Climate Financing in India:

An Interplay of the Private and Public Sector

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Abstract

Climate Change is among the most pressing issues across the world to which a solution cannot be found without collective global action. Climate Finance is the pertinent course of action to ensure that nations make financial commitments to decarbonize their finances and reduce their emissions. Climate Finance in India is a concoction of funds from a variety of sources, both domestic and international. However, the funding for climate change in India is largely a consequence of domestic budget, both from the public and the private sector. Domestic Finance in the public sector has been raised through budgetary allocations, institutional setups like the Climate Change Finance Unit (CCFU) and various funds such as the National Clean Energy Fund (NCEF) and the National Adaptation Fund (NAF). Private sector in India too has left its mark on funding activities for climate change through institutions like banks and other financial institutions and mechanisms like the Green bonds. The paper also throws light upon the challenges faced in financing climate change activities and offers suggestive measures for betterment of administrative actions undertaken to make climate action plans a success.

Keywords: *Climate Change, Climate Finance, UNFCCC, mitigation, adaptation, public and private sector, budgetary allocations*

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Introduction

Understanding Climate Financing

The term 'Climate Finance' was introduced and defined by the United Nations Framework Convention on Climate Change (UNFCCC) as a form of financing directed towards activities aimed at mitigating and adapting actions towards climate change. These activities include attempts at reducing carbon emissions, lowering the content of green-house gases and enhancing the resilience of the ecology and human life as a whole[1]. Climate financing, thus includes all the funding processes, whether through public or private financing, that address climate change at grassroot, national or transnational level. On the contrary, in a narrower sense, the term refers to transfer of financial and other aid from developed nations to developing nations in compliance with the financial commitment made by the member nations under Article 9 of the Paris Agreement[2]. This definition is in consonance with the principal of "common but differentiated responsibility and respective capabilities", among the primary objectives of the UNFCCC.

Climate financing largely aims at realizing two main purposes in respect of climate change, i.e., to mitigate and adapt. Copious amounts of investments are necessary for decarbonization and reduction of greenhouse gases, on the one hand, and equipping humanity and economy with sufficient resources to adapt to the adverse impacts of climate change on the other[3]. The UNFCCC, Paris Agreement and Kyoto Protocol, all encourage the financial flows from the affluent countries to the less privileged nations as the developed nations indeed bear more responsibility for environmental damage that led to climate change in the first place.

As per studies conducted both at a global and domestic level, the major areas where climate finance is required includes revamping the existing energy sector, mechanisms for effective damage control, building resilience, replacement of methane and protection of natural capital. Various financial institutions have been put to use in the process of climate financing such as:

- Banks to facilitate transfer of capital cross borders
- Financial market instruments to price energy commodities
- Investment vehicles for promotion of renewable energy companies
- Derivatives markets to hedge and exchange risks related to energy prices

Climate Finance- The Indian Perspective

The Economic Survey of 2011-2012 introduced the term climate finance into official usage by providing a detailed report on domestic and international sources of finance. Climate finance

[1] Introduction to Climate Change Unfccc.int. Available at: https://unfccc.int/topics/introduction-to-climate-finance (Accessed: 22nd September, 2023)
[2] UN Doc. FCCC, CP, 2015, 10, Add.1 Decision 1/CP.21
[3] U.S. Department of Treasury. "Remarks by Under Secretary for International Affairs Jay Shambaugh at the Institute of International Bankers" Annual Washington Conference

in India is an interplay of resources flowing in from international and domestic sources, employed through the Budget administered by various government departments or through large-scale projects undertaken by private players and non-governmental organizations working towards climate change. Although, the role of international funding is vital, at present most of the financing for mitigation of climate change is done through budgetary allocations. The Economic Survey of India, in 2015, predicted that at least 2.5 trillion dollars would be necessary to meet India's climate change needs between 2015 and 2030. The major investors to climate finance in India include the Union and the State Governments, Non-Governmental Organizations, international agencies, private investors, banks and other financial institutions[4].

The Climate Change Finance Unit: The Institutional Response by the Government

The Government of India responded to the climate crisis by providing an institutional set up under the Department of Economic Affairs in the Ministry of Finance in the form of the Climate Change Finance Unit (CCFU) in 2011. The Unit was to comprise of 4 members holding the posts of Economic Adviser, Joint Director, Deputy Director and Economic Officer. Although, created to encourage analysis on climate change, the CCFU has majorly played the role of a representative for the government on international platforms[5].

The Climate Change Finance Unit was to serve as a nodal agency and perform the following functions:

• Guide the Ministry regarding negotiations on climate change

• Represent the Finance Ministry in international and domestic forums on climate change

• Draft suggestions to aid government's policy-making on climate change

• Develop the capacity to predict and tackle the issues arising from climate change

• Survey the steps taken by other national governments in compliance with UNFCCC's objectives

• Undertake the duty of determining the Green Climate Fund

• Evaluate the financial pledges made to the developing countries by the developed countries

Classification of Climate Finance in India

Domestic Public Finance for Climate Change

The Union Government largely allocates funds for financing climate change through either direct budget allocations, or indirectly routing funds for climate change through the Union Budget, and methods to leverage investment by private players. The major funds routed through the Union Budget as a part of national climate missions include:

[4] Anju Sharma, Benito Muller and Pratim Roy, Consolidation and Devolution of Climate Finance in India: The case of India, European capacity Building Initiative- Oxford Climate Policy(2015).
[5] Divya Singh, Climate Finance Architecture in India, CBGA (2017).

1. National Clean Energy Fund (NCEF)-

The Union Budget 2010-11 introduced the National Clean Energy Fund as a non-lapsable fund under Public Accounts for the purpose of furthering clean energy projects amongst both the sectors of the economy. The NCEF primarily provides funding in the form of loans which cover up to 40% of the total cost of the project after the Inter-Ministerial Group led by the Finance Secretary determines its merits. The NCEF provides funds mainly for projects envisioned towards innovation and research in Clean Energy technology. However, the NCEF has not particularly been successful in its endeavour as the government has admitted to using the funds for meeting fiscal deficits[6].

2. National Adaptation Fund (NAF)-

This fund was introduced by the Union Government with a budget allocation of Rs. 350 crores with the aim to support the vulnerable states and union territories to be able to raise the cost of adaptation. The National Bank for Agriculture and Rural Development (NABARD) was made the Implementing Entity for the fund. The NAF was introduced to strengthen the initiatives taken under the National Action Plan for Climate Change (NAPCC) and the State Action Plan for Climate Change (SAPCC).

3. Compensatory Afforestation Fund (CAMPA)-

Forests aid in sinking carbon emissions, thereby, accelerating the mitigation measures for climate action plan. The CAF was formed by an order of the Supreme Court to protect forests after the rampant failure of the Central Government to comply with the provisions of the Forest Conservation Act, 1980. By 2012, this fund was able to raise Rs. 25,000 crores, but the funds are not to put to use due to differences between the Central and the State government over its allocation. The Supreme Court intervened yet again and led to the enactment of the Compensatory Afforestation Bill in 2016 for the purpose of preservation and conservation of forests and their resources[7].

The Budgetary Allocations

From time to time, the Government of India makes attempts to undertake national missions for mitigation and adaptation to climate change by routing funds through the Union Budget. The executing agency are the various government ministries allocated under the national missions. Some of the eminent and successful missions involves:

National Solar Mission- This mission, under the Ministry of New and Renewable Energy, received budgetary allocation of Rs. 8795 crores in the 12th Five Year Plan (2012-2017). The achievements of this mission involves the installation of solar thermal collectors and grid-

[6] Panda, Gyana Ranjan and Narendra Jena, Framework and Performance of National Clean Energy Fund, Centre for Budget and Governance Accountability, New Delhi(2012).
[7] Vasudha Foundation, Handbook of Climate Finance in India, Vasudha Foundation. http://www.vasudha-foundation.org/wp-content/uploads/Climate_Finance_Handbook.pdf (2014).

connected solar generation panels. This mission largely attempts to take the burden off of coal and hyrdro-power for electricity generation.

National Mission for Enhanced Energy Efficiency- the Ministry of Power was in-charge of this mission among its many achievements are the distribution of LED bulbs under the UJALA scheme and drastic reduction in the cost of light bulbs from Rs. 500 to Rs. 204[8].

Green India Mission- This mission was introduced in 2010 for implementing a scientific approach for afforestation. The mission encouraged the involvement at the grassroot level for protection of forests under the leadership of the Ministry of Environment and Forests[9].

Other Steps taken by the Government

Besides budgetary allocations, the government has attempted to support climate action by measures such as imposing high rates of taxes on petroleum and diesel, proving cuts in the form of subsidies, using market mechanisms like Perform Achieve and Trade (PAT) and by regulatory regimes in the form of Renewable Purchase Obligations. The PAT scheme stresses on energy intensive industries and attempts to reduce their energy consumption through market mechanisms which also benefits the industry and makes its activities economical.

Another initiative of the government is the Indian Renewable Energy Development Agency (IREDA), whose authorized capital was raised substantially to encourage novel measures of credit lending for renewable energy projects. Under this project, tax concessions were given infrastructure bonds related to renewable energy projects. IREDA offers loans for almost 70% of the total cost of the project.

Role of Private Sector in Climate Financing

In the face of escalating climate challenges, the private sector has emerged as a dynamic force, driving transformative change and innovation in the realm of climate financing. Businesses today are proactively engaging in sustainable practices, recognizing the intertwined relationship between profitability and planetary health. This paradigm shift reflects a broader realization within the corporate world: environmental stewardship is not just a moral obligation but also a strategic imperative.

Private climate finance is mostly scaled up by international and national public finances. There are a number of sources that helps in the process of private financing. A few examples are as follows:

1. Financial institutions and public sector banks can help in mobilising funds for private sector, such as State Bank of India.

2. Multilateral or bilateral international credits from institutions.

3. A number of International and local investors.

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[8] IFMR (2015b), National Mission for Enhanced Energy Ef�ciency, Chennai.
[9] IFMR (2015f), Green India Mission, Chennai.

The dynamics of Indian business is slowly changing in India. Steps are being taken to form a mixed environment that could integrate climate concerns in it. Large private sector companies in the Indian markets comply with the Environmental and Social Safeguards (ESS).

Indian green bond issuances have reached a total of $21 billion as of February 2023.[10] The private sector was about 84% of it. The Greenko Group is the largest in India to proceed with the green bonds.

Green bonds are a financial instrument specifically designed to fund projects with environmental benefits. Private companies, as well as public entities, can issue green bonds to raise funds for environmentally sustainable initiatives. cGreen bonds serve as a bridge between the financial markets and eco-friendly projects. They enable private companies to raise capital specifically earmarked for investments in renewable energy, energy efficiency, green infrastructure, and other environmentally sustainable initiatives. By facilitating the flow of funds toward green projects, these bonds play a pivotal role in the global fight against climate change.

As per the REN21 Renewables 2020 Global status Report, the renewable energy projects and programs attracted US$64.4 billion of investment in the years 2014 and 2019. In 2019, there was an US$11.2 billion investment. In 2021, altogether, India has seen a sharp increase of US$18.8 billion of private investment in the renewable energy sector.[11]

Indian investors are increasingly recognizing the importance of environmental and social safeguards in their investment decisions. Environmental, Social, and Governance (ESG) factors are becoming integral to investment strategies. Indian investors are evaluating companies based on their ESG performance, including their environmental impact and social responsibilities. here is a rise in sustainable investment funds in India, managed by both public and private entities. These funds specifically focus on companies that adhere to stringent environmental and social standards.

“ESG has gone beyond being a mere talking point to becoming a key driver of dealmaking, with the share of ESG-aligned investments reaching almost 13% of the total PE-VC investments in 2022 at nearly $7.9 billion, from around 5% in the previous few years,” said by Prabhav Kashyap.

Indian investors, both individual and institutional, are increasingly aware of the importance of environmental and social safeguards. As awareness grows and regulations become more stringent, it is expected that responsible investing practices will become even more deeply ingrained in the Indian investment landscape.

[10] *India incorporates green bonds into its climate finance strategy.* Available at: https://blogs.worldbank.org/climatechange/india-incorporates-green-bonds-its-climate-finance-strategy (Accessed: 25th September, 2023)

[11] *The Indian renewable energy sector is becoming increasingly driven by private sector.* Available at: https://timesofindia.indiatimes.com/blogs/voices/the-indian-renewable-energy-sector-is-becoming-increasingly-driven-by-private-sector/ (Accessed: 25th September, 2023)

Then, there are the International credit lines, it plays a major role in private sector climate financing. International credit lines provide private sector entities with access to substantial capital. By easing financial constraints, these credit lines empower businesses to contribute significantly to climate financing initiatives. International credit lines encourage cross-border collaborations. Companies from different countries can join forces to develop and implement climate-friendly projects. This fosters knowledge exchange, promotes best practices, and accelerates the development and adoption of innovative green technologies. Climate-related projects often involve substantial financial risks. International credit lines, backed by global financial institutions, mitigate these risks by offering favourable terms, lower interest rates, and longer repayment periods. This makes investments in climate initiatives more attractive to private sector entities, encouraging their active participation. International credit lines are often aligned with international climate agreements and goals, such as the Paris Agreement. By adhering to these global benchmarks, private sector investments supported by international credit lines contribute directly to the fulfilment of international climate commitments, fostering a sense of shared responsibility.

International credit lines play a pivotal role in catalyzing private sector climate financing. By breaking financial barriers, encouraging cross-border collaborations, mitigating risks, and promoting innovation, these credit lines empower businesses to become active agents of change. In the collective effort to combat climate change, international credit lines serve as bridges that connect nations, businesses, and the global community, enabling a shared journey toward a more sustainable future. Through continued collaboration and strategic investments, the private sector, supported by international credit lines, can make significant strides in shaping a greener and more resilient world for all.

Effectiveness of National Strategies in Scaling up Private Sector Climate Financing

Climate change poses an existential threat that demands unprecedented collaboration between governments, businesses, and civil society. One of the cornerstones of this collaboration is the effective engagement and leveraging of private sector climate financing through national strategies. Several key factors underscore the effectiveness of these strategies in mobilizing private sector resources towards climate-friendly initiatives.

1) Financial Incentives and Support:

Financial incentives play a pivotal role in attracting private sector investments. Tax credits, subsidies, and low-interest loans reduce the financial burden on businesses, encouraging them to invest in projects with positive environmental impacts. Governments can create dedicated funds or green banks to facilitate these investments.

2) Public-Private Partnerships (PPPs):

Collaboration between the public and private sectors enhances the effectiveness of climate financing strategies. Public-private partnerships can unlock innovative financing mechanisms

and facilitate large-scale projects. Governments can provide the framework, while private companies contribute expertise, technology, and funding.

3) Policy Clarity and Stability:

Clear and stable policies are essential. When governments establish transparent and consistent regulations supporting climate initiatives, businesses gain confidence. Predictable policies allow companies to plan long-term investments in renewable energy, energy efficiency, and sustainable technologies.

4) Risk Mitigation Instruments:

Climate-related projects often carry inherent risks. Governments can de-risk investments by offering guarantees, insurance, or other risk mitigation instruments. These mechanisms protect private investors from unforeseen circumstances, making climate projects more attractive and feasible.

5) Capacity Building and Knowledge Transfer:

Building private sector capacity and providing technical assistance are invaluable. Workshops, training programs, and knowledge sharing platforms help businesses understand the benefits of green investments and navigate the complexities of sustainable technologies. Informed businesses are more likely to invest in climate-friendly initiatives.

6) Innovation and Research Support:

Innovation is key to addressing climate challenges. National strategies should allocate resources to support research and development in green technologies. Financial support for startups and research institutions encourages the private sector to explore innovative solutions, driving sustainable economic growth.

7) International Collaboration:

Climate change knows no borders, and international cooperation is essential. Countries can collaborate on research, share best practices, and harmonize policies. By aligning national strategies with global initiatives like the Paris Agreement, nations can create a unified front, attracting international investments and expertise.

8) Monitoring and Evaluation:

Regular monitoring and evaluation are critical. Governments must assess the impact of their climate financing strategies. This involves tracking investments, measuring environmental outcomes, and evaluating the effectiveness of financial incentives. Data-driven insights allow for strategic adjustments, ensuring continuous improvement in engaging the private sector.

The effectiveness of national strategies in engaging and leveraging private sector climate financing lies in their ability to create an environment where green investments are not only

financially viable but also socially and environmentally responsible. Through strategic policies, collaborative partnerships, and a commitment to innovation, nations can harness the immense potential of the private sector, transforming challenges into opportunities and steering the world towards a more sustainable future.

The Crucial Role of the Private Sector in Climate Financing Post-Covid-19

The COVID-19 pandemic has underscored the importance of global collaboration and sustainable practices. As the world moves towards recovery, the private sector has emerged as a linchpin in climate financing efforts. In the post-COVID era, private businesses are uniquely positioned to drive impactful climate initiatives, fostering economic growth while addressing the pressing challenges of climate change.

As we are aware, COVID-19 has caused significant losses of jobs due to the disruption caused in the economic activities. Green development can actually give a boost to job opportunities. A study was conducted at Cambridge Econometrics[12] and it suggests that green recovery could help in stimulating employment opportunities better than the ‘return to normal’ measures.

Green recovery initiatives create employment opportunities in sectors such as renewable energy, energy efficiency, and environmental conservation. More jobs mean increased income for workers and their families. Green technologies often lead to cost savings in the long term. Energy-efficient practices and renewable energy sources can lower utility bills for households and businesses, increasing disposable income. By prioritizing environmentally friendly initiatives, nations can not only address climate change but also create economic opportunities, increase income levels, and build a more sustainable and prosperous future.

Private Sector's Challenge in Climate Financing

The private sector faces numerous barriers related climate financing in India. Frequent changes in climate-related policies and regulations create uncertainty for businesses. The lack of consistent and predictable frameworks hampers long-term planning and investment strategies, leaving companies hesitant to commit to climate-friendly projects. The high initial costs associated with renewable energy projects and green technologies deter risk-averse investors. Uncertain returns on investment and limited access to capital for sustainable initiatives are significant hurdles, especially for small and medium-sized enterprises. In many regions, the demand for eco-friendly products and services remains insufficient. Without a robust market, private companies find it challenging to justify investments in green technologies, impacting the growth of sustainable industries. Advancements in green technologies are often essential for combating climate change. However, the lack of mature technologies, especially in sectors like carbon capture and storage, hinders investments. Uncertainty about the effectiveness and reliability of these technologies acts as a deterrent. Public resistance, influenced by misconceptions or lack of awareness, can stall projects related to renewable energy installations

[12] Green recovery plans can boost jobs more than 'return-to-normal' stimulus: Study. Available at: https://energy.economictimes.indiatimes.com/news/renewable/green-recovery-plans-can-boost-jobs-more-than-return-to-normal-stimulus-study/78762775 (Accessed: 25th September, 2023)

or changes in land use. Overcoming social resistance and gaining community acceptance are critical challenges for private sector climate initiatives.

In addressing these challenges, collaboration between governments, private sector entities, and financial institutions is essential. Governments can provide stable, transparent, and supportive policy frameworks, offering incentives to encourage private sector investments. Financial institutions must design accessible financial products tailored to climate projects, enabling businesses to navigate complex funding mechanisms. Moreover, raising awareness and fostering a societal understanding of the importance of climate financing can create a supportive environment for private sector initiatives.

Comparative Analysis

The private sector's role in climate financing varies between India and other countries due to differences in economic development, policy frameworks, market maturity, and environmental challenges.

India has made significant strides in climate policy development, with initiatives like the National Action Plan on Climate Change (NAPCC) outlining climate goals. India has set ambitious renewable energy targets, encouraging private sector investments in sectors like solar and wind. On the other hand, the developed countries often have well-established policies promoting green investments, including feed-in tariffs, renewable energy certificates, and carbon pricing mechanisms. Stability in policy frameworks provides confidence to private investors, enabling long-term planning and investments. For example, in the USA, The Biden administration has re-emphasized climate action, rejoining the Paris Agreement and announcing policies promoting clean energy and sustainability.
Many investments in India focus on affordability, aiming to make clean technologies accessible to a broad population. India is known for frugal innovation, creating cost-effective solutions for renewable energy and sustainability challenges. Developed countries often have mature renewable energy markets, with substantial investments in various renewable sources. Investments in cutting-edge technologies and research and development are common, fostering innovation in the green sector.London serves as a global hub for green finance, attracting investments in sustainable initiatives from around the world.

Many Indian businesses, especially smaller ones, face challenges in accessing capital for green projects due to stringent lending criteria. Certain sectors in India may lack mature technologies for significant emissions reductions, making progress challenging. Whereas, some developed countries face challenges in transitioning away from fossil fuels, especially if their economies are heavily reliant on traditional energy sources. While the U.S. has a mature market, the challenge lies in transitioning away from fossil fuels and addressing environmental justice concerns.
India and other nations share common goals of private sector involvement in climate financing, the approaches, challenges, and emphasis on specific sectors differ significantly due to their

unique contexts and priorities. Collaboration and knowledge exchange between these diverse approaches can further accelerate the private sector's essential role in addressing climate change globally.

Challenges to Climate Finance

Climate Change has become a raging concern for the government only recently as a result of which the climate finance sector is still highly dissected and dissonant in nature. Several sources exist for funding climate action programs but the lack of a central coordinating unit for mainstreaming climate goals has made it rather challenging to assess the aftermath and the implications arising from the funded activities. While, the diversity in sources of funding is welcome, it leads to the rise of multiple players, each with its own priorities and mandates. A symphony between these multiple players is a necessity to make the climate action activities a success. Most importantly, the inclusion of the grassroot level and cooperation of the State Governments is an imperative without which the success of climate financing cannot be determined.

Targeting the funds meant for climate change in the appropriate direction is another challenge faced by climate finance in India, as more often then not, these funds are diverged for meeting budget deficits. Additional measures for ensuring transparency of and accountability by the government departments and other private players will ensure better leveraging of the funds to flow in the direction of achieving climate change goals. Another major challenge faced by climate finance in India is the use of the funds mostly for mitigation rather than for adaptation. The funds have flown mostly in the direction of mitigation because it is easier to determine the cash flow cycles of activities such as renewable energy, solar missions and energy transformation. Moreover, multilateral funds are a major source for climate funding but due to the irregularity and insufficiency of funds given by developed nations and no mandates on their accountability have rendered this source as rather unreliable.

Suggestions for Improvement of Climate Finance

The following suggestive measures can be considered for the improvement of Climate Finance-

1. **Encourage Innovation**-

The present framework for climate action has for long emphasized on decarbonization and reducing green-house gases. However, the success through these measures have been limited and therefore, the funds should be directed to encourage more innovation and finding better techniques and new technologies to overcome the shortcomings of the existing system.

2. **Directing the finance in the right direction-**

Several sources of finance exist and the synergy amongst all of them is the need of the hour. The funds must be used towards building an institutional setup which is self -sustaining and resilient rather than allocating certain specific amounts to specific projects. Small-scale projects can only mitigate the impacts of climate change but the same is not sufficient.

Institutional capacity building which emphasizes both mitigation and adaptation to climate change ought to be the direction for the flow of the climate funds.

3. Incentives to encourage active involvement of all-

Climate Change is a predicament for all nations, business sectors, and people. The sole approach to success in the battle against climate change is the involvement of more and more institutions, investors, and businesses, who form a part of the institutional setup. Using climate finance to incentivize climate change activities is a promising path likely to encourage businesses to adopt cleaner energy and innovate new renewable technologies for saving the planet.