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Green Bonds Driving Sustainable Transition in Asian Economies: The Case of India

Nisha PRAKASH¹, Madhvi SETHI²

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Abstract

On September 25, 2015, 193 countries of the United Nations (UN) General Assembly, signed the 2030 Agenda to work towards attaining 17 Sustainable Development Goals (SDGs) and its associated 169 targets and 232 indicators. With one of the largest renewable energy programs, India is well-poised to be a role model for low-carbon transformation to other Asian countries. However, bridging the financing gap is critical to ensure that the country meets its SDG targets. Though the SDGs identified by the UN are broad-based and interdependent, for ease of analysis we have grouped them into five themes – people, planet, prosperity, peace, and partnership – based on existing UN models. This paper investigates the financing gap for ‘green’ projects linked to planet-related SDG targets in India. It builds an argument for utilizing green bonds as an instrument to bridge the gap. After establishing the potential of green bonds in raising the finance to meet India’s planet-related SDG targets, we look at the current policy landscape and suggest recommendations for successful execution. The paper concludes that deepening of the corporate fixed income securities market and firming up guidelines in line with India’s climate action plans are inevitable before green bonds can be considered a viable financing option.

Keywords: Green Bond, Sustainable Development Goals (SDGs), Green Financing, Climate Finance, Environmental Finance

JEL Classification Code: G18, G23, G32, Q01, Q56

1. Introduction

On September 25, 2015, 193 countries of the United Nations (UN) General Assembly, signed the ‘Transforming our World’: The 2030 Agenda for Sustainable Development’ declaration (UN, 2015). According to the agreement, the member countries agreed to work towards attaining 17 Sustainable Development Goals (SDGs) and its associated 169 targets and 232 indicators. Though the SDGs identified

by the UN are broad-based and interdependent (Rasul, 2016), for ease of analysis we have grouped them into five themes – people, planet, prosperity, peace, and partnership – based on existing UN models (UN, 2019). In this paper, we will be focusing on the planet-related SDGs covering clean water and sanitation (SDG 6), affordable and clean energy (SDG 7), responsible consumption and production (SDG 12), climate action (SDG 13), life on land (SDG 14), and life below water (SDG 15). The article attempts to understand the Indian scenario and builds an argument for utilizing green bonds as an instrument to attract capital from private investors to finance planet-related activities, labeled ‘green’ projects for the rest of the article.

Asia’s consumption of natural resources has been on the uptick to fuel its emerging economies (Gadgil & Guha, 2013). However, global warming due to anthropogenic factors (Stern & Stern, 2007) has brought an urgent need for emerging economies to incorporate a higher proportion of ‘green’ methods in their development mix (Atteridge et al., 2012). India has acknowledged the need for limiting its carbon emissions by signing the Paris Agreement and committing to specific targets (GoI, 2015). The targets include a 33-35% reduction in its emissions intensity of

¹First Author and Corresponding Author. [1] Research Scholar, Department of Management, Symbiosis International University, India [2] Assistant Professor, Christ (Deemed to be University), India [Postal Address: Christ (Deemed to be University), Hosur Road, Bhavani Nagar, S.G. Palya, Bangalore, 560029, India] Email: nisha.prakash@gmail.com

²Professor, Symbiosis Institute of Business Management, Bangalore, India [Postal Address: 95/1, 95/2, Electronics City Phase 1, Hosur Road, Electronics City Phase 1, Electronic City, Bengaluru, Karnataka 560100, India] Email: madhvi.sethi@sibm.edu.in

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GDP by 2030 from 2005 levels. With one of the largest and most ambitious renewable energy programs coupled with a thrust on transitioning to e-vehicles, India is well-poised to be a role model for low-carbon transformation to other Asian countries (MNRE, 2017).

Despite the projected potential, the primary challenge faced by India in shifting to a ‘greener’ growth trajectory is the lack of capital to finance the transition. According to estimates, India would require annual financing of \$960 billion for successfully achieving its SDG targets, indicating an annual shortfall of \$565 billion until 2030 (Bhamra et al., 2015). The financing gap is significant, considering that the total budgetary expenditure of the Indian Government was \$410 billion in 2020 (MoF, 2020).

Existing literature suggests that the financing gap for sustainable projects in developing countries could restrict their ability to meet their SDGs (Ekholm et al., 2013). With the widening fiscal deficit (Ganguly, 2019), there is a need for involving the private sector in raising capital to meet these SDGs (Zapatrina, 2016). Hence, it is pertinent to identify new and innovative financing options to attract private capital for financing ‘green’ projects in India (Trabacchi & Mazza, 2015).

This paper attempts to develop an understanding of the challenges surrounding raising finance for ‘green’ projects in India and builds an argument for the use of an alternative financing option, green bonds, to bridge the financing gap. The paper attempts to explain the characteristics of green bonds, which make it a viable choice, specifically, in the Indian context. After building the argument, the paper also explores the current policy landscape and suggests recommendations for deepening the green bond market in India. As there is limited literature available on country-specific studies on the viability of green bonds, the paper would be of interest to policymakers involved in enhancing private financing for ‘green’ development in Asian economies such as India.

Figure 1 summarizes the structure of the article. The next section focuses on understanding the current sources of finance for ‘green’ projects in India, alternative financing options are identified in section 3, and the arguments for considering green bonds as a viable financing option are developed in section 4. We look at the policy landscape and suggest recommendations in section 5.

2. Current Sources of Finance for ‘Green’ Projects in India

India is heavily dependent on fossil-fuels for its economic development, and a transition to greener sources of energy and infrastructure would require massive investment in ‘green’ projects (Bardhan et al., 2019). The financing gap for ‘green’ projects in India can be explained by understanding the sources of funds and its associated cost of capital. The ‘green’ projects in India are primarily funded by high-cost loans raised from commercial banks and non-banking financial corporations (Shrimali, 2018). Funds are also raised through grants from multilateral organizations and government initiatives such as accelerated depreciation, viability gap funding, tax exemptions, and generation-based incentives (Kumar et al., 2019). This is in stark contrast to developed economies where similar projects, particularly energy projects, are financed with a combination of debt and equity with the proportion of debt as high as 90% (IRENA, 2017). The excessive reliance on bank loans in the capital structure lead to higher financing costs (12-14%) for ‘green’ projects in India, compared to similar projects in developed economies (NITI Aayog, 2015). According to Polzin (2017), the cost of renewable energy projects in India is 24-32% higher than similar projects in developed countries, primarily due to the higher cost of debt in India.

The cost of raising capital negatively impacts the return of any project which is a key consideration for investors in ‘green’ projects (Eyraud et al., 2013). This was illustrated in the Indian context by research conducted by CPI according to which the high rates of interest are a major concern facing investors of ‘green’ projects in India (Nelson et al., 2012). Further, the banking industry in India is reeling under the crisis of non-performing assets in their balance sheets which constrains their funding capability (Ahamed, 2017).

Due to the high cost of bank loans and non-availability of cheaper debt facilities, successful deployment of similar projects in India would require higher equity inflow or government incentives which straps the already limited funds available for government functioning. Hence it is essential to explore alternative sources of finance to fund ‘green’ projects in India.

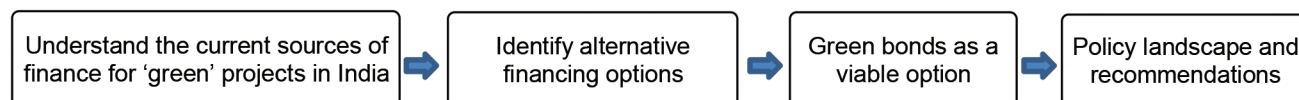


Figure 1: Structure of the Article

3. Alternative Financing Options for ‘Green’ Projects in India

The sources of finance for sustainable development can be broadly classified into national public, national private, international public, and international private sources (UNGA, 2014). According to the model, as shown in Figure 2, the financial intermediaries channelize the capital to fund SDG targets. We would now look at each of the sources in the Indian context.

3.1. National Public Funds

Public sector financing includes government grants, loans provided by public-sector banks, aid provided by multilateral aid agencies, international financial institutions, etc. However, public sector finance is already stretched thin with significant components of the budget allocated for healthcare, social well-being, and education (MoF, 2020). Multilateral development banks, primarily the World Bank (WB) and Asian Development Bank (ADB), are active in providing technical support and financial assistance for SDG projects in India. However, in Asian economies including India, the aid agencies target people, and prosperity-related SDGs (Baulch, 2006). Further, multilateral funding is regarded as an unsustainable source for long term transformation (Hee & Yujia, 2016). Considering the above, national public sources are weak sources of capital for funding ‘green’ projects in India.

3.2. International Public Funds

International public funds for developing countries in Asia are largely bilateral funds from the governments of developed countries (Weiler et al., 2018). However, the bilateral climate funds are largely influenced by trade relationships between the countries rather than the recipient’s need or their capabilities in effectively utilizing these funds.

Further, with increasing trade wars and protectionism, the reliance on international public finance for attaining the planet-related SDGs is unsustainable in the long-term.

3.3. Private funds (National and International)

According to the existing literature, 40-50% of the total investment required to meet ‘green’ targets could be funded by the private sector (Schmidt-Traub & Shah, 2015). Among alternative financing options available for ‘green’ projects in India, the private sector remains largely untapped. India has significant national savings, estimated to be approximately 30% of the GDP. However, the domestic savings are predominantly locked in physical assets and hence are unavailable for financial intermediation (Mohan & Kapur, 2015). About half of the domestic savings are short-term deposits in banks and hence are a mismatch for financing the long-term, front-loaded ‘green’ projects with long gestation periods (Sonntag-O’Brien & Usher, 2006). Though the market regulator SEBI is motivating domestic investors to invest in capital markets and long-term government bonds, it is yet to bear any clear result (Bharti, 2018).

Foreign investors primarily sovereign wealth funds (SWF), pension funds, insurance funds, and long-term investors, who have approximately \$84 trillion assets under management (AUM) in developed countries, represent an extensive source of funding (Röttgers et al., 2018). Investors with an AUM of \$45 trillion have made public commitments to integrate Environment, Social, and Governance (ESG) aspects into their investment decisions (Rook & Monk, 2019). Such funds have a long-term investment outlook with clear ESG mandates. According to a survey conducted by Aon Hewitt (2018) on institutional investors in 2018, 68% considered responsible-investing important with the primary concern for carbon footprint and climate change. Such claims are validated by the market data, according to which institutional investors led to the massive growth and oversubscription of ‘green’ bonds (UNEP, 2018).

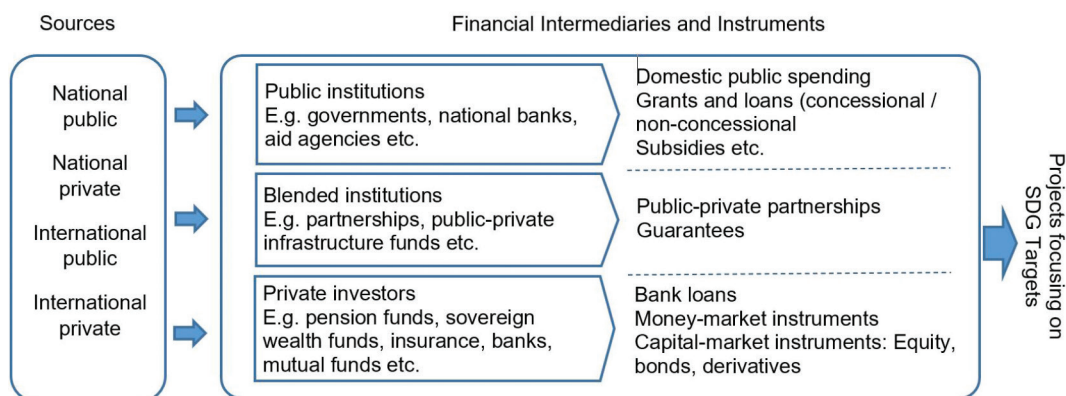


Figure 2: Flow of Funds From National and International Sources to Sustainable Development Projects

The possibility of raising capital through private funds depends on the risk-return characteristics of the project. In the current scenario, the ‘green’ projects, which are largely undertaken by organizations in their early years of development are perceived to be less creditworthy, as compared to the mature industries, by credit rating agencies. The lower credit rating increases the interest charged by banks for the capital provided through loans, making these projects less attractive to equity investors (Shrimali et al., 2013). The smaller size and high cost of capital discourage such firms from raising capital through the stock market. Hence, the comparatively smaller size of the ‘green’ companies not only raises their cost of capital but also restricts the range of capital market instruments available for raising capital. Hence, the ‘green’ industry struggles to attract private funding due to its smaller size, relatively new technologies, and longer gestation period (Chawla, 2016). The imbalance in information regarding the risks faced by this industry leads to higher perceived risk by prospective investors, thereby demanding higher returns to compensate for the high risk taken (Nelson et al., 2012; Xuan, 2020). Transformation to ‘green’ is also linked to high front-loaded capital cost as a proportion of total costs, making it less financially attractive to investors (Hee & Yujia, 2016).

Hence, to tap this market, innovative financial instruments that match the risk-return criteria of private investors need to be designed. To attract private investors, the financial instrument should be comparable to traditional

capital market instruments. The characteristics of fixed income securities address the concerns in financing ‘green’ projects, as shown in Table 1.

The institutional investors are familiar with the fixed income securities market in which they invest more than 50% of AUM (Sen et al., 2016). In this paper, we explore a popular bond market instrument namely green bonds to understand its feasibility in raising capital for ‘green’ projects in India.

4. Green Bonds as a Viable Financing Option for ‘Green’ Projects in India

Green bonds are fixed-income securities in which the issuer commits to utilizing the bond proceeds only for planet-friendly ‘green’ projects making them different from conventional corporate bonds where the bond investor has no control or information over the kind of project the proceeds would be used in (Shishlov et al., 2016). Green bonds or green-labeled bonds could be issued as corporate or project-specific bonds. It could also be issued by financial institutions such as banks, NBFCs, or microfinance institutions, targeting to provide loans for ‘green’ projects. Due to the assurance provided by the issuer on the use of proceeds, which is further certified by third-party reviewers such as Sustainalytics, this innovative instrument is emerging as a potential alternative financing option for ‘green’ projects. The strength of the green bond instrument is its capability to attract investors with an ESG mandate.

Table 1: The Characteristics of Bond Instruments that make it a Viable Option for Green Financing

Concerns in raising capital for ‘green’ projects	Characteristics of bond instruments
High cost of capital of ‘green’ projects lower returns for investors	According to corporate finance theory, debt financing has a lower cost compared to both equity and bank loans.
Perceived risk of ‘green’ projects	Bond instruments are capable of raising funds from investors with varied risk appetite.
Attracting private investors for ‘green’ projects	Bonds issued for ‘green’ projects could attract institutional investors with ESG mandate.
High lock-in period for financiers of ‘green’ projects	Financiers can choose to fund projects through the purchase of bond instruments rather than through loans with no secondary market. For a shorter payback period, financiers can sell the bonds in the secondary market.
High lock-in period for investors of ‘green’ projects	The secondary market for bonds assures the investors of an early exit thereby attracting investors with shorter investment horizons.
High gestation period of ‘green’ projects	‘Green’ projects take a few years to report positive cash flows. Bond maturities are typically 7 to 15 years which is compatible with the payback period of ‘green’ projects.
Lack of information on ‘green’ projects	The disclosure requirements for issuing debt would promote transparency in the market.

Green bonds would enhance funding for ‘green’ projects through pooling-in capital from multiple channels such as sovereign, bilateral, multilateral, private sector, and institutional investors (Ng & Tao, 2016). Green bonds can be issued for financing ‘green’ projects of any organization targeting to transition to a low carbon model. For example, if an automobile manufacturer wishes to expand its production to electric vehicles, then capital can be raised through a green bond backed by the low-carbon section of its assets.

The green bonds have witnessed tremendous growth after their introduction in 2007 (Gianfrate & Peri, 2019), as evidenced from Figure 3 below. India entered the green bond market in 2015 with the first issue by Yes Bank for \$141 million. By the end of 2018, India reported 19 issues with a cumulative issue size of \$6.5 billion (CBI, 2018a). Large commercial banks such as the State Bank of India and government agencies such as IREDA are active issuers in the green bond market. All the Indian green bonds issued have been oversubscribed and have attracted a wider pool of investors compared to the conventional bonds by the same issuer (Agarwal & Singh, 2018). For instance, the green bond issued by Indian Renewable Energy Development Agency Limited (IREDA), a public-sector undertaking, in 2016 was 5.1 times oversubscribed, indicating the appetite for Indian green bonds in the global debt market (NDRC, 2016).

Though the issued green bonds were mostly oversubscribed, the country lags behind both developed and emerging countries in promoting these financial instruments (Sarangi, 2019). Until 2018, India has issued green bonds worth \$5.2bn compared to Europe’s \$189.1bn (combined issue of top five issuers in Europe, i.e. France, Germany, Luxembourg, Netherlands, and Sweden) China’s \$78.9bn, and the US’ \$43.6bn. From Table 2 below it is clear that India is far-behind China in tapping the potential of green bonds, both in terms of the number of issues as well as the capital raised (Lee, 2020).

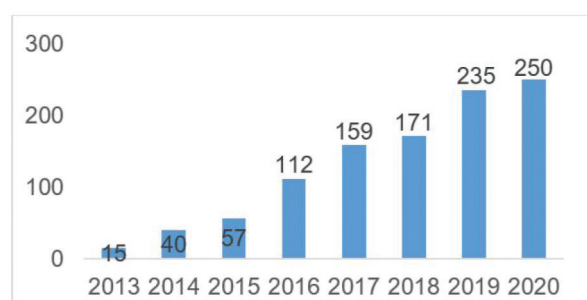


Figure 3: Green Bond Issue 2013-20 (in \$ billion)

Table 2: Comparison of Green Bonds Issued by Companies by Domicile, 2007-18

Parameter	India	China
Total number of issues	19	208
Capital raised (in \$ Billion)	6.5	89.2
Average issue size (in \$ million)	258.8	428.7
Average mid YTM	6.85%	3.77%

As green technologies are comparatively new and evolving, risk reduction will be crucial to develop investor interest in green bonds. It is also important to understand that green bond investors are driven largely by the returns and not the pro-green preferences (Zerbib, 2019). Having highlighted the potential of green bonds in financing ‘green’ projects to attain India’s planet-related SDGs, it is now appropriate to discuss the current policy landscape and suggest recommendations to facilitate the adoption of green bonds.

5. Policy Landscape and Recommendations

Bridging the financing gap for ‘green’ projects in developing countries would need significant funding from varied sources and innovative financial instruments (UNGA, 2014). Hence, the role of the government to devise policies to attract capital through multiple channels is significant (Gambetta et al., 2019). India has formulated an ambitious national action plan on climate change and active participation from the government in the form of policies and regulations is necessary to raise the required finance.

In January 2016, the stock market regulator SEBI issued its guidelines for green bond issuers in India (SEBI, 2017), making India the second country (after China) to have such national guidelines. Further, the central bank of India RBI announced a string of measures to deepen the corporate bond market in 2016 (SEBI, 2016). The government also passed the Insolvency and Bankruptcy Code (IBC) 2016 (IBBI, 2016). IBC streamlined the resolution of bankruptcies which when implemented could allay investor fear in the long-run. Meanwhile, SEBI provided further clarification on the issuance and listing of green bonds with a circular governing the disclosure requirements, in May 2017 (SEBI, 2017). The increasing clarity and regulatory nudges encouraged various public sector entities, including the largest public sector bank (SBI), to issue green bonds. However, these bonds were largely issued in the foreign markets as the government still struggled to attract investors to the domestic bond market.

Considering the current scenario, the authors would like to recommend the following policy recommendations to enhance the green bond market in India.

5.1. Build a National Framework

The lack of a robust definition of ‘green’ has created doubts on greenwashing projects, leading to investors perceiving green bonds as riskier (Agarwal & Singh, 2018). To prevent abuse of the green bond label, it is pertinent to build a national standard. The national standard should cover a green assessment framework to classify projects as ‘green’, creating a standardized taxonomy, auditing the green impact, providing transparent disclosure guidelines, and building a knowledge repository. These steps would enhance investor confidence in green financial products. India has taken the first steps in this direction with SEBI publishing green bond labeling guidelines and the disclosure requirements for Indian issuers (SEBI, 2017).

Though India has developed green bond guidelines, it lacks auditing models to separate projects with higher impact from others where the green impact is more of a consequence. CICERO’s ‘Shades of Green Method’ to rate bonds across the different shades of green depending on their impact can be used as a starting point to create evaluation frameworks more aligned to India’s domestic needs. In China, the government has introduced domestic green bond evaluation guidelines such as the new guidelines for green bond verifiers and verification activities released by China’s central bank and exchange regulator in 2018 (CBI, 2018b).

Considering the risk perception of green bonds due to lack of information, a knowledge repository is the need of the hour to acclimatize investors to this innovative product. For the renewable energy sector, the Indian Renewable Energy and Energy Efficiency Policy database set up in 2013 acts as a database of policies, regulations, and incentive programs catering to the sector in India (MNRE, 2013). However, a similar source tracking the evolving regulations, listings, and performance of green bonds are currently unavailable to investors.

5.2. Increasing the Depth of India’s Corporate Debt Market

The primary challenge facing the green bond market is the immaturity of the Indian corporate bond market. Government securities dominate the Indian debt market with Government securities forming more than 70% of the debt market (CRISIL, 2018). Further, private placement accounts for more than 95% of corporate bond issues (Mohan & Ray, 2017). In the current state, the corporate debt market in India is limited to highly rated corporate bonds issued by financial and public sector companies.

The primary factor limiting the investor presence in the Indian bond market is the restrictions placed on institutional investors. According to the Companies Act 2015, insurance companies can invest only in public limited companies which closes the door for green bonds typically issued through the special purpose vehicle (SPV) route (GoI, 2015). Similarly, both pension and provident funds also come under strict guidelines which effectively rule them out as an investor class for green bonds (FICCI, 2016). The restriction of investing solely in corporate bonds with an ‘AA’ rating, automatically discouraged and eliminated any company with a lower rating from raising capital through a bond issue.

Further, the secondary market for green bonds is shallow as the trading dries up within days of issuance. The immature market for corporate debt in India limits the debt financing options available for ‘green’ projects. This lack of depth of the domestic bond market is the primary reason for the foreign issue of green bonds by Indian entities. The Indian entities also prefer issuing USD denominated bonds as the coupon rate for USD-denominated Indian green bonds is typically 2.75%-6% whereas, for INR denominated bonds, the coupon rates are as high as 7.38%-10.75%. This difference is due to the higher risk associated with comparatively volatile INR and the low liquidity of the Indian secondary bond market (Kumar et al., 2019).

India’s corporate bond outstanding is less than 20% of the country’s GDP – compared to 150-200% in developed countries (BIS, 2019). In 2016, a committee headed by former RBI Deputy Governor H R Khan had made a series of recommendations for deepening the domestic debt market in India (SEBI, 2016). According to the panel, the primary reasons for poor liquidity of the corporate bond market in India were, 1) private placement forming 95% of the corporate bond market issues, 2) limited investor base because of regulatory restrictions on institutional investors, and 3) trading platform inefficiencies. The panel recommended changes in policies, market infrastructure, regulations, and innovation to attract corporates and investors to the Indian bond market. In recent years, the government has issued various policy recommendations of the panel. However, these measures have been largely incremental; sustainable deepening of this market would need fundamental reforms, public finance, integration of financial markets, and tighter liquidation and insolvency laws, as recommended by the panel.

5.3. Making Green Bonds Attractive to Investors

To promote green bonds, there is a need to develop innovative instruments such as asset-backed securities, for lowering the risk of green bonds. Securitization is the process of transforming a pool of financial assets into tradeable instruments. Banks that provide loans for ‘green’

projects can explore this instrument for transferring risk to investors. The perceived risk of ‘green’ projects can also be reduced by the public finance taking a subordinated tranche to the private finance – a structure popularly called ‘Blended finance’. Approaches such as credit enhancements and guarantees, securitization, and aggregation have immense potential in the Indian context (Dutt et al., 2019).

India took its first step in this direction by allowing its banks to provide partial credit enhancement for corporate bond issues up to 50% of the issue size for infrastructure projects (RBI, 2016). An implemented example of credit enhancement is India Infrastructure Finance Company Ltd. (IIFCL) partially guaranteeing the green bond issue of ReNew Power. This innovative structure enhanced the bond issue’s rating from BBB to AA+, making it attractive for institutional investors. India can also follow the example set by China which has set up funds at the local government level to guarantee green bonds (Weihui et al., 2016). To improve the risk profile of green bonds, asset-backed securitization can also be adopted which allows a higher credit rating based on the creditworthiness of the assets involved in the project. As the issue size in India is much smaller than those in developed countries, it is recommended to aggregate loans rather than following the high-volume securitization structure in the west (Agarwal & Singh, 2018).

National development banks, including the Global Climate Fund, accredited entities SIDBI and NABARD, can also be used to channelize funding to sustainable projects through aggregation and credit enhancement models.

5.4. Accelerating Through Exchanges

Stock exchanges play a critical role not only in bringing the issuer and the investor together but also in informing the market about the green bond by making data available to the market. Several stock exchanges across the world have started providing trading channels for bonds issued for sustainable projects. The Indian exchanges could emulate the model set by these exchanges in building a dedicated channel for green bond listing for domestic as well as international green bonds. As the first step in this direction, India launched its first international stock exchange, India INX, in 2017 which permitted the listing of green bonds. Until then, Indian issuers preferred London Stock Exchange and the Singapore Stock Exchange to issue green bonds. Domestic stock exchanges can play a critical role to mobilize the Indian green bond market, acting as custodians of the national framework, which would also include mandating the issuers to publish relevant documents as a standard obligation. For instance, the regulations in China mandate the issuer to explain how proceeds are used to finance green initiatives in the bond prospectus, both for conventional and green bonds (Agarwal & Singh, 2018).

The stock exchanges in India have made ESG reporting a listing rule, provide sustainability-related indices, and offers written guidance on ESG reporting (BSE, 2018). However, there is further scope for the two exchanges for listing green bonds which would open the instrument to all equity investors. In the current budget, the government has also announced plans to set up a Social Stock Exchange (SSE) (MoF, 2020), in line with the Impact Investment Exchange (IIE) Asia, Singapore, and Social Stock Exchange (SSE), London.

5.5. Regulatory Nudges

Various initiatives were undertaken to create consensus on regulations regarding green bonds such as the India Green Bonds Market Development Committee (IGMDC) set up by the Federation of Indian Chambers of Commerce & Industry (FICCI), an association of business organizations in India, in Dec 2014. Government support in standardizing the issue process and documentation, finalizing criteria on green attributes of projects, building regulations around reporting and transparency, and providing economic incentives for green bond issues, is critical for further penetration of green bonds in the Indian financial system. FICCI highlights that the major challenge for Indian entities to participate in foreign currency green bond issues is the high hedging cost and low sovereign credit rating. The additional costs involved in certifying green bonds and concerns regarding the penalty for non-compliance are inhibiting the growth of these instruments. In such cases, the government can provide hedging through its reserves and risk mitigation products such as credit guarantees which would enable issuing companies to overcome sovereign rating cap (CEEW, 2017). Being a new market, industry standards and practices are still in a nascent stage, but fast-evolving. Government and regulatory support in addressing these concerns are paramount to optimally tap this financial instrument to bridge the investment gap for sustainable projects.

The government could, along with favorable regulations, issue sovereign green bonds to enhance investor confidence following a strategy similar to governments in Fiji, France, Poland, Nigeria, Indonesia, and Belgium. In the previous budget, the finance minister observed that India’s external debt to GDP of 5% is one of the lowest in the world and hence the government could issue sovereign bonds to raise capital from global markets (MoF, 2020).

Green bonds also offer an opportunity to raise capital for unconventional investment sectors such as forestry and marine conservation, a new business model, innovative transport, etc. With the Indian government keen on scaling up electric transportation, green bonds are an innovative way for manufacturers to raise capital for transforming their assembly line to low-carbon products. Also, similar to the

sovereign blue bonds issued by Seychelles for enhancing private investment in the under-funded water sector, India can tap into the bond market for funding its ambitious river restoration plans, such as the ‘Clean Ganga’ project. Further, climate adaptation funds can also be raised by securitizing national funds such as the National Disaster Relief Fund (NDRF), the proceeds of which can then be used for building climate resilience.

While the government has a prominent role in setting policies to build up the green bond market in India, it is also necessary to ensure that regulatory requirements are not made too stringent to hamper the innovativeness of this product with immense impact potential.

6. Conclusion

Targeted policy intervention is essential to ensure economies develop without compromising the sustainability of future generations (Faradiba & Zet, 2020). Green bonds can act as a key instrument to channel long-term, scalable, low-cost debt to project developers through institutional investors. Green bonds are projected to have a substantial multiplier effect due to better diversity of investor channels, the scale of capital inflow, and increased access to funds across project lifecycles. Thus, green bonds are a strong alternative financing option to meet India’s planet-related SDGs. The paper concludes that to enhance financing of ‘green’ projects in India through green bonds it is essential to develop a national framework for ‘green’ projects and deepen the corporate debt market.

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