



FINANCING THE FUTURE OF ASIA

Innovations in Sustainable Finance

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THE FUTURE OF FINANCE

Around the globe, a wave of innovation is sweeping across the financial sector, from public equities to bonds, real estate to insurance, venture investing to small-business lending. In each of these areas, innovative players are using an ever-growing range of instruments to achieve social and environmental benefits, while producing attractive returns.

This is the exciting field of sustainable finance, and it is growing fast.

One area of sustainable finance that has posted dramatic growth in recent years is investing in publicly listed corporations based on environmental, social, and governance (ESG) factors. In the United States, total assets under management (AUM) under ESG strategies have grown almost four-fold in eight years, from around \$3 trillion in 2010 to \$11.6 trillion in 2018, representing \$1 out of every \$4 currently invested with professional asset managers.¹

Across the Pacific in Japan, the Government Pension Investment Fund (GPIF), the world's largest asset owner with around \$1.5 trillion in assets, recently announced its intention to incorporate ESG factors into all investment decisions and has already invested in five equity funds tracking ESG indices.^a According to BlackRock, the world's largest asset manager, the global market for ESG exchange-traded funds (ETFs) alone is expected to expand from \$25 billion to more than \$400 billion within a decade.²

The growing adoption of the United Nations Principles for Responsible Investment (UN PRI) reflects this global trend toward ESG. UN PRI is a set of six voluntary principles that aims to develop a more sustainable financial system and offers guidance to signatories interested in incorporating ESG in their investment strategies. Over the past decade, the number of signatories to UN PRI has grown more than five times, and total AUM by UN PRI signatories now stands at almost \$82 trillion.³

a. For more on GPIF's ESG investment approach, see page 41.

Another area seeing rapid growth is the market for green bonds—i.e., bonds issued to fund climate and environmental improvements—where the level of capital mobilized globally has risen from \$87 billion to \$167 billion in the last two years alone.⁴ Notable new products in the market include the BlackRock iShares Global Green Bond ETF, and the Planet Emerging Green One fund by the International Finance Corporation (IFC) and Amundi, which is expected to deploy some \$2 billion in emerging markets.^{5, 6}

The range of green bond issuers has also been growing, with corporations, municipalities, and transportation agencies increasingly including green bonds in their financing strategy. In 2016, the market saw the first-ever sovereign green bond issue by Poland, and this has since been followed by issues from other countries including France, Belgium, Indonesia, and Nigeria.⁷

Why sustainable finance?

All this raises the question: Why are investors increasingly buying into sustainable finance?

One simple answer is that sustainable finance offers more opportunities to generate strong returns.

An Oxford University meta-study of 190 academic papers on the relationship between sustainability and firm performance found that 88 percent of the papers concluded that companies with robust sustainability practices demonstrated better operational performance. Moreover, 80 percent of these papers also found a positive correlation between sustainability practices and share price performance.⁸

A separate analysis of 656 companies in IFC's portfolio showed that the return on equity (ROE) from companies with more sustainable practices was 210 basis points higher on average than from companies with less sustainable practices.⁹ Meanwhile, a Morgan Stanley study of 10,228 US-based open-end mutual funds showed that sustainable open-end funds had lower volatility than traditional funds while providing equal or higher returns, for 64 percent of the periods examined.¹⁰

Sustainable finance also offers diversification benefits through investment opportunities in assets that are less exposed to market risks. For example, investments in affordable housing are less likely to be affected by economic downturns and provide greater downside protection to investors when compared to traditional housing, as demand for affordable housing is stable and less responsive to economic cycles.¹¹

If we take a longer-term perspective, it becomes increasingly clear that financial returns ultimately cannot outrun the consequences of global social and environmental crises. One area where this is entering the mainstream of discussion in the financial sector is climate change. Credit rating agencies such as Moody's have already started to incorporate climate-related risks as negative factors in

their credit assessments of fixed-income products such as municipal bonds.¹² Meanwhile, the Bank of England (BoE) recently warned banks in the United Kingdom of climate change risks and directed them to incorporate strategies for mitigating those risks in their long-term business plans.¹³

More immediate shifts in market forces are also at work, as financial services institutions are increasingly sensing and responding to growing demand from their clients for sustainable finance products, and are generally coming under greater public scrutiny. This change appears to be accelerating as younger generations begin to exert greater pressure in the marketplace, as both customers and employees: A recent global Deloitte survey of millennial workers on what business should seek to achieve found that they were 63 percent more likely to mention the improvement of society than the generation of profits.¹⁴

Government agencies are also becoming increasingly interested in encouraging the move toward sustainable finance. For example, the European Commission has started working on regulations mandating the inclusion of ESG factors in the risk processes and fiduciary duties of institutional investors, as part of an action plan on sustainable finance that aims to boost sustainable growth of the EU economy.¹⁵

Innovations at the forefront of sustainable finance

Innovation in sustainable finance is not a new phenomenon. One of the first notable examples of successful innovation was the emergence in 1980s Bangladesh of the microfinance institution (MFI) model, which provided microloans to the rural poor with the intention of supporting improved livelihoods. Later innovations then enabled the MFI industry to broaden its customer base, diversify its offerings, and find new ways to reach customers by leveraging technologies such as mobile money. Today, the MFI industry has achieved impressive scale, reaching an estimated 139 million low-income clients globally in 2017 with an estimated \$114 billion loans outstanding.¹⁶



Microfinance has also been the catalyst for another sustainable finance approach—impact venture investing—which now supports businesses delivering social and environmental benefits across impact areas such as upskilling, gender inclusions, migrant rights, access to safe water, and in sectors that include energy, education, healthcare, and agriculture.

Of course, sustainable finance now goes well beyond the worlds of microfinance and impact venture investing, and indeed beyond the more commonly known areas of ESG investing and green bonds. Conservation funds are investing in forests to prevent deforestation while enhancing livelihoods. Parametric insurance products are improving the disaster resilience of countries and communities. Tech-enabled platforms based on past trading patterns are enabling the extension of micro-credit to small retailers, helping them grow. New affordable housing funds are investing in large projects, de-risked through long-term rental contracts with municipalities and real estate agencies.

On pages 5 and 6, there is a global overview of recent, exciting innovations across a wide range of categories of sustainable finance. While this range of innovation is hugely inspiring, the full potential of this sector is yet to be exploited. We believe that there are numerous opportunities for innovative financial services providers and advisors to take a position of leadership, to boldly devise and launch new offerings that could ultimately reshape the entire financial services sector.

Recent Innovations Across Sustainable Finance



Consumer and MSME Finance

Products addressing financial needs of segments typically underserved by mainstream financial institutions, such as low-income consumers with informal incomes, or micro, small and medium-sized enterprises (MSMEs).

Mobile-enabled payments and financial services

FinTech platforms, such as Alipay and WeChat are leveraging mobile phones to expand the reach of formal financial services to the rural poor and to enable lending to MSMEs (see page 19 for more).

De-risking SME lending for commercial banks

The Variable Payment Obligation program in Nicaragua de-risks bank lending to SMEs through loan syndication, reducing bank exposure to loans, and structuring repayments according to borrowers' cash flows (see page 52 for more).

Innovative credit assessment to unlock credit for micro-retailers

Jaza Duka in Kenya is fostering improved livelihoods by offering micro-retailers lines of credit on the MasterCard platform, enabled by credit assessments based on their trading patterns with Unilever (see page 52 for more).

Housing loans to informal-sector, low-income borrowers

Affordable housing finance companies in India have pioneered tech-enabled, field-based credit assessment, enabling low-income consumers with irregular and undocumented earnings, to access housing loans.



Impact Venture Investing

Investment in impact ventures that have social or environment impact objectives at the core of their business model.

Alternatives to VC model: open-end funds and holding companies

Funds such as Bridges Evergreen Fund, which have an indefinite lifespan, enabling them to better address impact ventures' needs for more patient capital, as compared with the commonly used closed-end fund model (see page 27 for more).

Wholesalers to foster the supply of capital in impact venture investing markets

Large funds, such as Big Society Capital in the UK, that grow the impact venture investing market by financing early-stage intermediaries who typically lack a track record and face challenges in raising capital from traditional LPs (see page 43 for more).

Crowdfunding to enable retail investments in impact venture

FinTech platforms, such as Securite and Campfire in Japan, that allow impact enterprises to access funding from retail investors, a segment that would otherwise remain inaccessible to these enterprises (see page 44 for more).

Blended capital funds to invest in higher-risk opportunities

Funds having a tiered capital structure where concessional funders take on a greater share of risk, to incentivize private investments into higher-risk opportunities (such as those in unproven models or markets).



Disaster Insurance

Insurance products that improve the ability of countries, institutions and communities to deal with the consequences of natural disasters.

Pooled sovereign catastrophe bonds

Bonds that enable governments to reduce dependence on own fiscal resources for disaster response—when pooled between multiple countries, risk diversification allows costs to be reduced (see page 50 for more).

Pooled parametric sovereign disaster insurance

In Southeast Asia, SEADRIF offers rapid pay-outs to insured countries following disasters without the need for on-the-ground damage assessments—when pooled between multiple countries, risk diversification allows costs to be reduced (see page 50 for more).

Parametric disaster insurance for lending institutions

In Indonesia, a parametric earthquake index insurance product provides protection to lenders following disasters, addressing higher impairments and supporting continued lending in times of need (see page 50 for more).

Hybrid parametric insurance and debt products

In Haiti, MiCRO offers a hybrid product combining parametric insurance, existing loan waiver, and new loans to help micro-entrepreneurs recover their livelihoods after natural disasters (see page 50 for more).



Real Assets

Funds that have developed innovative ways to generate financial returns from high-impact investments in real assets such as plantations, fisheries, low-income housing.

Funds for forest conservation and restoration

Althelia Climate Fund has invested in real assets to drive the conservation of forests, while generating a financial return on investment through a combination of capital gains, selling commodities, and monetizing carbon credits (see page 47 for more).

Funds to support sustainable fisheries

In Indonesia and the Philippines, the Meloy Fund for Sustainable Community Fisheries invests in small-scale community fisheries, to reduce overfishing while helping increase the income of fishing communities (see page 47 for more).

Funds for affordable housing

In Belgium, the Inclusio Affordable Housing Fund makes affordable housing attractive for private investors by investing in large projects tied to long-term rental contracts with real estate agencies and municipalities.



ESG Investing

Incorporating environmental, social and governance (ESG) factors into making, assessing, and managing investments in commercial enterprises.

ESG indices to showcase the returns potential of ESG investing

ESG indices such as Social Value 99 in China to raise awareness of returns potential of ESG investing and facilitate the development of related products such as ESG ETFs (see page 21 for more).

ESG ETFs offering low cost, easily accessible investment options

Publicly-traded funds comprising equity or debt from listed companies performing well on sustainability factors, enabling investors to get into ESG investing without conducting their own company assessments.

Thematic ESG ETFs with more targeted strategies

Funds with a thematic focus including on gender and environment—examples include NEXT FUNDS MSCI Japan Empowering Women Select Index ETF, and VanEck Vectors Green Bond ETF.

Increasing leadership by large institutions

The world's largest asset owner, GPIF, and largest asset manager, BlackRock, have moved decisively into ESG investing and are engaging with stakeholders to promote the sector (see page 41 for more).



Structured Products

Products offering performance-linked returns, unlike traditional bonds offering fixed returns—these include results-based financing instruments, where returns are dependent on project outcomes.

Development Impact Bonds (DIBs) and Social Impact Bonds (SIBs)

DIBs and SIBs enable private investors to fund the implementation of social and development projects, and receive payments corresponding to project outcomes (see pages 31 and 39 for more).

Pooled outcome funds

Funds that create a common pool of outcomes funding for multiple DIBs (e.g., India Education Outcomes Fund), simplifying the process of securing outcome funding and lowering overall transaction costs (see page 31 for more).

EIBs to support municipalities in developing green infrastructure

Environmental Impact Bonds (EIBs) are municipal bonds that include a results-based financing approach, enabling municipalities to invest in modern infrastructure while sharing risk with private investors (see page 29 for more).

Outcome-linked interest rate loans

In India, the Michael and Susan Dell Foundation uses outcome-linked interest rates to incentivize debtor schools to improve learning outcomes of their students—schools pay lower interest rates if they can demonstrate improved learning outcomes.



Thematic and Labelled Bonds

Variants of plain vanilla bonds that incorporate sustainability or impact components.

Green bonds to invest in projects with environmental benefits

A variation of traditional bonds that help finance projects with environmental benefits, supported by agreed-upon standards (see pages 17 and 29 for more).

Green sukuk to mobilize Islamic finance for green growth

Green sukuk are green bonds compliant with Islamic finance principles (see page 54 for more).

Municipal green bonds for urban infrastructure

Bonds enabling municipalities to mobilize private-sector capital for funding the green development of urban infrastructure—this is most developed in the US (see page 29 for more).

Forest Bonds for forest conservation and restoration

IFC's Forest Bond in Kenya mobilizes funding for forest conservation and restoration projects, whereby investors are paid a coupon in cash or carbon credits (see page 29 for more).

Blue Bonds for sustainability in marine resources

The Government of Seychelles has issued the world's first Blue Bond to mobilize financing for projects related to sustainable fisheries, and support the growth of the country's marine resource-dependent economy.

Debt pooling and securitization to extend credit to small borrowers

The Women's Livelihood Bond and the Sustainable Energy Bond are debt securitization vehicles that pool multiple loans into a single vehicle, unlocking institutional lending to small borrowers while reducing costs and risks for creditors (see pages 33 and 52 for more).

SUSTAINABLE FINANCE IN ASIA

Nowhere is the opportunity for sustainable finance greater than in Asia.

Many Asian countries have achieved strong economic growth over a sustained period of time, and this has enabled large-scale improvements in living standards and reductions in poverty across the continent. However, this model of resource-intensive growth has created long-term risks to sustainability, and Asia faces the threat of unraveling past gains if these risks are not effectively addressed. The crisis created by this approach is reflected in the fact that eight of the world's ten most-polluted cities are in Asia, six of them in India alone.¹⁷ Continuing with this approach to growth will lead to serious issues such as widespread food insecurity and higher levels of poverty. It is also likely to intensify international and intra-national conflicts, due to rising pressure on scarce resources such as fertile land and water.

Economic growth cannot escape the consequences of such issues. The United Nations estimates that the GDP of the Asia-Pacific region could decline by 3.3 percent from current levels by 2050 if countries do not abandon their business-as-usual approach to growth.¹⁸ Meanwhile, a recent report from the World Wide Fund for Nature suggests that banks in India could suffer substantial losses from their credit exposure to sectors with a high level of water-related risks. The report finds that the banks' lack of ESG assessment of lending opportunities in highly water-dependent sectors—such as agriculture—has left banks exposed to the problem of worsening water scarcity across the country.¹⁹

Asia has yet to realize the full potential of sustainable finance

Even though Asia presents a significant opportunity for sustainable finance to grow, only a sliver of this opportunity has been realized. In ESG investing, Asia remains far behind the United States and Europe, as Figure 1 illustrates. Moreover, the fact that 83 percent of Asian ESG AUM was concentrated in Japan indicates an even greater gap between the rest of Asia and the most advanced ESG markets.²⁰ In green bonds, only two Asian countries figure in the list of the top 10 countries in terms of cumulative capital raised through green bond issuance, as shown in Figure 2.

FIGURE 1: TOTAL AUM UNDER ESG INTEGRATION STRATEGIES, 2016 (\$ BILLION)²¹

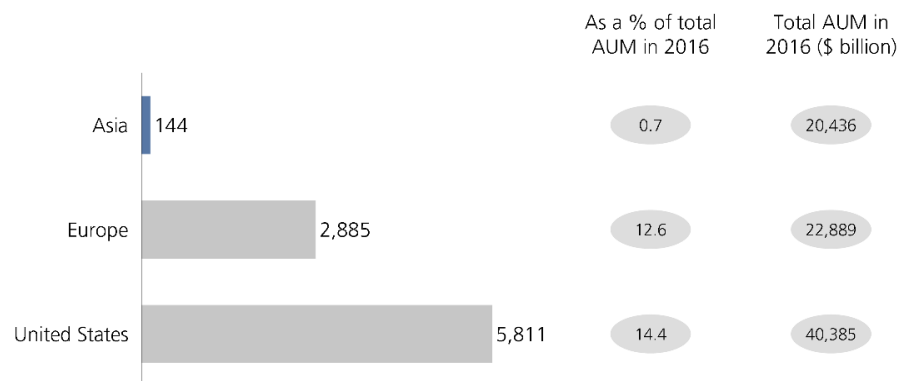
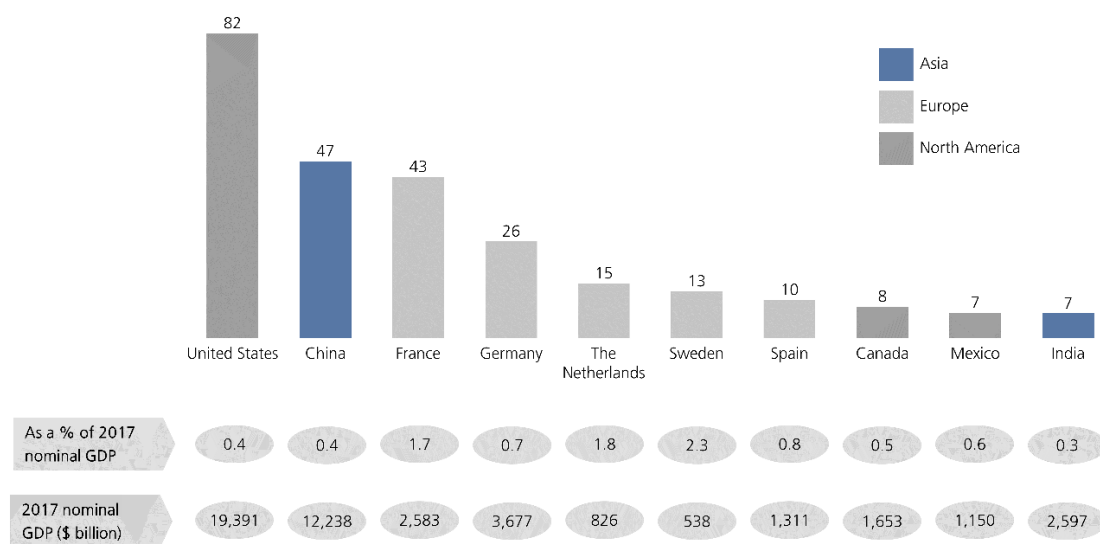


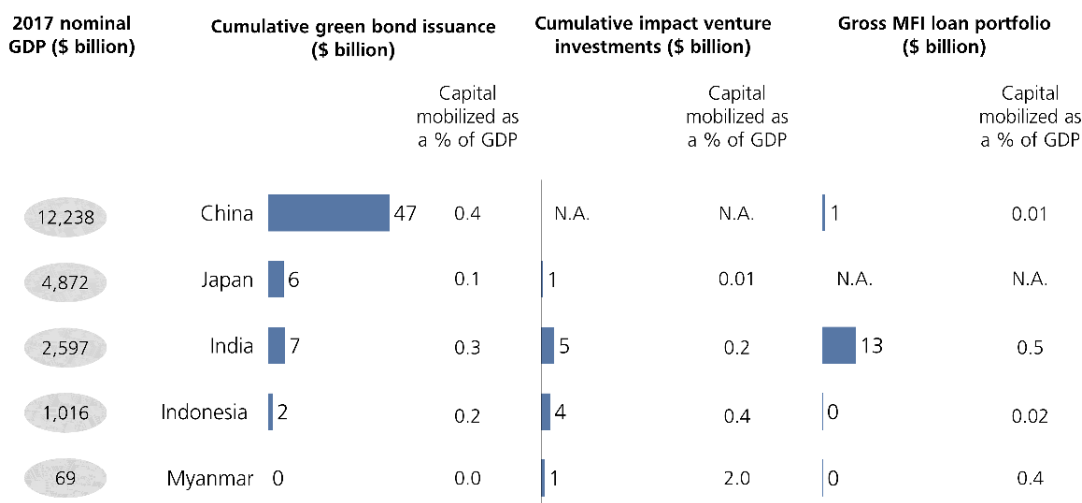
FIGURE 2: TOP 10 COUNTRIES BY CUMULATIVE GREEN BOND ISSUANCE, MARCH 2018 (\$ BILLION)²²



Note: Only includes green bonds aligned with international standards.

Apart from the relatively low volumes of capital mobilized to date, it is also important to note the highly uneven spread of this development across various Asian economies, which highlights the need for more concerted efforts to promote sustainable finance across the region. Figure 3 provides a snapshot of capital mobilized in selected Asian markets through different sustainable finance approaches and underlines how uneven the growth has been so far.

FIGURE 3: CAPITAL MOBILIZED THROUGH SUSTAINABLE FINANCE APPROACHES ACROSS DIFFERENT ASIAN ECONOMIES ^{23, 24, 25, 26, 27}



Note: Green bond data for China, India, and Japan is as of March 2018, and for Indonesia it is as of April 2018; Venture impact investing data for India covers 2010-2016, for Indonesia it covers 2007-2017, and for Myanmar and Japan, the data is cumulative as of 2017; Gross MFI loan portfolio as of 2016.

All of this points to the huge potential for sustainable finance to grow in key Asian economies as they catch up with developments in more developed markets such as the United States and Europe.

Growing innovation and momentum in Asia

We believe that the current wave of innovation in sustainable finance in Asia demonstrates strengthening interest and momentum, and sends a strong signal that Asia could yet fulfill its potential as a leader in sustainable finance.

In ESG investing, indices such as Social Value 99 are helping demonstrate such investments do not necessarily lead to lower returns. Moreover, thematic ESG ETFs, such as the NEXT FUNDS MSCI Japan Empowering Women Select Index ETF, which comprises companies that promote and maintain greater gender diversity in their workforce, offer investment opportunities for investors with more targeted strategies.²⁸

In the green bond market, we have seen the launch of a number of indices tracking green bonds in China. Also promising is the recent innovation around green sukuk—i.e., green bonds that are compliant with Islamic finance—with the issuance of the first-ever green sukuk in Malaysia in 2017 and of the first sovereign green sukuk in Indonesia in 2018.^{29, 30}

But innovation in sustainable finance in Asia goes well beyond ESG and green bonds. Impact Investment Exchange has developed the Women's Livelihood Bond which raises capital from mainstream investors to fund a blended portfolio of loans to small, women-led enterprises, as well as enterprises and MFIs working on women's empowerment. In Indonesia, the IFC and PT. Reasuransi MAIPARK have launched a parametric earthquake insurance product that will help microfinance institutions and rural banks continue lending to vulnerable communities in the wake of such disasters.³¹ Meanwhile, the Southeast Asia Disaster Risk Insurance Facility (SEADRIF) is a pooled parametric sovereign insurance product that offers immediate payouts to participating country governments in the event of a serious natural disaster such as large-scale flooding. SEADRIF currently covers Cambodia, Lao PDR, and Myanmar, and could expand to more ASEAN countries in the future.³²

Asia is also witnessing a technology revolution with the rapidly increasing penetration of mobile internet across the continent. This has enabled the growth of a financial technology (or FinTech) sector with the potential to serve a wide range of financial needs in a more inclusive way. For example, Ant Financial in China is now one of the largest lenders to micro and small businesses, having disbursed over \$100 billion in loans to 4 million enterprises over a five-year period. In Japan, impact ventures are raising capital through crowdfunding platforms such as Music Securities. In total, crowdfunding platforms in Japan have mobilized almost \$745 million in capital from individuals through a mix of donations, loans, and equity investments.³³ Similar lending platforms such as KoinWorks in Indonesia and Crowdo in Malaysia have also witnessed rapid growth.

Meanwhile, affordable housing finance companies (AHFCs) in India have pioneered tech-enabled, field-based credit assessment systems to quickly determine the credit-worthiness of low-income borrowers such as vegetable vendors and small traders. Such customers lack a stable cash flow and documentary evidence of income, making it difficult for them to access housing loans from mainstream financial institutions. Over the last decade, Indian AHFCs have built a combined loan portfolio of more than \$4 billion, financing over 230,000 homes for low-income households.³⁴

Innovative sustainable finance funds that invest in real assets to drive conservation and restoration of natural ecosystems, while generating a financial return, have also started to invest in Asia. For instance, the Althelia Climate Fund has invested around \$6 million in a peatland restoration project in Sumatra, Indonesia. The project will rehabilitate more than 22,000 hectares of peatland rainforest and support the local community to generate livelihoods through the project. It will mitigate around 1.2 million tons of carbon emissions annually, which Althelia plans to monetize in international markets.³⁵ Another example of return-seeking private capital being channeled toward conservation efforts is the Meloy Fund for Sustainable Community Fisheries. The fund makes debt and equity investments in fishing-related enterprises to promote sustainable community fisheries in Indonesia and the Philippines.³⁶ It aims to impact the lives of 100,000 people dependent on fishing in the two countries and conserve 1.2 million hectares of coastal habitats.³⁷

Supporting initiatives

Beyond the development of new sustainable finance instruments, supporting initiatives from government and other players can play a useful role in markets that are still nascent, by helping build ecosystems and attract investors.

For example, in Shenzhen in China, the government has established a range of incentives for fund managers to launch impact-oriented funds, including providing concessional capital for their funds. In Thailand, the government offers tax incentives for investing in government-certified social enterprises. Meanwhile, there are plans to launch impact investment wholesalers in Japan and South Korea.^b In South Korea, the impact investment wholesaler will directly seek to grow the number of funds investing in impact enterprises, while the Japan wholesaler will initially deploy capital to foundations that fund impact enterprises.

The development of new sustainable finance vehicles requires more flexible, concessional capital which is often in limited supply (*see also sidebar “When is more flexible, concessional capital needed?”*). The Rockefeller Foundation’s Zero Gap initiative is one example of how this need is being met. The initiative provides both grants and flexible program-related investment (PRI)^c capital to help develop and seed new mechanisms for sustainable finance, including many of the examples cited in this report.^d

Some foundations have also established partnerships to pool capital for specific impact objectives. For example, four US-based foundations—the Hewlett, MacArthur, and Packard Foundations, and the Jeremy and Hannelore Grantham Environmental Trust—have jointly participated in the funding of multiple initiatives in India. One of these initiatives is the US-India Catalytic Solar Finance Program that aims to develop risk-mitigation vehicles that can help unlock risk capital for the renewable energy sector.

Accessing risk capital for sustainable finance vehicles can also be a challenge, as the models are often untested or do not have a sufficient track record to attract mainstream capital directly. Given the limited availability of concessional capital, a number of vehicles have leveraged guarantees or blended finance approaches to drawing capital from mainstream or more risk-averse investors. For example, USAID provided a \$134 million, 10-year loan portfolio guarantee for Althelia’s first vehicle, the Althelia Climate Fund, to help bring in other investors.

b. Impact investment wholesalers are large-scale funds that invest in funds and other intermediaries making direct investments in social organizations. Such wholesalers can play a catalytic role in building the impact investment market by investing in intermediaries that may not otherwise have been able to raise their initial investment capital. The engagement of wholesalers is also likely to grow the sustainable finance market by attracting other investors. See page 43, for more details on impact investment wholesalers and Big Society Capital, the world’s first impact investment wholesaler.

c. Program-related investment refers to equity or debt investment made by private foundations with the main aim of furthering their charitable or program objectives. These investments can produce a financial return, but this cannot be their key purpose, allowing foundation PRIs to accept higher risks and/or lower returns relative to typical mainstream investors.

d. Please see page 68 for the list of initiatives supported by The Rockefeller Foundation that are covered in this report.

Other initiatives such as thematic hubs aim to foster the growth of sustainable finance in a more comprehensive manner while focusing on specific themes or issue areas. They engage in a variety of sustainable finance-related activities, such as the development of new finance vehicles, policy advocacy, and research. The Climate Policy Initiative in India is one such example with an integrated approach to enable finance for the renewable energy sector, through activities that include the development and market testing of finance vehicles, as well as research for policy adaptation.

Measurement and disclosure around the various dimensions of performance on sustainability are other areas where effective standards and mechanisms are needed, and there have been noteworthy initiatives on this front in specific countries. For example, the Government of India has made it easier for investors to assess the ESG performance of companies by making it mandatory for the top 500 listed companies on the Bombay Stock Exchange and on the National Stock Exchange to publish annual ESG disclosures. In China, mandatory disclosure on environmental aspects will be established in 2020 for companies listed on the Shanghai and Shenzhen stock exchanges. In Japan, GPIF has been engaging with ESG evaluators to encourage convergence in assessment approaches.

As we can see from this overview of sustainable finance in Asia, promising shoots of innovation have emerged, but progress is highly uneven, and the vast potential of sustainable finance is still to be fully realized. In the next chapter, we will take a deeper look at Asia's four largest economies—China, India, Japan, and Indonesia—to highlight how innovation in sustainable finance is helping mobilize private capital at scale to solve important social and environmental challenges. We will also highlight some opportunity areas, where we see issues not being addressed by sustainable finance or opportunities to bring existing sustainable finance models to greater scale.

WHEN IS MORE FLEXIBLE, CONCESSIONAL CAPITAL NEEDED?

While there are many opportunities in sustainable finance that offer market-rate or even superior risk-adjusted returns, it must also be acknowledged that, in certain situations, more flexible capital with concessional terms is needed. Typically, such capital could be needed when proving out new and untested models, or when opening up nascent markets. However, success in those early efforts could then pave the way for more mainstream, non-concessional capital to flow once those new models and markets have been established. This is reflected well in the story of the global microfinance institution sector, which benefited from at least \$20 billion in subsidies and concessional capital over two decades, before eventually developing into an investable option in mainstream debt and equity markets.³⁸

This pattern can also be seen in a diverse range of leading investors' approaches and portfolios today, as captured in the *Beyond Tradeoffs* series published in 2018 by Omidyar Network and FSG. For example, Prudential Financial describes its higher-risk "catalytic portfolio" as an R&D pipeline for larger future opportunities that could be included in the main, market-rate portfolio. One such investment was in initiating a local cap-and-trade marketplace to address stormwater runoff in Washington, D.C.—the initial investment was high risk since there was not yet an established market price for stormwater credits, but the market for credits has since become more predictable, enabling subsequent investments to be made through the main portfolio. Crucially, Prudential has ensured that its catalytic portfolio is appropriately set up to take on higher-risk opportunities by excluding those assets from its typical asset-liability matching process.³⁹

INNOVATION OPPORTUNITIES IN KEY MARKETS

In this chapter, we take a closer look at specific areas of progress and opportunity across the four largest Asian economies in GDP Purchasing Power Parity (PPP) terms: China, India, Japan, and Indonesia. Some of these areas are already established within each country, with clear and growing signs of momentum; others might still be nascent but have the potential to develop strongly. Within each area, we will discuss the key factors that enable or hinder progress and highlight promising relevant innovations.






It is important to note that the themes covered represent a selection rather than exhaustive coverage of all issue areas and opportunities for sustainable finance in Asia.



Note: The map is based on UN maps. Black dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan, the final status of Jammu and Kashmir has not yet been agreed upon by the parties.



Decades of strong economic growth have made China the world’s largest economy in PPP terms, so what happens in China matters, not only for Asia but for the world. There are promising trends in the government’s growing emphasis on environmental protection and the accompanying development of the green bond market, now the world’s second largest. Meanwhile, China’s FinTech sector is bringing payments, loans, and insurance to millions of rural people who previously had little access to formal financial services, and there are signs that these players could now extend their services to reach many millions more in Southeast Asia. And while ESG investing is still nascent in China, recent developments in products and disclosure standards could now be laying the foundations for the next transformation.

Key Statistics ^e		
	Population 1.4 Billion	World Rank 1
	GDP (PPP) \$21.2 Trillion	World Rank 1
	Per capita GDP (PPP) \$14,354	World Rank 62
	HDI 0.752	World Rank 86
	SDG Global Index Score 70.1	World Rank 54

e. Data on Population, GDP (PPP), and Per capita GDP (PPP) from World Bank; Data on HDI from UNDP Human Development Indices and Indicators 2018 Statistical Update; data on SDG Global Index Score from SDG Index and Dashboards.

OVERVIEW OF THEMES EXPLORED



Investing in China's green economy

The Chinese government is encouraging a transition toward a green economy and financial system to help address environmental degradation. As part of this, it has created five pilot zones to foster innovation in green finance and launched a green bond market that is now the world's second largest in cumulative issuance. The sector is seeing innovations across a range of areas including green bond ETFs, green asset-backed securities (ABS), and construction finance for green buildings. Meanwhile, the Hong Kong Bond Connect scheme could play a vital role in bringing in foreign capital.



Supporting financial inclusion through FinTech

China has the largest unbanked population in the world, which is predominantly poor and lives in rural areas beyond the reach of traditional financial services providers. However, FinTech giants such as Alipay and WeChat Pay have started expanding into these underserved markets, providing services including cashless payments, business loans, and insurance products; and partnering with traditional service providers to help reduce operating costs.



Fostering integration of ESG factors into investing strategies

ESG investing is still nascent in China. However, recent innovations such as the launch of an ESG index to demonstrate the business case for ESG investing, new ESG ETFs comprising Chinese securities, as well as plans for mandatory ESG disclosure, indicate that China is moving forward.



Other emerging areas of opportunity

FinTech platforms are innovating in various ways to enable and reward more eco-friendly behavior. Such technology-enabled, targeted innovations could potentially offer a substantial reduction in carbon emissions if they are able to scale.

Local government initiatives such as the effort to develop Shenzhen into a hub for sustainable finance within the next five years also offer interesting opportunities for the growth of sustainable finance in the country.



INVESTING IN CHINA'S GREEN ECONOMY

Government efforts are fostering opportunities

The Chinese government has adopted multiple measures to encourage the country's transition toward a green economy. In 2015, it launched the *Guidelines for Establishing the Green Financial System*, providing a plan for China's green transition and established a regulatory framework for the financial sector. The guidelines also enabled the launch of five pilot zones to promote green finance in China, and the opening of the country's green bond market.⁴⁰

The five pilot zones are located in the provinces of Zhejiang, Jiangxi, Guangdong, Guizhou, and Xinjiang, and each has a different area of focus. For example, Guangdong specializes in developing green credit mechanisms to support energy conservation and the reduction of emissions, while Guizhou seeks to strengthen cooperation with overseas financial institutions on green finance. Each pilot zone aims to develop and test policies as well as products that could then be replicated across the country.

The issuance of the first green bond in 2015 has also been a decisive step in China's efforts to promote a green economy. In just three years, the country has become the second-largest green bond issuer in the world, behind the US, with a cumulative issuance of \$37.1 billion.⁴¹ In order to sustain this growth, China is taking various measures to attract foreign capital to its green bond market. For example, harmonizing domestic green bond guidelines with international ones to improve investor confidence in Chinese green bonds, or issuing green bonds on international exchanges through state-owned banks, setting a precedent for private issuers to do the same.^{42, 43, 44}

China is also working to enable foreign investors to access green bonds issued domestically through the Hong Kong Bond Connect Scheme. Domestic bonds are typically challenging to access for foreign investors due to regulatory and operational hurdles. The recent launch of the Hong Kong Bond Connect Scheme—a cross-border trading scheme that allows foreign investors and investors from mainland China to trade directly in each other's bond markets through Hong Kong—will make it easier for international investors to access green bonds issued in mainland China.⁴⁵



One of the key areas of investment need is the financing of the Belt and Road Initiative (BRI), an infrastructure and economic development initiative to connect China with 65 other countries through maritime and land corridors. China has released guidelines to incorporate green principles into the BRI, which is targeting total investments between \$4 trillion and \$6 trillion.⁴⁶

Exchange-Traded Funds (ETFs) and Asset-Backed Securities (ABS) offer growing opportunities

We see strong potential for the launch of green bond ETFs and other index-linked products in China in the coming years. As many as five indices tracking Chinese green bonds were launched in 2017, while China's Industrial Bank also released an index-linked wealth management product the same year.⁵⁰ Moreover, a number of green bond ETFs have already been launched globally, including the VanEck Vectors Green Bond ETF, and the Lyxor Green Bond (DR) UCITS ETF, creating a precedent for others to follow.⁵¹

We also see significant potential in green ABS. Chinese issuers have been developing innovative ABS based on a variety of revenue streams, including water treatment fees, revenues from wind turbines, and even bus fares. Such securitization could allow smaller projects to access the capital markets and attract institutional investors to invest in green assets. As of 2018, there had been 15 ABS deals, totaling \$2.6 billion and representing 5.9 percent of cumulative green bond issuance in the country.⁵²

The financing gap for green buildings could be addressed by an innovative insurance product

In 2017, the financing of green buildings represented 7 percent of total green bond issuance, or approximately \$2.6 billion. However, the IFC estimates that China will need annual investment of \$921 billion in green buildings between now and 2030, indicating a significant financing opportunity. This is mainly driven by China's aim to relocate 250 million rural inhabitants to cities by 2025.⁵³

HONG KONG AS A HUB FOR CHINA'S GREEN BOND MARKET

Hong Kong has a great opportunity to establish itself as a key player in green finance, as it helps to direct investments to mainland China through the Hong Kong Bond Connect Scheme. The Hong Kong government has also launched and supported measures to establish Hong Kong as a green finance hub. To encourage the issuance of green bonds, it has announced a HK\$100 billion (\$12.7 billion) sovereign green bond issuance program to fund local projects, and launched a Green Bond Grant Scheme to subsidize the full cost of certification of green bonds for issuers. Issuers will be able to access a subsidy of up to HK\$800,000 (\$100,000) per bond, for bonds with minimum issuance of HK\$500 million (\$63 million).^{47, 48}

Alongside this, the government has supported the creation of the Hong Kong Green Finance Association, comprising 80 organizations including financial institutions and organizations with an environmental focus, to assist the government in developing green finance policies and promoting green finance.⁴⁹

In comparison, renewable energy, urban transport, and waste management represent annual investment opportunities of \$55 billion, \$51 billion, and \$4 billion, respectively.

The construction of green buildings in China has been limited by investors' lack of confidence that green buildings will deliver planned energy savings when completed, due to developers deviating from their plans or technologies not functioning effectively.

The Paulson Institute, a sustainability-focused think-tank, along with the City of Beijing, and the People's Insurance Company of China, are piloting a green building insurance model to address this issue. The product would provide cover to investors in the event that buildings deliver lower energy savings than planned. Data on customer claims could also be used to build a construction track record for developers, enabling those who are more reliable to access credit at more favorable terms, and further stimulate supply.⁵⁴



SUPPORTING FINANCIAL INCLUSION THROUGH FINTECH

Financial inclusion is an issue in rural areas and for MSMEs

Despite remarkable progress in expanding banking services in recent decades, China continues to have the largest unbanked population in the world. The estimated 225 million adults without a bank account in China are predominantly poor and belong to rural areas, showing that the reach of traditional financial services remains an issue.⁵⁵

Traditional financial service providers such as commercial banks, rural banks, financial cooperatives, and postal banks, have historically served rural areas through “bricks-and-mortar” models. These service providers have been innovative in expanding the reach of their networks, through approaches such as hub-and-spoke, with smaller sub-branches or ATMs in more remote areas. However, their model has limitations in terms of coverage and spread of services offered, and relies on government subsidies in low-density areas. Moreover, it may become increasingly challenging for these service providers to serve rural areas in the future, as the government is likely to reduce its subsidies to encourage more commercially sustainable approaches to promote financial inclusion.^f

MSMEs represent another segment that has been underserved by institutional lenders. While MSMEs represent approximately 90 percent of enterprises in China, they account for only 30 percent of the total number of outstanding corporate loans.^{56, 57} This is primarily due to stringent collateral and credit history requirements as well as high transaction costs. It is estimated that 41 percent of the 56 million MSMEs in China are financially constrained, representing a financing gap of \$1.9 trillion.⁵⁸

f. The government's approach to promoting financial inclusion is outlined in the document, *Plan for Advancing the Development of Financial Inclusion (2016–2020)*.

China's cashless revolution is helping accelerate financial inclusion in underserved markets

In the last few years, FinTech companies have revolutionized the way consumers across China make payments and access financial services. These companies offer a broad range of services that have been widely adopted, including cashless payments or transfers, access to consumer or business loans, as well as various insurance products.

This revolution has largely been led by two FinTech platforms, Alipay (owned by Alibaba) and WeChat Pay (owned by Tencent), that together process over 90 percent of mobile payments in China.⁵⁹ Moreover, Alipay and WeChat Pay have 520 million and 1 billion active monthly customers respectively, the majority of them from China.⁶⁰

A significant driver of the growth of FinTech platforms has been the convenience they offer to customers, enabling almost instantaneous access to a variety of financial services. This is illustrated by the “310” model of Ant Financial (owned by Alibaba and parent company to Alipay): “3 minutes to apply for credit,” “1 second to approve,” and “0 people involved in the decision.”

FinTech giants are enabling financial inclusion by extending their services to underserved markets. For example, Ant Financial recently announced that they had disbursed over \$100 billion in loans to 4 million micro and small businesses over five years, and provided 160 million rural residents with financial services including payment, insurance, and loans.^{61, 62} The expansion of FinTech platforms to rural areas is also helping rural customers access a wider range of services than previously available through traditional service providers.



CHINESE FINTECH COMPANIES ARE EXPANDING INTO OTHER ASIAN MARKETS

Innovations and capital from China are now helping foster greater financial inclusion beyond its borders. Chinese FinTech companies are making significant investments in expanding their activities across Asia. For example, Ant Financial has made investments and created partnerships to enter 10 South and Southeast Asian countries, including India, Bangladesh, the Philippines, and Thailand. For example, Rong360.com, a Beijing-based FinTech company specializing in loans, has invested in Indonesia's CashCash, a platform aggregating financial products from financial institutions.⁶⁷

Further, the rise of FinTech is leading to partnerships between traditional service providers and FinTech companies. These partnerships have enabled traditional service providers to streamline their processes and expand their offerings. For example, Ant Financial has invested in CFPA Microfinance, one of China's largest microfinance companies.⁶³ According to CFPA, this has helped them access Ant Financial's technology, and reduce the time to approve loans from days to seconds, with a significant reduction in their processing costs.⁶⁴

FinTech is likely to play an increasingly important role in financial inclusion, in a context where government subsidies to the traditional service provider may be reduced. Moreover, there is an opportunity for Chinese FinTech giants to continue to help accelerate financial inclusion in the region. This is especially true for Southeast Asia, where less than half of the population has access to a bank account, and a mere 33 percent of SMEs have access to loans.^{65, 66}



FOSTERING THE INTEGRATION OF ESG FACTORS INTO INVESTING STRATEGIES

ESG investing in China has grown slowly compared with other major economies

Asset owners and managers across the world are increasingly integrating ESG factors in their investment decisions. AUM incorporating ESG factors grew by 38 percent between 2014 and 2016, to a total of \$10.4 trillion, representing around 12 percent of global AUM.^{68, 69} However, the large majority of ESG investing has occurred outside of Asia: a mere 1.4 percent of global AUM incorporating ESG factors is in Asia, of which the vast majority is in Japan.⁷⁰

Investors in China have been slow to integrate ESG factors into their approach. Of the 2,000 global signatories to the UN Principles for Responsible Investment (UN PRI), a pledge by investors to incorporate ESG factors into their decision-making processes, only 18 are from China.^{71, 72}

One of the key reasons behind the low adoption of ESG investments by Chinese investors is the widespread perception that ESG investing requires a necessary tradeoff with financial returns. The absence of a mandatory ESG reporting system also makes it challenging for investors to assess and engage companies on ESG issues.

Promising innovations and ecosystem initiatives reflect growing momentum

There are a number of initiatives that indicate China is moving forward on ESG investing. To facilitate ESG assessments, the China Securities Regulatory Commission (CSRC) has announced that by 2020, companies listed on the Shanghai and Shenzhen Stock Exchanges will be required to disclose environmental information associated with their operations in their annual or semi-annual reports. Moreover, the Asset Management Association of China (AMAC) has started promoting and supporting ESG integration among investors, including by developing toolkits for investors and running educational events.

In an effort to demonstrate that ESG investing does not necessarily lead to lower returns, the China Association of Social Value Investment (CASVI) has launched the Social Value 99 index. It comprises 99 companies with leading ESG performance from the CSI 300 index, which tracks the top 300 stocks from the Shanghai and Shenzhen Stock Exchanges.⁷³ Between June 2016 and November 2017, Social Value 99 outperformed major Chinese indices, such as the SSE 50 (Shanghai top 50), and the CSI 500 (Shanghai and Shenzhen top 500).^{74, 75} Another notable example is the recently launched KraneShares's MSCI China Environment ETF.⁷⁶ We see an opportunity for more ESG ETFs in China as investors are gradually getting familiarized with ESG investing and may not have the capability to conduct ESG assessments.

BNP Paribas has also received approval for a fund that will raise capital from domestic investors and make overseas ESG investments. Such products could play a useful role in overall market development, by providing Chinese investors exposure to more mature ESG opportunities abroad while the domestic sector adjusts.⁷⁷

Initiatives from neighboring countries could be adapted for China

China could also draw inspiration from a number of initiatives in neighboring countries.

In 2015, the world's largest asset owner—Japanese pension fund GPIF—signed the UN PRI and announced it would incorporate ESG factors in its investment strategy. This sent a clear signal to institutional investors of the importance of considering the long-term sustainability of their investments (*for more about GPIF's move, see page 41*).⁷⁸ Institutional investors in China could seek to adopt a similar approach and foster ESG integration within financial markets.

AMAC could also seek to establish a stewardship code to encourage Chinese investors to adopt ESG investing. It could draw inspiration from the stewardship codes launched in South Korea, by the Financial Services Commission, the main financial regulator in the country, and by the state-run National Pension Service, the world's third-largest pension fund. These codes encourage more responsible investing practices from institutional investors, and have been adopted by more than 80 institutional investors and investment advisory firms.^{79, 80}



OTHER EMERGING AREAS OF OPPORTUNITY

Using FinTech to drive progress toward better environmental outcomes

FinTech and digital technologies represent an opportunity to drive progress toward better environmental outcomes. For example, Ant Forest encourages its users to reduce their carbon footprint by providing them information on carbon emissions associated with their consumption choices when shopping on the Alipay application and encouraging eco-friendly behaviors. This includes using public transport as opposed to taking a taxi, buying tickets or paying utility bills online, or requesting digital invoices rather than paper ones. As of March 2018, 300 million people had used Ant Forest, leading to a daily reduction of 8,000 tons of carbon emissions. The application tracks reductions in users' carbon footprints and finances the planting of trees when users reach specific thresholds in carbon savings. By the end of 2017, this initiative had led to the planting of 13 million trees.⁸¹

In another noteworthy initiative, Energy Blockchain Labs and IBM are creating a blockchain platform to digitize and automate carbon emissions trading. The platform will measure carbon savings of green assets, such as solar panels, and trade them on carbon markets. The platform will be able to certify carbon savings and reduce the time needed for green asset managers to monetize their carbon savings.

Leveraging Shenzhen's push to become a sustainable finance hub

The government of Shenzhen's central business district, Futian, is seeking to establish Shenzhen as a national hub for sustainable finance in the next five years. Since 2017, it has released a series of policies and initiatives aimed at promoting the development of sustainable finance.⁸² For example, it is providing concessional capital as well as subsidies to fund managers to encourage the creation of impact-dedicated investment funds. The government is willing to contribute up to 30 percent of a new fund's capital and will claim only half of its share of the returns from these funds. In addition, it wants to attract and encourage the creation of impact enterprises by offering subsidies, including for rent and salaries.

Another priority of the Futian government is to support the development of social impact bonds (SIBs). In line with this, it has funded a research study to investigate opportunities in social impact bonds and has committed to providing subsidies to intermediaries setting up SIBs.






SUMMARY OF OPPORTUNITIES IDENTIFIED

	CURRENT GAPS	PROMISING INNOVATIONS	PROMISING ECOSYSTEM INITIATIVES
Investing in China's green economy	<ul style="list-style-type: none"> • Financing for green buildings • Lack of alignment between domestic and international green bond standards 	<ul style="list-style-type: none"> • Innovative green ABS • Insurance to foster the construction of green buildings • Green bond ETFs 	<ul style="list-style-type: none"> • Indices tracking green bonds • Five pilot zones to foster innovation in green finance • Hong Kong Bond Connect Scheme • Hong Kong Green Bond Grant Scheme
Supporting financial inclusion through FinTech	<ul style="list-style-type: none"> • Financial inclusion in rural areas • Financing for MSMEs 	<ul style="list-style-type: none"> • FinTech to expand the reach of financial services • FinTech to improve service delivery from traditional service providers • New models enabling MSME financing such as the Variable Payment Obligation program and the Jaza Duka initiative (see the <i>Indonesia</i> section for more details) 	<ul style="list-style-type: none"> • Network of agent-based service points
Integration of ESG factors into investing strategies	<ul style="list-style-type: none"> • Perception that ESG investing forces tradeoffs on financial returns • Lack of mandatory ESG reporting system 	<ul style="list-style-type: none"> • ESG ETFs; e.g., MSCI China Environment ETF • Investment products enabling Chinese investors to make ESG investments overseas • GPIF's ESG-linked investment strategy (see the <i>Japan</i> section for more details) • Stewardship Codes launched in Japan and South Korea 	<ul style="list-style-type: none"> • ESG indices; e.g., Social Value 99 • AMAC efforts to promote ESG investing • UN PRI
Other emerging areas of opportunity	<ul style="list-style-type: none"> • Nascent sustainable finance market with low level of R&D, limited capital availability, and lack of financial intermediaries 	<ul style="list-style-type: none"> • FinTech for the environment; e.g., Ant Forest platform 	<ul style="list-style-type: none"> • Shenzhen as a sustainable finance hub • Government-funded research on opportunities related to SIBs



INDIA

India will soon be the world's largest country by population, so it will undoubtedly have a key role to play in addressing critical global issues. Sustainable finance in India has deep roots, not least because of the growth and mainstreaming of its microfinance industry through the 2000s. Today, India's impact venture investing market is Asia's largest, and there is clear potential for continued innovation to expand this further. Its green bond market has grown into Asia's second largest, and there are further diversification and expansion opportunities that remain relatively untapped. There is also great scope for innovation in financing for decentralized renewable energy and expand access to reliable power to reach many millions of people across rural India. Meanwhile, development impact bonds (DIBs) hold the promise of improving delivery of social projects in sectors such as education and healthcare, through a strong focus on defining, measuring, and incentivizing results.

Key Statistics ^g		
	Population 1.3 Billion	World Rank 2
	GDP (PPP) \$8.6 Trillion	World Rank 3
	Per capita GDP (PPP) \$6,026	World Rank 100
	HDI 0.640	World Rank 130
	SDG Global Index Score 59.1	World Rank 112

g. Data on Population, GDP (PPP), and Per capita GDP (PPP) from World Bank; Data on HDI from UNDP Human Development Indices and Indicators 2018 Statistical Update; data on SDG Global Index Score from SDG Index and Dashboards.

OVERVIEW OF THEMES EXPLORED



Finding alternatives to closed-end impact venture investing funds

With around \$5.4 billion invested as of 2015, India has the largest impact venture investing market in Asia. Most investors active in the space have adopted a VC approach and structured their funds as 10-year closed-end funds. Though this model has proved effective for investments in tech startups in the US, it is less aligned with the need for more patient capital by many impact ventures and could increase the risk of mission drift. Open-end funds and holding company models represent promising alternatives with longer investment horizons.



Opening up the green bond market to new sectors and projects

In just three years, the Indian green bond market has grown to become the second largest in Asia behind China. However, market participation from issuers and investors has been limited. As a result, the vast majority of green bonds have been used for renewable energy projects, while opportunities in other sectors such as green infrastructure are yet to be adequately explored. Leveraging credit enhancement measures, such as guarantees, could help bring in new investors and familiarize them with such instruments. Moreover, there is an opportunity to expand into new areas such as green urban infrastructure and forest conservation.



Improving the scalability of DIBs

DIBs are gaining momentum in India. However, DIBs often have high transaction or administrative costs, which can represent a disproportionate share of total project costs and make it more challenging to raise funding. Supporting ways to reduce these costs, such as by establishing DIB Knowledge Hubs to help share expertise, could further foster the uptake of DIBs.



Unlocking capital for decentralized renewable energy projects

Rooftop solar and decentralized energy projects have not scaled in India, primarily because of a lack of appropriate financing: Developers have been unable to access debt for project finance from domestic banks. Multiple initiatives are currently trying to address this market gap, including the Climate Policy Initiative, a thematic hub involved in developing and testing new vehicles, as well as research to inform policy development.



Other emerging areas of opportunity

ESG investing could represent an interesting opportunity for Indian investors, with the recent launch of two ESG funds pointing to significant market appetite for accessible ESG investing options.

UNDP and Social Finance India are currently working on an SDG Finance Facility that will develop and market innovative financial instruments with the aim of channeling private capital at scale to SDG-related projects in India as well as aid the growth of SDG-aligned financing.

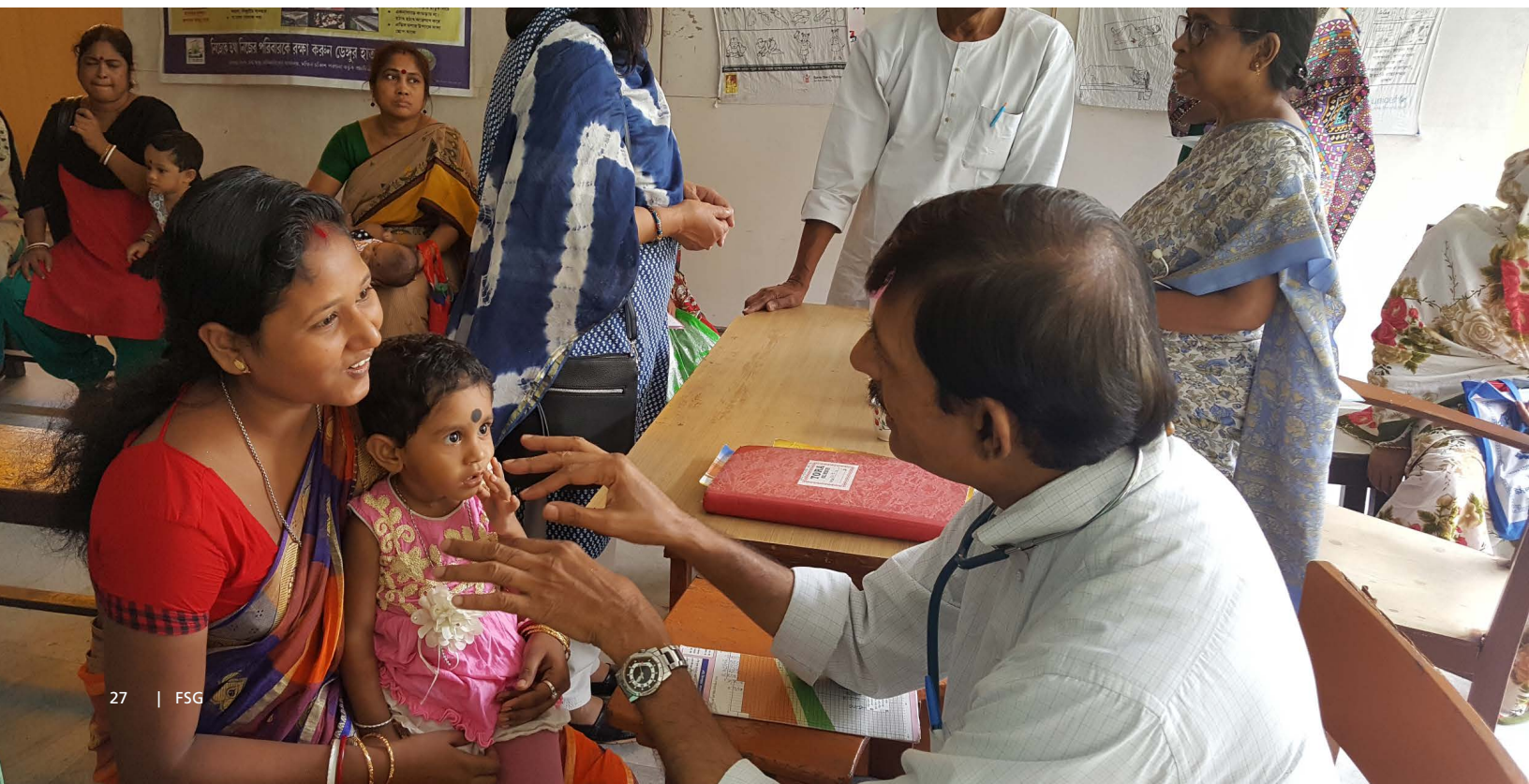


FINDING ALTERNATIVES TO CLOSED-END IMPACT VENTURE INVESTING FUNDS

India has an established market with a capital mismatch challenge

With approximately \$5.4 billion invested up to 2015, India's impact venture investing market is the largest in Asia.⁸³ It is also a fast-growing market as illustrated by a 14 percent average annual increase in the quantum of capital invested between 2010 and 2016.⁸⁴ Moreover, the market is well established with over 70 impact venture investors, across fund managers, Development Finance Institutions (DFIs), and philanthropies. A number of supporting organizations and initiatives exist and include accelerators and incubators, industry associations as well as advisory firms. However, as the market matures, there is a growing realization of the mismatch between the terms at which capital is supplied and the needs of some impact enterprises.

Most impact venture investors have adopted a venture capital approach with 10-year closed-end funds, borrowing a model that has worked well for investments in high-growth tech startups in the US. However, the realities of impact enterprises in India are different. First, they often operate in challenging environments where parts of the value chain and infrastructure necessary for operations may not be established, or where regulatory frameworks may not be conducive. Second, they typically serve customers who can be hard to reach or have low awareness of their innovative products. As a result, these impact enterprises often take time to develop and grow, and may not be able to generate sufficient value for investors within the timeframe of a closed-end fund model.



The slower growth of many impact enterprises, as compared to typical tech startups, has led impact venture investing capital to concentrate on a few high-growth sectors and enterprises, to the exclusion of others: As of 2015, the financial services sector had received two-thirds of the capital invested by impact funds and fund managers in India.⁸⁵

Where investments are made, there remains the risk that this divergence in time horizons could lead to the venture's impact mission being compromised, or an unwillingness to make capital investments where the likely payoff extends beyond the fund's investment horizon.

Alternative structures could help address the capital mismatch

Alternative structures such as open-end funds and holding company (HoldCo) models could address the limitations of closed-end funds. HoldCos and open-end funds have an indefinite lifespan, without fixed timelines for fundraising and exits. This allows portfolio enterprises more time to develop and grow, and cope with situations where exits might be difficult.^{86, 87} In addition, HoldCos are structured as parent companies that own multiple subsidiaries, often from the same geography or with a common sector focus, to promote synergies within the portfolio. These models return value to investors through dividends as well as by allowing them to periodically exit the fund and sell their shares on secondary markets.

Open-end funds and HoldCos are still nascent in impact venture investing, with a few models launched outside India. In Latin America, Encourage Capital has created a HoldCo, called Pescador Holdings, which makes minority investments in sustainable seafood companies. Pescador Holdings recently raised \$10 million in capital from Zoma Capital and is looking to raise a total of \$75 million.^{88, 89}

In the UK, Bridges Fund Management's Evergreen Fund is a permanent capital vehicle that makes long-term equity or quasi-equity investments in impact enterprises and social sector organizations in the country. The Evergreen Fund attracted around \$30 million for its first fundraise in 2016, with investments from Big Society Capital as well as the Merseyside and Greater Manchester Pension Funds. It completed a second fundraise in 2018, mobilizing close to \$64 million.^{90, 91} These structures could benefit from being further explored in an impact venture investing context in India, as they hold great promise to address the limitations of closed-end funds.

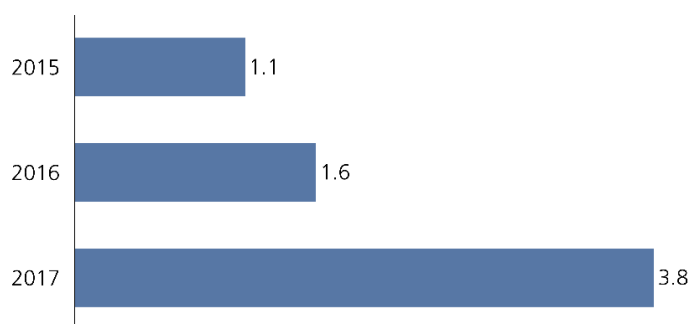


OPENING UP THE GREEN BOND MARKET TO NEW SECTORS AND PROJECTS

India's green bond market is growing but limited to few issuers and sectors

The Indian green bond market has been growing rapidly since its first issue in 2015. With cumulative issuance of \$6.5 billion, it is now the 10th largest in the world and the second largest in Asia behind China.⁹²

FIGURE 4: GREEN BOND ISSUANCE BY YEAR, 2015–17 (\$ BILLION)⁹³



Both issuers and capital providers have demonstrated high interest in India's green bond market. A diverse set of issuers across public and private sectors have already issued green bonds. They include state-owned companies, public commercial banks, public financial institutions, private corporations as well as private commercial banks.⁹⁴ Moreover, oversubscriptions to the bond issues suggest significant traction on the investor side as well. At least 10 green bonds from a total of 33 have been oversubscribed, with the degree of oversubscription ranging from 1.5 to 5.1 times.⁹⁵

The development of the green bond market has further been enhanced through policy measures, such as the Securities and Exchange Board of India (SEBI) green bond guidelines, which clarify the type of projects that proceeds can be used for and define certification processes issuers need to follow.⁹⁶ In parallel, the Federation of Indian Chambers of Commerce & Industry (FICCI) and the Climate Bonds Initiative have created the Indian Green Bond Council to facilitate conversations between the private sector and government on green bonds, and further support the growth of the market.^{97, 98}

As the market is still in an early stage of evolution, there is a lack of familiarity among potential issuers, and a heightened perception of risk among investors, especially domestic ones. As a result, the market is dominated by a few large issuers, with 64 percent of cumulative issuance coming from just six players. Moreover, the vast majority of green bonds have been used for renewable energy

projects, while other sectors such as green buildings and low-carbon transport infrastructure are yet to be adequately explored.^{99, 100} The IFC estimates that green buildings and low-carbon transport infrastructure in India represent investment opportunities of \$1.4 trillion and \$250 billion respectively by 2030, while renewable energy represents opportunities totaling \$320 billion.¹⁰¹

Innovations in policy and financing could aid further growth and diversification

To encourage issuance from more players and help expand the use of proceeds into sectors other than renewable energy, authorities in India could seek to subsidize the cost of green bond certifications as is occurring in Hong Kong through the Green Bond Grant Scheme. Under the scheme, issuers will be able to access a subsidy of up to \$100,000 per bond, for bonds with minimum issuance of around \$63 million.^{102, 103}

Credit enhancement measures, such as guarantees, could also play a useful role in helping to bring in new investors and familiarizing them with instruments they would not normally invest in. For example, in 2015, the Asian Development Bank (ADB) and the India Infrastructure Finance Company Ltd. (IIFCL) provided a guarantee to ReNew Power's \$68 million green bond, which led to an improvement in its credit rating from BBB to AA+ and helped it attract more risk-averse investors.¹⁰⁴ In the future, the government, DFIs, and development agencies could play a crucial role in further unlocking investments through similar credit enhancement measures.

Another opportunity lies in leveraging municipal green bonds to fund the development of green urban infrastructure. Over the 2010 to 2030 period, India will require investment of around \$1.2 trillion in infrastructure to bridge the current deficit and meet additional needs. However, current annual capital expenditure in infrastructure is less than 15 percent of the estimated annual need.¹⁰⁵

There has been minimal use of municipal bonds to date in India, so there will be a need for capacity and infrastructure building, as well as policy adaptation, in order to open up this market. In doing so, India could look for inspiration to other countries such as the US, which now has a municipal bond market worth \$3.8 trillion.¹⁰⁶

The US has also seen further innovation in this market with Environmental Impact Bonds (EIBs), which are municipal bonds that include a results-based financing approach. It enables municipalities to invest in modern green infrastructure, and promising returns that are tied to project outcomes, effectively transferring a portion of project risk to private investors. The EIB approach enabled the Washington DC Water and Sewer Authority to raise \$25 million to finance green infrastructure for stormwater management.¹⁰⁷

Another opportunity could be to leverage green bonds for forest conservation projects. This could be relevant in regions such as India's Northeast, which has seen significant loss of forest cover in

recent years.¹⁰⁸ One such model is the forest bond developed by IFC to address deforestation caused by farming practices in Kenya. This bond is helping to protect over 200,000 hectares of land, and is expected to offset 11.8 million tons of CO2 emissions over its lifetime.¹⁰⁹ The bond offers investors the option of receiving the coupon in cash or in carbon credits to offset gas emissions, with the possibility of selling the credits on the carbon market. In addition, the mining giant BHP has committed to purchasing up to \$12 million of unused carbon credits from the project, enhancing liquidity for the project's investors.¹¹⁰



IMPROVING THE SCALABILITY OF DIBs

DIBs are gaining momentum but are limited by high transaction costs

DIBs have been gaining momentum in India over the last few years. The successful completion of the Educate Girls DIB—the world's first DIB in education—helped demonstrate the impact potential of DIBs. It exceeded its targets of enrolling 837 out-of-school girls while improving learning outcomes for 7,000 children in public schools in Rajasthan.¹¹¹ The launch of two bigger DIBs shows how the market is now evolving toward larger-scale vehicles and impact. For example, the recently launched Quality Education DIB has an outcome fund of \$11 million, compared with the \$422,000 outcome fund of the Educate Girls DIB. It also seeks to create impact on a larger scale, aiming to improve the learning outcomes of 300,000 children.^{112, 113}

The ecosystem around DIBs in India is also growing. In addition to the actors involved in the early DIBs (such as UBS Optimus Foundation, Instiglio, Dalberg, and USAID), an increasing number of players are now entering the space, including Tata Trusts, The British Asian Trust, Social Finance India, and the UK's Department for International Development (DFID).



Despite this encouraging momentum, DIBs are constrained by high transaction and administrative costs associated with setting up the vehicle, and its management and evaluation, rather than with program implementation. For example, in the case of the Utkrisht Impact Bond, a DIB to improve maternal and newborn health in Rajasthan, \$1 million was budgeted for evaluation costs out of a total outcome fund of \$9 million. It will be important to find ways to reduce these costs in order for DIBs to attract mainstream investors and scale to their full potential.

Recent innovations could help reduce costs and attract new investors

Stakeholders managing DIBs have already made significant progress in establishing processes to reduce transaction and administrative costs. For example, UBS Optimus Foundation significantly reduced the time needed to structure recent DIBs by leveraging learnings from the Educate Girls DIB and replicating existing frameworks and contract templates. There is an opportunity for other stakeholders to benefit from these learnings as well. A recent Dalberg report proposes the creation of a DIB Knowledge Hub that would help share learning and content to facilitate structuring, management, and evaluation of DIBs.¹¹⁴

To further reduce transaction costs, intermediaries such as Pan-Impact Korea are developing “Smart SIBs” and applying blockchain technology to streamline outcome payments, enabling automatic payments upon the impact targets being met, as opposed to a system of manual payments.

Another answer is to create larger funds that could support multiple projects on a single, streamlined platform. Along these lines, the creation of the India Education Outcomes Fund (IEOF), which aims to raise up to \$1 billion, constitutes a significant step forward for education DIBs. It will establish a single source of outcome funding for education DIBs, significantly reducing transaction costs as project management teams will no longer have to seek outcome funding from multiple funders.¹¹⁵

Impact bond funds more generally could help draw in more mainstream investors. In the UK, Bridges Fund Management created the \$32 million Bridges Social Impact Bond Fund in 2014, to pool capital toward SIB investments from multiple investors. The fund caters to investors who might not have the capacity to directly invest in SIBs, or those whose minimum ticket size exceeds the needs of any single project. Using this approach, the Bridges Social Impact Bond Fund has attracted investment from a variety of institutional investors, including the Greater Manchester Pension Fund, the Merseyside Pension Fund, and Deutsche Bank.¹¹⁶



UNLOCKING CAPITAL FOR DECENTRALIZED RENEWABLE ENERGY PROJECTS

Decentralized energy still faces an investment shortfall

Renewable energy has gained significant momentum in India, especially since the government announced the target of scaling the country's renewable energy capacity from 42.6GW to 175GW between 2016 and 2022.¹¹⁷ Though India is on track to meet its overall objective, the capacity of rooftop solar and decentralized energy projects has stagnated for lack of appropriate financing.¹¹⁸

The funding gap is especially critical for off-grid solutions, which have only managed to mobilize around 1 percent of the total capital flows to the energy sector between 2013 and 2016. This is a serious concern because around 130 million people in India do not have access to electricity, and many millions more receive highly unreliable power supply.¹¹⁹

Access to debt for project finance is the main challenge for developers as domestic banks have been wary of lending to rooftop solar and decentralized energy projects. These banks lack understanding of the developers' business models, do not have any other collateral besides project assets, and view these projects as being too small for their typical loan ticket size. Moreover, as the off-grid space is a nascent industry, project developers also lack a track record that would satisfy mainstream lenders. As a result, while developers need products similar to infrastructure loans, banks tend to only offer them short-tenor, high-interest loans.^{120, 121}

In response, the Ministry of New and Renewable Energy is helping unlock capital for rooftop solar projects. It has offered sovereign guarantees to the ADB and the World Bank so that they can offer concessional lines of credit for rooftop solar projects through nationalized banks such as the State Bank of India (SBI) and the Punjab National Bank.¹²² As a result, the ADB and the World Bank have approved \$500 million and \$625 million credit lines for solar rooftop, respectively.^{123, 124}

Thematic hubs are driving an integrated approach to innovation

One of the key players in the decentralized renewable energy sector is the Climate Policy Initiative (CPI), which represents a new kind of thematic hub that is driving innovation in both knowledge development and new financing vehicles. On the knowledge development front, it conducts and publishes research, and provides inputs to policymakers. It also hosts the India Innovation Lab for Green Finance, an incubator for new financing vehicles that offers support all the way from idea validation, through development to capital raising.



The India Innovation Lab for Green Finance has supported multiple innovative vehicles relating to renewable energy across rooftop solar, off-grid solutions, as well as electric vehicles. One of these is the Sustainable Energy Bond developed by cKers Finance, which aims to lower transaction costs associated with financing decentralized energy projects. Because such projects are typically small scale, the bond helps lower transaction costs by pooling multiple projects into a single vehicle that then raises debt from investors. It will also help build a track record for developers, in terms of financial as well as impact performance, in order to attract further investors in the future.¹²⁵

Another example is the Solar Investment Trust, which aims to help small-scale industrial and commercial rooftop solar developers access low-cost equity by pooling projects in a listed special purpose vehicle, targeting investments from institutional investors, high-net-worth individuals, and corporations.¹²⁶

CPI's integrated approach is helping bring together stakeholders around a central theme, and work to address barriers across the financing ecosystem, by supporting the development of new vehicles while informing public policy toward a more conducive regulatory environment.



OTHER EMERGING AREAS OF OPPORTUNITY

The emergence of interest in ESG investing by domestic investors

Recent launches of two ESG funds, the SBI Magnum Equity ESG Fund and the Avendus India ESG Fund, are encouraging signs of the development of ESG investing in India. These are the first Indian funds to go beyond negative screening and integrate ESG factors into their approach. Prior to their launch, only global funds employed ESG integration strategies in their investments in India.¹²⁷

We see an opportunity for domestic investors and wealth managers to further engage in ESG investing. In 2012, the government made it easier for investors to assess the ESG performance of companies by making it mandatory for the top 100 listed companies on the Bombay Stock Exchange and on the National Stock Exchange to publish annual ESG disclosures; in 2017, it further expanded the directive to include the top 500 listed companies.¹²⁸

Moreover, there is an opportunity for institutional investors to learn from GPIF's engagement in ESG investing and start incorporating sustainability-related considerations in their investments as well (see *page 35 for more details*).¹²⁹

Innovating financial instruments to achieve SDGs¹³⁰

UNDP, Social Finance India, and the Swiss Agency for Development and Cooperation are collaborating to establish an intermediary, the SDG Finance Facility (SFF), which will develop and market innovative financial instruments to channel private capital toward SDG-related projects in India.

The facility is considering the development of multiple instruments for the Indian market, such as Corporate Social Responsibility (CSR) bonds to tap the mandatory CSR grant expenditure of companies based in India. The final structure and use of funds for such bonds has not yet been decided, but there is an opportunity to target highly catalytic situations given that there is no need to return any capital to CSR funders.






In addition to developing new products, SFF will aim to adapt existing products from elsewhere to meet the needs of the Indian market. This includes municipal green bonds, which enable municipal bodies to raise private capital and finance green urban infrastructure, as well as SDG bonds, which are fixed-income products helping mobilize private capital for SDG-aligned projects.

SUMMARY OF OPPORTUNITIES IDENTIFIED

	CURRENT GAPS	PROMISING INNOVATIONS	PROMISING ECOSYSTEM INITIATIVES
Addressing impact ventures' capital needs	<ul style="list-style-type: none"> • Closed-end fund model not adapted to the capital needs of most impact ventures • Concentration of investments in energy and financial services 	<ul style="list-style-type: none"> • Open-end funds and HoldCos; e.g., Pescador Holdings (Latin America) and Bridge Evergreen Fund (UK) 	<ul style="list-style-type: none"> • India Impact Fund of Funds
Opening up the green bond market	<ul style="list-style-type: none"> • Potential of green bonds in sectors other than renewable energy not fully utilized • Lack of familiarity and high-risk perception with green bonds from domestic investors 	<ul style="list-style-type: none"> • Other thematic or labeled bonds; e.g., Forest Bond (Kenya), Environmental Impact Bond (US), and Blue Bond (Seychelles) 	<ul style="list-style-type: none"> • Guarantees for green bonds • SEBI green bond guidelines • Green Bond Council
Attracting more mainstream investors to DIBs	<ul style="list-style-type: none"> • High transaction or administrative costs of DIBs 	<ul style="list-style-type: none"> • Leveraging technology to reduce costs; e.g., smart SIBs using blockchain technology (South Korea) • Reducing investor risk through guarantees; e.g., Bloomberg Philanthropies' partial payment guarantee for SIB investors (US) • Pooled impact bond funds for investing in SIBs and DIBs; e.g., Bridges Social Impact Bond Fund (UK) 	<ul style="list-style-type: none"> • India Education Outcomes Fund • Proposed DIB Knowledge Hub
Unlocking capital for decentralized renewable energy projects	<ul style="list-style-type: none"> • Lack of access to debt for decentralized energy systems 	<ul style="list-style-type: none"> • Debt pooling to reduce transaction costs and reduce investor risk; e.g., Sustainable Energy Bond 	<ul style="list-style-type: none"> • Ministry of New and Renewable Energy sovereign guarantees to ADB and WB to unlock financing for rooftop solar • Climate Policy Initiative
Other emerging areas of opportunity	<ul style="list-style-type: none"> • Low adoption of SRI / ESG investing among investors • Lack of sustainable investment products in the financial market 	<ul style="list-style-type: none"> • Launch of ESG investing products; e.g., SBI Magnum Equity ESG Fund and Avendus India ESG Fund (India) 	<ul style="list-style-type: none"> • Proposed SDG Finance Facility • Mandatory ESG disclosures for top 500 listed companies



With an aging population, a stagnant economy, and stretched public finances, Japan is exploring a variety of sustainable finance approaches to promote societal and environmental welfare into the future. There is growing interest in Social Impact Bonds (SIBs) with potential to improve the effectiveness of public spending and address challenges such as those related to the country’s growing elderly population. Meanwhile, Japan’s ESG investing market looks set to undergo a transformation following announcements from the Government Pension Investment Fund (GPIF)—the world’s largest asset owner—that it will now be incorporating ESG factors into its investment strategies and decisions as well as engaging with companies and other market stakeholders to encourage greater consideration of sustainability factors.

Key Statistics ^h		
	Population 126.5 Million	World Rank 10
	GDP (PPP) \$4.9 Trillion	World Rank 4
	Per capita GDP (PPP) \$38,267	World Rank 25
	HDI 0.909	World Rank 19
	SDG Global Index Score 78.5	World Rank 15

h. Data on Population, GDP (PPP), and Per capita GDP (PPP) from World Bank; Data on HDI from UNDP Human Development Indices and Indicators 2018 Statistical Update; data on SDG Global Index Score from SDG Index and Dashboards.

OVERVIEW OF THEMES EXPLORED



SIBs to improve effectiveness of public services

Japan's rapidly aging and shrinking population is increasing the pressure on already-stretched public finances. As such, SIBs are increasingly attracting interest from various government bodies. This momentum is also reflected in the multiple SIB projects that have been launched, across a number of areas such as healthcare and livelihood generation. Innovations such as guarantees to incentivize private investor participation have also been implemented. However, there is a need to address capacity issues among intermediaries and the government as well as legal issues pertaining to public bodies making outcome payments to private investors.



Leveraging the momentum behind ESG investing

ESG investing has seen lower uptake in Japan compared with other developed markets such as the US and EU. However, the recent decision by the Government Pension Investment Fund (GPIF) to pursue ESG investing signals the potential for dramatic shifts in this market. Beyond investing, GPIF is also actively involved in field building through collaborations with other large asset owners and fund managers, and with the World Bank. It is also engaging with ESG evaluators to drive greater convergence in assessment approaches. Meanwhile, the Bank of Japan has invested in an ETF targeting Japanese companies that are effectively promoting gender diversity in their workforce.



Other emerging areas of opportunity

The impact investment wholesaler being established in Japan could play a critical role in supporting the growth of impact venture investing in Japan. Such wholesalers are large funds that finance intermediaries and help build the impact venture investing market by unlocking capital supply.

Another area of opportunity is to leverage the rapid growth of crowdfunding platforms to mobilize large-scale retail investments in impact enterprises. Crowdfunding platforms are beginning to include impact enterprises in their portfolio and could become a significant new source of capital for them if further encouraged.

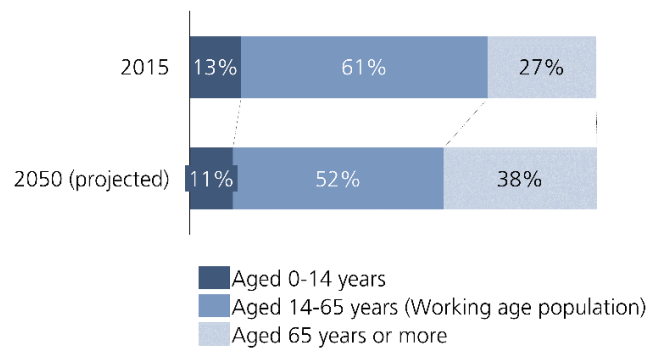


SIBs TO IMPROVE EFFECTIVENESS OF PUBLIC SERVICES

Japan's changing demographics are creating challenges on multiple fronts

Japan's rapidly shrinking and aging population is creating a number of challenges for the country. By 2050, the population is expected to decrease to 102 million, approximately 20 percent less than the current population.¹³¹ Moreover, the share of the working age population is projected to decline, while the elderly population—people aged 65 or more—will increase (see Figure 5).¹³² This will increase the need for social security expenditure, putting pressure on already-stretched public finances, as Japan has the world's highest government-debt-to-GDP ratio at 236 percent.¹³³

FIGURE 5: CURRENT AND PROJECTED DEMOGRAPHIC COMPOSITION OF JAPAN¹³⁴



Note: Numbers presented do not add up to 100 percent due to rounding.

The rapidly shrinking and aging population is also causing the economy in rural areas and smaller towns to contract, forcing people to migrate to large urban centers, and triggering a vicious cycle of further depopulation. With the majority of Japan's population already living in and around major urban centers, the decline of smaller centers is expected to continue unless measures to support local economies are taken.¹³⁵

Interest in how SIBs could improve the effectiveness of public spending

We see growing momentum for SIBs in Japan, as they could help improve the effectiveness of government spending by increasing focus on outcomes. A few early projects are already under implementation, and the government seems to be considering greater adoption of SIBs. For instance, the Ministry of Health, Labor, and Welfare is exploring SIBs for programs related to dementia and child poverty. Moreover, the government has also funded an ongoing five-year study on SIBs, further indicating interest in these instruments.¹³⁶



In order to introduce SIBs to private investors and encourage their investment, Japan's first fully fledged SIB has adopted innovative risk-mitigation mechanisms. Launched in 2017, the Kobe City SIB aims to help around 100 diabetic patients avoid expensive dialysis treatment through lifestyle changes and regular medical advice. The SIB was set up to reduce private investor risk in two ways. First, the Kobe City Government committed to making part of the outcome payment, as it expects the very provision of health services to have some positive impact on patients.^{137, 138} Second, the non-profit Japan Social Impact Investment Foundation provided first-loss capital, further reducing the risk for investors. These measures enabled the Kobe City SIB to secure investment from the commercial bank Sumitomo Mitsui Banking Corporation, and could be replicated in other nascent markets to build investor appetite in SIBs.¹³⁹

Further pilots are underway to test the applicability of SIBs across multiple issue areas. In East Omi City alone, there are four SIB pilots focused on supporting new local businesses, and there are 50 additional SIBs under development across the country.^{140, 141}

The growth of SIBs could be accelerated by addressing capacity and legal issues

There are a number of issues that need to be addressed for SIBs and other results-based financing approaches to scale. First, there is a need for capacity building in the sector. Structuring such instruments is a time-consuming process, and the relative lack of experienced intermediaries in Japan is a bottleneck to both the designing of new initiatives as well as the fast adaptation and replication of successful initiatives. Additionally, stakeholders such as governments and philanthropies need to adapt to these new models as they might not be accustomed to having a risk-return perspective when addressing social issues. Second, there is a need for standard outcome assessment approaches for similar SIBs to ensure impact is accurately measured and comparable. This would reduce transaction costs and help identify the most effective interventions. Finally, government regulations need to evolve and enable outcome funding from state bodies to private players. For example, the Kobe City Government faced challenges in securing funding to pay investors, which delayed the launch of its SIB.¹⁴² As more such projects are likely to be implemented, it is critical for Japan to make progress on these challenges.



LEVERAGING THE MOMENTUM BEHIND ESG INVESTING

There is growing interest in ESG investing

ESG investing is at an early stage in Japan and has experienced lower uptake compared to other developed markets. To illustrate, total assets under ESG integration strategies accounted for less than 1 percent of the total AUM in Japanese markets in 2016, much lower than the 13 percent and 14 percent in Europe and the US, respectively.¹⁴³

However, ESG investing has experienced growing momentum in Japan over the last few years. For example, ESG investments grew from virtually zero in 2014 to \$119 billion in 2016.¹⁴⁴ Recent moves into ESG by large players such as the Government Pension Investment Fund (GPIF) and the Bank of Japan are sending a strong signal that the market is undergoing an important shift toward greater sustainability.

There are also signs that asset owners and managers are increasingly taking heed of long-term sustainability considerations in their fiduciary duties.¹⁴⁵ Japan's Stewardship Code, released by the Financial Services Authority (FSA) in February 2014, has been an important development in the evolution of this understanding. The code asked institutional investors to incorporate sustainability in their investment decisions and to focus on the long-term growth of investee companies.¹⁴⁶ Fiduciary duties were also addressed in the Ito Review, a government-commissioned report on measures to improve competitiveness and return on equity of Japanese corporations, which stressed the importance of adopting a long-term view of profitability and sustainability.¹⁴⁷

Entry of large actors is likely to shift the market

The Bank of Japan has started to engage in ESG investing through investments in an ESG ETF tracking the MSCI Japan Empowering Women Index—an index constituted of companies with greater female participation in their workforce.^{148, 149} More importantly, the recent adoption of ESG investing by GPIF—the world's largest asset owner with assets worth approximately ¥170 trillion (around \$1.5 trillion)—is a highly encouraging development for the growth of ESG investing in the region.

GPIF has adopted a two-pronged strategy to incorporate ESG factors in its equity investments in Japan. The first involves passive investing across the entire market, while directly engaging with some investee companies to encourage greater adoption of sustainability practices in their core business. The second involves investing in funds tracking ESG indices. So far, GPIF has invested around ¥2.3 trillion (\$20 billion) through this second approach, and aims to expand this to around 10 percent of its Japanese equity portfolio.^{150, 151} GPIF is also incorporating ESG factors when selecting fund managers in charge of investments in alternative assets such as infrastructure and real estate.¹⁵²

GPIF has adopted ESG investing to reduce risks to its portfolio. Given the size of its portfolio, system-level risks are a threat to its investments. For example, its domestic equity investments comprise nearly 6 percent of Japan's total stock market capitalization, and it, therefore, needs to ensure markets grow in a sustainable manner, in order to mitigate risks to its assets and uphold its fiduciary duties.¹⁵³

In addition to risk mitigation, GPIF also expects to see capital appreciation in its domestic ESG investments as it believes that stock prices do not yet entirely reflect the ESG performance of companies. By being an early ESG investor, it expects to greatly benefit from increased share prices when other shareholders incorporate the value of ESG performance in their investments, as seen in other markets such as the UK and the US.¹⁵⁴

GPIF's field-building efforts could help develop the wider market

GPIF has adopted a collaborative approach to share learnings and drive change toward sustainable investing globally and in Japan. In addition to its investment activities, it collaborates with other asset owners, institutional investors, ESG evaluation agencies, and the World Bank to promote knowledge creation and cross-learning. For instance, it has jointly founded the Global Asset Owners' Forum with two other large pension funds, the California Public Employees' Retirement System (CalPERS) and California State Teachers' Retirement System as a platform for asset owners to share learnings from their investment activity.¹⁵⁵

In addition, a GPIF-World Bank partnership is studying the impact of ESG factors on investments across asset classes. The first report released by the partnership focused on fixed-income securities, and found that ESG investing in this area had strong potential to strengthen risk management and reduce volatility in returns.¹⁵⁶

GPIF is also entering into dialogue with its external asset managers to drive greater integration of ESG factors in its investment processes. Additionally, it is asking these managers to engage investee companies on adopting greater sustainability in their operations. GPIF is also working with ESG evaluators to encourage greater convergence in assessment methodologies, and reduce ambiguities in impact measurement.¹⁵⁷

As the world's largest asset owner, GPIF's actions could encourage other asset owners and institutional investors in the region to adopt a more long-term view of investments. We see an opportunity to further showcase the achievements of GPIF and continue promoting ESG adoption by investors.



OTHER EMERGING AREAS OF OPPORTUNITY

The new impact investment wholesaler could grow impact venture investing

Japan is working to establish an impact investment wholesaler, based on Big Society Capital's model in the UK (see sidebar "*The world's first impact investment wholesaler*"), which could play a key role building the country's nascent impact venture investing market. It will deploy funds to impact investing intermediaries that will then invest in social-purpose for-profits and nonprofits.

The wholesaler will draw capital from dormant bank accounts, which are accounts that remain inactive for 10 years or more. The money in such accounts is growing by around ¥50 billion (around \$500 million) annually, and therefore represents a sizable pool of capital to leverage.¹⁵⁸

The wholesaler is expected to be operational from 2019 and will provide financing through grants, loans, and equity, with the initial focus likely to be on grants. It is expected to disburse around \$50 million in the first year, and this amount could increase to around \$500 million annually within five years.

THE WORLD'S FIRST IMPACT INVESTMENT WHOLESALER^{160, 161}

Launched in 2012, Big Society Capital (BSC) was set up to help grow the social impact investment market in the UK. It invests in banks or funds that go on to invest in or lend to social entrepreneurs and have the potential to catalyze the market by crowding in other investors. BSC also makes direct investments in ecosystem organizations to help develop the infrastructure that supports social investment. For example, it has invested in the Social Stock Exchange, the world's first exchange dedicated to social enterprises and investors.

BSC's catalytic role in growing the UK's social impact investment market can be illustrated through its participation in setting up Access – The Foundation for Social Investment (Access). Access addresses unmet demand from social organizations such as charities and social enterprises for small-ticket unsecured loans by facilitating lending activities to the segment. It uses a blended finance approach that combines credit lines, grants, and guarantees to lenders, helping them overcome barriers that have prevented such lending in the past. Through this approach, BSC has contributed to the creation of an entire new segment of lending in the UK and enabled small social organizations to build their financial resilience.

Crowdfunding platforms could unlock retail investments in impact enterprises

Japan's rapidly growing crowdfunding market could be another significant source of capital for impact ventures. Driven by rapid developments in the FinTech space, and Japan's low-interest rate regime, which encourages investors to put their money in non-traditional assets, the crowdfunding market in Japan grew by almost 97 percent in 2016. Crowdfunding platforms are estimated to have mobilized nearly \$745 million in capital from individuals through a mix of donations, loans, and equity investments in 2016.¹⁵⁹

Crowdfunding platforms such as Securite and Campfire are beginning to include impact enterprises in their portfolio. They could become a significant new source of capital for impact enterprises, given the rapid growth of the crowdfunding space.

SUMMARY OF OPPORTUNITIES IDENTIFIED






	CURRENT GAPS	PROMISING INNOVATIONS	PROMISING ECOSYSTEM INITIATIVES
SIBs to improve effectiveness of public services	<ul style="list-style-type: none"> Lack of capacity to structure and manage SIB projects Legal roadblocks limiting the flexibility of government entities to act as outcome funders 	<ul style="list-style-type: none"> Reducing private investor risk through partial guarantees on outcome payment; e.g., Kobe City Government partial payment guarantee to SIB investors 	<ul style="list-style-type: none"> Establishment of the Japan Social Impact Investment Foundation as a nonprofit impact investor Government-funded research on SIBs
Leveraging the momentum behind ESG investing	<ul style="list-style-type: none"> Focus on short-term returns at the cost of long-term sustainability considerations The perception that ESG investing forces tradeoffs on financial returns 	<ul style="list-style-type: none"> ESG investments in equity and alternative assets by GPIF Gender lens investing; e.g., gender-themed ESG ETF investments by the Bank of Japan 	<ul style="list-style-type: none"> Stewardship code for institutional investors GPIF engagement with asset owners and asset managers to enable knowledge exchange and to drive ESG investing GPIF engagement with ESG evaluators to drive convergence in ESG assessment approaches UN PRI
Other emerging areas of opportunity	<ul style="list-style-type: none"> Underdeveloped impact venture investing market 	<ul style="list-style-type: none"> Crowdfunding to channel retail investments in impact enterprises; e.g., Music Securities platform for investments in impact enterprises 	<ul style="list-style-type: none"> Establishment of impact investment wholesaler to build the impact venture investing market



INDONESIA

Indonesia is on track to becoming the world's fourth-largest economy in PPP terms by 2050. Sustainable finance could play a key role in helping Indonesia fully and durably reap the benefits of this growth. Innovations in financing for smaller enterprises could help improve job prospects and quality in a sector that employs the vast majority of the country's workforce, leading to significant productivity and economic gains. Alongside this, new mechanisms for investing in conservation are offering ways to protect Indonesia's abundant natural wealth, a valuable resource that has unfortunately borne the brunt of indiscriminate economic development in recent decades. Meanwhile, new approaches to disaster risk management through parametric insurance products and risk pooling could help Indonesia to improve its resilience to natural disasters.

Key Statisticsⁱ

	Population 261 Million	World Rank 4
	GDP (PPP) \$3 Trillion	World Rank 7
	Per capita GDP (PPP) \$10,437	World Rank 77
	HDI 0.694	World Rank 116
	SDG Global Index Score 62.8	World Rank 99

i. Data on Population, GDP (PPP), and Per capita GDP (PPP) from World Bank; Data on HDI from UNDP Human Development Indices and Indicators 2018 Statistical Update; data on SDG Global Index Score from SDG Index and Dashboards.

OVERVIEW OF THEMES EXPLORED



Growing Indonesia's conservation market to mitigate environmental damage

Indonesia, which has one of the world's largest remaining stocks of forests, has been experiencing rapid deforestation. This has turned it into the world's largest source of forest-based emissions, with potentially devastating implications for planetary climate change. Against this backdrop, we see the emergence of innovative vehicles that are now investing profitably in conservation and restoration of natural ecosystems.



Strengthening disaster resilience by managing risk

Indonesia is highly vulnerable to natural disasters, and this imposes a large financial burden on the government as well as on individuals. Moreover, the penetration of insurance is very low, increasing people's dependence on state support in times of disaster. Innovative risk management mechanisms offer the opportunity to improve disaster resilience in Indonesia. These range from sovereign catastrophe bonds and pooled sovereign parametric disaster insurance products for the government, to innovative parametric disaster insurance products for individuals.



Unlocking capital for MSMEs through innovative financing models

MSMEs account for 97 percent of employment and contribute to 60 percent of the GDP in Indonesia. Although they play a critical role in the economy, they face a financing gap of almost \$54 billion, as mainstream institutions tend to perceive lending to this segment as highly risky and financially unviable due to small loan ticket sizes. Indonesia could benefit from innovative vehicles that leverage technology, debt pooling, and loan syndication to unlock credit availability for the MSME segment.



Other emerging areas of opportunity

Leveraging the government's efforts to promote SDG-aligned economic developments could be another interesting area of opportunity, as reflected in the recent launch of a blended capital fund to finance green infrastructure across the country.

Islamic finance also represents a promising opportunity for sustainable finance, as it represents large pools of capital that could be leveraged to fund socially and environmentally beneficial projects.

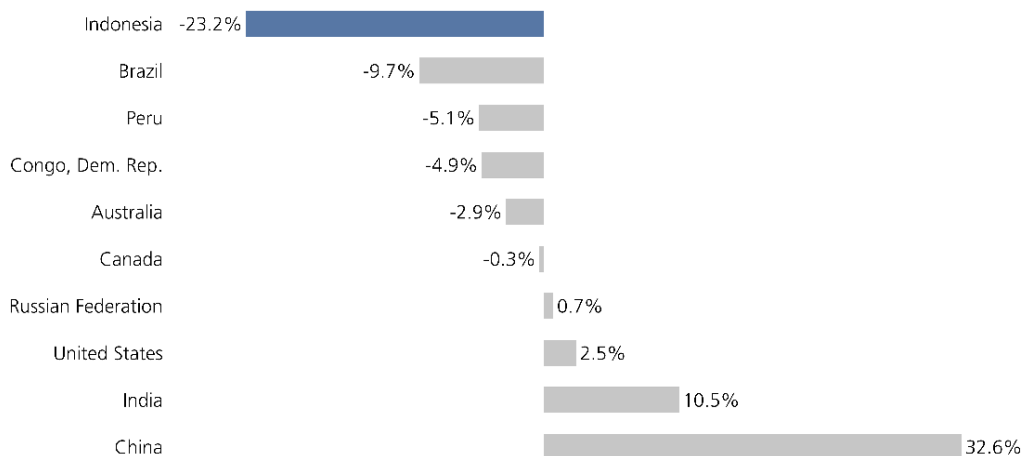


GROWING INDONESIA'S CONSERVATION MARKET TO MITIGATE ENVIRONMENTAL DAMAGE

Indonesia has suffered dramatic losses in forest cover

Indonesia, one of the world's most biodiverse countries and home to the largest rainforests in Asia, is undergoing rapid and large-scale destruction of its natural habitats. Demand for commodities, such as palm oil and paper pulp, has led to the destruction of its forests and their replacement with industrial-scale plantations. As a result, Indonesia lost almost a quarter of its forest cover between 1990 and 2015, representing the largest loss relative to total forest cover among the world's most forested countries.^{162, 163} This large-scale deforestation has played a significant role in turning Indonesia into the world's fifth-largest emitter of greenhouse gases.¹⁶⁴

FIGURE 6: CHANGE IN FOREST AREA IN THE WORLD'S 10 MOST-FORESTED COUNTRIES, 1990–2015¹⁶⁵



Innovative approaches are helping make investing in conservation financially viable

In recent years, we have seen the emergence of new varieties of investment vehicles that have made investing in traditionally unviable conservation assets attractive for a wide variety of investor classes.

One of these vehicles is the Tropical Landscape Finance Facility (TLFF), which finances projects in forest conservation, sustainable agriculture, and renewable energy in Indonesia. The facility includes a lending platform managed by ADM Capital, which aims to channel at least \$1 billion in long-term financing for such projects, that also commit to zero deforestation, while improving the lives and livelihoods of local people.^{166, 167}



TLFF's on-lending is financed through a debt securitization program managed by BNP Paribas. The securities are sold to mainstream investors such as family offices and insurance companies. Moreover, to help attract investments, the USAID Development Credit Authority (DCA) has provided a \$33.25 million credit guarantee to the facility.¹⁶⁸

So far, TLFF has extended a \$95 million loan to finance the development of a sustainable rubber plantation by a joint venture between France's Groupe Michelin and Indonesia's PT Barito Pacific. Besides sustainably produced rubber, the project will also generate 16,000 jobs.¹⁶⁹

Another example of vehicles financing conservation efforts is the Althelia Climate Fund. Structured as a blended capital fund and supported by a \$133.8 million DCA guarantee, the fund invests in real assets across the world to promote conservation, with the objective of generating returns for investors.¹⁷⁰ Through its investments it also aims to foster the creation of sustainable livelihoods for local communities.¹⁷¹ In Indonesia, it has invested in degraded peatland forests with the objective of supporting their restoration, which could mitigate around 1.2 million tons of carbon emissions annually.¹⁷² The fund uses a variety of approaches to generate returns on its investments, including monetizing carbon credits generated from projects, gains from appreciation in asset value, and the sale of commodities from asset utilization.¹⁷³

The fund has raised a total of \$140 million from a wide variety of investors. Part of this was raised with Credit Suisse through short-term fixed-income securities called "Nature Conservation Notes" that were marketed to the bank's high-net-worth individual (HNWI) clients.^{174, 175} Other investors in the fund include the Dutch Development Bank (FMO) and the Church of Sweden.

Lestari Capital's Sustainable Commodities Conservation Mechanism (SCCM) takes a different approach to fund conservation projects. In Indonesia, it leverages contributions from palm oil producers who are not compliant with sustainability certification requirements of the Roundtable on Sustainable Palm Oil (RSPO).^{176, 177} These contributions are then channeled to conservation efforts through the SCCM, enabling palm oil producers to mitigate the negative environmental impact of their operations, helping them obtain the RSPO certification. Such certification is becoming increasingly important for these producers in order to access international markets; for example, Norway has recently announced a ban on unsustainably produced palm oil, and more countries could follow such initiatives.¹⁷⁸

Forest conservation efforts are likely to grow in Indonesia, especially as the country is building its capacity to access dedicated pools of capital. As such, Indonesia has established the Climate Change Fund Management Agency—the Badan Pengelola Pelayanan Dana Perubahan Iklim (BPDI)—whose responsibilities include channeling funds from REDD+.^j One of the agency's roles will be to coordinate conservation efforts and facilitate access to the \$1 billion commitment made by Norway to Indonesia through REDD+ in 2010, of which Indonesia has so far only been able to secure \$8 million.

New vehicles are enabling investments in conservation of marine ecosystems

Indonesia also has a need for marine conservation due to threats from overfishing and climate change. Recently, the Meloy Fund for Sustainable Community Fisheries has started channeling capital to conserve marine ecosystems and promote sustainable fishing in Indonesia, by making debt and equity investments in fishing-related enterprises to promote sustainable community fisheries.¹⁷⁹

In addition to generating a return on its investments, the fund aims to impact the lives of 100,000 people engaged in fishing. It also aims to apply sustainable management practices to 1.2 million hectares of coastal habitats, including coral reefs, seagrass beds, and mangroves.¹⁸⁰

The fund has raised \$22 million from a diverse set of investors, including the Global Environment Facility, FMO, the Lukas Walton Fund of the Walton Family Foundation, and several other family offices and foundations. It has also received a partial credit guarantee from DCA.^{181, 182, 183}

The launch of several vehicles that mobilize private capital to fund conservation is an encouraging indicator of the investment potential of this market, and it represents an attractive opportunity for sustainable finance to grow further in Indonesia.

j. REDD+ is a program under the United Nations Framework Convention on Climate Change (UNFCCC) that incentivizes forest conservation by offering outcomes-based payments for declines in carbon emissions from reduced deforestation or improved conservation. It stands for "Reducing Emissions from Deforestation and Forest Degradation and fostering conservation, sustainable management of forests, and enhancement of forest carbon stocks."



STRENGTHENING DISASTER RESILIENCE BY MANAGING RISK

Indonesia's population is highly vulnerable to disasters

Indonesia is one of the most disaster-prone countries in the world.¹⁸⁴ Its location and topography make it vulnerable to natural disasters such as earthquakes, tsunamis, volcanic eruptions, floods, landslides, and droughts. Over the last 30 years, the country has faced 289 significant natural disasters and lost approximately 8,000 lives a year, on average.¹⁸⁵ Moreover, the occurrence and intensity of climate change-related disasters is likely to increase in the future.¹⁸⁶

These disasters can have catastrophic consequences for local communities. The overall insurance penetration rate in the country is below 3 percent, indicating that most people are at risk of losing everything in the wake of a disaster, and remain dependent on the government for support.¹⁸⁷ This is even more concerning as around 10 percent of Indonesia's population—more than 26 million people—live in poverty and are highly vulnerable to the economic shocks arising from these disasters.¹⁸⁸

Indonesia's capacity for disaster response remains limited. Despite measures such as creating a dedicated budget for disaster management, current resources are not sufficient to adequately respond to disasters. This often pushes the government to raise emergency debt for disaster relief and reconstruction.^{189, 190}

A number of innovative products enabling better disaster risk management have been launched across the world, including in Indonesia. Adapting and scaling more of these products could substantially improve the country's resilience to disasters.

Parametric insurance mechanisms can strengthen disaster response

The defining characteristic of parametric disaster insurance products is that their payouts are automatically triggered when specific disaster-related parameters are met. For instance, a parametric earthquake insurance product will pay beneficiaries automatically if the earthquake intensity is at least equal to that mentioned in the policy documents. Such products eliminate the need for damage assessment and paperwork for insurance benefits to be processed, offering faster relief and cheaper coverage to the buyers.

The simplicity of parametric insurance products makes them particularly amenable to rapid scaling, as they need minimal documentation from beneficiaries, and do not require an on-the-ground presence to assess claims. Moreover, these products have been developed to provide risk coverage at multiple levels, from governments to individuals.

The recently launched Southeast Asia Disaster Risk Insurance Facility (SEADRIF) is an example of a parametric disaster insurance product for governments. In addition to providing automatic payouts, it is structured as a pooled product providing cover to multiple countries (Cambodia, Lao PDR, and Myanmar). This has helped reduce premium expenses by 25 percent, as compared to the cost each country would have had to bear had they bought a similar cover separately.¹⁹¹

Parametric insurance products have also been developed to provide cover to financial institutions, enabling them to continue lending even after disasters. Such products cover lenders against the risk of default, which increases in the wake of disasters, and enable lending operations to continue when the need for credit from customers increases substantially. For instance, the World Bank's Global Index Insurance Facility, the IFC, and Indonesian reinsurer PT. Reasuransi MAIPARK have developed an earthquake index insurance (EQI) product that offers parametric insurance cover to microfinance institutions and rural banks to protect their portfolios against earthquake risks.¹⁹² A similar insurance product for the earthquake-prone provinces of Aceh and West Sumatra was jointly launched by Indonesian private sector general insurer Aswata, Swiss reinsurer Swiss Re, and the Mercy Corps in 2016.¹⁹³

Another category of parametric disaster insurance products provides cover to individuals and helps them better manage the aftermath of disasters. In Haiti and Central America, the for-profit insurer Microinsurance Catastrophe Risk Organisation (MiCRO) offers one such product to low-income micro-entrepreneurs who are at high risk of falling into poverty as a consequence of disasters. The product combines parametric insurance with a loan write-off in the event of especially severe disasters. Moreover, it also provides a fresh loan to help micro-entrepreneurs resume their livelihood-generating activities and mitigate the risk of falling into poverty.¹⁹⁴

Pooled catastrophe bonds could reduce costs

Catastrophe bonds (cat bonds) represent another type of risk-transfer product helping countries to improve their disaster resilience. Mexico was the first country to use cat bonds to transfer part of its disaster risk to private investors. Cat bonds have since been used by a number of countries, while Indonesia is also reported to be considering their usage.¹⁹⁵

Cat bonds are mainstream debt securities that are generally used by insurers and reinsurers to cover their risk. In the case of sovereign cat bonds, the issuing country raises capital from private investors as provision for disaster relief. In case of a disaster, the issuer's obligation to continue paying the coupon or even repay the principal is deferred or waived off completely, providing a financial cushion for disaster relief.¹⁹⁶ Private investors subscribe to such bonds as they offer high yields.

Facilities such as the World Bank's MultiCat Platform enable pooled sovereign cat bond issuances, helping reduce the cost to issuer countries by pooling risks. Countries such as Mexico, Peru,

Colombia, and Chile have used the platform, which has facilitated cumulative issues of around \$4 billion as of February 2018.¹⁹⁷



UNLOCKING CAPITAL FOR MSMEs THROUGH INNOVATIVE FINANCING MODELS

Despite government efforts, MSMEs in Indonesia face a \$54 billion financing gap

MSMEs in general, and micro-enterprises in particular, play a vital role in Indonesia's economic landscape: almost 90 percent of the country's workforce is employed in micro-enterprises.¹⁹⁸ However, institutional lenders tend to perceive MSMEs as high risk as they often lack credible information on their business or repayment capabilities. Moreover, the relatively small loan ticket sizes make this segment less attractive for institutional lenders.

As a result, many smaller enterprises cannot access appropriate financing, constraining their growth. Recent analysis has shown that the lack of financing for SMEs leads to lost growth equivalent to almost \$130 billion, or around 14 percent of Indonesia's GDP. This situation is similar for micro-enterprises, as only 1 percent of Indonesia's micro-enterprises can grow into sustainable SMEs.¹⁹⁹

The government has implemented various measures to improve the flow of finance to MSMEs, including through the creation of a credit insurance scheme for lending institutions, as well as by mandating minimum lending requirements to MSMEs. However, these initiatives have had a limited impact as there remains an estimated \$54 billion financing gap for the MSME segment in Indonesia.²⁰⁰

Innovative sustainable finance models offer opportunities to unlock mainstream lending to MSMEs

A number of innovative mechanisms for financing MSMEs have been launched in other countries, which could be relevant for Indonesia. These mechanisms leverage different approaches such as debt pooling, loan syndication, and innovative credit assessments to draw private sector capital to MSMEs.

One of these innovative mechanisms is the Women's Livelihood Bond (WLB). By pooling debt with varying risk profiles into a single vehicle, it enables mainstream lending to women-led enterprises, as well as enterprises and MFIs working on women's empowerment, in Cambodia, Vietnam, and the Philippines.²⁰¹ Investor risk is also mitigated through a joint DCA and DFAT (Australia's Department of Foreign Affairs) guarantee covering 50 percent of the portfolio, and a \$500,000 first-loss provision



from the Impact Investment Exchange (IIX).²⁰² IIX has also enhanced liquidity for investors by listing the WLB on the Singapore Stock Exchange.²⁰³ The first WLB issue in 2017 raised \$8 million from investors, and IIX is now working on the next iteration, which plans to raise \$100 million in three tranches during 2019–2020 and will cover more countries, including India and Indonesia.

Another example is the Variable Payment Obligation (VPO) program, which unlocks bank financing to SMEs by reducing their default risk and blending commercial capital and concessional capital. The program adopts a loan syndication model wherein impact investors and other third-party investors co-lend alongside the mainstream lender, thus reducing the latter's exposure to the loans. Repayments are structured on the basis of borrower's cash flows, rather than as fixed installments, reducing the default risk. The program is currently being piloted in Nicaragua, with focus on women-led or women-owned SMEs.²⁰⁴

MasterCard is currently working on an initiative to help unlock credit access for micro-retailers in Indonesia, based on the Jaza Duka partnership in Kenya between MasterCard, Unilever, and Kenya Commercial Bank (KCB). Jaza Duka enables MasterCard to assess the credit-worthiness of micro-retailers by analyzing data on their ordering patterns from Unilever. KCB then uses these credit assessments to offer short-term lines of credit to micro-retailers through MasterCard's mobile payment platform.²⁰⁵ Since its launch in 2017, the initiative has enrolled more than 12,000 micro-retailers and has a 97 percent repayment rate.²⁰⁶ Participating micro-retailers are also trained in inventory and credit management by MasterCard, and have reported an approximate 20 percent increase in their sales.²⁰⁷



OTHER EMERGING AREAS OF OPPORTUNITY

Channeling sustainable finance to SDG-aligned opportunities

In addition to vehicles aimed at directing private capital to thematic verticals, innovations in sustainable finance have led to cross-sectoral approaches that mobilize financing for green growth. This could help grow the market for financing SDG-aligned economic development, and Indonesia has witnessed some early success in raising funds through these vehicles. Indonesian green bond and green sukuk (Islamic green bond) issuance commenced in February 2018 and raised at least \$2.2 billion from global investors during the year.^k

In October 2018, the Indonesian Ministry of Finance launched a blended finance vehicle called SDG Indonesia One (SIO) to finance large-scale, SDG-aligned projects.²⁰⁸ SIO will facilitate investments in projects related to renewable energy and urban infrastructure, including in transportation, water, and waste management.^{209, 210} It will be managed by state-owned financing company PT Sarana Multi Infrastructure. SIO has a target of raising \$4 billion and had secured commitments worth \$2.3 billion at launch.²¹¹

Finding new ways to channel Islamic Finance

Islamic Finance comprises financial activities that are compliant with Islamic law, which prohibits profiting from interest, speculative activities, as well as investments in industries such as tobacco and gambling. Like sustainable finance, Islamic Finance also seeks to generate social and environmental benefits from financial transactions.

Islamic Finance has both commercial and charitable components, both of which could be useful to explore in the context of sustainable finance.

Instruments under the commercial component offer investment opportunities to investors seeking compliance with Islamic principles. This investor segment represents a large pool of capital, as reflected by the cumulative global outstanding issuance of sukuks^l of \$1.4 trillion as of 2016.^{212, 213} Sustainable finance is already tapping into this market with the growth in issuance of green sukuks, including the world's first sovereign green sukuk issue by Indonesia in 2018.²¹⁴ However, such issues still comprise a small share of the global sukuk market, and there is significant potential for raising capital in much larger volumes.

k. Total funds raised might be higher, as data for all issuance in 2018 was not available at the time of writing this report.

l. Sukuks are a type of Islamic Finance instrument akin to asset-backed securities.

The charitable component of Islamic Finance comprises mandatory as well as voluntary donations made by Muslim people. For example, zakat is a mandatory donation expected of Muslims with assets or incomes above a certain threshold, while waqf is a voluntary donation, typically of physical assets such as land, but can also be given in the form of cash.²¹⁵

Such mandatory and voluntary donations represent a significant opportunity for sustainable finance to be used as sources of catalytic capital. Donations are increasingly being used to support entrepreneurial activities, such as grants to help MSMEs meet their initial working capital requirements. Moreover, while these donations have historically been collected in a local and fragmented way, they are increasingly being collected by large agencies that can aggregate and consolidate funds. For example, collections by Indonesia's national zakat agency, BAZNAS,^m grew by 35 percent between 2015 and 2016, to a total of \$364 million. There is room for such agency collections to scale much further, as the total level of annual zakat collections across Indonesia has been estimated to be as high as \$16.2 billion.²¹⁶

We see great potential for further innovations in bringing Islamic and sustainable finance together. For example, zakat could be used as grant funding to support ventures in their very early stages. As they grow, micro-enterprises could seek other forms of financing, such as through Islamic microfinance, or sukuks once they have reached a level of scale. Similarly, we also see an opportunity to combine the commercial and charitable components to create blended finance instruments that would leverage donations to incentivize commercial investments into high-risk opportunities.

The recent establishment in Indonesia of a dedicated Innovative Financing Lab by UNDP could play a key role in exploring these potential innovations and enhancing the growth of sustainable finance aligned with Islamic principles.

m. BAZNAS – Badan Amil Zakat Nasional.

SUMMARY OF OPPORTUNITIES IDENTIFIED

	CURRENT GAPS	PROMISING INNOVATIONS	PROMISING ECOSYSTEM INITIATIVES
Growing the conservation market	<ul style="list-style-type: none"> • Large economic incentives for deforestation and degradation of ecosystems • Uncoordinated ecosystem conservation efforts 	<ul style="list-style-type: none"> • Sustainable real asset investment funds; e.g., Althelia Climate Fund and Meloy Fund for Sustainable Community Fisheries • Funds enabling sustainable economic growth; e.g., Tropical Landscape Finance Facility; Sustainable Commodities Conservation Mechanism 	<ul style="list-style-type: none"> • REDD+ • Establishment of the Climate Change Fund Management Agency (Badan Pengelola Pelayanan Dana Perubahan Iklim – BPDI) • Establishment of standards such as RSPO to encourage sustainable commodity supply chains
Strengthening disaster responsiveness through risk-transfer mechanisms	<ul style="list-style-type: none"> • Very low penetration of insurance products • High dependence on state support to deal with disasters • Limited government finances to handle disaster response 	<ul style="list-style-type: none"> • Parametric pooled sovereign disaster insurance; e.g., SEADRIF • Sovereign catastrophe bonds; e.g., MexCat • Parametric disaster insurance for financial institutions; e.g., EQI • Parametric insurance and debt hybrid product for micro-entrepreneurs; e.g., MiCRO (Haiti) 	<ul style="list-style-type: none"> • Proposed disaster risk financing instrument to fund local governments in Indonesia
Unlocking capital for MSMEs	<ul style="list-style-type: none"> • Low level of institutional lending to MSMEs due to high-risk perception 	<ul style="list-style-type: none"> • Debt pooling to enable institutional lending to MSMEs; e.g., WLB (Cambodia, Vietnam, and the Philippines) • Loan syndication and flexible repayment schedules to reduce commercial lender risk; e.g., VPO program (Nicaragua) • FinTech-enabled credit solutions for micro-retailers; e.g., Jaza Duka (Kenya) 	<ul style="list-style-type: none"> • Policy imposing mandatory MSME lending requirement on banks • Government insurance and interest subsidy to lending institutions for incentivizing MSME financing
Other emerging areas of opportunity	<ul style="list-style-type: none"> • Nascent market for financing SDG-aligned growth opportunities 	<ul style="list-style-type: none"> • SDG-aligned infrastructure investment fund; e.g., SDG Indonesia One 	<ul style="list-style-type: none"> • Republic of Indonesia Green Bond and Green Sukuk Framework • Innovative Financing Lab by UNDP

SINGAPORE AS A HUB FOR SUSTAINABLE FINANCE IN ASIA

Singapore has served as a hub for trade and services since its founding in 1819 when the island became a British trading port.²¹⁷ Visionary Singaporean leaders have leveraged the country's location and other advantages to grow economically. Singapore today serves as one of the world's major financial centers and is well-positioned to become a hub for sustainable finance.

Innovation is in Singapore's DNA

Singapore has consistently been considered among the world's most innovative economies by global institutions such as the World Intellectual Property Organization, which ranked the country as the fifth-most innovative economy in 2018.²¹⁸

Since its independence, Singapore's government has systematically identified emerging economic opportunities and implemented policies that have ensured rapid economic growth. It has continually encouraged the economy to keep shifting to higher-productivity sectors, thus ensuring the rapid transition of a resource-scarce city-state into one of the world's most dynamic economies. Carrying this impressive legacy of innovation forward, the government is now working to ensure Singapore can leverage its existing strengths and emerge as a major global center for innovation-focused industries. For instance, the government has taken a number of measures to promote the growth of the FinTech industry, including setting up a virtual FinTech Office in 2016 as a one-stop shop to address all industry issues. Additionally, the Monetary Authority of Singapore (MAS) has released guidelines for a regulatory sandbox, enabling experimentation and testing of applications in real-world scenarios, without the risk of violating existing laws and regulations.²¹⁹

The government has taken a number of measures to promote sustainable finance in the country

The Singapore government and regulatory bodies have taken a number of measures that indicate their interest in sustainable finance, primarily to promote green finance and ESG investing. In June 2017, MAS launched a Green Bond Grant scheme to subsidize the cost of green certification for issuers with the objective of encouraging such issuance by Singapore-based entities. MAS has also partnered with IFC for capacity building on green bonds in Asian financial institutions and promoting the use of internationally recognized green bond standards in Asia.²²⁰

In addition to promoting green finance, authorities in Singapore have taken measures to encourage better integration of ESG factors in the business decisions of financial institutions. Banks in Singapore are now required to incorporate some ESG standards in their financing decisions under the Guidelines on Responsible Financing that were adopted in 2015. Some of the factors that have to be considered include GHG emissions, deforestation, and corporate ethics and integrity.²²¹ MAS has also incorporated an assessment of sustainability factors in its supervision of banks in Singapore.²²² Moreover, in 2016, the Singapore Stock

Exchange adopted a “comply or explain” policy, making it mandatory for all listed companies to disclose information regarding their sustainability practices, failing which they must explain the reasons behind the lack of disclosure.²²³

The government has also taken a number of initiatives to encourage innovation and capacity building in the area of sustainable finance. The Singapore Management University (SMU) has started a certification program in sustainable finance and investing, providing training on ESG integration to asset management and investment professionals. The program is being supported by government entities such as MAS and the sovereign wealth fund Temasek. MAS has also expressed interest in establishing partnerships with financial institutions and other stakeholders to promote research and capacity building on ESG issues across the region.²²⁴

Singapore is well-positioned to serve as a hub for sustainable finance for the region

Singapore possesses many of the institutional, financial, and human attributes that would be needed for it to develop into a sustainable finance hub. It has a strong and stable economy with a well-developed financial services industry, an investment-friendly regulatory ecosystem, and a visionary government that has consistently led the way in preparing the country for the future. Singapore already serves as a regional hub for trade and financial services and has taken a number of steps to promote green finance both domestically and for the region, as outlined earlier.²²⁵ Most of the world’s large financial services institutions are present in Singapore, with many establishing their regional headquarters there. Some of the financial intermediaries present in Singapore, such as BNP Paribas, Credit Suisse, Citibank, and UBS, as well as domestic entities such as DBS and Temasek, have been active in sustainable finance.²²⁶

A number of specialized impact venture investors, intermediaries, and sustainable finance ecosystem players are already present in Singapore. To cite some examples, investors and intermediaries such as Aavishkaar, Omidyar Network, BlueOrchard, Bamboo Finance, Impact Investors Exchange, and Lestari Capital are present in Singapore. Similarly, large ecosystem players with a pan-Asian network such as AVPN and the Aspen Network of Development Entrepreneurs (ANDE) are also present in the country.

There is an opportunity for Singapore to support the development of sustainable finance in the ASEAN region. According to a study by DBS and UNEP, the region needs \$3 trillion in green investments between 2016 and 2030, for the development of green infrastructure and for investments in energy efficiency, food, agriculture, and land use.²²⁷ Mobilizing and channeling capital in such volumes will require massive institutional, human, and technical capacity, which no ASEAN city other than Singapore currently has.

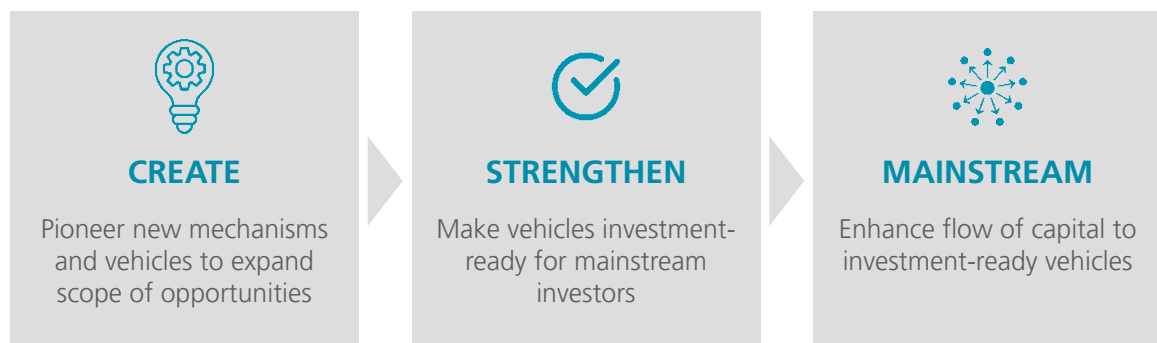
Historically, Singapore has grown by supporting innovative industries, and the developing sustainable finance sector offers it the opportunity to continue its track record of leadership.

UNLEASHING THE NEXT WAVE OF INNOVATION

As we hope we have made clear in this report, the sustainable finance sector in Asia is undergoing rapid and exciting change, and in some areas moving boldly into the mainstream of finance. We believe that this truly has the potential to reshape the entire financial services sector and become the future of finance itself.

But much has to be done to get us there. We need to see even greater levels of innovation across Asia to truly exploit the full potential of sustainable finance. Importantly, there are needs not only for the creation of new mechanisms and vehicles, but also in making these vehicles investment-ready for mainstream investors, and then in drawing in the quantities of capital needed to transform the entire market. These three areas are reflected in Figure 7 below.

FIGURE 7: STAGES OF INNOVATION IN SCALING SUSTAINABLE FINANCE



In *Create*, actors directly engage in or foster the development and structuring of new vehicles to expand sustainable finance to additional areas. In *Strengthen*, they seek to bring untested vehicles to a stage where they are investment-ready for mainstream investors, for example, by refining a vehicle's model, building its track record, and helping shape a supportive ecosystem. In *Mainstream*, participating actors aim to mobilize capital from mainstream investors into investment-ready vehicles, including by spreading awareness about the vehicles' value proposition or engaging in capacity building efforts to support investors.

As we do all of this, we hope that many of us will seek to combine forces and work together where it makes sense, given the wide range of skills and expertise needed to shape these new markets, while acknowledging that competitive pressures will continue to be strong in this arena as they are throughout the financial services sector.

Over the next few pages, we lay out some initial recommendations for how a range of different actors could engage across these areas of innovation, to truly realize the potential of sustainable finance. Our hope is that this report will help many of you seize the opportunity to shape this emerging sector and build positions of leadership within it, and by doing so help us move toward a future in which *all* of finance is turned toward building a better world.

Create

Pioneer new mechanisms and vehicles
to expand scope of opportunities



ACTION	ILLUSTRATIVE EXAMPLES
Philanthropic foundations, DFIs, MDBs, and development agencies	
Fund the development of innovative vehicles, through the provision of capital to development teams directly, or to organizations that support the development of such vehicles	The Rockefeller Foundation Zero Gap initiative Co-funding of the US-India Catalytic Solar Finance Program and the US-India Clean Energy Finance Program by the Hewlett, MacArthur, and Packard Foundations, and the Jeremy and Hannelore Grantham Environmental Trust
Support the establishment and operations of thematic hubs that work on developing innovative vehicles	UNDP establishing the Indonesia Innovation Lab DFID providing funding to the India Innovation Lab for Green Finance The SDG Finance Facility jointly proposed by UNDP and Social Finance India
Support governments and other funders to engage in or foster innovation	UNDP and IFC support to the Government of Indonesia in developing the Green Bond and Green Sukuk Framework World Bank support to the Government of Seychelles in developing the Blue Bond
Market facilitators	
Conduct research to highlight market gaps and opportunities for innovation	Council on Energy, Environment and Water research on market gaps in the energy sector in India Janaagraha research on barriers preventing the uptake of Municipal Bonds in India
Organize events to showcase learnings from the space, highlight opportunities or future potential developments, and foster the creation of partnerships	AVPN Social Investment Forum RS Group Sustainable Finance Initiative
Support governments and other funders to engage in or foster innovation	The work of the Japan and South Korea National Advisory Boards (NABs) in promoting SIBs among Government bodies AVPN Asia Policy Forum
Mainstream investors	
Share finance expertise and participate in the structuring of innovative vehicles	BNP Paribas involvement on the Tropical Landscape Financing Facility in Indonesia, and the Sustainable India Finance Facility
Governments	
Establish initiatives specifically aiming to foster innovation	The five pilots zones to promote green finance initiated by the Government of China
Provide an enabling legal and regulatory environment for the development and testing of vehicles	Singapore regulatory sandbox for FinTech startups

Strengthen

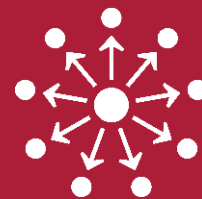
Make vehicles investment-ready for mainstream investors



ACTION	ILLUSTRATIVE EXAMPLES
Philanthropic foundations, DFIs, MDBs, and development agencies	
Invest in untested innovative vehicles, or in vehicles without an established track record	Walton Family Foundation investment in the Meloy Fund for Sustainable Community Fisheries
Provide risk-mitigation capital, in the form of guarantees or first-loss capital, to attract capital from mainstream investors into innovative vehicles	<p>USAID DCA guarantees to multiple vehicles such as the Althelia Climate Fund, the Variable Payment Obligation program, and the Women's Livelihood Bond</p> <p>The Rockefeller Foundation participation in the junior debt tranche of the SunFunder Beyond the Grid Solar Fund</p>
Fund evaluation studies to assess financial and impact performance of innovative vehicles	UBS Optimus Foundation funding of the evaluation for the Educate Girls DIB
Market facilitators	
Foster access to capital for innovative vehicles through matchmaking	<p>India Innovation Lab for Green Finance supporting the capitalization of untested finance vehicles in renewable energy</p> <p>Convergence matchmaking platform for blended finance</p>
Generate and share knowledge on lessons from implementation of innovative vehicles	Dalberg research on the Educate Girls DIB in India
Mainstream investors	
Support capitalization of innovative vehicles lacking a track record	<p>Credit Suisse funding of Althelia Climate Fund through Nature Conservation Notes sold to their HNWI clients</p> <p>DBS work on placing the Women's Livelihood Bond with investors</p>
Governments	
Provide risk-mitigation capital, in the form of guarantees or first-loss capital, to attract financing from mainstream investors into innovative vehicles	IREDA Credit Enhancement Guarantee Scheme in India, which offers partial guarantees for bonds that fund renewable energy projects

Mainstream

Enhance flow of capital to investment-ready vehicles



ACTION	ILLUSTRATIVE EXAMPLES
Philanthropic foundations, DFIs, MDBs, and development agencies	
Conduct and disseminate research to spread awareness of sustainable finance and encourage adoption	World Bank research on ESG in fixed-income investing in partnership with GPIF
Support the creation of impact standards to make it easier for investors to assess the sustainability of investment opportunities and promote integrity	Funding of the Green Bond Standards Scheme by multiple funders including The Rockefeller Foundation and Bloomberg Philanthropies
Market facilitators	
Conduct and disseminate research to spread awareness of sustainable finance and encourage adoption	Global Sustainable Investment Alliance biennial research on SRI
Create market markers to encourage adoption of sustainable finance	MSCI development of ESG-themed indices
Engage in capacity-building efforts with mainstream investors, on incorporating sustainability considerations in their activities	UN PRI development of toolkits and events to support investors in incorporating sustainable finance practices
Mainstream investors	
Incorporate and invest in approaches and encourage peers to adopt similar practices	GPIF incorporating ESG factors in its investment decisions and engaging with asset owners to encourage them to adopt ESG investing
Support the creation of impact standards to make it easier for investors to assess the sustainability of investment opportunities and promote integrity	Creation of the Green Bond Principles by a consortium of investment banks including HSBC, Morgan Stanley, and Crédit Agricole Corporate and Investment Bank
Signal commitment to sustainable investing by creating or joining dedicated investor groups	UN PRI, which now represents close to 2,000 signatories Stewardship codes in Japan and South Korea
Help clients, such as HNWI and Family Offices, understand range of opportunities in sustainable finance	UBS working with their clients to provide them with a broader perspective of ways to generate impact beyond philanthropy through the socialization of innovative opportunities
Create products making it easier for investors to invest in sustainability	Creation of the ESG ETFs by BlackRock
Governments	
Signal the need for sustainable finance	Bank of England directives to banks to incorporate climate-risk in their long-term planning
Provide incentives or concessional capital to foster the flow of mainstream capital toward sustainable finance	Tax incentives for investments in government-certified social enterprises in Thailand Green bond subsidies in Hong Kong and Singapore covering the cost of bond certification for issuers Concessional capital provided by the Futian government for fund managers to create impact funds
Create an enabling policy environment	Mandatory ESG disclosures for the top 500 listed companies in India

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UBS Optimus Foundation

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