中央财经大学绿色金融国际研究院
International Institute of Green Finance, CUFE

FINANCING SUSTAINABLE INFRASTRUCTURE IN ASIA

Meeting investment needs through green bonds, multilateral development banks, the Belt and Road Initiative, as well as infrastructure standards.

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The International Institute of Green Finance (IIGF)
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The IIGF is an independent and non-profit think tank established in China in September 2016. It conducts research on green finance on a wide array of topics such as credit, bonds, funds, insurance, carbon-trading, local pilots, international cooperation, ESG rating, as well as risk assessment. The IIGF is specialized in Chinese green finance at national and local level and additionally conducts research on green finance internationally from a Chinese perspective.

The IIGF works with numerous stakeholders in green finance both within and outside China. Within China, the IIGF is an executive member of Green Finance Committee of China Society for Finance and Banking and works closely with the People's Bank of China, the Chinese Ministry of Finance, the National Development and Reform Commission, the Chinese Ministry of Ecology and Environmental Protection, as well as with a number of national, regional and local government institutions, financial institutions, and research organizations. Internationally, the IIGF conducts joint research with a plurality of organizations such as UNEP, UNPRI, the European Investment Bank, Cambridge University, Climate Policy Initiative, the International Institute for Sustainable Development, and many more.

The IIGF is formally associated with the Central University of Finance and Economics in Beijing and is partially financed by donations from Tianfeng Securities. The institute is headed by Wang Yao, who additionally serves as Deputy Secretary General of the Green Finance Committee of the China Society for Finance and Banking.

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Executive Summary

While substantial progress has been achieved on sustainable development in Asia and the Pacific, the challenges remain large and ways in which to overcome them have to be integrated into infrastructure development. Rapid progress is needed to set the region on track to meet the SDGs, towards which the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) (2018) estimates that only one of 17 goals is "on track" to be met. In general, social goals such as on poverty, health, and education are doing better than environmental ones such as climate change, water, and biodiversity. This suggests the need to both change from business-as-usual into a development model that prioritized sustainability, while prioritizing environmental issues where performance is most dire. Financing sustainable infrastructure is critical part of the solution as it shapes the underlying functioning of the economy.

A number of concrete challenges to financing sustainable infrastructure are highlighted across a wide range of literature. Amongst the most frequently raised issues is the lack of transparency in the development of infrastructure project pipelines due to a lack of project structuring and financing capabilities (Bielenberg, et at., 2016; Brookings Institution, 2016; United Nations Environmental Program and Global Infrastructure Basel report, 2016). Furthermore, project development costs and the role of public support at the early stage of the project cycle is insufficient, especially in developing countries with less mature financial markets (OECD, 2016). Additionally, and the lack of comparable historical performance data of sustainable infrastructure projects presents a challenge to investors who today find it difficult to accurately estimate risk of sustainable vs un-sustainable projects. (Aizawa and Schuele, 2016; Asian Development Bank, 2017). Across the literature a number of ways to categorize such challenges exist. However, within the literature there is a lack of clear and comprehensive conceptualizations of the challenges. From the concrete context of financing sustainable infrastructure in Asia-Pacific, five categories of challenges can be derived: institutional framework; project financiers; project owners; financial markets; and standards.

- **Institutional framework:** Within the political and regulatory environment surrounding sustainable infrastructure finance, a country's institutional frameworks do not often sufficiently support sustainable infrastructure finance. These include political instability and policy reversals, distorting subsidies and feed-in tariffs, and an uneven playing field towards state-owned institutions or energy sources. In particular, unpredictable support for renewable energies has been a key problem, as seen for example in the sudden reduction of Chinese solar PV subsidies in May 2018 sending shockwaves through the industry. Furthermore, the

playing field remains far from stable and even, such as indicated by the fact that in 2016 fossil fuels still received substantially greater subsidies ($260 billion) than renewable energy sources ($160 billion) on a global scale (International Energy Agency, 2017).

- **Project financiers:** Potential investors in sustainable infrastructure projects face a number of challenges compared to traditional projects as their market is less mature and underdeveloped. An overemphasis of short-term profits also reduces the incentive of institutional investors to prioritize long-term environmental sustainability. In addition, portfolio restrictions given by asset owners to asset managers may limit opportunities to invest in sustainable infrastructure projects, due to a perception of higher risk. However, portfolio restrictions may also work in the other direction by requiring a proportion of investments to be green. The combination of actual or perceived costs and a an unfavorable institutional framework to drive sustainable investing has resulted in Asia-Pacific investors and their fund managers lagging far behind their western counterparts in embracing "environment, social and governance (ESG) investing,", which is the inclusion of companies' ESG performance as criteria in fund allocation decisions. According to a report by the Global Sustainable Investment Alliance, less than 1 per cent of Asian funds integrate sustainability into their investment strategies, compared to 21.6 per cent and 52.6 per cent in the United States and Europe, respectively (Global Sustainable Investment Alliance, 2017).

- **Project owners:** A fundamental challenge of infrastructure project owners is their lack of experience using sustainable, or green, finance labelling to attract more funds. This includes limited awareness of targeted green and other finance mechanisms, inexperience in leveraging non-traditional financial products and limited capacity in structuring projects to allow for sustainable labelling. Furthermore, infrastructure project owners are often national and local government institutions, lacking transparency and comprehensiveness of infrastructure project pipelines. Improving guidance available provided by ministries, regulatory institutions or private sector associations is one way to address this issue. Furthermore, an increasingly common mechanism to address this issue is project preparation facilities, which brings together project owners and financiers, frequently with blended finance tools from the public sector such as by feasibility studies or project guarantees.

- **Financial markets:** Within global and local financial markets sustainable infrastructure finance is inhibited by a number of challenges at the market, product and project levels. Overall market challenges include the fact that sustainable infrastructure is not a mature asset class, typically experiencing a shortage of specialized funds, mismatch of risk profiles and non-monetized positive environmental externalities. Financial product-level challenges finance include lack of data availability, limited transparency in product offering and a low level of international, national and sub-national compatibility of such data. Project-level challenges include lack of bankability, uncertain end-user demand, complexity of project execution and management, as well as higher risk associated with new technologies. Current effort towards addressing these issues include improving information availability and quality through platforms, standards and third-party assessments initiated by both the public and private sectors.

- **Standards:** A cross cutting issue spanning across the other four listed above is the issue of standards. The lack of green and sustainability

related standards exists at several levels including definitions of sustainability, disclosure indicators, and project design. Without such clear consensus-based standards it becomes difficult for investors to analyze assets, banks to price loans, governments to target support, project owners to design projects, third parties to estimate impacts, and so on for all stakeholders in infrastructure finance. That some standards are settled with a top down approach such as in China, and bottom in other places such as in Western markets, this add another layer of difficulty in a potential harmonization process.

Addressing these challenges, the paper has identified four central ways to promote sustainable infrastructure financing in Asia:

1. The Role of MDBs in Financing Sustainable Infrastructure

The multilateral development banks (MDBs) are increasing their involvement in sustainable infrastructure finance by scaling up climate investments and by integrating social and environmental issues into their general financing requirements as a cross-cutting issue. As an organization type, MDBs are governed by a number of member countries and have clear development oriented mandates. As part of this, most MDBs have a strong focus on financing sustainable infrastructure. Four the purpose of promoting sustainable infrastructure finance in Asia, MDBs can play a key role in the following ways:

- At the early-stage of its development, MDBs can effectively de-risk sustainable infrastructure projects using a number of schemes. Those schemes include: Technical assistance, risk assessment disclosure, public private partnership, concessional and non-concessional loans, guarantees and insurance, as well as risk sharing facilities.

- The lack of a pipeline of potential bankable projects and high project development costs are crucial challenges for sustainable infrastructure projects that MDBs can address. Transaction costs for preparing environmentally and socially sustainable infrastructure projects are higher than for conventional projects, among other reasons, because such projects often carry higher technological risks from using less mature and proven technologies. While the short-term mindset of many investors in the market makes them less interested in sustainable infrastructure projects, long-term institutional investors such as sovereign wealth funds, pension funds and insurance companies are often discouraged by the relatively high risk of infrastructure projects and from less stable political circumstances in many Asia-Pacific countries.

- Given their expertise as well as pioneering role in many areas of sustainable finance, MDBs can provide policy support at both the financial and economic level. Specifically, this is due to the expertise accumulated in MDBs given their generally long history and large scale, combined with a development mandate and authority as intergovernmental institutions. The current situation is that with few exceptions, financial systems are not used as tools for reaching sustainability goals. This is particularly true for Asian countries. As an indication of this trend, China was the first country in the world to launch a comprehensive set of guidelines for greening its financial system in 2016.

- With standards identified as a cross-cutting obstacle throughout the chapter, MDBs can furthermore play an important role in this regard. This is in particular in regards to green definitions and information

disclosure as highlighted as a key problem for sustainability in Asia (Paulson Institute, 2017; White and Case, 2018). This has been highlighted by many commentators over the last years. Given their authority in development finance, joint MDB action on green standard setting can be influential in setting global standards for all stakeholders. The EIB's current work on standards under the forthcoming European Union (EU) sustainable finance taxonomy (European Commission, 2018) as well as green bond harmonization between the EU and China (EIB and China Green Finance Committee, 2018), elaborated upon in greater detail in the following section, are key examples of the role MDBs can play.

2. Creating an Enabling Environment for Green Bonds to Develop Sustainable Infrastructure

While MDBs can contribute to de-risk sustainable infrastructure projects and making them viable and bankable for investors, the development of capital markets is also needed for such projects to link with potential investors. In that regard, green bonds, which are earmarked for funding sustainable and environmental-friendly projects, are a promising instrument that has rapidly grown. In just over a decade, annual green bond issuance grew from $1.5 billion USD in 2007 to $258.9 billion USD in 2019. Accessing international green bond markets requires overcoming three important challenges: (i) The lack of a common green bond framework, (ii) limited policy support, and (iii) insufficient demonstration effects. The rest of this section discusses these challenges in detail and proposes ways for Asia-Pacific issuers of green bonds to overcome them.

- Differences in the definition of "green bonds" are a key obstacle to the development of an efficient global green bond market (Paulson Institute, 2017). In 2016 the G20 identified lack of clarity in green definitions as one of the principal challenges to the establishment of a global green bond market and the development of green finance more generally (G20, 2016).

- The establishment of a common green bond framework internationally is a necessary but not a sufficient condition to achieve an efficient global green bond market, from which Asia-Pacific regional and national markets can benefit. Other challenges to establishing an efficient green bond market therefore are a lack of knowledge of green finance in general among potential Asian green bond issuers, and a failure to compensate these market players for the additional expenditure that green bond issuance requires. This challenge can be overcome by public institutions playing an active role in both capacity building and financial support. Several Asia- Pacific governments have taken concrete steps in this direction, as the Governments of Indonesia and China have set up knowledge and learning hubs for green finance whilst the governments of Singapore, Japan, Hong Kong, and local governments in China have initiated measures that render green bond issuance more attractive.

- A third challenge facing Asia-Pacific green bond issuers attempting to access international capital markets is insufficient intercontinental bond issuance demonstration by sovereigns and development banks guiding the way. This true both for issuances raising capital for infrastructure as well as for general purposes. From such demonstrations, corporates and other Asian financial institutions would be able to derive insights on how to issue their own green bonds in compliance with both green bond regulations in the Asian issuer's country and the European investors state whilst the new

connections within sustainable investor pools can be shared with non-sovereign green bond issuers in the future.

3. Sustainable Infrastructure Investment: the Belt and Road Initiative and Others

In essence, the SDGs can only be met if they are an integral part of the development paths of countries under the Belt and Road Initiative (BRI). As the orginal 65 countries under the BRI collectively account for over 30 per cent of global GDP, 62 per cent of population, and 75 per cent of known energy reserves (World Bank, 2018b), these ambitions can only be realized if they are included in the BRI. On the environmental front, most BRI countries' environments are deteriorating and their NDCs are misaligned with a 2-degree scenario, current development pathways must be changed. Likewise, on social aspects these countries are only on track to reach one of the 17 SDGs (UNESCAP, 2018). While the BRI is a China led initiative, it is an open-ended initiative that any Asian and Pacific country can sign up to and be part of shaping. Given its expected impact, no matter if the perspective is positive or negative, active or inactive, all stakeholders from public to private across Asia and the Pacific will have to take a stance on the BRI.

While the BRI is the largest infrastructure initiative in Asia and the Pacific in terms of geographic scope and level of ambition, a number of other initiatives also exist. To ensure that sustainability factors are included in all initiatives, it is important to understand their linkages and actively work to ensure their mutual support. Concrete ways to ensure the mutual support of initiatives includes their specific mention in each initiative's policy documents, inclusion of projects in more than one initiative simultaneously, ensuring the same technical standards are used for characterizing projects in each initiative, involvement of the same international investors, as well as host countries alignment between their own development plans and the related initiatives. Key infrastructure initiatives in the region include those coordinated under ASEAN, European Union, United States, Japan, Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS), Greater Mekong Subregion (GMS), Shanghai Cooperation Organization (SCO), Eurasia Economic Union (EEU), Central Asian Regional Economic Cooperation (CAREC) Program

4. Applying and harmonizing safeguards and best practices

Ensuring that infrastructure supports sustainable development requires that social and environmental goals are an integrated part of designing infrastructure projects. Developing shared practices is a concrete way to ensure this in practice. While a number of such practices exist today they are not uniformly used by geography or infrastructure type, nor are they based on multi-stakeholder dialogues. Concretely, this topic is critical because shared and transnational practice can clearly define and guide how to carry out sustainable infrastructure projects in practice by (i) utilizing environmental and social safeguards for infrastructure projects, and by (ii) clarifying the sustainability "best practice" by industry sector, geography, and/or organization type. Lastly, (iii) in setting up such standards, intergovernmental organizations can play a key role based on their authority, mandate, and convening capabilities.

- ***Avoiding harm: Setting a threshold through environmental and social safeguards:*** By definition, safeguards form a framework and process to assess, prevent and mitigate social

and environmental harm. When identifying and designing a project, safeguards should help first assess the possible environmental and social risks and the impacts associated with the project. Later, during project implementation, safeguards should help define measures and processes to effectively manage such risks. The process of applying safeguard policies can be an important opportunity for stakeholder engagement, enhancing the quality of project proposals and increasing ownership. In essence, these systems are focused on ensuring that both the agency and its country partners understand the indirect risks of projects, so that they can be evaluated and weighed against the benefits of the project.

- ***Doing good: Best practices for maximizing sustainability impact by industries, sectors, and infrastructure types:*** While the safeguards listed above aim to avoid harm, best practice for infrastructure aim to actively ensure a positive contribution to sustainable development. These practices differ mostly by infrastructure type, while remaining similar across geographies and organizations. A non-exhaustive representative sample is listed in table 5.2 below. Best practices for sustainable infrastructure can be defined as a formalized practice for ensuring a given sustainability performance of infrastructure projects through tangible management processes through an infrastructure project cycle. There are two core reasons for the existence of best practices, of which the first is the need to provide a third-party objective standard to ensure the sustainability of an infrastructure project, while the second is the need to have a common language and process for doing so. These reasons provide confidence in the public as well as in project developers, financiers, local authorities and end-users.

Introduction

While substantial progress has been achieved on sustainable development in Asia and the Pacific, the challenges remain large and ways in which to overcome them have to be integrated into infrastructure development. Rapid progress is needed to set the region on track to meet the SDGs, towards which the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) (2018) estimates that only one of 17 goals is "on track" to be met. In general, social goals such as on poverty, health, and education are doing better than environmental ones such as climate change, water, and biodiversity. This suggests the need to both change from business-as-usual into a development model that prioritized sustainability, while prioritizing environmental issues where performance is most dire. Financing sustainable infrastructure is critical part of the solution as it shapes the underlying functioning of the economy.

The United Nations' Sustainable Development Goals (SDGs) directly aim at enhancing the resilience and sustainability of various kinds of infrastructure. SDG 7, for instance, proposes to "increase substantially the share of renewable energy in the global energy mix" by 2030, while SDG 9 endeavors to "develop quality, reliable, sustainable and resilient infrastructure[…] to support economic development and human well-being, with a focus on affordable and equitable access for all" (United Nations, 2015, p. 23 and 24) The achievement of these goals will require not only incorporating sustainability consideration in the selection and prioritization of infrastructure projects but also enhancing financing for such sustainable infrastructure development.

Sustainable infrastructure can be defined as physical infrastructure that supports the attainment of sustainable development, which includes environmental, social and economic sustainability, as well as good governance. More specifically, environmentally sustainable infrastructure mitigates carbon emissions during construction and operation and contributes to the transition to a lower-carbon economy. It is also resilient to climate change risks, such as sea level rise and extreme weather events, and it addresses local environmental challenges, such as those related to water provision and air quality. Economically sustainable infrastructure provides jobs and contributes to economic growth and to build capacities within the country, without burdening governments with unsustainable debts or users with excessively high charges. And socially sustainable infrastructure facilitates access of the poor or socially excluded groups to services and economic opportunities, as well as reducing their vulnerability to climate change and improving gender equality (Bhattacharya and others, 2016).

This chapter aims to provide policy makers and practitioners involved in infrastructure in Asia-Pacific with both an underlying understanding of the

challenges to financing sustainable infrastructure as well as with concrete solutions to overcoming these. Based on academic publications, grey literature, media articles, as well as input from practitioners, the chapter draws on a wide range of sources and perspectives to provide an objective balance on issue with numerous nuances. Spanning a wide range of topics with substantial literature, the chapter provides an extensive list of references which can be consulted for further details on specific arguments or cases.

The chapter analyzes how sustainable and resilient infrastructure can be financed in Asia-Pacific, by identifying the most impactful and feasible ways, namely multilateral development banks (MDBs), green bonds, the Belt and Road Initiative (BRI), as well as "safeguards" and "best practices". From this outset, the remainder of the chapter is organized as follows: Section 2 identifies key challenges and how they relate to the four ways identified. Section 3 discusses the role of MDBs in de-risking existing infrastructure projects for other investors, by financing the identification of bankable projects such as through feasibility studies, by providing policy support to countries towards improving national green finance systems, as well as by supporting the development of clear consensus based green finance standards. Section 4 discusses how to create an enabling environment for green bonds, by overcoming the lack of a common green bond framework, limited policy support, and insufficient demonstration effects. Section 5 addresses the role of the BRI through integrating sustainability into BRI and Chinese outwards investment policies, and by coordinating and harmonizing efforts with similar infrastructure investment schemes in the region. Section 5 highlights utilizing environmental and social safeguards for infrastructure projects, and standardizing sustainable infrastructure "best practices" by industry sector, geography, and/or organization type, while intergovernmental organizations can play a key role based on their authority, mandate, and convening capabilities in mainstreaming "safeguards" and "best practices".

Challenges to Financing Sustainable Infrastructure

In the economy, capital flows to where return is the highest. Simply put, the unmet need for sustainable infrastructure finance is therefore a sign of a lower return on investment from a combination of lower revenues and higher costs. It is particularly on the cost side that financing for sustainable infrastructure is perceived as less profitable to investors. These costs stem from both higher technological risk of less mature technologies, political risks from less stable political support or the lack thereof, or higher transaction costs from using less proven implementation methods. It is further important to note that as capital flows to where returns are highest in relative terms, when polluting projects get subsidies or do not pay for environmental externalities, this further reduces the attractiveness of sustainable infrastructure projects.

A number of concrete challenges to financing sustainable infrastructure are highlighted across a wide range of literature. Amongst the most frequently raised issues is the lack of transparency in the development of infrastructure project pipelines due to a lack of project structuring and financing capabilities (Bielenberg, et at., 2016; Brookings Institution, 2016; United Nations Environmental Program and Global Infrastructure Basel report, 2016). Furthermore, project development costs and the role of public support at the early stage of the project cycle is insufficient, especially in developing countries with less mature financial markets (OECD, 2016). Additionally, and the lack of comparable historical performance data of sustainable infrastructure projects presents a challenge to investors who today find it difficult to accurately estimate risk of sustainable vs un-sustainable projects. (Aizawa and Schuele, 2016; Asian Development Bank, 2017). Across the literature a number of ways to categorize such challenges exist. However, within the literature there is a lack of clear and comprehensive conceptualizations of the challenges. From the concrete context of financing sustainable infrastructure in Asia-Pacific, five categories of challenges can be derived: (i) institutional framework; (ii) project financiers; (iii) project owners; (iv) financial markets (v); and standards.

Institutional framework

Within the political and regulatory environment surrounding sustainable infrastructure finance, a country's institutional frameworks do not often sufficiently support sustainable infrastructure finance. These include political instability and policy reversals, distorting subsidies and feed-in tariffs, and an uneven playing field towards state-owned institutions or energy sources. In particular, unpredictable support for renewable energies has been a key problem, as seen for example in the sudden reduction of Chinese solar PV subsidies in May 2018 sending shockwaves through the industry. Furthermore, the playing field remains far from stable and even, such as indicated

by the fact that in 2016 fossil fuels still received substantially greater subsidies ($260 billion) than renewable energy sources ($160 billion) on a global scale (International Energy Agency, 2017). In general, governments face no obligations to compensate companies for lost profits caused by policy reversals, while some multi- and bilateral investment treaties may include such clauses. In the years following the Paris Agreement, this problem has seen some improvement through the structuring and implementation of nationally determined contributions or NDCs.[1] As NDCs provide increasingly concrete plans integrated to various degrees in countries' national economic plans, they have in many cases resulted in a better alignment and stability of climate policies. Such long term planning is needed to solve current disadvantages for sustainable infrastructure compared to other types of infrastructure. With respect to the four ways of integrating sustainability into infrastructure investment in Asia-Pacific, this challenge can be address in particular by policy support from MDBs, fiscal incentives for green bonds, and sustainable sectors being emphasized in the BRI, and safeguards working to develop national environmental protection laws.

Project financiers

Potential investors in sustainable infrastructure projects face a number of challenges compared to traditional projects as their market is less mature and underdeveloped. An overemphasis of short-term profits also reduces the incentive of institutional investors to prioritize long-term environmental sustainability. In addition, portfolio restrictions given by asset owners to asset managers may limit opportunities to invest in sustainable infrastructure projects, due to a perception of higher risk. However, portfolio restrictions may also work in the other direction by requiring a proportion of investments to be green. The combination of actual or perceived costs and a an unfavorable institutional framework to drive sustainable investing has resulted in Asia-Pacific investors and their fund managers lagging far behind their western counterparts in embracing "environment, social and governance (ESG) investing,", which is the inclusion of companies' ESG performance as criteria in fund allocation decisions. According to a report by the Global Sustainable Investment Alliance, less than 1 per cent of Asian funds integrate sustainability into their investment strategies, compared to 21.6 per cent and 52.6 per cent in the United States and Europe, respectively (Global Sustainable Investment Alliance, 2017).

While the positive correlation between ESG performance and financial performance has been clearly proved for listed companies in the West (Oxford University and Arabesque Partners, 2015), this remains to be proven for Asian markets and in particular for infrastructure projects. Some preliminary studies provide support for the hypothesis, such as the International Finance Corporation of the World Bank Group (IFC) (2018) report on performance in emerging markets, and Moody's (2018) study showing the relatively lower risk of infrastructure bonds. Miscalculating the risk associated with poor sustainability performance of infrastructure exposes

1 NDCs embody efforts by each country to reduce national emissions and adapt to the impacts of climate change (UNFCCC, 2019). While not based on a common framework they use different targets such as emissions peak year, emission intensity by GDP, renewable energy proportion in primary energy.

investors to stranded asset risks, highlighting the importance of improving project financiers' perception before such risks become systemic macroprudential risks in national and international financial systems. Addressing this challenge through the four ways proposed in this chapter, key roles can be played by reducing project risk through MDB involvement, increasing investor understanding of the performance of sustainable finance instruments such as green bonds, including financial institutions perspective in BRI policies, and harmonizing sustainable infrastructure best practices to provide investors with greater clarity.

Project owners

A fundamental challenge of infrastructure project owners is their lack of experience using sustainable, or green, finance labelling to attract more funds. This includes limited awareness of targeted green and other finance mechanisms, inexperience in leveraging non-traditional financial products and limited capacity in structuring projects to allow for sustainable labelling. Furthermore, infrastructure project owners are often national and local government institutions, lacking transparency and comprehensiveness of infrastructure project pipelines. Improving guidance available provided by ministries, regulatory institutions or private sector associations is one way to address this issue. Furthermore, an increasingly common mechanism to address this issue is project preparation facilities, which brings together project owners and financiers, frequently with blended finance tools from the public sector such as by feasibility studies or project guarantees.[2] A promising model for this is the ADB's Green Finance Catalyzing Facility which works with investors and local government to structure and develop infrastructure project pipeline (ADB, 2017b). Amongst the four ways suggested to address the challenges, the project owner category can be approached in particular by a variety of contextually tailored MDB financing instruments, increasing sovereign green bond issuance to provide demonstration effects, by involving national and sub-national government in the BRI and similar schemes, and by reducing sustainability assessment costs through compatibility between "safeguards" and "best practices".

Financial markets

Within global and local financial markets sustainable infrastructure finance is inhibited by a number of challenges at the market, product and project levels. Overall market challenges include the fact that sustainable infrastructure is not a mature asset class, typically experiencing a shortage of specialized funds, mismatch of risk profiles and non-monetized positive environmental externalities. Financial product-level challenges finance include lack of data availability, limited transparency in product offering and a low level of international, national and sub-national compatibility of such data. Project-level challenges include lack of bankability, uncertain end-user demand, complexity of project execution and management, as well as higher risk associated with

2 "Blended finance" is the strategic use of development finance for the mobilization of additional finance towards sustainable development in developing countries (OECD, 2019). This is particularly relevant for infrastructure financing in developing countries as development finance institutions can be involved to catalyze private capital that would otherwise not be available in less mature financial markets

new technologies. Current effort towards addressing these issues include improving information availability and quality through platforms, standards and third-party assessments initiated by both the public and private sectors. Furthermore, an increasing number of development finance institutions are creating designated funds, such as the IFC-Amundi Green Cornerstone Bond Fund. This fund will only buy green bonds in developing countries with the purpose to encourage more issuances in countries with few green bond issuances and kickstart the development of a local green bond market (Amundi and IFC, 2018). The Asian Infrastructure Investment Bank (AIIB) also launched a similar initiative in early 2019 with the aim "to promote infrastructure as an asset class, develop debt capital markets for infrastructure and promote the integration of environmental, social and governance principles in fixed income investments" (FT, 2019, p.1). While the IFC supported fund has a global coverage, the AIIB fund focuses on Asia. In addition to the above, from the four ways suggested as solutions, this challenge can in particular by addressed by MDBs leading the way on sustainability data and risk disclosure, green bonds being developed as a mainstream instrument, developing sustainability-focused funds formally under the BRI, as well as by "best practices" being used as basis for sustainable infrastructure as an asset class.

Standards

A cross cutting issue spanning across the other four listed above is the issue of standards. The lack of green and sustainability related standards exists at several levels including definitions of sustainability, disclosure indicators, and project design. Without such clear consensus-based standards it becomes difficult for investors to analyze assets, banks to price loans, governments to target support, project owners to design projects, third parties to estimate impacts, and so on for all stakeholders in infrastructure finance. That some standards are settled with a top down approach such as in China, and bottom in other places such as in Western markets, this add another layer of difficulty in a potential harmonization process. Yet, there are a number of ways to address this issue across geographies, sectors, organizations, and financial tools, and as an key theme throughout the chapter, the issue of standards is addressed individually in the four remaining sections in the following ways: MDBs can play a key role in setting standards on project design, global integration of green bond markets require common scopes of green and sustainability, at a policy level the BRI can set standards of information disclosure and reporting, and standards on safeguards and best practices can be promoted by intergovernmental institutions such as United Nations ESCAP. As a cross-cutting issue, the challenge of standards can be addressed by the four ways set out in this chapter through disclosure standards developed by MDBs, harmonizing international green bond use-of-proceeds standards, addressing technical standards that differ among countries under the BRI and similar schemes, and by standardizing the current plurality of both "safeguards" and "best practices".

Opportunities: Abundant capital and new sustainable finance instruments

In an environment characterized by a number of challenges, a number of key opportunities exist simultaneously. For example, the ample liquidity in global capital markets existing since the global financial crisis provides a timely opportunity to source financing internationally. UBS estimated that the world's savers have $10 trillion in low-yielding government bonds, $7 trillion in bonds with

negative real returns, and about $9 trillion into cash (FT, 2019). This "dead" money could be invested in sustainable infrastructure as an asset class on similar risk and better return terms, thus lowering the cost of capital for sustainable infrastructure projects in countries where capital can flow in from abroad. Moreover, a number of Western institutional investors, that hold 70 per cent of global sustainable assets and have longer-term performance targets than other investors, are increasingly mandated by asset owners to align their portfolios with the Paris Agreement (Global Sustainable Investment Alliance, 2017). If these mandates continue to expand, they will lead to the development of a vast source funding for sustainable infrastructure in Asia and the Pacific.

While the lack of designated sustainable financial products is a challenge, their rapid increase over the last years provides an opportunity to infrastructure development. Based on the increasingly robust evidence that sustainability performance correlated positively with financial performance (Oxford University and Arabesque Partners, 2015), green bonds, green indexes and green funds are proliferating. In this regard, while sustainability infrastructure finance is the main focus, such financial products broadly conceived are also increasing. Examples include the European Investment Bank (EIB) inaugural Sustainability Awareness Bond (EIB, 2018), ING's Sustainability Improvement Loans (ING, 2019), or the Canadian Imperial Bank of Commerce's 2018 issue of a Gender Bond (Bloomberg, 2018).

The Role of MDBs in Financing Sustainable Infrastructure

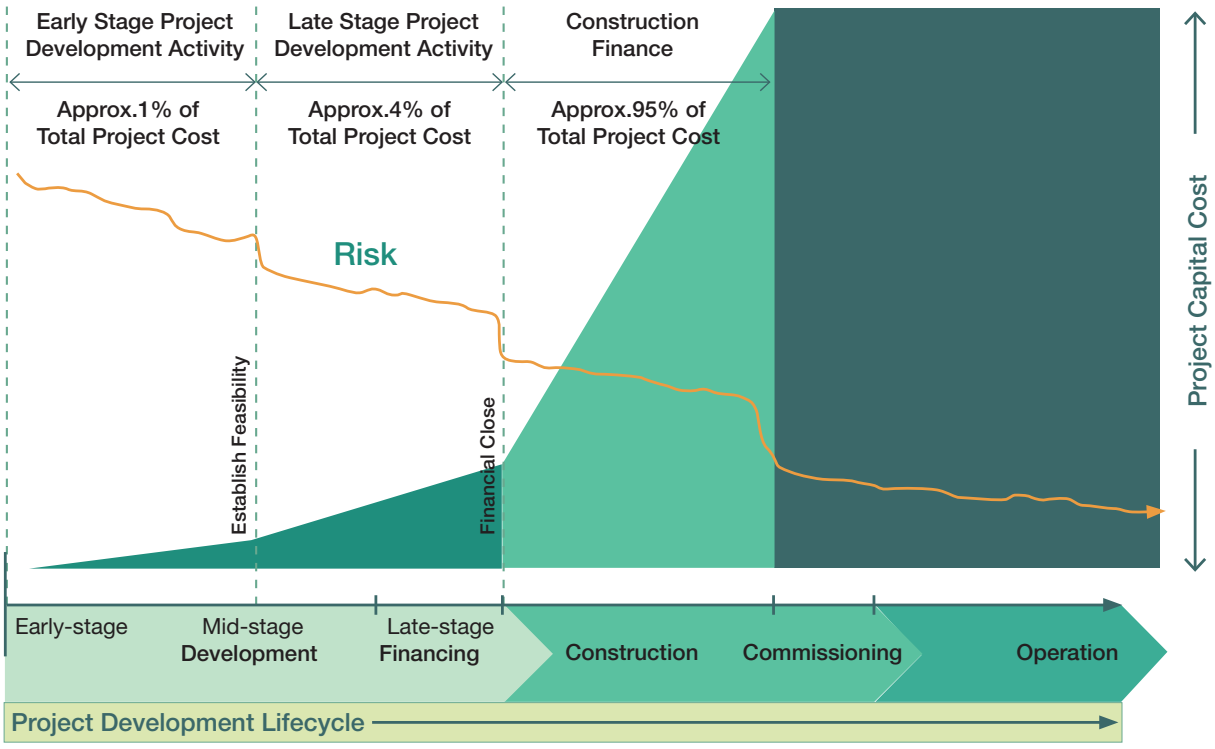
The multilateral development banks (MDBs) are increasing their involvement in sustainable infrastructure finance by scaling up climate investments and by integrating social and environmental issues into their general financing requirements as a cross-cutting issue. As an organization type, MDBs are governed by a number of member countries and have clear development oriented mandates. As part of this, most MDBs have a strong focus on financing sustainable infrastructure.

MDBs target to expand their sustainable infrastructure finance in their lending portfolio. For example, the MDB's total climate financing support for low- and middle income countries of $41.5 billion in 2019 is up from $25.1 billion in 2015 (MDBs, 2020). Still share of climate financing as proportion of their total loan portfolio is below target for the majority of the MDBs. This suggests that most MDBs will need to make rapid changes in their financing strategy for sustainable infrastructure if they want to reach their targets.

MDBs can further leverage their resources to pull in private financing and increase the total resources available for sustainable infrastructure development. MDBs play an important role by providing financial solutions to make sustainable infrastructure projects viable and bankable through de-risking early-stage infrastructure projects and funding feasibility studies. A recent proposal of MDB reform suggest that they should focus their financing on these aspects during the early-stage of project and sell their loan or equity stake to most likely private investors at the operational stage (Bhattacharya and Kharas, 2018). At the later stage, the project owner could also issue green bonds instead of relying on loans. As is clear from Figure 4, by focusing on the early stages of project development, which involve not only higher risks but also significantly lower costs, MDBs would be able to increase their asset turnover substantially and finance many more projects. And by making more projects viable and bankable, they will also provide an impetus for the development of green bonds and boost the role of the private sector in financing for sustainable infrastructure.

However, some studies disclose that MDBs are currently not adequately aligned with sustainability issues in their lending practices (E3G, 2018; WRI, 2017). Working towards improving the situation, a joint MDB-International Development Finance Club (IDFC) statement at the One Planet Summit of 2017 promised to align financing with the Paris Agreement (World Bank, 2017). In addition to active targets for sustainable infrastructure finance, MDBs are also using negative lists for excluding less sustainable infrastructure projects. For example, the World Bank announced in 2017 that it would no longer finance upstream fossil fuels, following a 2010 decision of not financing coal-fired plants (WB, 2017b). The

Figure 2. Risk and capital costs during the project development lifecycle



Source: United Nations Environment Programme and Aequero (2011).

rest of the section discusses ways in which MDBs support the realization of sustainable infrastructure projects by reducing risks of projects and supporting project development and pipelines.

From this context, MDBs can contribute to sustainable infrastructure in Asia-Pacific by (i) de-risking existing infrastructure projects for other investors and by (ii) financing the identification of bankable projects such as through feasibility studies. Furthermore, they can do this by (iii) providing policy support to countries towards improving national green finance systems and by (iv) supporting the development of clear consensus based green finance standards.

De-risking at the project level

At the early-stage of its development, MDBs can effectively de-risk sustainable infrastructure projects using a number of schemes. Those schemes include: Technical assistance, risk assessment disclosure, public private partnership, concessional and non-concessional loans, guarantees and insurance, as well as risk sharing facilities.

- **Technical assistance**: MDBs use their knowhow and technical expertise to improve the understanding of sustainability factors at the project level by stakeholders such as government, investors and project holders. Their technical assistance

helps them, for instance, to include climate and environmental risks in their risk management strategies and practices. Depending on MDBs and their clients, these assistance could be provided on either market or concessional terms. As an important example of a large-scale technical assistance project, the World Bank Group's Sustainable Finance Network gathers, analyzes and disseminates good practices of sustainable infrastructure finance across developing countries (IFC, 2018b).

- **Risk assessment disclosure**: Following the guidelines of the Financial Stability Board's Task Force on Climate Finance Disclosures guidelines (FSB-TCFD), MDBs increasingly disclose key metrics and provide an evaluation of risks in their own portfolios (FSB-TCFD, 2017). Such disclosures are expected to improve risk perceptions of sustainable infrastructure projects, as well as in providing a benchmark for other investors to follow. In addition to them individually disclosing their sustainability risks, MDBs should also jointly publish such a risk assessment report, which requires a common methodology and framework that could be used as best practice for others to follow.

- **Public private partnerships (PPPs)**: Blended finance in a PPP model allows MDBs to use their own resources to catalyze other resources from both governments and businesses. It is estimated that each $1 of their own financing can catalyze between $2 and $5 of external financing (MDBs, 2015; United Nations, 2015b). As PPPs work as a continuum of ownership sharing between a public entity and a private entity, MDBs' financial commitment can be as low as needed to ensure the private party's engagement, thus maximizing the catalyzation of private capital. An example of an MDB led PPP initiative with a strong climate component is the EIB's Med5P, working with public authorities on preparation, procurement and implementation of PPP infrastructure projects (EIB, 2019).

- **Concessional and non-concessional loans**: As the primary vehicle for MDBs' financial operations, direct loans are a major contribution that MDBs can make to enhance sustainable infrastructure development in the region. The key advantages of MDB loans are firstly that they are more stable and longer term, often 20 to 25 years, than commercial or corporate loans, lowering transaction costs and uncertainty associated with refinancing a sustainable infrastructure project a number of times over its lifespan (Butier and Fries, 2002; Carnegie Endowment for International Peace, 2001; Overseas Development Institute, 2015). A second advantage is that MDB loans may be concessional, lowering the cost of capital and making a project more likely to be bankable. Concessional terms are particularly relevant in sustainable infrastructure development where risk is perceived as higher and consequently used to provide demonstration effects (Development Finance Institutions, 2017).

- **Guarantees and insurance**: To lower the risk carried by investors, MDBs can provide a guarantees and insurance. By covering a government or government entity's potential failure to meet financial obligations to a private or public project, MDBs' guarantees have helped attract direct private sector investment (MDBs, 2015b). As risk is often perceived to be higher for sustainable infrastructure projects, increasing the provision of MDBs' guarantees can contribute to enhance the feasibility of the projects. Sector specific risks include, for instance, unstable political support leading to a reversal of subsidies or power purchase agreements for renewable energy (ADB, 2017b).

A successful case of insurance is the Global Index Insurance Facility by the IFC, which facilitates access to finance for farmers, entrepreneurs, and microfinance institutions through the provisions of catastrophic risk transfer solutions and index-based insurance in developing countries (IFC, 2017).

- **Risk sharing facilities**: These facilities work as loss-sharing agreements between an MDB and a holder of infrastructure assets through which the MDB reimburses the asset holder for a portion of the losses incurred on a portfolio of eligible assets. MDBs could use such facilities to encourage local banks to increase loans for sustainable infrastructure. Risk sharing facilities that focus on sustainable infrastructure have been increasingly used by MDBs such as the IFC, EIB, European Bank for Reconstruction and Development (EBRD) and African Development Banks (AfDB). This is particularly feasible for MDBs with majority voting power of developing countries, which tend to be less risk averse (Bhattachary and others, 2018). The EIB's Private Finance for Energy Efficiency scheme provides a successful case study of such a risk sharing facility (EIB, 2019b).

Supporting project pipeline development

The lack of a pipeline of potential bankable projects and high project development costs are crucial challenges for sustainable infrastructure projects that MDBs can address. Transaction costs for preparing environmentally and socially sustainable infrastructure projects are higher than for conventional projects, among other reasons, because such projects often carry higher technological risks from using less mature and proven technologies. While the short-term mindset of many investors in the market makes them less interested in sustainable infrastructure projects, long-term institutional investors such as sovereign wealth funds, pension funds and insurance companies are often discouraged by the relatively high risk of infrastructure projects and from less stable political circumstances in many Asia-Pacific countries. MDBs' involvement in the early stages of project preparation and development can help to make the projects an investible asset class for short-term investors and lower the risk to attract long-term investors to whom MDBs can sell of the asset after the construction phase has been completed (Bhattacharya and Kharas, 2018). Some methods to enhance project pipeline development include feasibility studies, early stage financing, special purpose vehicles, as well as project preparation facilities;

- **Feasibility studies**: MDBs can contribute to project pipeline development by using their expertise and funding to prepare feasibility studies, through a grant, concessional or market-based terms. With sustainability embedded in their mandates and historical experience with less mature and new technologies, MDBs' experience in project appraisal can contribute to evaluate sustainable infrastructure projects for other investors to finance. Such a tool can have a particularly strong catalyzing effect as the MDB could commit only a small proportion, about 1 per cent, of total project financing. An example is the World Bank IDA's $18 million feasibility studies fund under the Afghani Ministry of Finance (WB, 2018b).

- **Early stage financing**: With a limited number of bankable projects available for international investors, MDBs' early stage financing can make project profitable that would not otherwise be. This financing can take place in cooperation with local and national development banks that have similar mandates as MDBs, often after having conducted a feasibility study but not being able to catalyze

private finance. By committing financing, MDBs can drastically reduce the risk carried by other parties involved both at the early stage and later on. MDBs can subsequently sell off the asset to free up the capital to be used for new projects, maximizing private capital catalyzing rates. Because of the low liquidity that currently characterizes sustainable infrastructure assets, the sale of the assets is not currently common. However, with sustainable infrastructure becoming an international asset class driven by institutional investors, this modality is likely to expand in the future (Global Sustainable Investment Alliance, 2017).

- **Special purpose vehicles (SPVs)**: An SPV is a legal entity created for a specific purpose. SPVs for raising capital can be used as a funding structure, by which all investors are pooled together into a single entity. With the higher risk of sustainable infrastructure projects in Asia-Pacific countries, an SPV setup can work as a risk-sharing mechanism that isolates project risk from the parent company while allowing other investors to share such risk. MDBs can contribute both technical assistance to national and local governments for the establishment of SPVs and a financial stake in them (UK-China Green Finance Task Force, 2017). A large-scale example of successful support of an MDB to a green infrastructure SPVs can be seen in AfDB's involvement in the Lake Turkana Wind Project (AfDB, 2019)

- **Project preparation facilities (PPFs)**: PPFs reduce the time and transaction costs to develop and select sustainable infrastructure projects by combining aspects of the three methods discussed above. PPFs can play a useful role in many of the region's national infrastructure markets, which are immature and have weak links to global financial markets. MDBs can contribute to PPFs as initiators and facilitators as well as by providing technical and financial support. By bringing together all relevant stakeholders and applying standard methods for project development and selection, PPFs are effective in expediting and reducing the cost of bankable project preparation. In recent years, a large number of PPFs have been established in response to the difficulties that many countries face in developing bankable infrastructure projects (Hoare and others, 2018). Globally, there are now over 60 such facilities with MDB involvement, including the World Bank's Global Infrastructure Facility, the EBRD's IPPF, and the NEPAD-IPPF of the AfDB, as well as country-specific facilities, including ADB's Green Finance Catalyzing Facility, which is being applied in some Asia-Pacific countries and could be applied beyond the region (ADB, 2017b). The ADB case simultaneously provides an interesting example of an MDB providing a platform for project development where experts can provide input for improving project structuring.

Policy support

Given their expertise as well as pioneering role in many areas of sustainable finance, MDBs can provide policy support at both the financial and economic level. Specifically, this is due to the expertise accumulated in MDBs given their generally long history and large scale, combined with a development mandate and authority as intergovernmental institutions. The current situation is that with few exceptions, financial systems are not used as tools for reaching sustainability goals. This is particularly true for Asian countries. As an indication of this trend, China was the first country in the world to launch a comprehensive set of guidelines for greening its financial system in 2016. The IFC played an important role in this Chinese effort, in particular towards green commercial banks.

Following the establishment of a Green Finance Study Group within the G20 framework in 2016, 13 other G20 countries have launched green finance policies. It is clear that the above issued can only be systematically addressed through a number of various tools and processes. MDBs can contribute to improving the sustainability of the financial system both through both regulatory and non-regulatory measures. For instance, the Sustainable Banking Network (SBN) organized by IFC (2018b) is providing capacity building on green bonds for regulators and potential issuers, with the purpose of developing domestic green bond markets.

Above the level of the financial system, MDBs can help regional and local governmental institutions in providing a more beneficial environment for sustainable investments. A particularly relevant issue for Asian and Pacific countries is the lack of an efficiently and predictably functioning legal system around infrastructure, increasing the transaction costs. This was concluded by the 2018 Chinese Development Bank (CDB), United Nations Development Program (UNDP), and Peking University (PKU) joint report on Belt and Road Economic Development Report (CDB, UNDP, and PKU, 2018). This report provided a ranking of the BRI countries' legal systems showing a critical need for improvement. This study and its conclusions were also highlighted by the People's Bank of China (PBOC) Research Bureau's China Green Finance Report 2017. Numerous historical examples exist of MDBs providing policy support to improve countries' legal environment, and with the added complexity of sustainability issues MDBs role in this part of the legal environment is particularly important.

Standard setting

With standards identified as a cross-cutting obstacle throughout the chapter, MDBs can furthermore play an important role in this regard. This is in particular in regards to green definitions and information disclosure as highlighted as a key problem for sustainability in Asia (Paulson Institute, 2017; White and Case, 2018). This has been highlighted by many commentators over the last years. Given their authority in development finance, joint MDB action on green standard setting can be influential in setting global standards for all stakeholders. The EIB's current work on standards under the forthcoming European Union (EU) sustainable finance taxonomy (European Commission, 2018) as well as green bond harmonization between the EU and China (EIB and China Green Finance Committee, 2018), elaborated upon in greater detail in the following section, are key examples of the role MDBs can play. A particularly impactful role frequently mentioned in recent years is for MDBs to not only require projects they are involved in to meet their safeguard requirements, but to recommend project owners to apply certain industry standards. For example, MDBs could recommend projects involving water management to adhere to the International Water Stewardship Standard, and in that way incite similar projects and standards to gradually harmonize with this benchmark.

Under the United Nations Framework Convention on Climate Change (UNFCCC) and the Organization for Economic Cooperation and Development (OECD) climate financing is accounted with a high level of detail, based on specific standards on what qualifies as climate change mitigation and adaptation. These processes can serve as inspiration for developing a similar mechanism for green finance. As already existing, the standards from the MDB-IDFC Common Principles for Climate Mitigation Finance Tracking (MDB-IDFC, 2015) could be expanded with a green finance working group. MDBs are

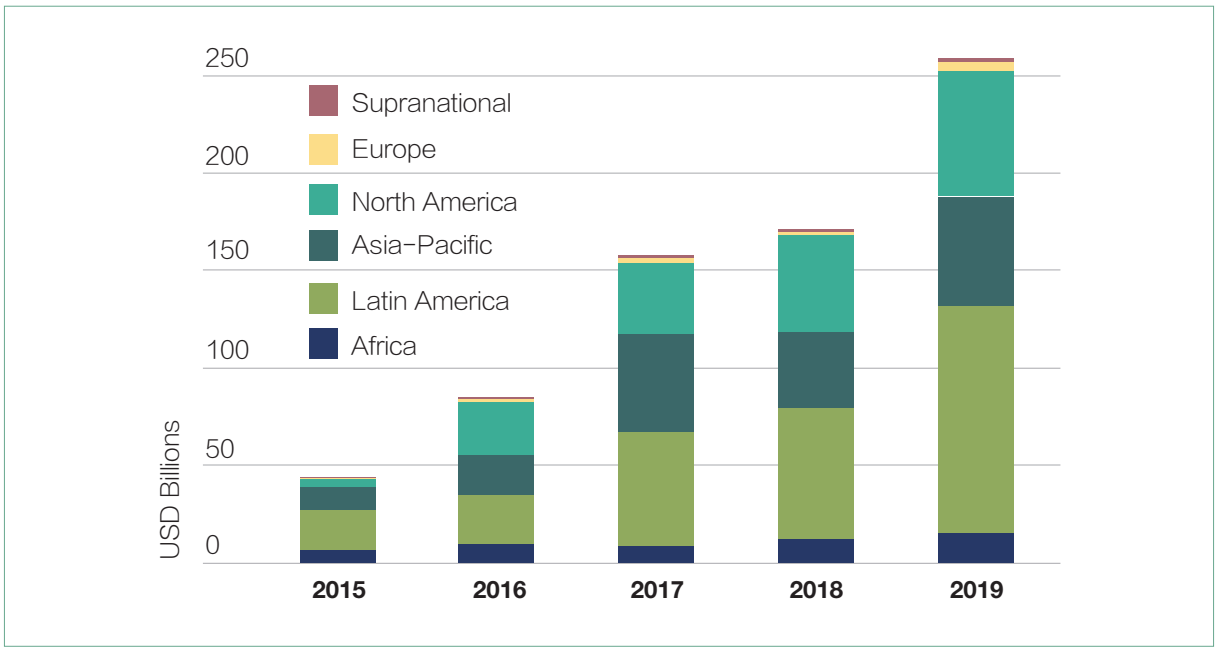
able to lead this effort on standard setting due to their institutional legitimacy based on institutional, delegated, expertise, principled, and capacity-based authority (Avant and others, 2010). Among existing initiatives towards this purpose, the EIB is cooperating with the Chinese government to harmonize green bond standards in the EU and China (EIB and China Green Finance Committee, 2018). Additionally, the EBRD is a strong supporter of developing a standard for climate related financial disclosure under the Financial Stability Board's Task Force on Climate Related Financial Disclosure (FSB-TCFD) initiative (EBRD, 2018). The main challenge for setting standards is allowing sufficient leeway for standards to reflect different local green priorities. In many developing countries green includes air, soil, and water pollution, while for many European issuers, green is more specifically focused on climate change mitigation. Such differences are also reflected in investor preferences. Ultimately, for the sake all market stakeholders, MDBs can lead the effort in developing and supporting compatibility between standards by developing a common basic framework, clarifying the concept of green finance as basis for its further expansion.

Creating an Enabling Environment for Green Bonds to Develop Sustainable Infrastructure

While MDBs can contribute to de-risk sustainable infrastructure projects and making them viable and bankable for investors, the development of capital markets is also needed for such projects to link with potential investors. In that regard, green bonds, which are earmarked for funding sustainable and environmental-friendly projects, are a promising instrument that has rapidly grown. In just over a decade, annual green bond issuance grew from $1.5 billion USD in 2007 to $258.9 billion USD in 2018.

While the majority of issuers and investors in this market are in the United States and European Union, the concept of green bonds holds vast potential for Asian and Pacific issuers as a source of financing of sustainable infrastructure. Specifically, green bonds can play an important role for them because not only it is one of the most matured sustainable finance instruments but also investors on global capital markets are increasingly interested in sustainable infrastructure assets in emerging markets (Global Sustainable Investment Alliance, 2017). Of the global

Figure 3. Geographic distribution of green bond issuance in 2019



Source: Climate Bonds Initiative (2020)

green bond market, Asia-Pacific currently makes up 35 per cent. However this is largely based on Chinese and Japanese issuance, with the remaining countries making up only a few percentages.

Increasingly, bond issuers in Asia are picking up the practice: whereas China had still not issued a single green bond in 2015, in 2016 it accounted for 40.9 per cent of global green bond issuance (followed by 24.6 per cent in 2017 and 23.0 per cent in 2018) (International Institute of Green Finance, 2019). Furthermore, India financed part of its 2022 renewable energy targets through the issuance of green bonds both by public institutions and corporates (Climate Bonds Initiative, 2018). Additionally, whereas ASEAN's green bond issuance was USD 2.3 billion in 2017, its green bond issuance cumulatively stood at over USD 5 billion in 2018, of which 39 per cent was issued in Indonesia (Climate Bonds Initiative, 2018). The largest underwriter of green bonds globally, Bank of America Merrill Lynch, expects Asia's total green bond issuance to be around USD 600 billion in the upcoming five years (Investment and Pensions Europe, 2018), while the former head of the UNFCCC, Christina Figueres (2018), aims for USD 1 trillion globally by 2020. Hence, though Europe may be the birthplace of green bond issuance, a vastly growing number of public and private organizations in Asia are embracing the sustainable future of bonds.

Research of the Global Sustainable Investment Alliance (2017) shows that in Asia-Pacific (excluding Japan) only 0.8 per cent of funds were managed with strategies including sustainability components, whereas this number is 21,6 per cent in the United States and 50 per cent in Europe. As a result, over 90.7 per cent of global sustainable investment, around USD 20 trillion, is located in either Europe or in the United States. In addition, sustainable assets as a proportion of total managed assets in Asia had only grown by 16 per cent each year in the two years leading up to 2016. In comparison, in the same period in the United States, the age of sustainably managed funds grew by one third on a yearly basis, and in Europe, in spite of its already high base, still grew by 12 per cent annually. Furthermore, a HSBC (2017) global survey confirmed that only 68 per cent of Asian investors are willing to make their investment more sustainable , compared to 97 per cent of European investors. For this reason, though the future for Asian green bond issuers to sell their bonds might lie in Asia, at present the vast majority of opportunities still lie in Europe and in the United States.

Accessing international green bond markets requires overcoming three important challenges: (i) The lack of a common green bond framework, (ii) limited policy support, and (iii) insufficient demonstration effects. The rest of this section discusses these challenges in detail and proposes ways for Asia-Pacific issuers of green bonds to overcome them.

The lack of a common green bond framework

Differences in the definition of "green bonds" are a key obstacle to the development of an efficient global green bond market (Paulson Institute, 2017). In 2016 the G20 identified lack of clarity in green definitions as one of the principal challenges to the establishment of a global green bond market and the development of green finance more generally (G20, 2016).

A one-size-fits-all solution is standardization, i.e. the adoption of one green bond standard for the entire world. Although the first green bond was issued by the EIB in 2007, the first initiative to create

conceptual clarity about what constitutes "green" was only initiated with the International Capital Market Association's (ICMA) release of the Green Bond Principles (GBP) in January 2014. At that time, the market had grown to a substantial size with for-profit organizations to issue green bonds for $10 billion USD in 2013. ICMA intended to promote integrity in the green bond market by providing a "foundation [for all participants in the market] to develop their own robust practices, referencing a broad set of complementary criteria as relevant" (ICMA, 2018, P. 2).

Concretely, the GBP has four central components that green bonds should live up to: Use of proceeds, process for project evaluation and selection, management of proceeds, and reporting. Most importantly, the first component designates a list of ten project categories as eligible to be funded with green bond proceeds[1] although this list is by no means final nor comprehensive, leaving leeway for stakeholders to develop more detailed definitions. The second component urges documentation of the way in which eligible projects ought to be evaluated and eventually selected. The third component sets out that the net proceeds of the green bond should be moved to a sub-account, or sub-portfolio. The fourth and final component stipulates that information release on the use of proceeds should be renewed annually until full allocation. In addition, the ICMA recommends second-part opinion to ensure compliance with all these criteria.

In Asia and the Pacific, a number of countries have also acknowledged the need of regulating green bonds. Respectively in March and May 2017, the Japanese Ministry of the Environment (2007) adopted the "Green Bond Guidelines" and the Securities and Exchange Board of India (2017) released the "Disclosure Requirements for Issuance and Listing of Green Debt Securities" that both closely resembled the GBP. The GBP also spurred regional integration of standards, as capital market regulators and industry players in South-East Asia conjointly released the ASEAN Green Bond Standards (ASEAN-GBS) in November 2017. Although the ASEAN-GBS share the GBP's four criteria and leave the external verification optional, there too exist areas of difference. Firstly, the language used in the ASEAN GBS is much firmer than the language used in the GBP, the Indian, or the Japanese standards, as they state that the ASEAN green bond issuers *must* show compliance. Even though the guidelines are still voluntary, as they have not been adopted into corresponding regional or national regulatory frameworks, this difference in language maters: it gives a much stronger signal to market players and stock exchanges in terms of what norms and standards are expected of them. Secondly, the ASEAN GBS again states that the issuer *must* ensure that information on all four criteria is publicly accessible from a website throughout the bond's entire tenure—the GBP merely encourages annual reporting. Lastly and perhaps most importantly, the ASEAN GBS identifies only broad project categories as eligible while explicitly excluding all fossil fuel

1 The project categories the that are listed as appropriate use of proceeds within the GBP are: (1) renewable energy; (2) energy efficiency; (3) pollution prevention and control; (4) environmentally sustainable management of living natural resources and land use; (5) terrestrial and aquatic biodiversity conservation; (6) clean transportation; (7) sustainable water and wastewater management; (8) climate change adaption; (9) eco-efficient and/or circular economy adapted products, production technologies and processes; and (10) green buildings (ICMA, 2018).

power generation projects (ASEAN, 2017). In its broad and abstract categories of eligible activities, the GBP makes no such specific exclusions.

The expenditure required to commission an external review is making green bonds more expensive than they otherwise would have been. Issuing as an unlabeled green bond still allows the issuer to finance green projects but does not certify the investors of the green nature of the bond. Furthermore, trading green bonds on a global level aggravates this issue, as uncertainty whether a green bond is considered green both in the issuer's and the investor's country of domicile raises doubts about its tradability on secondary markets. To tackle this issue, for Chinese institutions issuing green bonds on European capital markets, it has become the norm to commission two external verifications covering the Chinese standard and a chosen international standard. For example, when the ICBC issued its record USD 2.1 billion green bond on the Luxembourg Stock Exchange, CICERO was consulted to verify the bond's compliance with international market standards whilst Zhongcai Green Finance Consultants Ltd. had to ascertain the bond's adherence to Chinese definitions of "green" (Environmental Finance, 2018). Such double third-party assessment was also carried out for the Agricultural Development Bank of China as well as Industrial Bank. Here it is worth noting that while in the Chinese case two external verifications are common, but this is not necessarily the case for all Asian issuers depending on local regulations and investors preferences.

The multitude of standards in different jurisdictions (and in the case of China even within a jurisdiction) in regard to green bonds makes a *one-size-fits-all* standardization seem increasingly less likely. In addition to the fact that China's inclusion of "clean coal" conflicts with ASEAN GBS's exclusion of "any fossil fuel projects", the CBI points out that aspects of China's listing of "clean coal" as a green category makes European investors wary (CBI, 2018b). Conjointly the European Investment Bank (EIB), which assists the EU's High-Level Expert Group (HLEG) in shaping the EU's policy on green bonds, and the China Green Finance Committee (CGFC) in a series of White Papers explored the differences between China's, the EIB's, and the MDB-IDFC's definitions of green (on which the future EU definitions of "green" will likely be based) and ways in which to overcome them. Their collaboration reached two important conclusions: The overwhelming majority of eligible activities overlap, yet there remain principal areas of difference in some categories that are difficult to be bridged.

Firstly, both the EIB and MDB-IDFC exclude clean goal and "environmental restoration projects, coal washing, and processing cleaner gasoline and diesel, and a few aspects of ecological protection and climate change adaption", which are all considered green by China (EIB and CGFC, 2018, p.7). In return, areas that the EIB and MDB-IDFC include but are absent from the Chinese standards are "renewable energy plant retrofits, wind-driven pumping systems, energy audits to end-users, carbon capture and storage, non-motorized transport, projects producing low carbon components, as well as a number of aspects of technical assistance" (EIB and CGFC, 2018, p.7). Finally, the EIB includes nuclear energy as an eligible category, but this is left out in both the Chinese and MDB-IDFC definitions entirely. With an EU-wide classification system for the expenditure of green bond proceeds in the pipelines for June 2019, which will be based on the EIB and MDB-IDFC's definitions, global standardization is unlikely to be realized in the near future.

Acknowledging this reality, the EIB-CGFC

cooperation has shifted its focus to establishing a translation device: "a Rosetta Stone". The goal of this endeavor is to make EU and China standards compatible, thereby facilitating cross-border green capital flows. Practically, this means that to this Rosetta Stone is created by both parties agreeing on the same basic framework of objectives (e.g. climate change mitigation, climate change adaption, biodiversity, natural resource conservation, pollution prevention and control) and activities (e.g. energy, energy efficiency in energy supply, eco-efficient products etc.), under which any party can make their own technical standards (e.g. nuclear energy or coal washing) for what qualifies as green. The final version of the Rosetta Stone will then be able to comprehensively show to international investors whether a green bond lives up to only the Chinese standard, and therefore should receive the a) "China-Green" label, or b) the standards of the EU, and therefore should receive the "EU-Green" label, or c) both, and therefore should receive the "China-EU-Green" label. As a second step, to reduce the differences within the technical standards, the EU and China are already in dialogue on setting similar thresholds, such as for emission per kilometer to qualify as green transport.

Hence, the challenge that a lack of a global green bond framework presents is best overcome not by standardization in isolation, but by a two-fold approach to harmonization: standardization between the EU and China where possible and the creation of an EU-Chinese "translation device" for the areas in which green standards are bound to remain different. Achieving this between EU and China as a first step can directly be expanded to cover standards in Asia-Pacific. Taking a continuum approach to global harmonization of standards allows for the differences between countries to be accommodated. The underlying reason for different opinions on what should qualify as green include the stages of development, the variety of political priorities, the economic model, and the natural resource endowment. For these reasons, each country has different priorities on what environmental protection should focus on. For example, while most developed countries focus on climate change, developing countries prioritize dealing with pollution problems.

In addition, this approach does not have to be limited to remedying the challenges that differences in standards cause between China and Europe. Instead, considering that the EU and China together dominate both the investment and issuer side[2] of the green bond market, this "standardization-where-possible-translation-where-necessary" approach has a good chance to set an international precedent, as other countries have a major incentive to attach their own standards to the Rosetta Stone. The GBP is the appropriate actor through which to promote such a framework globally, because as aforementioned the GBP is the global reference point for current green bond principles (and CGFC and EIB are not), and whilst the idea was discussed at its annual meeting in 2018, the concept has yet to be adopted. As consensus is building, it remains possible that the GBP adopts such a measure in the future. The EIB, as one of the two main parties involved in establishing this framework, was the main

2 Top green bond issuing countries in 2018: #1 USA, #2 China, #3 France, #4 Supranational, #5 Germany, #6 Netherlands, #7 Belgium, #7 Sweden, #8 Spain, #9 Canada, #10 Australia #11 Japan. Climate Bonds Initiative (2018). *Green Bond Highlights 2018*. London, UK: CBI

advocate pushing the international adoption of this initiative within the GBP. It will persist in this effort following the update of the green bond standards in China and the establishment of a sustainable finance taxonomy in Europe, as it will continue to advocate the adoption of the "Rosetta Stone" by the GBP in 2019. At the same time, the European Union and the Chinese government can take the idea to multilateral forums such as the G20 and the United Nations.

Limited policy support

The establishment of a common green bond framework internationally is a necessary but not a sufficient condition to achieve an efficient global green bond market, from which Asia-Pacific regional and national markets can benefit. Other challenges to establishing an efficient green bond market therefore are a lack of knowledge of green finance in general among potential Asian green bond issuers, and a failure to compensate these market players for the additional expenditure that green bond issuance requires. This challenge can be overcome by public institutions playing an active role in both capacity building and financial support. Several Asia-Pacific governments have taken concrete steps in this direction, as the Governments of Indonesia and China have set up knowledge and learning hubs for green finance whilst the governments of Singapore, Japan, Hong Kong, and local governments in China have initiated measures that render green bond issuance more attractive.

The Government of Indonesian has delivered policy guidance to Indonesian non-sovereigns, who intend to issue green bonds internationally by publishing the Roadmap for Sustainable Finance in Indonesia 2015-2019 (CBI, 2018c). An integral part of this roadmap is expanding learning networks for capacity building through the Bali Center for Sustainable Finance launched by the Udayana University in 2017. China's Tsinghua University fulfills a similar function of expanding learning and network capacity, as it initiated the Center for Finance and Development. One of the key programmes of this center is the Green Finance Leadership Programme (GFLP), which provides a platform for knowledge sharing on best practices of, and inspiring innovations for, scaling up green and sustainable finance.

In addition to explaining green bond issuance, the Government of Singapore, Hong Kong, China and local governments in China have financially supported some financial institutions and corporates involved in green finance. Singapore's central bank carries the costs of the external review process to ensure the bonds "green" character for investing parties. Hong Kong has followed Singapore's example, but only subsidizes 50 per cent of the external verification process. However, Singapore only does so when companies issuing on the Singaporean stock exchange, and not for Singaporean companies elsewhere. To receive the support, the issuer has to follow the guidelines of the GBP or ASEAN GBS. Recently, this support has been expanded to also cover social and sustainability bonds. The grant was originally designed for a min issuance size of SGD 200m (or equivalent in other currencies). This has been changed to SGD 20m or equivalent per issue, as long as the program size is at a minimum of SGD 200m. While such an external verification is not mandatory, it is carried out for the vast majority of green bonds to ensure investors of their green characteristics Given that most sustainability investors are most active on Western capital markets, subsidizing green bond issuance on non-domestic markets will further support Asian green bond issuer's success. This would, of course, be equally true for other sustainable finance instruments. Hong Kong has followed Singapore's

example, but only subsidizes 50 per cent of the external verification process.

Furthermore, conventional Chinese local governments substantially increased their support both in terms of supporting methods as well as number of local governments providing support. Some key supporting methods are interest subsidies, guarantees for green bond financed projects, fast-track approval processes, coverage of issuance costs, as well as guiding institutional investors to buy green bonds. Such types of measures now exist in the provinces Inner Mongolia, Fujian and Jiangsu, as well as the cities Shenzhen, and Beijing. Finally, the People's Bank of China (PBoC) has policies to incentivize green bond issuance in the pipeline. At the close of 2017, the PBoC introduced the green Macroprudential Assessment (MPA) system. As part of this system, banks receive an MPA score, the height of which is determined by the proportion of its portfolio consisting of green loans and by the bank's history of green bond issuance. A high score may result in monetary rewards in the near future. In addition, in June 2018, the central bank expanded the guarantee scope of its medium-term lending facility (MLF) to include green finance instruments as suitable collateral. The new types of guarantees include collateral, such as highly rated loans from small companies, agricultural financial bonds, and green bonds

Insufficient demonstration effects

A third challenge facing Asia-Pacific green bond issuers attempting to access international capital markets is insufficient intercontinental bond issuance demonstration by sovereigns and development banks guiding the way. This true both for issuances raising capital for infrastructure as well as for general purposes. From such demonstrations, corporates and other Asian financial institutions would be able to derive insights on how to issue their own green bonds in compliance with both green bond regulations in the Asian issuer's country and the European investors state whilst the new connections within sustainable investor pools can be shared with non-sovereign green bond issuers in the future.

Indeed, past experience suggests that issuance demonstration by public institutions done successfully incentivizes other institutions to follow suit. Briefly put, the process begins with the highest credit rated public institutions, and gradually evolves through semi-public, corporate, asset backed, to project bonds. Reaching this maturity is consequently critical to allows SPVs to issue green bonds. As the market matures, this also opens the possibility to use securitization to create asset backed bonds, within which securitization of green loans of commercial banks holds particular potential to ultimately finance SMEs via green bonds. This is true for green bonds but also for developing a bond market in general in countries with limited sophistication in capital markets, such as many Asia-Pacific markets. In fact, green bond issuance itself started with the EIB's pioneering issuance of the first Climate Awareness Bond in 2007. Only after a number of other AAA-rated public institutions had grown the market to USD 10 billion issuance in 2013, the first corporates started issuing green bonds in 2013. When it comes to exhibiting Asian issuance attracting global investment specifically CDB, and the government of Indonesia have as public institutions taken up the mantel to provide an example of how to successfully bridge the gap between an Asian country and Europe.

In November 2017, CDB issued a quasi-sovereign international green bond on the China Europe International Exchange (CEINEX) market place in

Frankfurt, the first green bond of the platform and also the first bond denominated both in USD and EUR. The CDB met both conventional European and Chinese green requirements, as it strictly excluded firstly clean coal and fossil fuel-related technologies, and secondly nuclear and nuclear-related technologies from the use of proceeds. As a sovereign backed Chinese institution this provided clear demonstration effects, leading to a rapid increase of Chinese green bonds being issued abroad. To certify its commitment, CDB developed a green bond framework of its own based on the 2017 version of the GBP and obtained the Climate Bonds Initiative Certification as verified by EY, and published annual green bond reports on its website.

Furthermore, the Indonesian government became the first Asian sovereign to sell a green bond internationally, as it in 2018 issued the largest green Sukuk bond ever (USD 1.25 billion) listing on the Singapore and Nasdaq Dubai Exchanges.[3] By doing so, it tapped into investment from Europe and America making use of both regions' increasing prominence of sustainable investment strategies (Strait Times, 2018) whilst the Islamic character of the bond also led Islamic investors in Asian countries to buy one third of the 5-year part of the bond even though these investors are not known for their sustainability strategies (Reuters, 2018). The Indonesian example, hence, shows that creative issuance of sovereign green bond can help a country attract investment in multiple ways: it expands the network that Indonesian non-sovereign bond issuers can make use of in the future in traditional sustainability investor strongholds like the European capital market whilst at the same time innovative sovereign bond issuance (i.e. the bond's Islamic character) rendered green bonds attractive to non-sustainability focused investors. As a consequence, commentators dubbed the sovereign bond issuance a "significant milestone for the country" that will most likely have a "trickle-down effect" (Asia Asset Management, 2018).

Finally, there is a commendable future demonstration initiative on the way. Phase II of the CGFC-EIB White Paper recommends issuance demonstration following the update of the Chinese Green Bond Standards and the establishment of a sustainable finance taxonomy in Europe, both expected in 2019. Specifically, the setup of a translation device (Rosetta Stone) between these two frameworks ought to be put into practice with an EIB sustainability panda-issuance in China. By doing so, it will provide a demonstration effect from European issuer to Asian investor. In spite of the bond having been issued that way around, such issuance still sets an example on how to render the issued bonds both "U and China-green". As with the role of the EIB in initiating the green bond as a concept, they can continue to play a demonstrating role in expanding the market such as in this case. Considering the aforementioned potential of a China-EU translation device setting a global green precedent, a successful demonstration issuance of this kind can also enthuse parties outside of the EU and China to follow the EIB's example (EIB and CGFC, 2018).

3 Green Sukuk: A bond that apart from measuring up to green standards is also in line with Islamic finance principles

Sustainable Infrastructure Investment: the Belt and Road Initiative and Others

In essence, the SDGs can only be met if they are an integral part of the development paths of countries under the Belt and Road Initiative (BRI). As the 65 original countries under the BRI collectively account for over 30 per cent of global GDP, 62 per cent of population, and 75 per cent of known energy reserves (World Bank, 2018b), these ambitions can only be realized if they are included in the BRI. As the current number of BRI countries is over 150 by most ways of counting, this is increasingly true in 2020. On the environmental front, most BRI countries' environments are deteriorating and their NDCs are misaligned with a 2-degree scenario, current development pathways must be changed. Likewise, on social aspects these countries are only on track to reach one of the 17 SDGs (UNESCAP, 2018). While the BRI is a China led initiative, it is an open-ended initiative that any Asian and Pacific country can sign up to and be part of shaping. Given its expected impact, no matter if the perspective is positive or negative, active or inactive, all stakeholders from public to private across Asia and the Pacific will have to take a stance on the BRI.

The Belt and Road Initiative is critical to consider in the context of sustainable infrastructure in the Asia and Pacific region because it is the largest infrastructure project of the region and therefore potentially the most impactful on sustainable infrastructure, the policies defining the BRI can facilitate the financing of sustainable infrastructure, and it plays a strong direct and indirect role in the success of other similar initiatives in the region. All this is based on the nature of the BRI as an international cooperation program by nature. Based on this, the BRI can play an important role in financing sustainable and resilient infrastructure in Asia-Pacific by (i) integrating sustainability into BRI and Chinese outwards investment policies, and by (ii) coordinating and harmonizing efforts with similar infrastructure investment schemes in the region.

Financing the Belt and Road Initiative

A range of estimates exist on the scale of financing needed under the BRI. The most commonly cited estimate of total financing needed is that the BRI will cost more than $ 1 trillion by 2027 (Morgan Stanley, 2018). As the high end of the range an often mentioned $ 8 trillion total financing figure stems from a Hong Kong Economic Journal (2016) article citing experts of the State Council. This can be seen in the context of a general need for infrastructure investment in Asia of $ 22,6 trillion from 2016 to 2030, which is increased by 13 per cent if adjusted to be climate change compatible (ADB, 2017). According to the OECD's estimates, climate compatible infrastructure is 10 per cent more expensive, while these costs will be offset three times over by the resulting fuel savings (OECD, 2017). Given the unsustainable development trajectory and the infrastructure investment need, the BRI poses

both a challenge in meeting financing needs and make this financing sustainable.

In this context it is important to note that BRI as an abstract initiative rather than a geographic scope, is not an infrastructure financing scheme and does not aim to cover all infrastructure investment needs. Still, it remains an initiative contributing to meeting the current gap through its focus on connectivity. As such, it is only possible to determine the infrastructure need and BRI expected supply, while the difference cannot be defined as a "gap". Concretely, the $1-8 trillion estimated cost of the BRI is a contribution to meeting the need of more than $20 trillion of total infrastructure financing.

As estimated by Natixis (2017), meeting the BRI financing demand from the Chinese side alone would require another 50 per cent increase in cross border lending over the next 5 years. While the annual 18 per cent growth rate suggest that is possible, the dilemma lies in where China would source this capital from. If solely financed by China, it would increase Chinese external debt from 12 percent to 50 per cent by 2020 and beyond. As this is not realistic, financing the BRI has to be realized by pooling sources together globally. A source of particular potential is European banks. Cross border bank lending today hovers at $15 trillion, of which more than half originates from European banks, with only about 10 percent from Chinese banks. Of the $15 trillion, 20 per cent are lent to borrowers in BRI countries, again with European banks providing more than half of such loans. Already today, Western banks are mobilizing in preparation to seize opportunities in the BRI. In addition to loans, global capital markets should be tapped for funding the BRI as trillions of dollars in equity and debt could be used for such purposes (Columbia University and Renmin University, 2017).

Sustainability level of key BRI policy documents

Current integration of sustainability in the BRI overarching documents.

The greenness of the BRI is ultimately set out in its originating and overarching policy and guiding documents. These documents mostly originate from Chinese official sources, while they cover and are accepted by other BRI countries and global actors. This process is a top down approach to sustainability integration which is characteristic of Chinese initiatives, as opposed to the bottom up method seen in particular in Western countries but also in Asia in general.

Issued in 2015 by the NDRC, Ministry of Commerce (MOFCOM) and Ministry of Foreign Affairs (MOFA) (2015), the Vision and Actions on Jointly Building Silk Road Economic Belt And 21st-Century Maritime Silk Road is the central document lying out the principles, framework, priorities, and mechanisms of the BRI. In his speech at the launch of the document at the Boao Forum in Hainan China's President Xi Jinping said "The programmes of development will be open and inclusive, not exclusive. They will be a real chorus comprising all countries along the routes, not a solo for China itself" (Xinhuanet, 2015). This highlights the rhetoric around an inclusive nature of the initiative. Environmental and climate issues are specifically mentioned in the document under "connectivity" as a priority, phrased as: "At the same time, efforts should be made to promote green and low-carbon infrastructure construction and operation management, taking into full account the impact of climate change on the construction." (NDRC and others, 2015).

Launched at the 2017 Belt and Road Forum, the Guiding Principles on Financing the Development of

the Belt and Road, was endorsed by 27 ministers of finance of participating countries (China, Ministry of Finance, 2017). As such it forms a central pillar of how not only China but other participating countries plan on financing the BRI. Within the brief 4-page document, sustainability concerns are addressed as the following: "We underscore the need to strengthen social and environmental impact assessment and risk management of projects, improve cooperation on energy conservation and environmental protection…". This underscores the inclusion of sustainability issues. Yet, it is slightly unorthodox that the specific world "climate" is not included.

Furthermore, in the same speech Xi Jinping called for "the establishment of an international coalition for green development on the Belt and Road, and we will provide support to related countries in adapting to climate change" (Xinhuanet, 2017). This coalition will be officially launched towards the end of 2018 and will be hosted jointly by the United Nations Environment Programme (UNEP) and the Chinese Ministry of Ecology and Environment (MEE). The purpose of the coalition is to bring together numerous partner organizations from around the world to form the largest body of environmental expertise possible in order to ensure that Belt and Road brings long-term, planet-friendly growth (UNEP, 2017). As a China-UK joint initiative, the Green Investment Principles for the Belt and Road, are a set of voluntary guidelines being developed at the time of writing, led by the Green Finance Committee of the China Society for Finance and Banking and the Green Finance Initiative of the City of London (2017). From the perspective of Asian and Pacific countries this is both a strong policy signal as well as a benchmark approach to BRI financing that could be adopted by any country for any type of initiative (World Economic Forum, 2018; China Daily, 2018).

In parallel with Chinese official policy efforts, a number of fora exists for coordinating and promoting the greening of the BRI. Amongst the principle ones are the Global Green Finance Leadership Programme, hosted by the Centre for Finance and Development of Tsinghua University as mentioned above (Green Finance Leadership Programme, 2018). Second, IFC's Sustainable Banking Network assists developing countries in developing their domestic green financial systems. This network uses many lessons learn from the Chinese experience, such as on scaling up green bonds (IFC, 2018b). Lastly, the China Council for International Cooperation on Environment and Development (CCICED) is a high-level international advisory board to the Chinese government, including on sustainability in the BRI (CCICED, 2018).

Policy documents on sustainability of Chinese BRI financing

For all Asia-Pacific countries to benefit from the BRI, they must deal effectively with Chinese organizations. As Chinese outward infrastructure financing and construction is based on both their own regulations as well as host country systems, Chinese infrastructure involvement can only happen where the purposes of the two overlap. It is consequently critical for all BRI countries to have a detailed understanding of the Chinese policy documents on outwards sustainable infrastructure.

While the above listed overarching guidance documents encompasses all BRI stakeholders, a large number of policy documents govern and guide Chinese participation in the initiative. These can be separated into policy documents on Chinese overseas investment, on green finance specifically with an overseas component, and document specifically on environmental issues of Chinese

overseas investment. In analyzing the impact of policy documents, it is critical to make a distinction between hard, mandatory provisions and soft, guiding provisions. This difference can usually be made by the title of documents, where "Guiding Opinions" or "Guidelines" are soft, and "Measures", "Provisions" and "Notice or Circular" are hard.

The first category, namely regarding general policy documents on Chinese overseas investment cover a wide range of material including with a long history and from many ministries and regulators. The key policy documents in this category are listed in Table 2 below. Considering this type of policies, it is clear that no formal law on environmental protection exists. The issue of environment and climate is usually included in the documents, but only with brief mention in an article or two.

Secondly, regarding green finance policies, most such documents include provisions on overseas investment. The key documents and their overseas investment provisions are listed in Table 3 below. As the Chinese financial system is internationalizing, including in relation to green finance, most policy documents guiding green finance in China include international provisions. These are usually in regard to compatibility with international standards and compliance with international best practice, as well as in ensuring proper assessment of environmental risks in investment decisions.

Lastly, as of the time of writing there were four key documents relating specifically to green issues in the BRI and overseas investment exists. Issued in 2013 jointly by the MEP (now MEE) and MOFCOM (2013) the *Guidelines for Environmental Protection in*

Table 1. Key policy documents on Chinese overseas investment

Year	Issuing Agency	Policy Title	Primary content
2018	MOFCOM, PBOC, SASAC, CBRC, CSRC, CIRC and SAFE	Interim Measures for the Reporting of Outbound Investments Subject to Record-filing or Approval	Requirements for information sharing on online platform used for approval processes
2017	NDRC	Administrative Measures on Overseas Investments	Determines process and scope of overseas investments
2017	State Council	Further Guiding and Regulating the Outbound Investment Direction	Defines encouraged, restricted, and prohibited Sectors of investment
2017	NDRC, MOFCOM, PBOC, MFA, ACFIC	Regulations on Outbound Investment and Business Activities of Private Enterprises	Investment practice and assessment, including on green variables
2009	MOFCOM, SAFE	Notice on the Joint Annual Inspection of Overseas Investment	Evaluation of compliance with Chinese and host country laws
2008	MOFCOM, MFA, SASAC	Notice on Further Regulating the Foreign Investment Cooperation of Chinese Enterprises	Process of inspection, approvals, and fines for breaches of practice

Source: Authors' compilation

Table 2. Key policies on green finance with overseas investment provisions

Year	Issuing Agency	Policy Title	Overseas Investment Provision
2016	PBOC, MOF, NDRC, MEP, MOF CBRC, SCRC, CIRC	Guidelines for Establishing the Green Financial System	Article 31: Enhance the "greenness" of China's outward investment.
2012	CBRC	Green Credit Guidelines	Requires compliance of local environmental rules on banking and adherence to international best practice
2014	CBRC	Key Indicators of Green Credit Performance	System for assessment of performance of banks overseas engagements
2015	GFC	Green Bond Endorsed Project Catalogue	Relations and compatibility with ICMA's Green Bond Principles

Source: Authors' compilation

Foreign Investment and Cooperation aims to reduce negative environmental impacts of Chinese overseas investment. While ready in 2009, the document was not launched until 2013 due to disagreements on strictness and method of enforcement between the MEE and MOFCOM (Gallagher and Qi, 2018).

Second in April 2017, the MEE, MOFA, NDRC, and MOFCOM (2017) jointly issued the *Guidance on Promoting Green Belt and Road*, providing increasing clarity of how Chinese enterprises should act environmentally sustainable in the BRI. They are encouraged to use environmentally friendly process and materials, disclose annually on environmental performance, and support host countries in their environmental ambitions. Yet, these are soft, guiding policies with no direct penalties for non-compliance. As an extension to this guidance, the third key document was launched by the MEE in June 2017, called the BRI Ecological and Environmental Cooperation Plan. This plan highlights what kind of supporting policies are required, how to integrate environmental issues into broader planning, and which standards should be enforced (MEE, 2017)

The final document was issued by the CGFC and takes a specific financial approach. The document, called the Environmental risk management initiative for China's overseas investment, is a voluntary initiative advocating Chinese overseas investors to reduce environmental risks by understanding local regulations and environments, conduct quantitative risk assessments, disclosure their environmental performance, and adopt the highest international environmental performance standards (China Green Finance Committee, 2017). Working closely with international financial institutions and for a, the Green Finance Committee plays a key role in internationalizing Chinese green finance, including towards the BRI.

As shown in the table and text above, a substantial number of policy documents promote the environmental and climate sustainability of Chinese investments into the BRI. Still, the policy environment and how it is enforced in practice is subject to skepticism from a number of sources. A central point in the critique is the questions of Chinese policy banks' adherence to international standards. According to the Financial Times reporting, these

banks fail to live up to international standards by selecting contractors only from Chinese state-owned construction and engineering companies. They further argue that the banks do not adequately conduct environmental and social impact studies. Specifically, of Chinese financing 89 per cent goes to Chinese contractors (Financial Times, 2018). Addressing Chinese commercial banks, Friends of the Earth argues that they do not adequately require high quality environmental and social impact assessment from their clients, and that public consultations are not sufficiently available (Friends of the Earth, 2017).

Finally, some scholars argue that despite being frequently requested to adopt international social and environmental safeguards in overseas investments in policy documents, Chinese investors in fact use higher safeguards in domestic than in overseas projects (Gallagher and Qi, 2018). Arguably, if Chinese companies are able to follow the higher environmental standards at home, they should equally be able to do so abroad. As a first step in this process, the Chinese policy banks, Export-Import Bank of China (EXIM Bank) and CDB, should revise their "host country principle" of applying host country standards, and simply use Chinese standards for all projects abroad. Standardization of such safeguards as well of sustainable infrastructure best practices, as discussed in the following section, can improve environmental performance of Chinese investors in two ways. Having fewer and more wide-spread standards puts indirect pressure on Chinese parties to follow the mainstream practice, while standardization of the practice also reduces the added burden of environmental and social impact assessment. Ultimately, as the biggest investor in least-developed countries and developing Asia by FDI stock (Financial Times, 2018b), the policies guiding Chinese outward FDI has to be overhauled to support host countries' sustainable development trajectories.

Other sustainable infrastructure development initiatives in the Asia-Pacific region

While the BRI is the largest infrastructure initiative in Asia and the Pacific in terms of geographic scope and level of ambition, a number of other initiatives also exist. To ensure that sustainability factors are included in all initiatives, it is important to understand their linkages and actively work to ensure their mutual support. Concrete ways to ensure the mutual support of initiatives includes their specific mention in each initiative's policy documents, inclusion of projects in more than one initiative simultaneously, ensuring the same technical standards are used for characterizing projects in each initiative, involvement of the same international investors, as well as host countries alignment between their own development plans and the related initiatives.

- **ASEAN:** Adopted in 2016, the key infrastructure plan under the ASEAN framework is the *Masterplan on ASEAN Connectivity 2015* (2016). With a broad coverage of physical, institutional and people-to-people connectivity, sustainable infrastructure is a key subcomponent. Key initiatives under this component include a pipeline list of projects, a platform to measure infrastructure productivity, and developing sustainable urbanization strategies for ASEAN countries. It is clear that many BRI labelled projects overlap with the ambitions of the ASEAN initiatives, and consequently infrastructure project stakeholders may need to take into account both initiatives simultaneously, such as for example by including proposed BRI projects in the pipeline and platforms.

- **European Union (EU):** At the west side of the BRI the European Union is a key stakeholder both as a key market and a key financier of BRI projects. The EU's key strategy in this regard is the Connecting EU and Asia Strategy launched in September 2018 with a focus on transport, energy, digital, and human dimensions (EU, 2018). The EU and Chinese leadership have already clearly indicated their ambitions for cooperation such as highlighted in the Joint Statement of the 20th EU-China Summit of the July 2018, which also included a strong focus on sustainability and in particular climate change (EU and China, 2018). Towards the purpose of jointly promoting infrastructure investment, the EU-China connectivity platform was launched by the European Commission in late 2015, leading to an initiative such as the Trans-European Transport network and the upcoming China-EU Co-investment Fund (CECIF) (EIF, 2018). The inclusion of the European Investment Fund (under the EIB), and the CDB in this fund is a significant case of high-level cooperation (European Investment Fund, 2018).

- **United States:** While the United States has at the level of the federal government adjusted its approach to global sustainable development, 2018 has brought a number of new measures with an impact on the Asia and Pacific region. First of all, the US Department of State's (2018) launch of the *Free and Open Indo-Pacific Strategy* includes provisions on both sustainability and infrastructure. It specifically mentioned sustainability as a priority and initiates the Infrastructure Transaction and Assistance Network as an interagency body to coordinate efforts to assess projects, direct development finance, and give technical assistance (White House, 2018). Furthermore, U.S. Secretary of State Michael R. Pompeo announced $133 million of funding to initiatives on Asian digital economy, energy, and infrastructure, in particular in support for the ASEAN Connect initiative, APEC, the Lower Mekong Initiative, and the Indian Ocean Rim Association (U.S. Department of State, 2018). Lastly, reforming the US development approach the United States International Development Finance Corporation was established in 2018 which with its $60 billion funding can play an important role in supporting Asian and Pacific infrastructure (U.S. Congress, 2018).

- **Japan:** As a historically important funder of Asian and Pacific infrastructure through various channels, Japanese initiatives continue to play an important role. As the cornerstone of this ambition Japan together with the ADB will deliver the *Partnership for Quality Infrastructure: Investment for Asia's Future* (Japan, Ministry of Foreign Affairs, 2015) plan which includes $110 billion for infrastructure investment in the 2015-2020 period. Sustainable development is listed as a key purpose of the plan. Furthermore, the Japan-India joint *Asia Africa Growth Corridor* (2016) plan, puts sustainable infrastructure into the context of Asia-Africa integration, similarly to the ever-expanding scope of the BRI. While Japan and India remain skeptical to the BRI, with overlapping efforts and similar goals, dialogues within the two initiatives should include each other, while host countries should include both in its infrastructure planning.

- **Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS):** As a cooperation organization between Thailand, Lao People's Democratic Republic, Cambodia, Viet Nam, and Myanmar, the Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS), includes 5 year plans for infrastructure connectivity. At the 8th meeting taking place in 2018 the countries established an *ACMECS Master Plan* for the next five years (2019 - 2023) under the vision of *Building ACMECS CONNECT by 2023*

(Thailand, Ministry of Foreign Affairs, 2018). The plan specifically mentions the ambition to narrow the development gap, contribute to the process of ASEAN community building and to the achievement of the Sustainable Development Goals (SDGs) as well as the 2015 Paris Agreement on Climate Change. With numerous BRI projects in the region identifying how BRI financing can help support the ACMECS plan can contribute to achieving the goals of both initiatives.

- **Greater Mekong Subregion (GMS):** With a similar scope to ACMECS, but adding the Chinese provinces of Yunnan and Guangxi, the Greater Mekong Subregion (GMS) was launched in 1992 with the help of the ADB to enhance economic relations between the countries (ADB, 2019). As approved in Hanoi in March 2018, the two current strategic documents, the Hanoi Action Plan and the Regional Investment Framework, mention green, environmental, and low-carbon in abstract terms, but with limited inclusion in the justification for the more than 200 projects in the official pipeline. As many of the projects include cross-border components and as China is increasing infrastructure investment in the region, integration and coordination with the BRI could scale up both efficiency and investment scale. Inclusion of GMS pipeline projects on BRI platforms and discussion of GMS in the BRI Forum could promote such integration in practice.

- **Shanghai Cooperation Organization (SCO):** Established in 2001 with its current 8 members cover the majority of Asian countries, with the exception of ASEAN countries, the SCO has increasingly prioritized cooperation on infrastructure. This was the key outcome of the 2015 meeting where transport infrastructure was identified as the most pressing issue for the region (China Daily, 2015). However, sustainability of climate issue is not stressed in public rhetoric of the SCO meetings nor in the key policy documents. While the United Nations Secretary General applauded the SCO for its contribution to infrastructure investment in Afghanistan to facilitate trade, the Secretary General simultaneously highlighted that such investment should consider human rights and other freedoms to be effective (United Nations, 2014). In terms of coordination with other initiatives, the SCO is well aligned with BRI efforts, given the key role of China in both initiatives. Furthermore, the formal coordination efforts set up between ASEAN and the SCO forms a best practice that all the mentioned initiatives should follow (SCO, 2018).

- **Eurasia Economic Union (EEU):** As both a political and economic union the EEU is comprised of Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia and is centered around a single customs market, as established in 2010. Based on the economic and geographic circumstances in the region, energy and transport infrastructure is a key priority for the union. Sustainability issues are scarcely mentioned in strategic documents, while on energy in particular, the union focuses on establishing a common gas market with limited mention of clean energy (Stiftung Wissenschaft und Politik, 2018). Sustainability is only mentioned in the sense of sustainability of energy supply or sustainability of industrial development, and consequently not in reference to the scope and contents of the SDGs (EEU, 2015). While there is a clear overlap between the joint ambitions between the EEU and BRI on regional connectivity infrastructure, there is no formal coordination mechanism (Central Asia Institute for Strategic Studies, 2017). Both initiatives would benefit from formalizing relations on similar terms as for example ASEAN and SCO, as mentioned above.

- **Central Asian Regional Economic Cooperation (CAREC) Program:** Made up of 11 countries, CAREC was initiated in 2001 to develop regional projects and initiatives for sustainable economic growth and prosperity in the region. By 2018 the initiative has mobilized $32.9 billion worth of investments within multimodal transportation networks, increased energy trade and security, facilitated free movement of people and freight, and laid the groundwork for economic corridor development (CAREC, 2019). The initiative has strong multilateral involvement officially partnering with ADB, EBRD, IMF, Islamic Development Bank (IsDB), UNDP, and the World Bank. This ensures that projects with such MDBs and United Nations involvement include alignment with SDGs and the Paris agreement, while also applying high environmental and social safeguards. With China as a member of CAREC, and with both CAREC and BRI having a strong connectivity focus, the overlap between the two initiatives is clear. Efforts are already in place to seamlessly support each other, such as the ADB hosted forum on the potential of CAREC-BRI collaboration, at which the ADB Vice-President Zhang Wencai expressed: “The overlapping geographies of CAREC and BRI provide further impetus for close coordination to jointly build resilient and sustainable regional infrastructure, strengthen trade links, and create jobs and greater economic opportunities for all our countries“.

A number of additional sector specific infrastructure initiatives exists in the Asia-Pacific such as the South Asia Subregional Economic Cooperation program (SASEC), the Intergovernmental Agreement on the Asian Highway Network, Intergovernmental Agreement on the Trans-Asian Railway Network, and the Intergovernmental Agreement on Dry Ports. As suggested as well for the above listed initiatives, sustainability should be integrated into the core rhetoric, host countries should align the projects with their NDCs and sustainability priorities, and clear links and relations should be established between each initiative and the overarching framework of the BRI.

Applying and harmonizing safeguards and best practices

Ensuring that infrastructure supports sustainable development requires that social and environmental goals are an integrated part of designing infrastructure projects. Developing shared practices is a concrete way to ensure this in practice. While a number of such practices exist today they are not uniformly used by geography or infrastructure type, nor are they based on multi-stakeholder dialogues. Concretely, this topic is critical because shared and transnational practice can clearly define and guide how to carry out sustainable infrastructure projects in practice by (i) utilizing environmental and social safeguards for infrastructure projects, and by (ii) clarifying the sustainability "best practice" by industry sector, geography, and/or organization type. Lastly, (iii) in setting up such standards, intergovernmental organizations can play a key role based on their authority, mandate, and convening capabilities.

Avoiding harm: Setting a threshold through environmental and social safeguards

By definition, safeguards form a framework and process to assess, prevent and mitigate social and environmental harm. When identifying and designing a project, safeguards should help first assess the possible environmental and social risks and the impacts associated with the project. Later, during project implementation, safeguards should help define measures and processes to effectively manage such risks. The process of applying safeguard policies can be an important opportunity for stakeholder engagement, enhancing the quality of project proposals and increasing ownership. In essence, these systems are focused on ensuring that both the agency and its country partners understand the indirect risks of projects, so that they can be evaluated and weighed against the benefits of the project. While safeguards provide a minimum threshold, all projects have to simultaneously live up to the legal requirements in the host country. A key reason that safeguards were developed in the 1990's was that host country legal requirements and enforcement did not provide adequate environmental and social protection.

Environmental and social safeguards usually constitute four components:

1. A policy statement setting out the organization's commitment, usually tying the safeguards to the fundamental mandate.
2. A set of practices in relation to specific environmental and social issues, such as involuntary resettlement, pollution control, biodiversity, labor standards, etc.
3. A set of internal procedures indicating the responsibilities of agency and country partner staff members to follow steps linked to the programme or project cycle
4. A set of technical guidance documents

focusing on environmental and social assessment practice, specific environmental and social issues, and on the environmental and risk for different sectors or sub-sectors

Such environmental and social safeguards can be used by any institution involved in project finance across the globe. While varying substantially across actors, practice is relatively harmonized when it comes to the safeguard frameworks applied by development finance institutions. Furthermore, for non-DFIs such as private financial institutions or national development banks the safeguards are often not publicly disclosed. The key benchmark for safeguards frameworks is the IFC's (2012) Performance Standards on Environmental and Social Sustainability or the World Bank's (2018) Environmental and Social Framework, both spanning more than 100 pages (United Kingdom, Department for International Development, 2014). Other MDB's safeguards are similar to the IFC's and are consequently not listed independently below.

A key problem identified by commentators is that countries may engage in a race to the bottom of environmental requirements when financiers do not have explicit safeguards. This competition on lowering requirements works as an attempt to facilitate and cut costs of investment by reducing as many requirements as possible. For example, rather than clear safeguards the China EXIM Bank (2007) merely has 4 pages of guidelines for environmental and social impact assessment. In these, it promises to follow relevant regulations for projects, meaning that projects in China follow Chinese regulations and projects abroad follow host country regulations, incentivizing a race to the bottom. By this logic, safeguards of financiers can play an important role in avoiding this trend by pushing for the inclusion of higher social and environmental requirements both directly to governments and through their involvement directly and indirectly at the project level. Given the intergovernmental nature of MDBs, they play a particularly important role as the host country

Table 3. Examples of social and environmental safeguards

Name	Actor(s)	Coverage	Key Characteristics
Performance Standards on Environmental and Social Sustainability	International Financial Corporation (World Bank Group) (2012)	All infrastructure	Global benchmark standard for safeguards
Environmental and Social Management Guidelines	Food and Agriculture Organization of the United Nations (2015)	Food and agriculture	Tailored to FAO's own project cycle and process
Environmental and Social Safeguards Framework	Lao Environmental Protection Fund (2014)	All infrastructure	Explicitly follows the World Bank's standard
Guidance for Assessing Social Impacts	European Commission (2009)	All infrastructure, and any other EC supported project	Separate documents dealing with social and environmental components
Article 10 of the Statute	Brazil National Bank for Economic and Social Development (2007)	All infrastructure	Details of safeguards updated in strategic documents such as the Social and Environmental Responsibility Policy of 2010.

Source: Author's compilation.

is (almost always) a member of the MDB, providing both legitimacy and a clear channel to work with the host government.

When safeguards do exist in the first place, an additional challenge exist in how to rely on both safeguards and national legal frameworks. The complication lies in the risk that national systems become superfluous when projects rely on financiers' safeguards (WRI, 2013). A potential solution is to provide flexibility in the application of safeguards in order to suit national legal circumstances. This would mean that if strong national laws exist but the implementation is poor, the financier can focus on supporting implementation. If the legal framework is not strong enough, the financier should have policies in place capable of filling the gap for the investment in question. Ultimately, the focus though should be on using the systems that already exist and on supporting domestic systems to protect people and the environment. For example, the Caribbean Development Bank (2008) highlighted the need of capacity building in its safeguards by requiring cooperation with local government to develop regulations for projects when there any loop in the local legal system.

Doing good: Best practices for maximizing sustainability impact by industries, sectors, and infrastructure types

While the safeguards listed above aim to avoid harm, best practice for infrastructure aim to actively ensure a positive contribution to sustainable development. These practices differ mostly by infrastructure type, while remaining similar across geographies and organizations. A non-exhaustive representative sample is listed in table 5.2 below. Best practices for sustainable infrastructure can be defined as a formalized practice for ensuring a given sustainability performance of infrastructure projects through tangible management processes through an infrastructure project cycle. There are two core reasons for the existence of best practices, of which the first is the need to provide a third-party objective standard to ensure the sustainability of an infrastructure project, while the second is the need to have a common language and process for doing so. These reasons provide confidence in the public as well as in project developers, financiers, local authorities and end-users.

The key contents of best practices differ by the sector and scope of each standards. Some are comprehensive like the SuRe best practice covers numerous environmental, social, and governance variables, while other are more specific such as the Hydropower Sustainability Assessment Tool is focused on a single type of infrastructure. Across the different best practice initiatives, a number of components are generally included such as exemplified by the components of the Hanoi Principles for Construction and Engineering:

1. Commitment: Management should be fully committed to developing and implementing a business ethics compliance program.
2. Oversight: Provide for vigilant oversight of compliance with the principles.
3. Policies and Procedures: Develop and/or adopt clear, meaningful and useful policies, guidance and tools, as appropriate, which are consistent with the principles
4. Training and Communication: Provide regular and effective training, communication and education on the APEC Construction and Engineering Sector Principles, and related company policies,
5. Monitoring: Establish appropriate monitoring

and auditing mechanisms, to ensure compliance and take corrective action.

6. Reporting Mechanisms: Create proper reporting mechanisms for employees to raise ethical concerns or questions.
7. Business Relationships: Communicate its policies consistent with the principles to third parties.
8. Advocacy and Promotion: Promote and advocate its ethical commitments outside of the company.

These are frequently distinguished through the project cycle by early stage, preparation, implementation, and operations. The contents of best practices may be similar to the safeguards listed above, but often differ to the degree of integration into the planning of the infrastructure project. While safeguards are often conducted as a prerequisite for carrying out a project, best practices are deeper strategically integrated as being continuously references in the overall layout of the project as a whole.

Harmonization: Establishing shared standards

A number of challenges exists for the effective usage of both safeguards and best practice for sustainable infrastructure. Firstly, substantial overlap exists between different standards. As can even be seen in the few examples listed in table 5.1 and 5.2 the "coverage" column shows overlap on infrastructure type, geography, and sustainability scope. The dilemma arising from this is the questions of what standards infrastructure projects should follow, if they intend to ensure their positive contribution to sustainability. Essentially, cases may arise where a single infrastructure project is subject to following a wide range of standards simultaneously, and while

Table 4. Examples of best practices for sustainable infrastructure

Name	Actor(s)	Coverage
SuRe Standard for Sustainable and Resilient Infrastructure	Global Infrastructure Basel	All types All geographies All SDGs
International Water Stewardship Standard	International Standard Development Committee	All types All geographies Only water management
Hanoi Principles for Construction and Engineering	Asia Pacific Economic Cooperation (APEC)	Only construction and engineering stage Only Asia specific All SDGs
Extractive Industries Transparency Initiative Standard	Extractive Industries Transparency Initiative	Only extractive industries All geographies All SDGs
Hydropower Sustainability Assessment Tool	International Hydropower Association	Only hydropower All geographies All SDGs
Risk and Responsibility Programme	Government of the Netherlands	All types All geographies Only risk management

Source: Author's compilation.

the contents of each standard is similar, they all include differences. Adhering to a number of different standards simultaneously ultimately amounts to a large administrative and managerial burden. Consequently, the practice today is for infrastructure project to select the standard most relevant to their economic sector, or that they believe investors have a preference for. This added burden is true for both safeguards and best practices. In developing sustainable infrastructure as an asset class these overlaps constitute a substantial barrier to providing investors with the clarity required to make informed investment decisions.

Directly addressing this challenge, safeguards and best practice standards should strive towards greater harmonization rather than the proliferation of standards we have seen over the last 20 years especially. Achieving such harmonization in practice can be achieve through a number of processes, but should adhere to the following two principles:

Firstly, rather than merging all standards it is possible for standards to be based on a common framework of reference. This means that each standard initiative can base their practices on a common set of policy objectives and/or economic activities. This allows the maneuverability of standards to be tailored to their infrastructure type, geography, and sustainability area, while providing a clear method for comparison. This recommendation addresses the overlaps between areas of sustainability, but the principle can be applied across the eight areas of content of best practice standards listed above. An example of an effort based on this principle is the work of the Green Bond Principles, and while being a standard for a financial instrument the process can be applied to the case of best practice standards as well.

A second recommendation is that such harmonization efforts should be led by intergovernmental organizations that have the necessary authority and mandate. For global standards this includes bodies of the United Nations such as the World Bank Group. For regional standards this could be carried out by cooperation organizations such as ASEAN, regional multilateral development banks, or regional branches of the United Nations such as ESCAP. An example of a current standardization effort can be found in the Impact Management Project, which serves as a forum for building a global consensus on how to measure, report, compare, and improve impact performance towards the SDGs. Partnering with a long range of partners including intergovernmental organizations of the type suggested above, such as OECD, UNDP, and IFC, the project has a fixed timeline of three years, by which it aims to provide a consensus-based framework for harmonizing standards. Such a framework will allow all stakeholders to measure sustainability impacts based on the same variables related to what, who, how much, contribution, and risk. Such an initiative can serve as inspiration for harmonizing standards from performance in general, to sustainable infrastructure in particular.

Conclusion: Four Key Ways of Overcoming Challenges to Integrating Sustainability into Asia's Infrastructure Investment.

To meet the sustainable development goals and the Paris agreement, they must be closely integrated into Asian infrastructure financing. Doing this requires overcoming a number of challenges, that currently put sustainable infrastructure at a disadvantage relative to traditional practices. These include an unlevel playing field of the institutional environment, lack of capacity of investors to accurate analyze sustainability factors, insufficient knowledge of project owners of sustainable finance tools and practices, as well as a shortage in the financial system of designated sustainable finance tools, data, and asset classes. This chapter has identified and analyzed four ways that infrastructure financing can be sustainability-aligned.

1. MDBs can play a critical role by de-risking existing infrastructure projects for other investors and by financing the identification of bankable projects such as through feasibility studies. Furthermore, they can do this by providing policy support to countries towards improving national green finance systems and by supporting the development of clear consensus based green finance standards.
2. Green bonds are a promising instrument as they are the most mature green finance instrument, and while the greatest green investment potential is located in global capital markets, the challenges of accessing these capital markets can be overcome. These challenges include the lack of a common green bond framework, limited policy support, and insufficient demonstration effects, which all have concrete solutions to be applied.
3. The Belt and Road Initiative is critical as it is the largest infrastructure project of the region and therefore potentially the most impactful on sustainable infrastructure. It can play an important role through integrating sustainability into BRI and Chinese outwards investment policies, and by coordinating and harmonizing efforts with similar infrastructure investment schemes in the region.
4. Shared and transnational standards can clearly define and guide how to carry out sustainable infrastructure projects in practice. This can be done practice by utilizing environmental and social safeguards for infrastructure projects, and by (clarifying the sustainability "best practice" by industry sector, geography, and/or organization type. In setting up such standards, intergovernmental organizations can play a key role based on their authority, mandate, and convening capabilities.

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