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# Sustainable Finance in Southeast Asia

**INSEAD MBA Project with CCE**

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# Table of Contents

Introduction & Project Objectives .....	3
Scope.....	3
Methodology .....	4
Introduction to Sustainable Finance.....	5
Opportunities in Southeast Asia .....	9
Singapore as a Sustainability Hub.....	11
Shortlist of Sustainable Finance Opportunities in the Region .....	13
1. Primary Green Bonds .....	13
2. Green Bond Secondary Market .....	15
3. Mid-market Loans .....	16
4. Savings-as-a-Service .....	17
5. Impact Investing .....	18
6. Green Sukuks & Islamic Finance.....	19
7. Natural Resource Securitisation .....	20
Sustainable Finance Opportunities for France in Southeast Asia .....	22
Conclusion and Recommendations .....	24
Contributors.....	26
Student team .....	26
Steering committee .....	26
Interviewees & expert contributors .....	27



## Introduction & Project Objectives

Southeast Asia has long been exposed to environmental risks and the challenges of sustainable development. Environmental sustainability's roots in the region reach back many years, to Lee Kuan Yew's 'garden city' vision for Singapore in the 1960's, and Malaysia and Indonesia's Muslim view of humans as guardians of nature. More recently, these issues have grown in importance, through social sustainability challenges experienced in rapidly-emerging economies such as Vietnam and Myanmar, the regional haze crises of 2013, '15 and '19, and a growing appreciation of the risks of global sea level rise to archipelagic nations such as the Philippines and Indonesia.

At the 2019 Singapore Fintech Festival, the Monetary Authority of Singapore announced plans for a comprehensive, long-term strategy to make sustainable finance a defining feature of Singapore's role as an international financial centre, just as wealth management and fintech (financial technologies) have become part of the city-state's identity.

Being a financial hub, it is not surprising that Singapore is making efforts to embed sustainable Finance into its long-term strategy. In Europe and North America, sustainable Finance, ESG reporting and more niche areas such as impact investing have matured significantly in the last 10-15 years, and sustainability has become a mainstream topic in financial services. There is a lot that Singapore and other Southeast Asian nations can learn from the experiences of Europe and North America, and there is also a lot that Southeast Asia can design and develop independently for its own needs.

This study has been commissioned by the Conseillers du Commerce Extérieur de la France (French Foreign Trade Advisors or CCEs) in partnership with INSEAD in order to explore what opportunities the trend of sustainable finance will create in Southeast Asia. The report provides an overview of sustainable finance, before evaluating the potential of Southeast Asia flourish as a hub for sustainable finance. Finally, we present seven specific opportunities for sustainable finance initiatives in the region, along with an assessment of French institutions and how they might contribute to the development of sustainability in Southeast Asia, in the financial sector and beyond.

## Scope

Sustainability is a broad topic, covering everything from gender equality to healthcare to pollution. Additionally, the criteria of 'Environmental, Social and Governance' (ESG) are increasingly referred to alongside sustainability in business situations, and this further introduces the topic of corporate governance to the mix. This report specifically focuses on environmental sustainability, a topic chosen to reflect the growing discourse on climate change in Southeast Asia, and one we felt was particularly relevant after Singapore's Prime Minister's speech at National Day 2019, where he spoke of the great risks posed to Singapore's coastline by global sea level rise.



Equally, 'finance' is also a huge topic, covering product categories from insurance to investment, from public equity and debt markets to fintech. For the sake of focus, this report looks in detail at debt instruments such as green bonds and loans, simply because these have come to the fore as popular financial products in the world of sustainable finance.

That said, although the report specifically focuses on 'environmental' sustainability and 'debt' finance, it also touches on other elements in the sphere of sustainable finance where it is relevant or practical to do so.

## Methodology

The primary mode of research for this study was qualitative, and included literature reviews, attendance of relevant events and seminars, and extensive interviews with industry experts across the region. The authors were extremely fortunate to be introduced to the wide network of industry spokespeople provided by members of the CCE and their professional contacts. A full list of interviewees can be found in the 'contributors' section at the end of the report.



# Introduction to Sustainable Finance

By providing adapted financing solutions, financial institutions can promote sustainable development; this practice has become known as ‘sustainable finance’. Sustainable Finance responds to both growing investor demand, and an increased need for portfolio resilience. It is also a response to growing environmental risks that will impact financial markets and the wider economy.

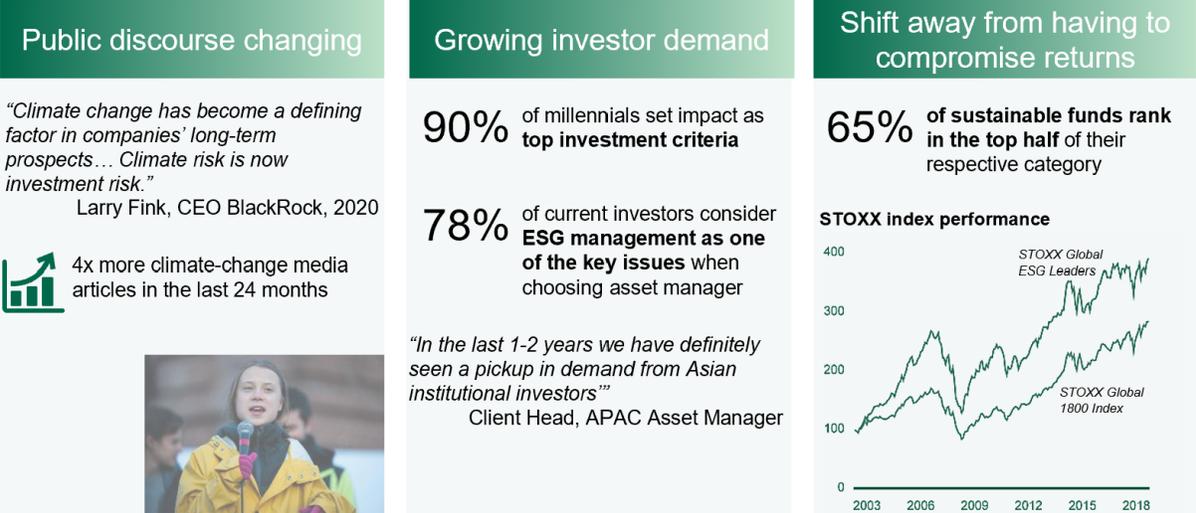


Figure 1 - Sustainable finance trends

For example, climate change can cause **acute hazards**: i.e. event-driven hazards, including more frequent and intense extreme events such as cyclones or heatwaves. It can also cause **chronic hazards**: i.e. long-term change in the mean and variability of climate patterns such as mean temperatures.

These risks affect financial institutions when their counterparties suffer climate change impact and are unable to pay back loans, provide dividends or impact their valuation. It can translate into credit risks (e.g. reduced counterparty creditworthiness), market risks (e.g. change in equity price), and finally liquidity risks (e.g. abrupt repricing of physical climate risks).

As well as climate change, sustainable finance is used for a wide range of social and environmental objectives or outcomes, and covers a broad spectrum of financial products in debt and in equity.

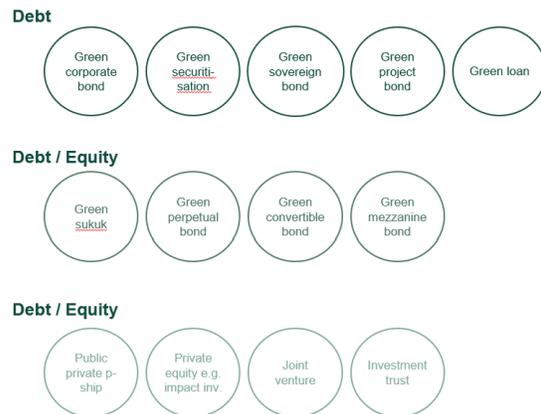


### Used for a range of objectives

<b>Environmental</b>	<ul style="list-style-type: none"> <li>Climate change mitigation (e.g. renewables)</li> <li>Climate change adoption (e.g. agricultural tech)</li> <li>Other environmental (e.g. waste recovery)</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>Gender equality (e.g. female entrepreneurship)</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>Impact investment</li> <li>Microfinance</li> </ul>
<b>Good governance</b>	<ul style="list-style-type: none"> <li>Transparency programmes</li> </ul>



### Funded by both debt and equity



Source: Dimensions of sustainability in financial decision-making. Source: [UNEP \(2016\)](#).

Source: ASEAN green Financial instruments Guide ([Climate bond initiatives 2019](#))

**Figure 2 - Sustainable finance's objectives & its instruments**

Asian financial institutions must adapt to mitigate climate risks and support economies in their green transitions. Several key industries in the region, such as tourism, agriculture, and coastal infrastructure such as ports, are currently at risk and could significantly be affected. Ignoring climate change could adversely impact returns of many industries and asset classes.

### Climate-positive/ least at-risk industries

-  Renewable energy
-  Automakers producing hybrid/ electric cars
-  Clean Tech or Energy/ Water efficiency companies
-  Apparel (if adapting to customer preferences)
-  Consumer goods (if adapting)
-  Innovative solutions (e.g. new building materials and eco-friendly construction)

### Most affected industries

-  Traditional Energy (Oil, Gas, Coal, Utilities)
-  Infrastructure and buildings
-  Agriculture and forestry
-  Insurance
-  Tourism
-  Food & Beverages
-  Construction (incl. input materials)
-  Transportation (incl. Air, Maritime, Rail, etc.)

**Figure 3 - Main industries affected by climate change**



For example, the 2011 Thai floods, a climate-related disaster, caused over USD44bn of damages to the technology hardware manufacturing sector in Thailand. This single event caused lasting impact to the country's economy:

**In focus: 2011 Thai floods**

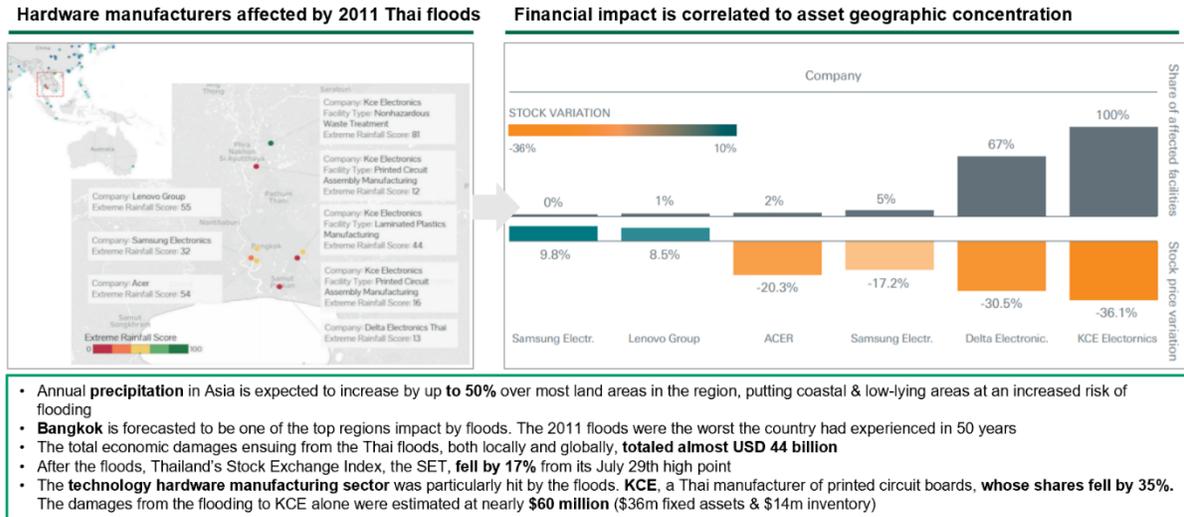


Figure 4 - Illustration of climate change financial impact on the hardware sector during 2011 Thai floods

As well as risk mitigation, enhanced management of environment-related risks could bring significant value to financial institutions, through cost reduction, new growth opportunities and competitive differentiation. The following diagram explains these numerous advantages in further detail.

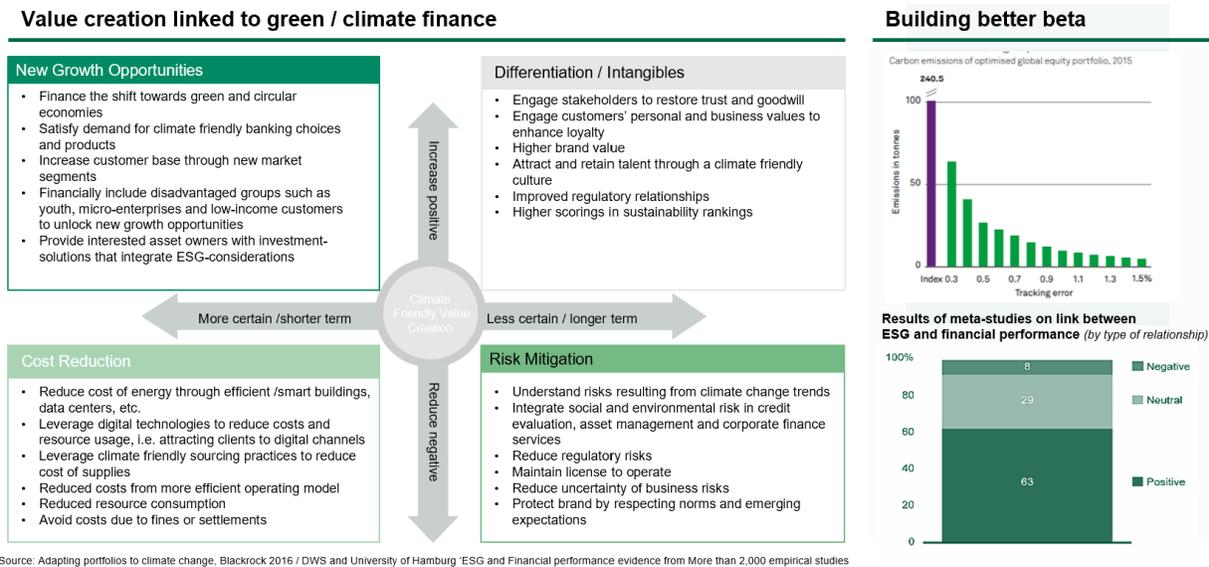


Figure 5 - Value creation diagram linked to green finance

From a regulatory standpoint, climate investment reporting systems are maturing, and Southeast Asia stands to gain from lessons learnt in other regions in this area. Several authorities have published guidelines to help



companies transition and become more transparent. A handful of the more popular guidelines for assorted financial products and reporting objectives are provided here for reference:

		Authority	Description	Users
	<b>Principles for Responsible Investing</b>	United Nations	<ul style="list-style-type: none"> <li>International network of investors working together to put six targeted principles of ESG investing into practice</li> <li>Based on fundamentals of ESG integration</li> </ul>	Asset owners, investment managers & institutional investors
	<b>Taskforce for Carbon Disclosure</b>	Financial Stability Board	<ul style="list-style-type: none"> <li>Voluntary climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders</li> <li>Holistic consideration of physical, liability and transition risks associated with climate change</li> </ul>	Companies, banks, investors
	<b>Morningstar Globe Ratings</b>	Morningstar	<ul style="list-style-type: none"> <li>Sustainability Rating used to help investors understand the vulnerability of their investment portfolios to environmental, social, and governance (ESG) factors</li> </ul>	Investors in public markets, unit trusts, ETFs
	<b>European Taxonomy</b>	European Union	<ul style="list-style-type: none"> <li>Classification system for sustainable activities and a framework to facilitate sustainable investment. Provides screening criteria for activities that can make a substantial contribution to climate change mitigation or adaptation</li> </ul>	Governments investors, companies
	<b>Climate Bonds Standard</b>	Climate Bonds Initiative	<ul style="list-style-type: none"> <li>Standardised set of verification criteria for green bonds</li> <li>Tool allowing investors and intermediaries to assess the environmental integrity of bonds</li> </ul>	Banks, lenders

Figure 6 - Non-exhaustive list of existing guidelines on sustainable finance

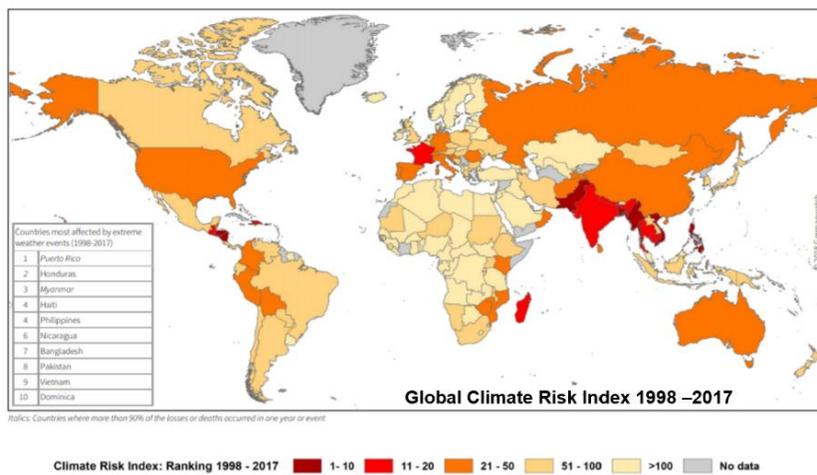
It is worth noting that although the universe of reporting systems is maturing and improving, this area remains a point of extensive debate and frustration in the world of sustainable Finance, and the lack of compatibility across reporting systems often leads to misinterpretation of information, or unnecessary administrative effort.



# Opportunities in Southeast Asia

Climate change brings extensive risks to emerging economies, especially those in Southeast Asia. The region's highly-populated coastlines make it vulnerable to cyclones and sea level rise. Its high reliance on intensive agriculture, especially for water-intensive rice production, make Southeast Asia vulnerable to temperature and rainfall fluctuations. Finally, the region's high population densities and extensive riverine systems make it particularly vulnerable to flooding. Even developed economies in the region are not immune from risk. Singapore, for example, has reclaimed over 25% of its current landmass from the sea over the past 60 years. This reclamation supports a densely populated city and came at an extremely high cost to the island-state; to lose this valuable territory to sea level rise would be catastrophic for Singapore.

Map of climate risks, reflecting countries' vulnerabilities to climate change



Most impacted countries

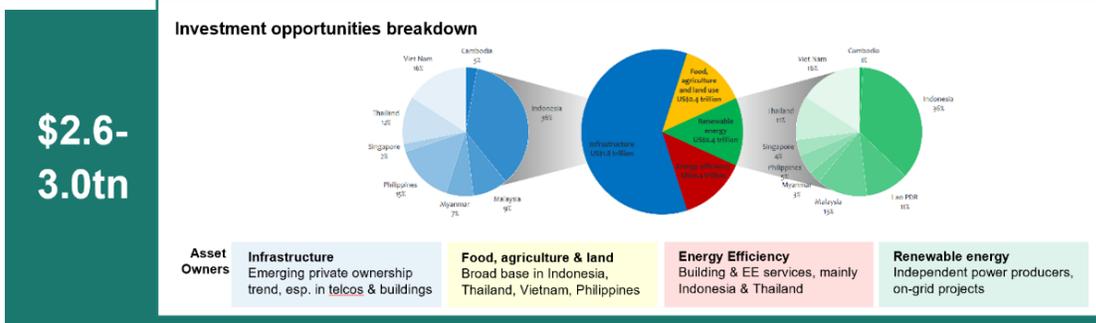
- Bangladesh:**
  - Sea level rise, flooding and cyclones causing migration and displacement
- Pakistan:**
  - Volumetric flow rate of rivers affecting farmers
- Myanmar:**
  - Droughts are causing diminished water sources and destroying agricultural yields
- Singapore:**
  - Sea level rise (>20% of landmass has been reclaimed in last 55 years)
- Indonesia:**
  - Sea level rise (largest archipelagic country in the world)
- Thailand:**
  - Floods, food production, sea level rise
- Vietnam:**
  - Floods, food production, sea level rise

Figure 7 - Map of climate risks across the world and most impacted countries in Asia

Although Southeast Asia is vulnerable as a region, it is also especially well-positioned to benefit from green investment. Here are five reasons why:



I	II	III	IV	V
<b>Strong need for action in the region</b>	<b>Strong economic growth forecasts</b>	<b>Consumer openness to technology</b>	<b>Potential to 'leapfrog'</b>	<b>Likelihood of regulatory action</b>
<i>Pollution (e.g. '13, '15, '19 haze) &amp; waste growing extensively</i>	<i>ADB project GDP growth 4.8-5.0% [prior to COVID]</i>	<i>High levels of smart phone use; penetration 30-70%</i>	<i>As seen in telcom infrastructure and payments tech</i>	<i>Fluid political system; intervention likely</i>



Source: Asian Development Bank, DBS: [https://www.dbs.com/woy-resources/images/sustainability/img/Green\\_Finance\\_Opportunities\\_in\\_ASEAN.pdf](https://www.dbs.com/woy-resources/images/sustainability/img/Green_Finance_Opportunities_in_ASEAN.pdf)

**Figure 8 - Sustainable Finance opportunities until 2030**

Global context: overall cleantech investment	Southeast Asian opportunity: solar power
<p>Historically, clean energy has been the largest class for climate investment</p> <p>It remains a major opportunity for climate investment, with growing base of experience in Europe, the US &amp; China</p> <p><b>% of climate-focused investment by market</b></p> <p>Since 2013, the world has seen a 're-bounce' of climate-related investment from venture capital, private equity and project finance players</p>	<p>Solar power is <b>feasible in all ASEAN countries</b> given locations proximity to the Equator.</p> <p>Moderate political and regulatory risk, <b>vulnerable to policy changes</b> e.g. feed-in tariffs.</p> <p>Technology risk is low, with solar voltaic power <b>technology relatively mature</b>.</p> <p>Credit and capital markets risk is low, as most off-takers are likely to be state-owned</p> <p><u>Example:</u></p> <p><b>La Carlota and Manapla 80 MW solar farms (Philippines)</b></p> <p>US\$173 million of equity investment was secured from the Philippine Investment Alliance for Infrastructure (PINAI) in November 2015. PINAI is a partnership between the Government Service Insurance System, Macquarie Group and the Asian Development Bank.</p>

Source: Bloomberg, 2018 & 2020; National Venture Capital Association and Deloitte survey (2019); ICF Climate Friendly Investments Assessing the Opportunities for Private Equity & Venture Capital Investors  
Asian Development Bank, DBS: [https://www.dbs.com/woy-resources/images/sustainability/img/Green\\_Finance\\_Opportunities\\_in\\_ASEAN.pdf](https://www.dbs.com/woy-resources/images/sustainability/img/Green_Finance_Opportunities_in_ASEAN.pdf)

**Figure 9 - Clean energy and solar opportunities in Asia**

In view of these risks and opportunities, authorities across the ASEAN nations are starting to initiate efforts to protect themselves from long-term climate risk. For instance, by the end of 2019, 7/10 ASEAN countries (95% region's GDP), will had issued new or revised sustainable banking regulations/guidelines. These guidelines stipulate that climate change and environmental degradation are part of the E&S issues that banks should seek to address when developing their sustainability strategies and policies.

In four ASEAN countries, the financial regulators or banking associations are leading the development of sector-specific E&S guidelines. In three of the countries, financial regulators are starting to expect banks to assess and mitigate their portfolio-level exposure to climate-related or other E&S risks. And in five countries, the financial regulator or banking association expect banks to report on their sustainability strategy publicly.

These steps are visible evidence of a region which is starting to take sustainable Finance seriously, and serve as an indicator for opportunities in sustainable Finance as this movement continues to grow.



# Singapore as a Sustainability Hub

As it stands, Singapore's green finance scene is still in its early stages with a limited established market for corporates or financial institutions. As an example, S\$6 billion worth of green bonds have been issued to date, which represents only a small bite of Singapore's S\$420 billion corporate debt market. Many investors continue to hold a "wait-and-see" attitude to using green financing instruments. Others are also skeptical about greenwashing and how to validate or invalidate sustainability practices accurately.

However, as more and more capital shifts towards sustainable efforts, central banks around the world, including the Monetary Authority of Singapore (MAS, The Central Bank of Singapore), have been nudged to jumpstart the green transition. As a well-established financial hub, Singapore has a critical role to play in the development of sustainable finance. Over the past few years, MAS has sent some first strong signals to financial institutions to advance sustainable investment in the region. They launched seven key initiatives to develop Singapore as a global hub for sustainable Finance (Source: MAS website):

1. Sustainable Bond Grant – The MAS has established a Green Bond Grant Scheme to promote and ensure the issuance of green bonds in Singapore. Sustainable bond issuers can use this grant to cover the initial cost of obtaining an external review. The grant offsets up to S\$100,000 for eligible sustainability bonds.
2. IFC-MAS Partnership - MAS is partnering with the International Financial Corporation (IFC), a member of the World Bank Group, to promote the growth of green bond markets in Asia.
3. ABS Guidelines on Responsible Financing - ABS (Association of Banks in Singapore) developed guidelines, which define the minimum standards on responsible financing practices that banks' and FI's business models need to integrate.
4. Sustainable Insurance Forum (SIF) - MAS participates in the SIF, which is a network of leading insurance supervisors and regulators seeking to strengthen their understanding of and responses to sustainability issues for the business of insurance.
5. Asia Sustainable Finance Initiative (ASFI) – MAS supports the creation of the ASFI, a multi-stakeholder platform bringing together industry academic, and science-based knowledge partners to support Singapore-based financial institutions operating in the region in deepening their sustainable finance expertise.
6. Singapore Stewardship Principles – Supported by the MAS and the SGX (Singapore Exchange), the principles provide useful guidance to responsible investors towards fostering good stewardship and creating sustainable long-term value for all stakeholders.
7. The network of Central Banks and Supervisors for Greening the Financial System (NGFS) - MAS is one of the founding members of the NGFS. The NGFS aims to enhance the role of the financial system to manage risks and to mobilize capital for green and low-carbon investments



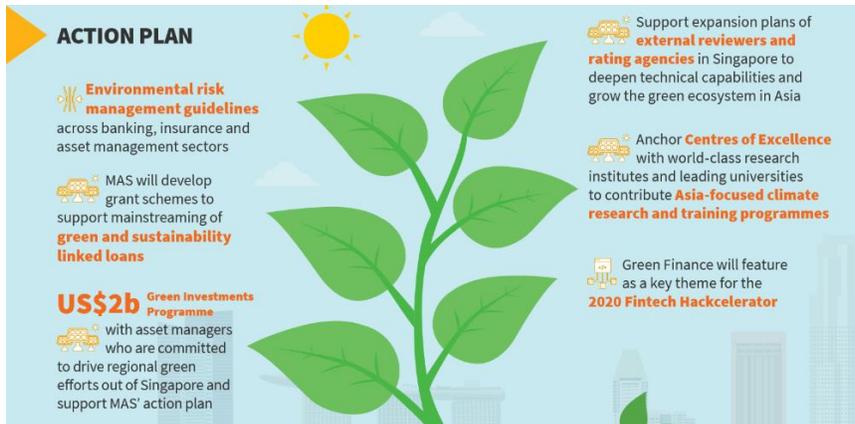


Figure 10 - MAS action plan for sustainable finance (source: MAS website)

This commitment around green finance intensified over the last few months before the Covid-19 outbreak in early 2020. The National Day Rally (NDR) speech on Sunday, August 2019 from Prime Minister Lee Hsien Loong from Singapore outlined the impact that climate change will have on Singapore and spoke about why the country should be concerned about the issue. In line with this address,

the MAS announced in November 2019 a US\$2 billion green investment program (GIP) to drive growth in sustainable Finance and to channel funds to asset managers who are committed to deepening green finance activities in Singapore. Although the public sector alone cannot bear the widening gap in green finance supply, official public financing has an important signaling role in catalyzing more private-sector investments.

Looking ahead, Singapore still has some cards to play to improve the overall green Finance maturity of the region and establish itself as the regional leader. Singapore's actions revolve around three main pillars, as detailed in the following picture:



Figure 11 - Singapore action plan to become ASEAN green finance hub

Lastly, Singapore benefits from a leading position in the Fintech market. The city can leverage its technical capabilities to spur green Finance and develop innovative & first-of-its-kind green financing solutions in the future.



# Shortlist of Sustainable Finance Opportunities in the Region

In the short and medium-term, we foresee seven key opportunities that the region & Singapore can develop and orchestrate to grow green finance.



Figure 12 - Sustainable finance opportunities in the region

## 1. Primary Green Bonds

Contrary to some peoples' perceptions, the Singapore debt capital markets sector is small by global standards. Hong Kong is the biggest regional player and could be considered as "the Luxembourg of the east". Singapore financial sector has a long way to go to catch up with HK for bonds in general, not just green bonds. However, this also is a huge opportunity for Singapore to use green bonds as a launchpad for growth, especially in ASEAN and SEA.



Supported by new regulations and guidelines, the issuance of green debt doubles in Southeast Asia: USD8.1bn in 2019 from USD4.1bn in 2018. ASEAN issuance remains low but increased compared to the previous year. As an example, it represented 3% of the global total and 12% of the Asia-Pacific region in 2019, up from 1% and 5% in 2018, respectively. Singapore contributed to 55% of the ASEAN green debt issuance in 2019, up from 29% in 2018.

Figure 13 - Green bond issuance in USD per year (Source: State of Asia market, climate bond initiatives 2019)



The proceeds are distributed across three main sectors: Buildings, Renewable energy, Transport and Water

**Buildings and Energy represent the majority of investments**

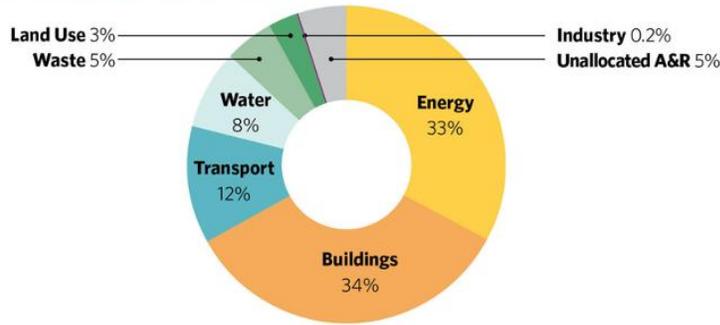


Figure 14 - Sectors distribution of green bond issuance (Source: State of Asia market, climate bond initiatives 2019)

© Climate Bonds Initiative 2020

ASEAN Green Finance State of the Market 2019

In cooperation with the national authorities of ASEAN+3 (ASEAN plus China, Japan, and South Korea), the Asian Development Bank (ADB) introduced the technical assistance (TA) program in March 2020 to nurture the necessary ecosystems for green local currency bonds for infrastructure development in ASEAN+3.

The ASEAN+3 Multi-Currency Bond Issuance Framework (AMBIF) is a standard regional bond issuance program that allows issuers to issue bonds in multiple jurisdictions through typical procedures. Seven markets have already adopted ABMIF: Cambodia, Hong Kong, Japan, Malaysia, Philippines, Singapore, and Thailand. Below is a typical example of a green bond in the region between DBS and CDL (City Development Limited).

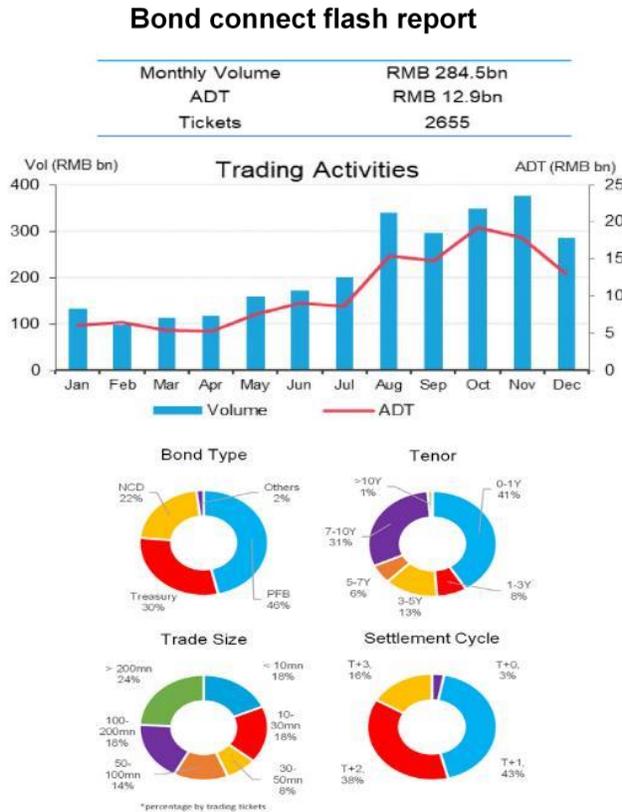
	<b>Example</b>	<b>Outcomes</b>
	<p><b>Bookrunner:</b> DBS  <b>Investor:</b> Mainly FI &amp; fund  <b>Beneficiary:</b> City Development Limited</p> <p><b>Location:</b> Singapore  <b>Loan size:</b> SGD100m  <b>Project scope:</b> 50MW solar</p> <p><b>Project description:</b>            CDL has issued Singapore's first green property bond certified under the Climate Bonds Low Carbon Buildings (LCB) Criteria. Proceeds of the SGD 100m (USD 70.7m) will be allocated to Republic Plaza's building energy efficiency. It will finance the major retrofitting of chiller plants and installation of energy efficient lighting</p>	<p>The combined impact of the retrofit and upgrades is an estimated 33% reductions in emissions. KPMG provided verification against the Climate Bonds Standard and Sustainalytics provided a second party opinion</p>
		<b>What is Low Carbon Buildings Standard?</b>
		<p>Sector specific investor-screening tool that applies emissions performance criteria to assess whether bonds issued to fund buildings deliver a robust level of environmental performance to qualify for Climate Bonds Certification</p> <p>3 types of assets covered: commercial building, residential building, upgrade project</p>

Sources: <https://www.climatebonds.net/certification/cdl-properties>

Figure 15 - Green bond example between DBS and CDL



## 2. Green Bond Secondary Market



The green bond secondary market is currently very limited in ASEAN due to a lack of attractive pricing and expected quotas to be filled. There also appears to be a premium in the secondary market for green bonds versus equivalent plain vanilla debt. This premium significantly increases, especially when a third party has not certified the “green” characteristic of the investment. Such premium is of little benefit to issuers who need the discount to be applied to the primary sale for them to reap any upside.

Additionally, the secondary market lacks structure in ASEAN. Nevertheless, Singapore could take inspiration from China platform Bond Connect. This platform facilitates the exchange of bonds, including green ones, on the secondary markets. This approach brings transparency and clarity on the bond market to reassure investors for bonds trading. Hereafter is an example of how the platform look likes.

Figure 16 - Chines Bond connect platform (Source: Bond connect website)

For both primary and secondary markets, several actions should be taken to make these two opportunities a success. Those actions include:

- Creation of green investment platform to pool the right across different institutions
- Improvement of non-financial data disclosure to facilitate financial decision making
- Clarification of what is “green” & creation of a toolkit: green bond taxonomy, risk analysis framework, requirements for stock exchanges etc.
- Create of an investment pipeline to gain visibility on green projects & assets
- Creation of a trading bond platform like “Bond Connect” in China, allowing investors to trade in each other's bond markets through a market infrastructure linkage in Singapore



### 3. Mid-market Loans

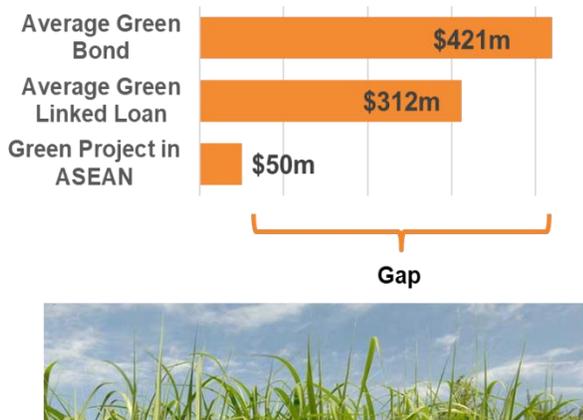


Figure 17 - Green project financing gap in ASEAN

ASEAN economies are dominated by small and medium enterprises (SMEs). Many have issues accessing finance, which could be used for green investment in three broad categories according to DBS. First, for SMEs to improve their environmental performance, second for SMEs looking to expand their sales of green bonds and services to support emerging technologies related to renewable energy, lastly for agricultural smallholders. Mid-market sustainability bonds & loans is an opportunity to investigate in the region. Yet this financial service is not served by mainstream sustainable Finance. As summarized in figure 17, there is a clear gap between the market demand in ASEAN the availability of supply for green project financing.

Several barriers can explain the situation, as summarized below:

- Green bond and loans are currently only viable for bigger entities
- Lack of domestic projects in small markets
- Users are not aware of how to engage third party assurance providers
- High cost of third-party assurance
- Slow movement of governments to take a lead with sovereign green bonds (except Indonesia)
- Lack of disclosure of environmental data makes it hard for lenders to evaluate loans

Like the green bond market, the development of non-financial data disclosure and reporting at project and corporate level is key to make this opportunity a success. The usage of information-sharing platforms could help to build internal and external awareness on mid-market green loan and green financing in general. Lastly, assurance should be made more affordable to SMEs through subsidies or interest rate discounts.

### Mid-market loans: Singapore solar

	<p><b>Example</b></p> <p><b>Lender:</b> ING  <b>Beneficiary:</b> Sunseap Solar  <b>Secondary opinion:</b> Sustainalytics</p> <p><b>Location:</b> Singapore  <b>Loan size:</b> SGD50m  <b>Project scope:</b> 50MW solar</p> <p><b>Project description:</b>            Funds used to develop a series of rooftop solar projects in Singapore, ranging from approximately 100kW to 5MW in size. Sub-projects will benefit from long-term Power Purchase Agreements with more than 20 international and domestic commercial and industrial corporates such as PSA (Ports Authority of Singapore)</p>	<p><b>Outcomes</b></p> <p>Not only was this loan smaller than larger green bond / green loan issuances, but it will be used in turn to finance a series of smaller projects, bringing green financing to a large number of smaller operators who otherwise could not have accessed it.</p>
	<p><b>Key Learnings</b></p> <ul style="list-style-type: none"> <li>• ING were able to <b>build their presence</b> in ASEAN green finance from this initial loan</li> <li>• The loan has also enabled independent businesses and organisations in Singapore to <b>develop control over their energy sources</b></li> </ul>	

Sources: [https://www.sunseap.com/SG/newsroom/2019/news\\_20190403.html](https://www.sunseap.com/SG/newsroom/2019/news_20190403.html)

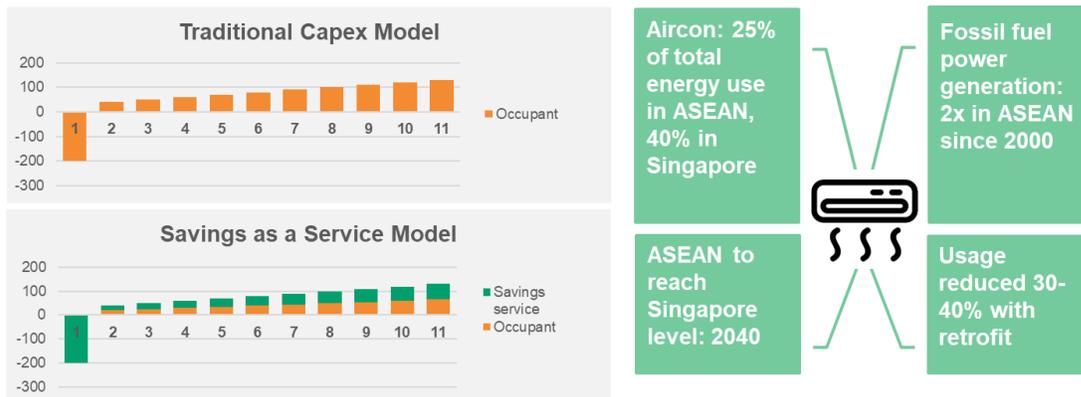
Figure 18 - Mid-market green loan example; Singapore Solar power Sunseap & ING



## 4. Savings-as-a-Service

'Savings-as-a-service' is increasingly used as a value proposition in the renewables and the energy savings sectors. Such financing schemes are often promoted by 'ESCOs' (energy savings companies) for building energy efficiency projects, but they are also appropriate vehicles to support the set-up of renewable power technologies. An ESCO is defined as a company providing a broad range of energy solutions including the design and implementation of energy savings projects, energy conservation, energy infrastructure outsourcing, power generation and energy supply. An energy performance contract undertaken by an ESCO could include guarantees of energy savings with its remuneration directly linked to the energy savings achieved. The ESCO can either finance or assist in arranging financing under a shared savings or guaranteed savings model.

According to DBS, ESCOs have become popular financing vehicles across ASEAN. This may be important for arrangements involving residential buildings where the building management will need agreements with the apartment owners for such initiatives, and thus where a guaranteed fixed saving may be more palatable.



**“Currently, energy efficiency investments [in ASEAN] are mainly financed by bank loans, which have proven to be an inadequate supply of funds”** (Asian Development Bank, Jan 2020)

Sources: Beebyte, International Energy Agency

**Figure 19 - Savings as a service model vs. traditional capex model**

ESCOs also provide opportunities for owners of industrial buildings. However, a key condition to obtaining private finance is the set-up of national targets for energy efficiency processes. In the absence of stable energy prices or financial parties interested in taking on the energy price risk, industrial standards are needed to promote energy efficiency projects.

Companies currently struggle as capital is locked down for a long period, a typical of 10-15 year pay-back is expected in average for each project. To make this opportunity successful, several options could be envisioned:

- Commit to standardised measurement frameworks e.g. Singapore NEA
- Seek audit & assurance expertise to accurately model future cost savings
- Financial service providers: consider innovations to take debt off balance sheets



Below is an illustration of a savings-as-a-service financial scheme:

## Savings-as-service: Barghest Building Performance

	<b>Example</b>	<b>Outcomes</b>
	<p><b>Company:</b> BBP  <b>Location:</b> Singapore  <b>Founded:</b>  <b>Key activities:</b> Technology solutions combined with attractive financing solutions to help our customers reach their energy efficiency goals.  <b>Capabilities:</b> Energy savings 10-40%</p> <p><b>Barghest Building Performance (BBP)</b> are a Singapore energy efficiency company who use equipment replacement and optimization techniques to improve building efficiency, mainly in the aircon chiller units of buildings in Singapore. They offer a pre-agreed saving on clients' future power costs of which they take a cut</p>	<p>Increasingly, BBP are having to innovate on providing financing solutions to their clients, given the considerable up-front capex required to generate future savings. They now compete with other firms such as BeeBryte and financial services are a key part of the value proposition</p>
		<b>Key Learnings</b>
		<ul style="list-style-type: none"> <li>• Energy efficiency / savings project are extremely compelling, given they offer both carbon dioxide emissions reductions as well as cost savings in the long run</li> <li>• However, the long pay-back periods involved mean financial innovation is necessary to build the market</li> </ul>

Sources: [https://www.sunseap.com/SG/newsroom/2019/news\\_20190403.html](https://www.sunseap.com/SG/newsroom/2019/news_20190403.html)

Figure 20 - Savings as a Service model illustration with BBP

## 5. Impact Investing

Impact investing intends to generate positive and measurable social and environmental impacts alongside financial returns. Coined in 2007, Impact investing remains a young concept, especially in Asia. However, it is overgrowing. In total, 16 percent of global impact investment AUM is allocated to East, South, and Southeast Asia. Impact investing could, therefore, be a valuable funding option to help the ASEAN's green transition. However, the impact investing sector currently sees a divergence in intention and target preferences of investors who are working in emerging markets vs. those in developed markets. For example, EM-focused investors are more likely to target socio-economic causes, while DM-focused investors place more emphasis on environmental sustainability-driven agenda. However, an exception stands out in ASEAN: Clean & renewable energy. Driven by rising urbanization and a growing middle class, demand for energy in Southeast Asia is set to increase by a staggering 80% between 2013 and 2035, estimates the International Energy Agency. Bloomberg New Energy Finance expects that Asia will spend US\$2.5 trillion on clean energy by 2030 – a gap that governments alone cannot fill. Private sectors can have a critical role to play to bridge this funding shortfall. Potential investors are now more comfortable with the risks involved in the building and running of power assets because returns have been attractive, and policy support is gradually increasing, albeit the level of support varies across the region.





Figure 21 - One of the solar-energy projects that Armstrong has funded in Nong No, Northern Thailand. Image: Armstrong Asset Management

As an example, the regional private equity fund Renewable Energy Asia Fund II (REAF II), managed by the London and Singapore-based company Berkeley Energy, invests in renewable energy infrastructures in Southeast Asia. REAF II will make equity investments in on-grid solar, wind, waste-to-energy, and hydropower projects of between 5 and 100 MW in India, the Philippines, and Indonesia. REAF II aims at bridging the gap between local developers and international investors looking for renewable energy projects in Southeast Asia. Armstrong’s Southeast Asia Clean Energy Fund and Singapore-based Equis Funds Group are also two other private groups that started investing in renewable energy projects in the region in the past decades.

Green impact investing will be a success only when environmental impact and financial returns are demonstrable. Trust will be key in those kinds of investments.

## 6. Green Sukuks & Islamic Finance

Malaysia & Indonesia, which represents 50% of ASEAN GDP and serving a large community of active Muslims, are looking to develop Islamic green Finance to finance the transition. The Clean Energy Business Council (MENA), the Climate Bonds Initiative, the Gulf Bond and Sukuk Association (GBSA) established The Green Sukuk and Working Party (GSWP) to design and promote Shari’ah-compliant financial products to invest in climate change solutions.

42% of ASEAN green bonds are in sukuk format

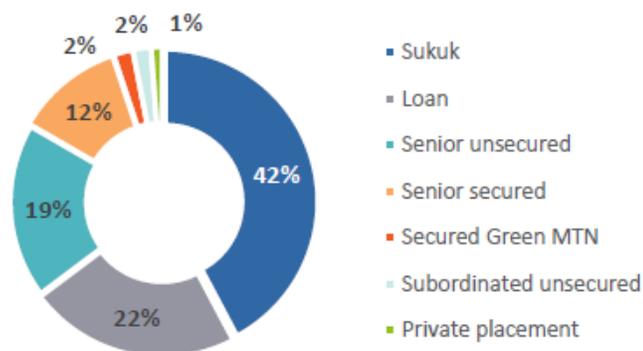
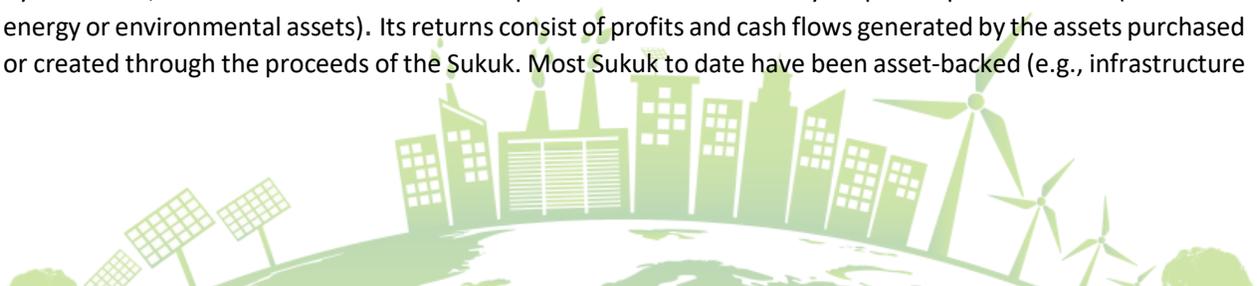


Figure 22 - Repartition of green bond format in ASEAN (Source: climate bond initiatives)

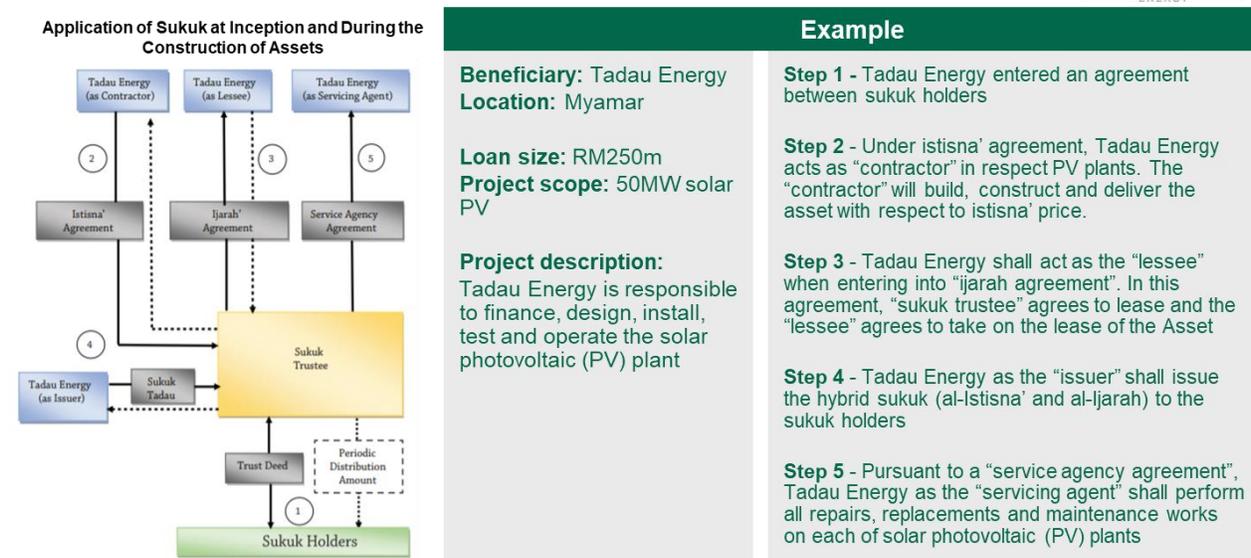
By definition, Green Sukuk are Shari’ah compliant securities backed by a specific pool of assets (renewable energy or environmental assets). Its returns consist of profits and cash flows generated by the assets purchased or created through the proceeds of the Sukuk. Most Sukuk to date have been asset-backed (e.g., infrastructure



projects), where credit of the originator has been the decisive factor for ratings and investor analysis, per Shari'ah principles. Proceeds are used to finance construction, to refinance construction debt, or to finance the payment of a government-granted green subsidy. They may involve securitizing future income cash flows from ring-fenced projects or assets with specific criteria attached. Eligible assets could be solar parks, Biogas plant, Wind Energy, Renewable transmission and infrastructure, EV, etc.

Below is an example to illustrate the Green Sukuk process:

## Green Sukuk: Tadau energy PV plant



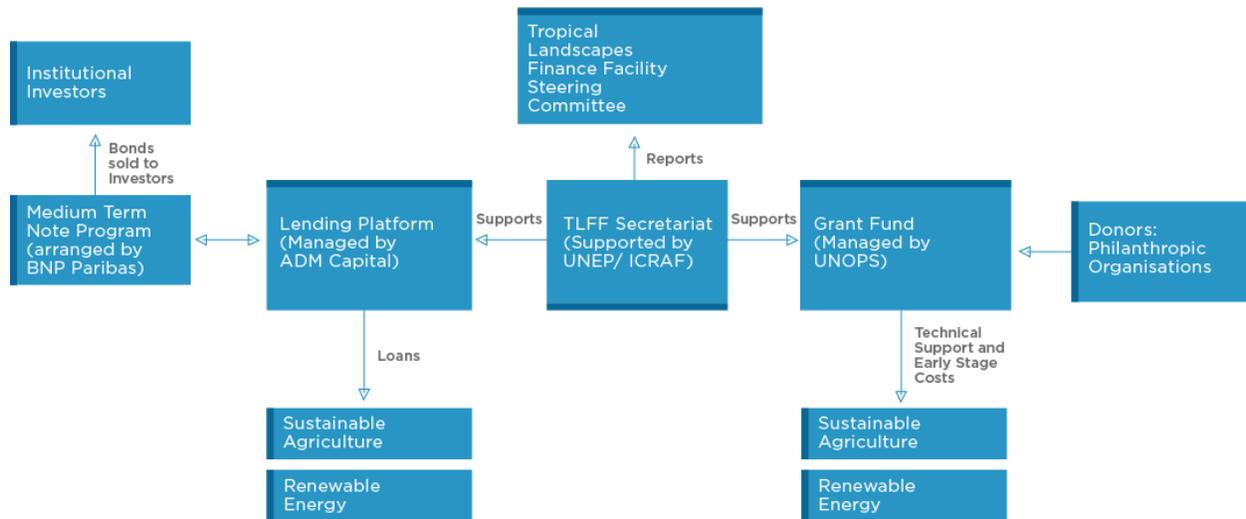
Source: <https://www.tuijise.org/content/7-issues/10-5-2/m031/tui031.pdf>

Figure 23 - Illustration of a green Sukuk's mechanism

## 7. Natural Resource Securitisation

ASEAN and South East Asia hosts large areas of natural resources. Their economies' high growth rate poses many challenges and pressures to the local community and ecosystem there are embedded in. Deforestation, pollution, climate change are just a few of those challenges. Protecting natural capital is paramount in those economies. For this purpose, a multi-stakeholder group decided to create the Tropical Landscape Finance Facility (TLFF) to bring long-term finance to projects and companies that protect natural resources and improve rural livelihoods. It is a unique initiative aimed at financing sustainable projects in Indonesia to improve the quality of life of the inhabitants and protect biodiversity. The TFLF is a partnership between UN Environment Program (UNEP), World Agroforestry Centre (ICRAF), ADM Capital, and BNP Paribas. TLFF consists of a lending platform and a grant fund. ADM runs the lending platform and issue loans that are intended to provide long-term debt to individual projects in sustainable agriculture, forest conservation, and renewable energy sectors. Then, loans from the platform are securitized and turned into a medium-term note program run by BNP Paribas, which sells the bonds on to investors in a range of tranches that reach some investor pools not typically associated with green Finance. With UNEP, BNP developed a framework integrating various covenants, which do not allow you to do deforestation. A large portion of the plantation must be devoted to wildlife and a part to improve schools, hospitals, the livelihood of farmers.





**Figure 24 - TLFF governance architecture (Source: TLFF website)**

The first project funded by the TLFF aims at developing a sustainable rubber plantation and rehabilitate degraded land in two provinces in Indonesia. Proceeds of the issuance were used to provide a 15-year loan to Royal Lestari Utama – a joint-venture between France’s Michelin and Indonesia’s Barito Pacific Group. On an area of 88,000 hectares, only 34,000 are dedicated to the plantation of rubber trees. The rest of the land is reserved for preserving biodiversity, restoring the Indonesian forest, and protecting the elephants, tigers, and orangutans of Sumatra; 3 endangered species.

Such model could be a success if exploiting companies (both from the emerging market of the developed market), consider green backed assets securitization of natural resources as a critical element of their supply chain. Factoring the restorative capacity of natural area as an essential element of their supply chain resiliency is an critical mind-shift to support those kind of initiatives.



# Sustainable Finance Opportunities for France in Southeast Asia

France is considered a world leader & critical contributor to sustainable Finance development. As summarized in the below figures, France is currently a European leader in green finance and holds a top position worldwide. Her expertise and knowledge in green Finance are well-recognized. It is a combination of the expertise of its financial institutions and the favorable ecosystems created by the French government.

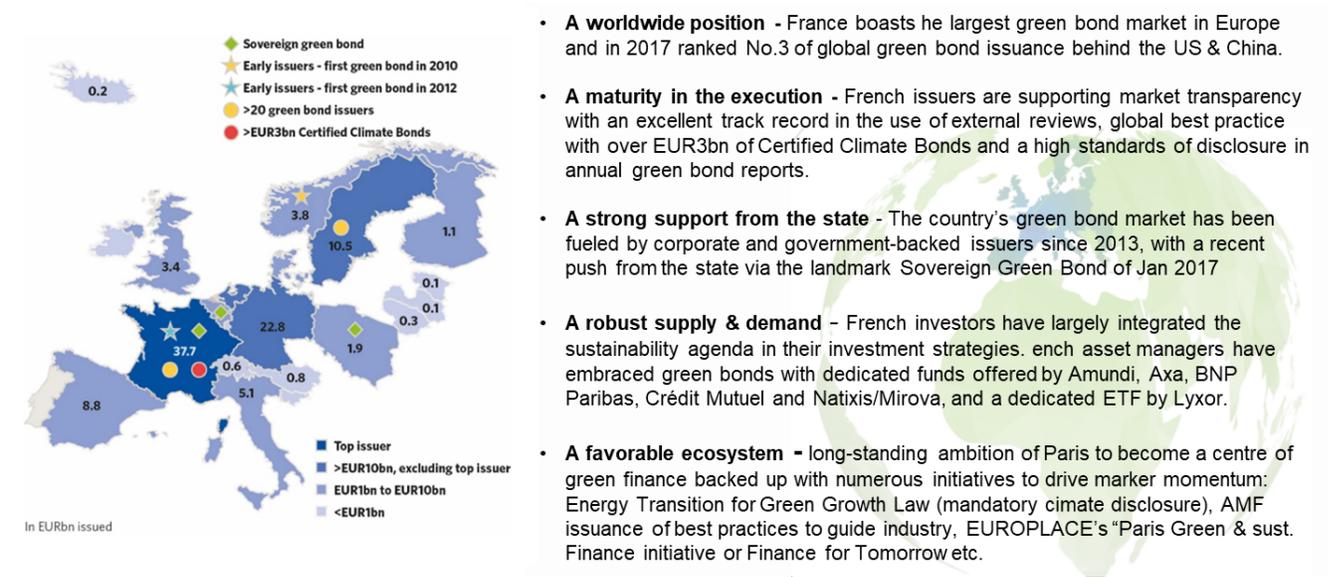


Figure 25 - Summary of France expertise in Green Finance (Source: France report 2019, climate bonds initiatives)

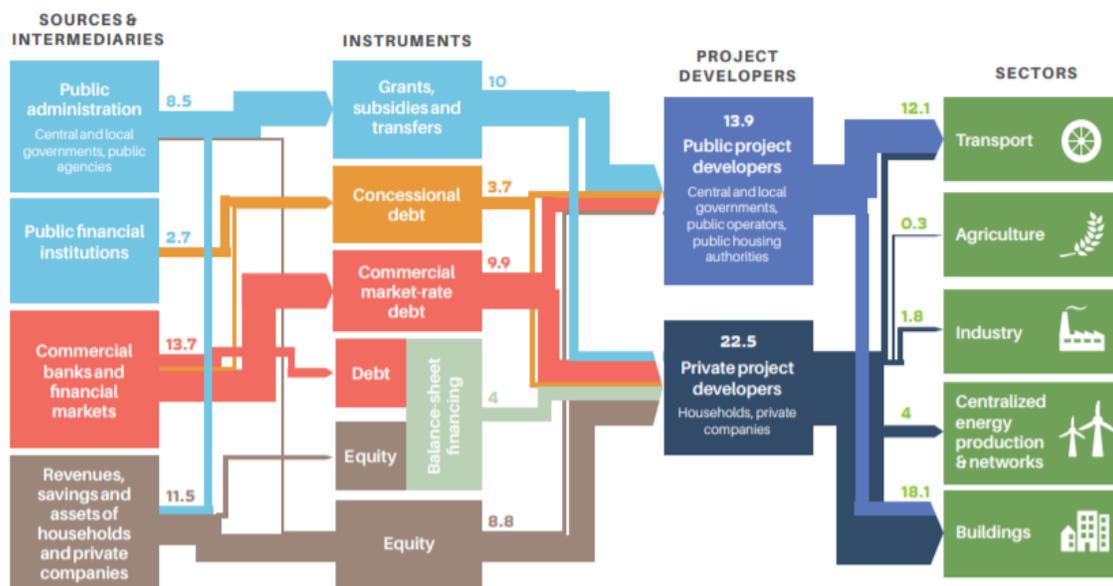


Figure 26 - Overview of Climate financing ecosystem in France (Source: Rapport Paris GSFI)



France owns, therefore, multiple assets and experiences that she can use to grow in ASEAN and Southeast Asia regions. This maturity can give her a competitive advantage in entering new markets or in developing innovative financing schemes in partnership with other financial institutions, industries, governments, and NGOs. Below is a non-exhaustive list of assets that France could use at her advantage:

1. Strong involvement of France in the emergence of a green bonds market
  - Dedicated expertise for underwriting, for verification and asset management
  - Active participation in the creation of the Global Bonds Principles (BNP, CACIB, EDF, ENGIE, Mirova, Unibail)
2. Substantial expertise in environmental and carbon assessment and accounting
3. In-depth knowledge of infrastructure financing, a foremost opportunity in Asia
4. Well-equipped research in sustainable development
  - Institut Louis Bachelier (ILB) and the various research chairs around sustainable development subjects
  - INRA - research in the fields of food, agriculture, and the environment
  - I4CE (Institute for Climate Economics) - ) deciphers and analyses for decision-makers the economic issues of policies related to the climate
  - IDDRI (Institute for Sustainable Development and International Relations)



## Conclusion and Recommendations

By its geographic vulnerability, its more substantial growth, its increasing population, and its economic reliance on environmentally-sensitive industries, ASEAN will be more and more exposed to environmental-related risks, such as pollution, natural resource depletion, and climate change. To reduce its vulnerability, and provide long-term economic stability and prosperity, the ASEAN region needs to put itself on a sustainable trajectory, which will require substantial amounts of green investment. Food and agriculture, energy efficiency, renewable energy, and infrastructure are the four main opportunity sectors in demand for Green Finance. The need for additional ASEAN green investment from 2016 to 2030 is estimated at US\$200 billion annually. However, the current annual ASEAN flow of green finance supply is five times lower, estimated at US\$40 billion. There is a significant gap between demand and supply that needs to be bridged in the years to come. As outlined in this report, the development of Singapore as a hub for green finance and the reinforcement of green instruments portfolio are promising signals towards such a green transition. We have highlighted seven opportunities to reinforce the green finance supply. It includes green bonds, mid-market green loans, results-oriented investment (Savings as a service), Islamic green finance, Green blended facility (like TLFF), and impact investing.

However, several barriers specific to the region would need to be addressed in the future to scale those green finance opportunities in the area. Those barriers include the scarcity of investment pools, the dominance of SMEs, the insufficient environmental disclosures from companies, the unclarity around what is green, the limited number of reliable credit agencies, and the limited availability of robust and harmonized financial policy framework across the region.

The ASEAN region is now at a crossroads. The Organization for Economic Co-operation and Development (OECD) is optimistic. It states that South-East Asia has a “golden opportunity to leapfrog over the low-performing, polluting, resource-inefficient technologies and practices of more-developed countries.” DBS outlined several options, including the creation of an ASEAN green investment platform, the engagement of institutional investors, the development of a better toolkit, the leverage of digital finance and microfinance, and the development of national green finance roadmaps.

In this context of transformation, France’s green finance expertise is a definite asset. Her leading position in Europe and Worldwide, her maturity in the execution of green financing, and her ecosystem of institutions in sustainable development make France one of the best countries to support the region in this transition.

For French companies wishing to benefit from the growth of sustainable finance in the ASEAN region, and who wish to contribute to this important and growing topic, we recommend the following actions:

1. **Engage with the French Embassy**, CCE, French Chamber of Commerce in the relevant country of operation to gain up to date information on French sustainability initiatives. Additionally, Banque de France has recently opened an overseas office in Singapore, and will provide improved relationships with financial regulators and central banks in the region.
2. **Be aware of France’s existing reputation and track record in sustainable finance**, which provides a competitive advantage as well as a body of knowledge and experience which can be used when approaching new markets
3. **Conduct comprehensive sustainability reporting** in compliance with an internationally recognised methodology such as TCFD (Task Force on Climate-Related Financial Disclosures)
4. **Push companies should adopt an industry leadership role**, adopting best practice for their own internal sustainability and carbon reduction initiatives; not only does this ensure they are not accused



of 'greenwashing', but as our report has demonstrated it brings significant cost, brand and reputational advantages

5. **Be prepared to be flexible, to adapt and innovate proactively**, as this is a fast-moving space. Regulations are evolving quickly, as are consumer preferences. Investors, staff and other key stakeholders have increasingly high expectations of corporate responsibility and best practice. In some cases, cooperation with competitors or rivals may be a necessary part of this journey.
6. **Invest in capacity-building. Educate both internal and external stakeholders**, communicate proactively, and train staff in relevant sustainability and sustainable finance practices. Companies who are part of the initial learning journey in this space stand to gain a head-start versus their competitors.
7. **Listen closely to customers & their viewpoints**, which are evolving rapidly. Our study revealed that even in Singapore, the most developed of the ASEAN nations, retail investors stance and appetite for ESG investing and sustainable finance has shifted significantly in only the past 6 months.
8. **Leverage internal expertise in sustainability in headquarters in France**, either through industry bodies, or through internal corporate divisions. Many French multinational companies have well-qualified sustainability teams in their head offices. Regional operating branches should make the most of this internal resource and experience to gain an advantage in new markets.
9. **Engage with local discussion forums and capacity-building organisations** to stay ahead of the knowledge curve and to develop necessary relationships. In Singapore, these include Asia Venture Philanthropy Network (AVPN), Eco-business, SG Innovate, Asia Pacific Loan Market Associated (APLMA), Ecosperity Events and World Wildlife Forum (WWF), among others
10. **Plan to anticipate future regulations and exceed them**. This requires dedicated communication and follow-up with local and international authorities, but it ensures that costs can be kept to a minimum as new regulations are implemented, and that any opportunities arising can be proactively taken in advance.



# Contributors

## Student team

The student team was composed of four students from the business school INSEAD

			
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## Steering committee

The delivery of this report was under the supervision of the CCE Steering Committee, composed of the following members:

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- **Jean Yves Broussy**, Aesera Partners
- **Eric Bramoullé**, Amundi
- **Joris Dierckx**, BNP Paribas
- **Karine Hirn**, East Capital
- **Lucie Tepla**, INSEAD



## Interviewees & expert contributors

On top of desktop research, additional information and insights have been collected through interviews. We interviewed financial experts from the region, coming from the following companies/institutions. We are profoundly grateful for their precious time and help in the development of this report.

- Soc. Generale
- Morningstar
- BNP Paribas
- East Capital
- Insitor
- Credit Agricole
- Amundi
- DBS
- IIX
- Vigeo Eiris
- AXA
- Refinitiv
- Climate Bonds Initiative
- Ambassade de France
- MSCI
- Rabobank
- CCE
- INSEAD
- Schroders

