur across their supply chains, i.e., from any purchase. This then helps clients make better informed purchasing decisions and to buy more environmentally friendly goods and services.[42/]

Source: Krungsri Research

40/ https://www.businesswire.com/news/home/20220926005159/en/Sweep-Launches-Game-Changing-Solution-for-Financial-Institutions-to-Track-Emissions-Across-Investment-Portfolios

41/ https://www.baringa.com/en/industries/energy-resources/low-carbon-solutions/

42/ https://lune.co/fintech-and-banking/

Krungsri Research view

New businesses, despite being small in size, have the potential for growth and can contribute to sustainable development alongside larger enterprises. Moreover, well-established large organizations can draw valuable lessons from the success of new companies, particularly ESG startups, in order to adapt and derive benefits accordingly.

For businesses, when **consumers show increased interest in environmental issues (E)** to the point where it becomes a crucial factor in investment decisions or the purchase of goods and services, the situation in which businesses compete by setting goals to conserve the environment becomes a win-win scenario for all market participants. Companies that take their **social responsibilities (S)** seriously and that put in place corporate policies to support local communities and to share profits among stakeholders fairly will also benefit by reducing their exposure to risk and increasing their long-term returns, both financial and non-financial (e.g., benefits to reputation and corporate branding). Lastly, **governance (G)**, or transparency and fairness in administration, is also an important consideration, and disclosure of non-financial data relating to sustainability is increasingly required by regulators worldwide. The future trends are also clear, and it is extremely likely that going forward, the use of ESG metrics will expand and deepen. Private sector organizations should thus position themselves as early leaders in this area, and they should give serious thought to how best to adapt to what are sure to be rapid changes in this area in the coming period. Future directions that ESG trends may take include exploiting advances in internet of things-enabled sensors to collect data on ESG indicators and using AI and machine learning in ESG data analytics. Companies that move forward aggressively in this area will be well placed to reduce risk to their cost base and to their operations. This will also allow companies to cut their energy consumption and release of greenhouse gases, thereby helping these corporations put their core operations on a much more sustainable footing.

Within the banking industry, opportunities in the ESG space continue to widen, particularly as these relate to the design of financial products and services targeting particular partners or customers, such as green bonds or loans. Krungsri Bank has in fact already moved into this area, and in June 2023, the bank released its green bonds, which target environmental conservation, and its blue bonds, which focus on the conservation of aquatic resources.[43/] Furthermore, in November 2023, Krungsri also received the Platinum Award for Excellence in Environmental, Social, and Governance (ESG) for the fourth consecutive year at The Asset ESG Corporate Awards 2023 (organized by The Asset, a financial magazine). In Thailand, government specialized financial institutions, or SFIs, are also establishing a clearer role for themselves in the ESG space, with the Export-Import Bank of Thailand (the EXIM bank) having won The Asset's 2022 Best Green Bond award.[44/] Similarly, the Government Savings Bank (GSB) has established itself as an ESG social bank that aims to support sustainable development and to create positive social impacts through 'ESG in Action'.[45/] Finally, the Bank for Agriculture and Agricultural Cooperatives (BAAC) has proposed guidelines for the implementation of low-carbon banking and discussed the use of ESG metrics in support of the transition to sustainability.

43/ https://www.krungsri.com/th/newsandactivities/krungsri-banking-news/ifc-first-green-and-blue-bond-issued-by-krungsri
44/ https://mgronline.com/stockmarket/detail/9660000051848
45/ https://www.smethailandclub.com/news/10495.html

Swelling interest in ESG issues, combined with banks' growing desire to move their businesses to a more sustainable footing, has created a space within which startups and FinTech operations can now grow and find a role in helping banks ease pressure on their pain points. Banks are, therefore, now able to partner with ESG startups to develop their operations, resolve their problems, push forward with their agendas for sustainability, and excel in offering financial services to a wide customer base and a broad range of consumer groups. This collaboration can occur through business partnership models or venture capital investments. The synergy can be achieved through leveraging the strengths of banks, as large organizations with substantial capital and resources, and the strengths of startups, known for their creativity, innovation, flexibility, and adaptability. It has been well said that all change has humble beginnings, but by working together, banks and ESG startups will be able to generate transformative power to drive economic, social, and environmental development with hugely positive consequences for the sustainability of society at large. Clearly, ESG Startups have already been taking small steps towards a greater goal.



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