Rajeshwar Rao: Building a robust ecosystem for green and sustainable finance in India

Valedictory address by Mr Rajeshwar Rao, Deputy Governor of the Reserve Bank of India, at the Credit Summit 2025, organised by the Bharat Climate Forum, New Delhi, 17 April 2025.

* * *

Distinguished guests, participants, ladies and gentlemen, Good afternoon

At the outset, let me thank the organisers for inviting me and giving me an opportunity to deliver the valedictory address and share some of my thoughts on a subject which continues to engage national as well as global attention. I believe there would have been fruitful deliberations on the topics of green and sustainable finance and the role of financial institutions, opportunities and challenges, aligning of regulatory and policy worlds, facilitating global financing, and integration of climate change aspects in credit risks of the financial institutions. Each of these topics require detailed deliberations and collectively they form the building blocks for creation of a robust ecosystem for green and sustainable finance for the economy and financial system at large.

The critical enablers to attract green and sustainable investments that need to be put in place for financial ecosystem has been and continues to be a subject of deliberations at various fora be it G20 Sustainable Finance Working Group, the international standard setting bodies such as the Basel Committee on Banking Supervision, the International Sustainability Standards Board as well as the Financial Stability Board, and the Network for Greening the Financial System. These enablers range from adoption of a national green/ climate finance taxonomy, globally aligned disclosure standards for climate related financial risks, and robust assurance and verification process. Green and sustainable finance being a niche area, requires us to be mindful of greenwashing risks. Moreover, there are certain inherent risks and conditions that need to be met from the risk-reward perspective in green and sustainable lending/ investment decisions. Let me delve a bit into these aspects and try to build a narrative on how we can collectively build and develop a robust ecosystem for green and sustainable finance in India.

The Green and Sustainable Finance Taxonomy

When we talk of green and sustainable finance, the primary consideration is understanding as to what defines it. A national level taxonomy is crucial as it serves as the first building block that aligns the entire ecosystem, be it the government, regulators, other policy makers, financial institutions and borrowers/investors. This is under development in India. You are aware that an announcement to this effect was made by the Hon'ble Finance Minister in the Budget Speech for 2024-25. Meanwhile, we at Reserve Bank of India have till this juncture used the Sovereign Green Bonds (SGrB) framework for mapping of the green and sustainable sectors. This was also used when we issued a Framework on acceptance of Green Deposits in April 2023, which aligns with the SGrB framework towards identification of the green sectors. Thus,

as a robust ecosystem enabler, the first building block would be a national level taxonomy for identification of the sectors and alignment of various regulatory dispensations along this taxonomy.

Consistent and harmonised Regulatory approach

The second building block would be a consistent and harmonised regulatory approach towards assessment of climate change risks and fostering of related financing. The climate change risks, and the related issues are sector agnostic, with significant inter-dependencies. To ensure that the net zero target announced by the Hon'ble PM at COP26 in 2021 is achieved by 2070, it would require players in the economy and financial system to fine-tune their respective actions/ measures, so that as a country, we can achieve this target. It would also require a consistent and harmonised approach among the concerned regulators and authorities.

Assurance and Verification Function

The next building block would be the development of robust assurance and verification functions. Assessment of climate related financial risks, green and sustainable finance are context specific, with need for a clear and objective demonstration of end use of funds. Transparency and related checks and balances that provide assurance on end use of the funds related to green and sustainable finance is extremely important. Given the technical expertise needed for assurance on climate related aspects, as well as adherence to benchmark assurance standards, there is a need to ensure credibility of this assurance and verification process. This would mean defining the requirement of consistent standards detailing expertise and skills that any assurer or verifier must possess to provide these services. A consistent approach across the financial system on the processes would provide confidence to the investors, which would then operate as a key enabler for increased flow of credit to the relevant sectors while addressing concerns around risks of greenwashing.

Transparency and Disclosures

The fourth aspect is the need for transparency in climate related disclosures. This is essential for financial institutions to assess and manage climate related financial risks, ensure transparency, and support long-term financial stability. It also underscores the need for coherence among various sectors on disclosure aspects. To give an example, if a financial institution is to make any lending or investment decision or assess its portfolio risks, or is mandated to make climate related financial disclosures, then it must depend on the borrowers to provide the requisite information. This means not just putting in place an enabling mechanism for both the lender and the borrower but also having consistency across the financial system for seamless flow of data and information. The Reserve Bank of India had published a draft "Disclosure framework on Climate-related Financial Risks", in February 2024 for public consultation. The draft guidelines require Regulated Entities to make qualitative and quantitative disclosures with respect to climate related financial risks based on four broad areas, viz., (i) governance (ii) strategy (iii) risk management and (iv) metrics and targets. We have received comprehensive feedback on the framework basis which the guidelines are being finalised.

Complexities of climate change modelling and data considerations

Another area where consistency and harmonisation are required is compilation of data. For purpose of climate related financial risk, assessment and related facets of green and sustainable finance, be it transition or adaptation finance, data is very crucial. One of the limitations for climate risk assessment at this juncture is the need for technical expertise coupled with unique data requirements. Climate related data, understanding nuances of the climate patterns and the impact on account of climate change, is a highly technical and skilled job. Climate scientists across the world use super computers to study climate and weather patterns and its related aspects. It involves complex modelling and is resource intensive. If we depend on a financial sector expert, who uses financial modelling for assessing quantitative estimates and then arrive at the financial sector impact, this expertise alone may not suffice. The two skill sets needed for climate scenario analysis and climate finance risks are completely different in that as climate scientists are not experts in financial modelling and financial modellers have limited expertise in area of climate science. This makes the job of assessment of impact of climate change risks on financial sector more difficult and would therefore require collaboration amongst the two.

Given the impact of climate change risks, viz., physical and transition risks and the impact it has on the value of real assets and financial instruments, understanding these risks is crucial for lenders or investors from a risk-reward perspective. Thus, for uniform and consistent assessment of risks across the financial system, the aspect of disclosure and data becomes crucial. This will remove the misalignment of information between borrowers and lenders/ investors and not only allow a fair assessment of climate change risks but also foster green and sustainable finance.

As a part of this endeavour, Reserve Bank had in the monetary policy statement of October 2024, announced the formation of Reserve Bank - Climate Risk Information System (RB-CRIS). It is envisaged to bridge data gaps and provide standardised datasets to the Regulated Entities (REs) on three aspects – Physical Risk Data, Transition Risk Data, and Carbon Emission Factor Database. The physical risk data part would focus on providing pan-India hazard and vulnerability data. As regards the transition risk, the plan is to arrive at India specific transition scenarios and use them to provide sectoral benchmark transition pathways. Finally, recognising the need to standardise the emission calculation across the sectors, a consistent approach towards carbon emission methodology and the uniform database is also being proposed. Under RB-CRIS, the RBI intends to bring all the stakeholders together and bring coherence and bridge the existing data gaps.

Climate change and credit risks

Climate change risks impact the financial institutions, financial system and real economy through the traditional risk categories and one risk factor that prominently stands out is credit risk. Climate change would lead to additional operational costs for the borrowers with an increased possibility of loss of their assets, leading to increased probability of default by the borrowers. The real economy is also impacted through various means such as direct property losses, crop losses, loss of employment and livelihood losses. Another facet of credit risk in climate change emanates from the need to promote green and sustainable financing. The fact that the net-zero technologies

driving the transition to decarbonisation, are at various developmental and evolving stages, itself signifies a significant increase in credit risks. Thus, there is a dichotomy wherein on one hand there is a need for incentivising green and sustainable finance and on the other there is an increase in inherent risks from encouraging such financing. So, the key issue is how to manage this dichotomy? While the prudential aspect, i.e., the risk management consideration, is the prime concern for any regulator, the flow of credit is generally market determined albeit mandated at times through specific directed lending policies. Therefore, a delicate balancing act needs to be performed by the regulators to avoid any imbalance from the broader financial stability perspective.

Challenges to Green and Sustainable Finance and Global Financing

Challenges to green and sustainable finance are many. However, they can be broadly categorised in two specific buckets – one is the structural issues while the other relates to the quantum of financing available. From the structural perspective, the main challenges would be, high-upfront capex requirements given the specific nature of required project loans/ investments; perceived high inherent risks given the evolving nature of climate related technologies; asset liability mismatches which is ubiquitous to any lending/ investing activity, more so in case of project loans given the longer maturity, commencement and gestation timelines; and knowledge and information gaps, given the technical nature of assessment of climate change risks and appraisal of climate related technologies.

As to the quantum of financing available, there are various pull and push factors at work, in the context of global capital mobilisation. The global capital stock of lending/ investments flows also follows a risk-reward perspective. The pull factors are the specific domestic enablers which may drive investor appetite. This would be a function of robustness of the financial ecosystem, liquidity, and depth of the financial markets, transparency and disclosure standards, rigour of verification and assurance mechanism, development and dissemination of risk assessment models for climate-related risks, data and capacity gaps, long-term strategy on transition plans, and availability of pool of bankable projects. The push factors would be the global commitment of funds for climate related funding. The recent geo-political developments could possibly lead to the weakening of these push factors. This is a developing story and there is a need to closely monitor the wider implications. Given the huge requirement for funding of the green transition, the availability of global funds remains critical.

The inherent risks in the green and sustainable finance, skews the risk-reward considerations leading to increased cost of credit. This leads to demand by private sector investors/ lenders for appropriate derisking mechanisms through grants/ guarantees/ philanthropic capital/ financial incentives, etc. Mobilising such capital on scale, would be a challenge. A related issue is the availability of bankable projects. Though, bankable projects invariably find credit, there are funding challenges with partially bankable and non-bankable projects. As you all may be aware, there are two aspects of climate change finance we need to consider, one is mitigation and other is adaptation. Mitigation is used for transition purpose and adaptation for resilience purpose. Financing in case of mitigation can be associated with cash flows, but it

becomes difficult for adaptation and resilience, as the associated cash-flows are difficult to assess leading to sub optimal capital flows towards sustainable investments in resilient infrastructure and adaptation.

Augmenting green and sustainable finance

Given these limitations, there is a need for concerted efforts to overcome these challenges and augment green and sustainable finance. This would require a multi-pronged approach. Blended finance, which combines concessional public funding with private sector investment can be one of the main conduits of the credit flow by de-risking climate related projects. India is a diverse country, with varying needs of climate mitigation and resilience, meaning, a coastal area would require a differentiated approach as compared to the regions near the Himalayas. We would need practical implementable solutions, curated to specific issues. Tools like guarantees, sustainability-linked loans, and climate-resilient bonds could be explored to further enhance private sector involvement.

The problem of climate change needs scalable solutions, and it cannot come by entirely relying on public funds. There is thus a need to develop a market wherein the risk-reward perspective itself takes care of the scale of requirements. Even within adaptation space, there are pockets which can be associated with cash flows. Climate change risks and financing needs to be viewed also as an opportunity. Innovative solutions which not only mitigate financial risks associated with climate change but also incentivise private investors to participate in climate projects need to be explored.

Developmental Financial Institutions (DFIs) would have to play a major role in channelising the flow of credit for green and sustainable finance. There is a need for more collaboration between DFIs, Multilateral Development Banks (MDBs), National Development Banks (NDBs) and Vertical Climate and Environmental Funds (VCEFs). Given the current geo-political developments, with the world moving to a multi-polar world, there is a need for certain reforms within the MDBs as well greater representation from/ credit to the global south.

Technology and innovation would play a major role in mitigation of climate change risks while creating a robust ecosystem for green and sustainable finance in the country. This requires developing a platform that would bring together the REs and technology solution providers, to facilitate an orderly development of required technological solutions to mitigate climate related risks and overcome the current limitations and foster sustainability linked credit flow. The Reserve Bank has on April 09, 2025, included sustainable finance and climate risk mitigation as a topic under the Theme Neutral "On Tap" application facility under the Regulatory Sandbox which could help develop and test innovative solutions.

The Way Forward

One term which often finds mention in global context has been "inter-operability". While as a concept, inter-operability seems ideal in a just and equal world, in these times in a world with stark inequalities, mandating inter-operability with similar level of commitments, may not be the ideal way and there is a need for a differentiated approach. The Emerging Markets and Developing Economies (EMDEs) have started

this journey to achieve seamless integration and inter-operability. However, there is yet some distance to be covered. Though, historical examples from high-income countries demonstrate the potential to decouple economic growth from emissions, for EMDEs this would require strong international co-operation, significant investments, and effective policies. Further, any transition from carbon intensive economy to a greener economy is not a smooth ride and there are going to be disruptions be it restructuring, reallocation of resources and financial flows as also displacement of workers and have a bearing on land use. Thus, as we traverse this journey there is a need for delicate balance to ensure that socio-economic implications are carefully considered and addressed.

Going forward, we would also need to arm our respective organizations with skilled manpower and technical expertise to spearhead the transformation in addressing the challenges of climate change. With this end in view, Reserve Bank has been conducting extensive capacity building programmes for the REs. The focus has been on bringing international experts to share their experience on green and sustainable financing, stress testing and scenario analysis, credit risk assessment, transition planning, physical risk assessment, and global best practices for governance, strategy and risk management.

Conclusion

India occupies a unique position in the global climate context. As one of the world's fastest-growing economies, it faces the dual challenge of fostering and sustaining economic development while addressing climate change. On the one hand, it is highly vulnerable to climate risks while on the other hand, it has the potential to lead the global green transition. While we have made a fair start, there are several challenges that remain to be addressed. The risk management architecture in REs for climate related financial risks is still evolving and further concerted efforts are required. Further, a comprehensive assessment on the extent of losses that may be caused due to climate change risks in the future requires more granular approach. There is a need to build technical expertise and competencies for comprehensive assessment and mitigation of climate change risks. There is also a need for a more harmonised and coherent regulatory approaches across various sectors so that the sectoral dependencies may be addressed in an efficient manner. While the need for the world to transition to a greener tomorrow is given, there are several challenges on the way, and they need to be addressed in a holistic manner. We also need a collaborative and sensitive approach to address the various issues given the impact on the economies and the societies at large. I am confident seminars such as these give an opportunity to further the work to achieve these objectives.

Thank you.

Inputs provided by Sunil Nair and Saket Kumar are gratefully acknowledged.