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Financing India's Green Transition

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ABSTRACT Climate change has emerged amongst India's most formidable challenges to sustained GDP growth. To accelerate the implementation of the country's commitments under the Paris Agreement and advance its progress towards the Sustainable Development Goals, finance is key. India needs to develop a comprehensive strategy and an integrated policy approach that aligns the country's financial systems with the long-term needs of the economy while incorporating environmental risks. China, working closely with the United Nations Environment Program, has taken international leadership in this arena. As India's financial sector evolves, it can take cues from China and other leaders in green finance, and embed the green imperative in its investment decisions. This brief examines the role of the entire financial system in India's transition to a green economy and presents a case for actors in both the financial markets and banks to develop new financial instruments that deliver both investible returns and environmentally positive outcomes.

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INTRODUCTION

India's aspirations to become a US$ 5-trillion economy by 2024[1] is contingent on the steady growth of its Gross Domestic Product (GDP). To this, perhaps the most formidable challenge is runaway climate change. Anthropogenic activity is eroding human capital (education, productivity), as well as produced (infrastructure, property) and natural (air, water) at an unprecedented pace. A study measuring the effects of anthropogenic climate forcing on GDP per capita by country has estimated that global warming has caused the Indian economy to be 31 percent smaller than it would have otherwise been.[2]

Indeed, India is facing extreme climate conditions, from flash floods to droughts and record-breaking heatwaves. Analysts have observed that the 2018 and 2019 floods were the kind that are expected only once in hundred years and cannot be blamed on nature's vagaries alone.[3] According to reports from Mongabay-India,[4] at least 1,351 people lost their lives due to floods and heavy rainfall in just two months (July-August) of 2019, compared to 1,562 monsoon-related deaths recorded for the entire 2018. In Kerala, climate-induced floods have become increasingly frequent; the submergence of many parts of Mumbai has become an annual affair, too. Parts of north and central India experience deadly heatwaves that break their own record every year.

Apart from these extreme climate-induced natural disasters, the natural capital of the country is depleting at an accelerated pace. Bengaluru, for instance, India's tech capital is already parched and is among the 21 major Indian cities that may run out of groundwater by 2020.[5] New Delhi has become the most polluted capital in the world, and Gurugram—which is part of the National Capital Region (NCR)—is the most polluted city.[6] It is estimated that air pollution in Delhi is responsible for approximately 10,000 to 30,000 deaths in the city annually.[7]

India has made a commitment to reduce its greenhouse gas (GHG) emissions by 33-35 percent (from 2005 levels), increase the share of non-fossil fuel-based electricity to 40 percent and enhance forest cover to absorb 2.5 to 3 billion tonnes of carbon dioxide by 2030.[8] These goals are articulated in the government's Intended Nationally Determined Contributions (INDCs) under the United Nations Framework Convention on Climate Change (UNFCCC) in Conference of Parties (COP 21) in Paris in 2015. While the political will may be evident, the overarching climate actions to achieve INDC goals require massive financial resources.

Preliminary estimates indicate that around US$206 billion (at 2014-15 prices) would be required between 2015-2030, for implementing adaptation actions in key areas like agriculture, forestry, fisheries, infrastructure, water resources and ecosystems. Beyond these, additional investments will be needed for strengthening resilience and disaster management, pegging the total fund requirement at US$2.5 trillion between 2015-2030.[9] Raising financial resources for climate change adaptation and mitigation actions of this scale is an unprecedented challenge, but given the existential crisis, failure is not an option.

Success will depend on how effectively policymakers are able to draw a comprehensive map for raising the requisite finance and how quickly the financial sector – both public and private, is able to respond to the needs in time.

AN IMPLEMENTABLE FINANCE STRATEGY: FIRST IMPERATIVE

India launched the National Action Plan on Climate Change in 2008. While the document provides the broad policy, even after a decade the plan is yet to be backed by an implementable strategy and, in particular, a policy framework for the financial sector. Further, climate change planning and financing at the state level is at its early stage of development.

The People's Republic of China (PRC), by most accounts, is the country that has taken the lead in the area of green financing; its experience can provide lessons to other countries like India that are attempting their own strategies. The PRC established a green finance task force in 2014 and, working closely with the United Nations Environment Program (UNEP), initiated an inquiry into the design of a sustainable financial system. (The UNEP also led an inquiry into the Design of a Sustainable Financial System in India.) The recommendations of the report include the development of a National Green Finance Strategy that should be taken up at the highest policymaking level. During China's presidency of the G20 in 2016, it made green finance a priority, and a G20 Green Finance Study Group was established at the beginning of that year. The PRC then launched the world's first green finance policy framework, "Guidelines for Establishing the Green Financial System", to create a finance system that will facilitate the economy's transition to sustainable growth. These guidelines lay down the official definition of green finance, incentives, disclosure requirements, development plan for green financial products, as well as risk mitigation.

India needs an implementable action plan comprising of strategy and policy framework to enhance the ability of the financial sector to mainstream climate action into decision-making.

TOWARDS GREEN FINANCING: NEXT STEPS

Expansion of regulatory and incentive mechanisms

Green finance is a systematic programme involving multiple stakeholders such as government, financial institutions, and regulatory agencies. Beyond framing the policy framework and guidelines for green finance, to create an appropriate incentive and restrictive mechanism, green elements will need to be incorporated into laws and regulations of the countries including fiscal, taxation, monetary, credit and industrial policies. This cannot be done in isolation and will need a well-coordinated approach amongst various actors including the Ministry of Finance, Ministry of Environment Forest and Climate Change, State Governments, and regulatory bodies such as the Reserve Bank of India (RBI) for laws on commercial banks and financial institutions, the Securities Exchange Board of India (SEBI) for securities law, and the Insurance Regulatory and Development Authority of India (IRDAI) for insurance law.

Strengthening institutional framework

The Climate Change Finance Unit (CCFU) within the Department of Economic Affairs, Ministry of Finance is the key coordinating agency for climate finance in India. It was established in 2011 with the objective of creating a strong platform for conducting analyses on issues related to climate finance. So far, however, most of the activities of the CCFU have focused on representing the Finance Ministry in all climate change financing related issues in international and domestic forums as well as providing input on issues of climate finance in economic surveys.

There is no institute that has taken on the role of coordinating climate finance amongst various stakeholders and establishing mechanisms around climate finance. As a result, multiple processes thrive in the country. The role of the CCFU should be expanded to house a specialised committee to design suitable and effective policies and processes as well as coordinate amongst various actors in the financial sector, both public and private, to ensure effective implementation.

An example in this regard is the Green Finance Committee (GFC) of the China Society of Finance and Banking. All major banks, as well as a number of large and medium-sized funds, insurance and securities companies have joined the GFC since its inception in April 2015. Since its inception, GFC and its 200-plus members have played a key role in facilitating the release of new policies, promoting the notion of green finance, product innovation, and capacity-building.

To make the top-level design and mechanisms of climate change effective and to promote wide-scale adoption of green finance, it is necessary to raise the awareness and deepen the understanding of green development amongst governments at all levels, gain knowledge about green finance and improve capacities at all levels for governments, investees and investors, and intermediaries. Therefore, the role of the CCFU coordinating committee can be expanded to include raising awareness about green finance as well as capacity development of the financial sector.

Beyond this, India also needs an independent think tank that can conduct specialised research in climate finance to promote innovative mechanisms and international best practices. This brief takes the example of PRC's International Institute of Green Finance (IIGF) of the Central University of Finance and Economics (CUFE), which has emerged as one of the world's leading financial think tanks. The IIGF is specialised in green finance as well as climate finance and energy finance. It conducts research within a range of areas such as credit, bonds, insurance, carbon-trading, information disclosure and risk assessment at a national and local level, and conducts research in other countries as well. IIGF is one of the executive member institutions of the Green Finance Committee (GFC) of the China Society of Finance and Banking and has also built an academic relationship with the Ministry of Finance.

Measuring the finances deployed

For India to effectively fight climate change, climate finance needs to be predictable,

assured and transparent. The amounts deployed for both adaptation and mitigation activities should be tracked and measured against the needs and priorities. While India tracks GHG emissions through various reporting mechanisms including PAT (perform-achieve trade), and RPO (renewable purchase obligations), it does not have a National MRV (measurement, reporting and verification) through which international and domestic climate finance can be tracked. Accordingly, India's Second Biennial Update Report to the UNFCC has highlighted an integrated MRV system that measures both GHGs and the finance committed to climate action as a capacity building need for the country. Thus there is an urgent need to develop unified statistical standards and development assessment systems for green finance. Such a system could be applicable for green finance standardisation, disclosures of project-wise environment information and monitoring green finance investments, to assist policymakers and regulators in monitoring of implementation and evaluation of policies.

Creating a domestic framework for environmental risks

Like in many other countries, India's financial sector – both capital and money markets, is fraught with the tragedy of horizon. Long-term risks such as climate change are not recognised by market actors including individual and institutional investors due to pervasive short-termism and profit motive. Mechanisms to price-in risks associated with climate change and the premium attributable to climate-proofing assets need to be developed and there has to be a proactive approach towards 'green finance'. Currently in India, climate change is not included as a scenario in stress tests, even as it is already agreed that it is a plausible event that might occur in the future. Financial institutions should be encouraged to conduct a periodic 'Climate Stress Test' (CST), or the evaluation of potential vulnerability of banks' and financial institutions' capital position to climate-related risks such as droughts or extreme weather events. Referring to China once again for a lesson, the Industrial and Commercial Bank of China (ICBC) has developed an environmental stress test, in effect incorporating environmental risk into its risk management system.

Such an approach is necessary for India given how, according to a Cambridge Study, the country fares poorly when it comes to asking companies to disclose how vulnerable their businesses are to climate-related risks.[10] The assessment was made based on the recommendations made by the Task Force on Climate-related Financial Disclosures (TFCD). The report also noted that "although the Securities Exchange Board of India has introduced a requirement to produce business responsibility reports for the top 100 listed entities in 2012, which was increased to the 500 largest listed companies in 2016 (SEBI, 2016), we have not been able to find evidence of specific TCFD-compliant initiatives."

It is pertinent for banks to recognise, understand, measure and provision the financial risks of climate change. By doing so, they will be able to reflect a more accurate value of their assets and liabilities. Organisations that understand climate risks to their businesses could also avail better

financial terms from financial institutions if they hedge for such risks.

Government-supported Green Bank

A green bank is a financial institution typically public or quasi-public, that uses innovative financing techniques and market development tools in partnership with the private sector to accelerate deployment of clean-energy technologies. Globally, countries like Australia (Clean Energy Finance Corporation), United Kingdom (Green Investment Group), and Japan (Green Finance Organization) have created nationalised banks to leverage private investments in green technologies. The Indian Renewable Energy Development Agency (IREDA) under the Ministry of New and Renewable Energy is a government-backed agency for promoting clean energy investments. In May 2016, the IREDA announced plans to explore becoming India's first green bank.[11] A green bank, as part of IREDA, can leverage limited public funds to attract greater private investment to grow India's clean energy market. The transformation will empower IREDA to access domestic and international capital as well as better financing terms, including lower interest rates with longer lending terms. To be sure, it remains to be seen if such a mechanism will fulfill its objectives.

Recalibration of financial sector for green finance

Green finance covers a gamut of financial services, institutional arrangements, country arrangements, country initiatives and policies, and products (debt, insurance, or guarantees) designed to promote the flow of finance towards economic activities and projects. These will actively promote environmental improvement, climate change mitigation and adaptation, and improve efficiencies in natural capital preservation and mobilisation. Developing a diverse range of green financial products can be an opportunity for capital and money market institutions to not only centralise the green growth model in each and every investment decision—be it agriculture, industry, or infrastructure—but also to improve the market share, increase profit, create customer loyalty and enhance brand image globally.

OPPORTUNITIES IN THE INDIAN CAPITAL MARKETS

As Indian capital markets are still evolving, there is an opportunity to leapfrog the development paradigm by pioneering and expanding green solutions for both investments and capital raising both through equity and debt.

Green bonds: Green bonds have emerged as one of the most prominent financial vehicles catering to climate action specifically for projects requiring long-term finances. Long-term investors including pension and insurance funds now prefer bonds which invest in green assets as they understand the catastrophic impacts of climate change on their investments.

In the past 10 years of their existence, green bonds have gone from being an esoteric product to being widely accepted and used in the market. In 2018, worldwide, labelled green bond issuance amounted to US$167.6 billion, led by the United States (with 20-percent

market share) and followed by PRC (18 percent), France (8 percent), Germany (5 percent) and the Netherlands (4 percent).[12] The Climate Bonds Initiative estimated that green bond issuance in 2019 could reach a record US$ 250 billion.[13] As of November 2018, India had issued green bonds valued at US$ 7.15 billion.[14] The amount is minuscule, given the size of India's economy and when compared to the vastness of green bond issuances by the US (US$ 34 billion) and PRC (US$ 31 billion).

One of the key reasons for the small scale of green bonds in India is the underdeveloped domestic bond market. Project developers in India have largely relied on commercial banks for finance although bank finance is not ideal for funding large-scale infrastructure due to inherent asset-liability mismatch issues. The recent non-performing assets (NPA) stress of the banking sector demonstrates this, as most defaults are on infrastructure or real estate loans.

Between November 2018 and August 2019, green bond issuances from India shrunk further due to multiple factors including interest rate, forex fluctuations and large-scale NPAs in the banking sector. It was only in August 2019, that two large issuances (Greenko: US$950 million and Adani Green: US$500 million) came in the international market.[15] To scale up the green bond market, the Securities Exchange Board of India (SEBI) in 2017 issued national level regulatory guidelines for issuance and listing of green bonds. The guidelines, however, fell short in defining the term 'green'. The Pension Fund Regulatory Authority (PFRDA) has reduced the minimum credit rating for Indian pension funds from "AA" to "A".[16] This will give a fillip to the green bond market as well. Going forward to expand the green bond market and bring in local capital, the government can consider opening up the market for retail participation. However, to make the product attractive for investors, the incidental expenses associated with green bonds— related to the rating of the bond and green certification—need to be rationalised. This could be done by supporting the development of a robust rating system for risk and the degree of green the underlying asset is.

Credit enhancement schemes: Partial risk guarantee facilities or credit enhancement can be deployed to improve the credit profile of a structured financial product or transaction. Through partial credit guarantees, the guarantee issuer assumes the lenders' default risk on a part amount of the debt, thereby improving a project's credit rating and reducing the perceived investment risk. One of the first partial risk guarantee facilities in India was the Asian Development Bank's (ADB) India Solar Generation Guarantee Facility.[17] The India Infrastructure Finance Corporation Limited (IIFCL) also launched a dedicated scheme known as the 'credit enhancement scheme' for funding viable infrastructure projects with project bond tenors above five years.[18] This scheme addressed the challenges currently faced by the Indian banking sector such as asset liability mismatch, capital adequacy and exposure norms, and supported certain renewable energy infrastructure projects to reduce their cost of debt through refinancing their debt through bonds. As the scheme has produced successful outcomes it needs to be mainstreamed and the government could consider setting up a dedicated fund to

provide hedging services and partial guarantees specifically for green investments.

Aggregation and securitisation: Aggregation and securitisation are strategies that work together to finance small-ticket projects or assets for which it is difficult to raise finance from banks and capital markets. Aggregation typically refers to a process whereby smaller assets are bundled together; securitisation, in this context, refers to the process by which the bundled assets are monetised under a financing arrangement which could range from a commercial bank loan facility, fund, or a tradable security sold on the capital markets.

Aided by the clarity on the participation of foreign investors provided by the Finance Act 2016, the securitisation market in India has been growing in recent years, reaching a high of US$7.08 billion in the first half of 2017 from a low of US$2.16 billion in 2015.[19] As the Indian securitisation market has already delivered securitisation products with mortgages and vehicle loans as underlying assets, the transition to green assets such as green mortgages and electric vehicle loans should be fairly smooth. Securitisation can also support India's solar rooftop programme.

Blended finance is a fairly new concept and was identified as a financial investment vehicle only in 2015 during UN negotiations for the subsequent years. Typically, multilateral development banks and governments are the main sources of financing green assets as private capital seeks commercial rate of return due to lack of tested business models and other associated risks. However, green financing cannot be scaled up without private sector financing and blended finance could be a useful modality. Blended finance means blending concessional (public/philanthropic/multilateral) finance, that is capital extended below market terms, to catalyse private finance through guarantees or grants. Through blended finance, the unique characteristics of each capital type can be leveraged towards the shared objective of scaling-up private investment, and with it the climate impact. India holds huge potential with respect to its philanthropic funding, as an increasing number of philanthropists are shifting towards an outcome-driven approach. Special funds can be incubated that can take up blended financing to scale up green investments.

ESG Investments and Funds: In the Harvard Business Review's (HBR) 2019 ranking of the world's top 100 CEOs, it increased the weightage of Environmental and Social Governance (ESG) to 30 percent. This directly led to the dropping out from the list of Amazon CEO Jeff Bezos, after topping it in 2014 and consistently being on the list since then. This was because Bezos scored low on its ESG scales. A survey of 500 of the world's largest asset managers by Thinking Ahead Institute shows that while overall assets under management were declining, ESG bucked the trend with mandates rising by 23.3 percent in 2018.[20]

Although nascent, ESG investing in India is growing quickly and options are available for all category of investors. For institutional investors, high net-worth individuals and family offices venture capital and private equity, funds have emerged. For instance, Quantum Advisors has launched a US$1-billion ESG fund to invest small- to mid-cap

companies; Avendus Capital is also launching an ESG fund. Indeed, the mutual fund industry has a bouquet of options for retail ESG investors. Kotak Mutual fund is India's first asset management company to sign the UN-supported Principles for Responsible Investment (PRI) – a global network of investors that attempts to integrate ESG practices into investment practices. Four more investment management firms from India are signatories to PRI: the SBI Magnum Equity Fund, a mutual fund, changed its focus to ESG and became SBI Magnum Equity ESG Fund.[21]

Real Estate/Infrastructure Investment Trusts: Real estate/infrastructure investment trusts (REITs/InvITs) are securities linked to real estate that can be traded on the stock exchange once they get listed. The structure is similar to that of mutual funds where there are sponsors, trustees, fund managers and unit holders. REITs/InvITs invest in income-generating physical real estate or infrastructure. This income gets distributed amongst the unit holders. Besides regular income from rents and leases, gains from capital appreciation of real estate/ infrastructure also form an income for the unit holders.

India's first REIT was floated in 2018 by a Bengaluru-based real estate developer backed by Blackstone Group LP, a global private equity firm.[22] Globally, REITs/InvITs are emerging as a great way for conscious investors to take exposure in green real estate. In August 2019, UK-based real estate firm Hendrson Park bought Irish commercial property investment trust, Green REIT in a deal that values the firm at 1.34 billion euros, a 25-percent premium to its share price before the sales process kicked off in April.[23] It is noteworthy that when Green REIT put itself up for sale it was trading at a discount to the value of its property portfolio.

OPPORTUNITIES IN RETAIL BANKING

Going green is not only limited to large-scale infrastructure projects such as solar and wind energy, and water management, but also smaller ones such as green buildings and habitats, clean transportation, pollution prevention and control systems, and energy-efficiency projects. Retail banks can support the mass adoption of these projects as they are deeply rooted locally and serve both businesses and individuals. Moreover, as retail customers are becoming more aware of the impact of their actions on the environment, it is also an opportunity for banks to fulfill their fiduciary relationships, improve their market share, increase profit, create customer loyalty and enhance their brand image both by adopting green practices such as paperless banking and introducing products that reward clients for going green.

While a variety of green banking products have emerged globally, this brief takes China as a good case study for India. In PRC, banks have been active in promoting green transformation and products innovation. In 2014, 29 major banks signed the 'Joint Undertaking of the Chinese Banking Industry Regarding Green Credit' and formulated their own policy framework under which they have developed over 50 green credit products, covering services such as accepting green assets as collateral or pledges, and financing energy efficiency, emission reductions, and new-energy projects. The

Indian retail banking sector is still evolving and has the opportunity to not only offer a diverse range of green products but also integrate environmental incentives in mainstream offerings such as business or project loans as well as housing and vehicle credit.

Green Building Finance: Buildings in India's residential and commercial sector consume over 37 percent of the country's electrical energy[24] and certified green buildings can deliver energy savings between 20-30 percent and water savings of up to 30-50 percent.[25] As per the Indian Green Building Council (IGBC), 'green buildings' are those that use less water, optimise energy efficiency, conserve natural resources, generate less waste, and provide healthier spaces for occupants. Several green building certification agencies have emerged in recent years. The IGBC (Indian Green Building Council) was formed in 2011 and has more than 5,400 projects registered with a total footprint of more than 6.92 billion square feet. The GRIHA (Green Rating for Integrated Habitat Assessment) came up in 2007 and has more than 1,700 registered projects and 507 certified professionals. The BEE (Bureau of Energy Efficiency) has also developed an Energy Performance Index for office buildings.

According to an IFC report which analyses the climate investment opportunities in six urban sectors across Asia Pacific, the greatest investment opportunity in the region lies in green buildings at US$17.8 trillion by 2030.[26] With 70 percent of the buildings (housing, retail, commercial, hospitality and health) needed by 2030 yet to be constructed, India is at the threshold of a construction boom and has the potential to emerge as the world's largest green building market. According to Anarock, a property consultant, India's green building market is expected to double by 2022 at 10 billion square feet, valuing around US$30-50 billion.[27] The IFC estimates an investment opportunity of US$1.4 trillion in green buildings with US$1.25 trillion in the residential and $228 in the commercial sector.[28]

Given the market size and well-developed certification mechanism, financing green buildings across the housing, retail, commercial, hospitality and health sectors presents a viable market as well as opportunity for banks and financial institutions to support green growth. However, currently the number and type of products offered by retail banks in India is limited to green home loans or green mortgages and no information on the share of green home loans to total housing credit is available. By mainstreaming green value in all construction loans through innovative products and approaches that incentivise the uptake of green buildings, retail banks can deliver a major thrust to the green growth agenda.

Green Vehicle Finance: The Government of India has announced a big push towards electric vehicles under its Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme. Phase 1 of FAME was launched in 2015 and Phase 2, in March 2019. NITI Ayog estimates that if FAME II and other measures succeed, India could realise EV sales penetration of 30 percent of private cars, 70 percent of commercial cars, 40 percent of buses, and 80 percent of two- and three-wheelers by 2030.[29] It is estimated the lateral

shift would significantly reduce the pollution in cities and lessen India's dependence on oil imports. Given these dynamics, the segment is an unprecedented opportunity for banks and financial institutions to contribute to India's transition to a low-carbon economy and reduce the vehicular pollution in the cities.

However, electric mobility in India is still at a nascent stage. The high up-front cost of acquiring an electric or hybrid vehicle has severely hampered the offtake and the key to resolving the deadlock remains in solving the financial puzzle by providing products which incentivise the purchase of electric vehicles. The State Bank of India, for instance, has introduced the country's first 'Green Car Loan' (Electric Vehicle) to encourage customers to buy electric vehicles. The scheme offers a 20 basis points smaller interest rate than on the existing car loan schemes. Further the loan comes with the longest repayment period of up to eight years.[30] As discussed earlier, bundling and securitisation of electric vehicle loans could support lowering the cost of finance and increasing the availability of capital.

Green Insurance: The United Nations Environment Program describes green insurance thus: "In the narrow sense, green insurance usually refers to environmental pollution liability insurance, while in the wider sense, it can be extended to cover a variety of insurance schemes related to environmental risk management, including climate insurance that highlights environmental risk resilience and innovative insurance products that provide safeguards for low-carbon solutions."[31] Insurance can help prevent the risks of environmental pollution and share the responsibilities of damage compensation. From a broader perspective, compulsory requirements for environmental pollution liability insurance for polluting companies will reveal future pollution costs and thus restrain investments in high environmental risk products. Therefore, green insurance should be an important element of the green finance system. The PRC, for instance, has promulgated a mandatory pollution liability insurance law, and the pilot was launched by Shenzhen. The Shenzhen Compulsory Environmental Pollution Liability Insurance Pilot Business Catalog specifically names 1,066 Shenzhen-based companies across ten industries including electroplating, oil depots, dangerous chemicals and printed circuit boards that will be required to purchase environmental pollution liability insurance.[32]

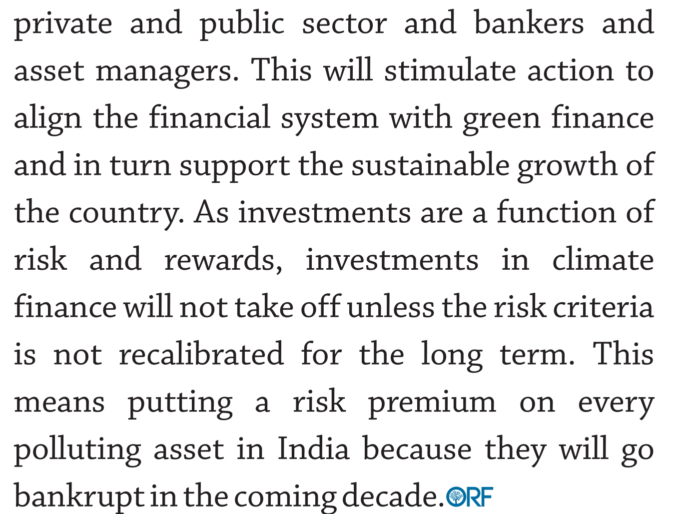
In June 2016, the RBI Financial Stability Report advocated the green insurance concept: "Green insurance helps in mitigating and managing ecological and environmental risks. Such insurance policies cover potential liabilities arising from the pollution of water, land or air or collateral damages to the ecology and environment by policyholders."[33] It also said, "These policies will help in not only providing indemnities for ecological and environmental losses but will also help in the restoration of ecological damages." Although not mandatory currently, the pollution insurance market is evolving in India and companies like TATA AIG and ICICI Lombard have introduced green insurance products.

CONCLUSION

India is in a race against time in meeting its climate goals and greening all finance has

become an imperative. This requires concerted efforts, a cohesive approach and the collective vision of policymakers, regulators and actors in the financial system. The way forward is to accelerate the dialogue at the highest level and initiate a narrative around sustainable finance.

There should be a unified approach around taxonomy, green guidelines, financial products, as well as defining the roles of



private and public sector and bankers and asset managers. This will stimulate action to align the financial system with green finance and in turn support the sustainable growth of the country. As investments are a function of risk and rewards, investments in climate finance will not take off unless the risk criteria is not recalibrated for the long term. This means putting a risk premium on every polluting asset in India because they will go bankrupt in the coming decade. ORF

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ENDNOTES

1. Union Budget 2019-20, *Union Budget Speech*, July 2019
2. Stanford University's Earth System Science. *Journal proceedings of the National Academy of Sciences*. April 2019.
3. Earth and Space Science News, *Devastating Floods Hit India for the Second Year in a Row.* August 2019
4. Mongabay-India is a conservation and environment news and features service. The service was founded in 1999 and headquarters of Mongbay are located in California, USA.
5. Niti Ayog. *Composite Water Management Index*. June 2018.
6. Air Visual, *World's most polluted cities 2018 (PM 2.5)*, March 2019. https://www.airvisual.com/world-most-polluted-cities
7. DownToEarth. *Delhi loses 80 lives to air pollution every day, says study*. December 2018: https://www.downtoearth.org.in/news/delhi-loses-80-lives-to-air-pollution-every-day-says-study-50222
8. United Nations Framework Convention on Climate Change, *India INDC to UNFCC*, October 2015.
9. Government of India: *Economic Survey 2015-16-Chapter 8*, February 2016. https://www.indiabudget.gov.in/budget2016-2017/es2015-16/echapvol2-08.pdf
10. Cambridge Institute of Sustainable Leadership, *TCFD Report 2018*, May 2018
11. Economic Times, *IREDA may be converted into a Green Bank*, May 2016. https://economictimes.indiatimes.com/industry/energy/power/ireda-may-be-converted-into-a-green-bank/articleshow/52111096.cms?from=mdr
12. Climate Bond Initiative. 2018 Green Bond Market Highlights. January 2019.
13. Markets Media. Green Bond Issuance May Reach $250bn In 2019. December 2019
14. Observer Research Foundation, Moving from Growth to Development: Financing Green Transitions in India, April 2019.
15. The Hindu Business line. *Why aren't Indian companies warming to green bonds?*. August 2019. https://www.thehindubusinessline.com/specials/clean-tech/why-arent-indian-companies-warming-to-green-bonds/article29091086.ece
16. Economic Times, *NPS schemes can now invest more in debt*, April 2019. https://economictimes.indiatimes.com/wealth/invest/nps-schemes-can-now-invest-more-in-debt-move-aimed-at-improving-scheme-performance/articleshow/68608262.cms?from=mdr
17. ADB, *Proposed Guarantee Facility Solar Power Generation*, April 2011. https://www.adb.org/sites/default/files/project-document/61800/44941-01-ind-rrp.pdf
18. Department of Financial Services, *India Infrastructure Finance Company Limited*, https://financialservices.gov.in/banking-divisions/Financial-Institutions-and-others/India-Infrastructure-Finance-Company-Ltd-%28IIFCL%29?page=1
19. Yes Bank, *Innovative Pathways to Sustainable Finance in India*. October 2018.

20. Thinking Ahead Institute. *The world's largest 500 asset managers*. October 2019

21. Economic Times, *Why India is turning into ESG funding hotspot*, February 2019. https://economictimes.indiatimes.com/markets/stocks/news/why-india-is-turning-into-esg-funding-hotspot/articleshow/67938722.cms

22. Mint, *India's first REIT is finally here. Should you invest?* March 2019. https://www.livemint.com/money/personal-finance/india-s-first-reit-is-finally-here-should-you-invest-1552826505402.html

23. Bloomberg. *Henderson Park Bets $1.5 Billion on Green REIT in Ireland*, August 2019

24. The Energy Resource Institute (TERI), https://www.teriin.org/buildings

25. The Energy Resource Institute (TERI), ate Investment Opportunities, ncing Green Transitions in India,clined. he list in 2014 anIndian Green Buildings Council, IGBC Green New Buildings Rating System, September 2014.

26. International Finance Corporation. *Climate Investment Opportunities in Cities*. 2016.

27. Hindu Business Line, *India's green building market to double by 2022*, March 2018. https://www.thehindubusinessline.com/news/real-estate/indian-green-building-market-to-double-by-2022/article23391602.ece

28. International Finance Corporation, *Climate Investment Opportunities*, November 2017

29. Niti Ayog, India's Electric Mobility Transformation, Progress to Date and Future Opportunities. April 2019.

30. Hindu Business Line, *SBI launches Green Car Loan*, April 2019. https://www.thehindubusinessline.com/money-and-banking/sbi-launches-green-car-loan/article26912775.ece

31. United Nations Environment Programme. China Green Finance Progress Report. November 2017: http://unepinquiry.org/wp-content/uploads/2017/11/China_Green_Finance_Progress_Report_2017_Summary.pdf

32. Paulson Institute, *Shenzhen Establishes Pilot for Mandatory Environmental Pollution Liability Insurance*, August 2018: https://www.paulsoninstitute.org/green-finance/green-scene/shenzhen-establishes-pilot-for-mandatory-environmental-pollution-liability-insurance/

33. Reserve Bank of India. RBI Financial Stability Report. June 2016: https://m.rbi.org.in/Scripts/FsReports.aspx

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