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POLICY BRIEF

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Mobilizing & Leveraging Climate Finance in India:

Predictable, Assured and Transparent

Key Messages

- Climate Finance is one of the most important requirements in keeping the global temperature below 1.5 degree Celsius.
- Climate-related poverty in India is another dimension when addressing climate finance, India requires USD 2.5 trillion (at 2014-15 prices) for mitigation and adaptation measures over the next 15 years.
- The scale and scope of climate finance required in India is huge and the financing architecture is complicated.
- Private sector is the prime mover and prime agent' for scaling up climate finance and 'studies show that public funds for mitigation can (globally) leverage private investment by widely ranging factors.
- Climate finance has to be predictable, assured and transparent to be part of the planning process and to make a difference.

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I. Introduction

Climate finance will be a key driver for achieving the world's goal of limiting the rise in earth's average temperature to well below 2 degree Celsius above pre-industrial levels, and even more critical to realizing the long-term vision of limiting the rise to 1.5 degrees Celsius. The necessity of climate finance has been recognized in the global climate deal adopted at the 21st Conference of Parties (COP21) session of the United Nations Framework Convention on Climate Change (UNFCCC) in Paris on 8th December 2015. Yet, the Paris Agreement, adopted by 195 nations, has not set any target, leave alone a revised target, from the earlier agreed US 100 billion a year to be raised by industrialized countries till 2020.

In the run up to the Paris Agreement, there was widespread agreement that climate finance needed to be a central piece of the post-2020 global climate deal to be finalized in Paris. The Paris outcome needed to commit developed and industrialised nations to substantially reduce their greenhouse gas (GHG) emissions as well as provide adequate finance, technology access and capacity support for the low-carbon and resilient growth pathways of developing countries.. By not giving any numbers in the Paris Agreement and only deciding to 'set a new collective quantified' beyond the agreed USD 100b a year, whether climate finance will now allow global leaders to deliver on their agreement to keep the earth's average temperature far below 2 degrees Celsius is open to question.

This is particularly worrying because Article 4.4 (mitigation) of the Agreement turns on its head the primary responsibility of developed countries to take the lead in cutting emissions. A last minute furore created by the United States on legal grounds replaced the word 'shall' with 'should' in the Article, thereby diluting the legal obligation of the developed countries to effectively curtail emissions. This means that less ambitions cuts in emissions would require a higher quantum of climate finance to neutralize the impacts, besides also making it more

difficult for people to adapt to higher risks. Worse, Article 9.4 (Finance) fails to give equal attention to adaptation by saying that the scaled-up finance will try for a 'balance' between adaptation and mitigation, depending on individual country's priorities and needs.

Climate finance has witnessed a long struggle. The draft negotiating text for Paris has an added new Article 2bis which stated that effective implementation of the Paris agreement by developing country Parties (non-Annex) will depend on the extent to which developed country Parties (Annex 1) provide finance, technology transfer and capacity building. Yet, the draft text had also given the option to remain silent on this. Obviously, the battle for global climate finance was going to be long and hard for the post-2020 climate agreement that should ideally have had a robust ratchet mechanism for predictable, assured and transparent climate finance. For now, everything is left to future stocktaking and revision of developed countries' own ambition and intent.

The Adaptation Fund was set up by the UNFCCC in 2001 to finance adaptation programmes in non-Annex countries but the first operative recognition of the importance of climate finance came as late as in 2009. This was when the COP15 Copenhagen Accord promised to mobilize USD 100 billion a year by 2020 for post-2020 long-term financing of developing countries to reduce potential emissions and adapt to climate change impacts. To get things going, immediate 'fast-start' finance of up to USD 30 billion was promised between 2010-2012. Subsequently, the COP16 Cancun Agreement established the Green Climate Fund (GCF) with equal representation of developed and developing countries on its Board. Though global commitments have grown, rather slowly, since the COP15 decision, red lines in the draft negotiation text for Paris continued to afflict all aspects of climate finance – quantum, source, mechanics and balance between mitigation and adaptation needs – during the negotiations at Paris. A key unmet demand of the civil society for adequate capitalization of the GCF for the success of the 2021-2030 Paris Agreement remains.

While, the Adaptation Fund and the GCF are expected to shift world investments towards building resilience and de-carbonisation, the success of the Paris deal is also inextricably linked to national budgets and how well they will dovetail mitigation and adaptation into the development policies. This is because the global post-2020 Sustainable Development Goals, to be adopted by world leaders in April 2016, will be achieved by countries only if development gains are not hindered or eroded by climate change impacts. These development goals are reflected in many of the Intended Nationally Determined Contributions (INDCs) submitted to the UNFCCC, including in India's INDC. The INDCs lay out low-carbon development plans (with emission reduction targets for primarily Annex 1 countries) and adaptation plans (primarily by non-Annex countries). The latter are linked to domestic (unconditional INDC) and/or external (conditional INDC) climate finance. A total of 189 negotiating Parties have submitted their INDCs and eight more are expected. Over 150 Parties had submitted their INDCs in the run-up to Paris.

The level of 'conditional' and 'unconditional' trajectory of low-carbon and resilient growth of each country will decide if the world will stay under 1.5 degrees Celsius of exceed it. This makes the capitalization of domestic National Adaptation Funds, set up by several countries including India, critical as also the need for a robust ratchet-up mechanism for predictable, assured and transparent climate finance. Climate finance is also important for achievement of the 7 goals of the UN Sendai Framework for Disaster Risk Reduction and the 17 goals of the proposed post-2015 Sustainable Development Goals (SDGs) because (a) climate uncertainties influence all these goals; and (b) the post-2020 timeframe is common to them. The stocktaking and implementation of the Paris Agreement will determine the role that climate finance will ultimately play in realizing the INDCs and ensuring resilient and sustainable development on earth.

This paper flags key components of India's climate finance policy, institutional set up and financial requirements within the context of the global climate negotiations and recommends what will be needed to deliver climate finance where it is needed most with the purpose of catalyzing further debate on this critical driver of sustainable development.

II. Climate finance must for sustainable development in India

India (in INDC) has put a figure of USD 2.5 trillion (at 2014-15 prices) as its price for achieving its mitigation and adaptation targets by 2030. Not only is the amount huge, it also seems large for a USD 2 trillion economy which is also the world's third largest after United States and China, measured on the basis of Purchasing Power Parity (PPP). A year before 2020, when the Paris deal will begin its implementation period, India is expected to have become a USD 3 trillion economy. Yet, large economies are not necessarily also the richest - India's share of the world GDP is just a third of the United States but India houses over four times the population of the US.

Consequently, India is home to a large number of people with huge developmental needs and who are extremely vulnerable to climate change impacts. These people face multiple socio-economic poverties:

- *One in three persons* in the 1.4 billion country live in poverty, an average woman being much poorer than an average man;
- *1,78,000 habitations* are unconnected by all-weather roads;
- *One in five people* are without proper housing;
- *One in four persons* is without electricity;
- *Two out of five households* have no kitchen;
- *Over 85% of households* use biomass-based fuels for cooking;
- *One in three households* do not have access to safe drinking water;
- *One in three households* in India's 600,000 villages need to fetch water beyond half-a-kilometer radius and beyond 100 meters in urban areas – a task mostly performed by women; and
- *Nearly half the households* do not have access to basic toilets.

Climate change impacts threaten to worsen each of these parameters unless sufficient investments are made on low-carbon development infrastructure and adaptation interventions. India's INDC reflects this when articulating its two-fold priority – poverty eradication and sustainable growth.

India is also a farming country with both its primary and secondary sector hugely dependent on climate-sensitive natural resources. Two out of three persons are dependent on agriculture and allied activities out of which 60% of its predominantly small and marginal farmers are dependent on the monsoons for irrigation. Even the irrigated cropland in the highly climate-sensitive Indo-Gangetic Plains depends on monsoons for replenishing surface water which contributes to 80% of the irrigation in the region. All of India's forests and livestock-related economic enterprises are sensitive to temperature and rainfall patterns. Agro-based exports and textiles comprise over a fifth of India's exports.

Climate-related poverty in India has another dimension. Over 2/3rd (68%) of the cultivable area is drought-prone, 12% is vulnerable to floods and river erosion and 3/4th of the 7500 km-long coastline is prone to cyclones, salinity ingress and sea-level rise[1]. Climate change-induced disasters like cloud bursts, flash floods, glacier lake outburst floods (GLOF) and landslides in the Great Himalayan mountains have already brought havoc to large urban and rural areas[2]. The Himalayan glaciers, feeding nine of India's largest rivers, are rapidly melting and retreating, threatening food and water security of hundreds of millions of people in the downstream areas of India and its neighbouring countries in South Asia. It also reduces power generation capacity from dams and micro-hydro projects. India is among the world's 10 most disaster-prone countries and climate change is projected to worsen the situation, requiring huge investments in not just disaster preparedness and restoration but also to address social and economic impacts of loss and damage.

III. Domestic initiatives on climate finance: Policies and Institutions

India's blueprint on climate action, the National Action Plan on Climate Change (NAPCC) is the umbrella policy initiative of India framed by the Prime Minister Council on Climate change in 2008, in the run up to COP14 at Poznan. The NAPCC encompasses twelve (8 created in 2008 and 4 added in 2014) 'National Missions,' each focusing on key climate-sensitive sectors including creation of climate knowledge. The NAPCC has adopted a mission mode over policy because missions come with operational guidelines and budgets and can be monitored whereas policies usually only reflect intent. The Missions mainstream both mitigation and adaptation into India's development programmes, with the responsibility of each Mission entrusted to subject-specific ministries and departments (see Annexure 1). Being a federal nation, the NAPCC is accompanied by State-level Action Plans on Climate Change (SAPCCs) which have been formulated on the lines of the NAPCC but with a higher focus on adaptation and afforestation than on mitigation.

Three NAPCC Missions – on sustainable agriculture, water and the Himalayan ecosystem - are slated to help people adapt to climate uncertainties. The Mission on Strategic Knowledge emphasises high quality research and technology, including joint research with other countries. Subsequently, four new Missions were added by the current government in 2014. These focus on wind energy, waste-to-energy, human health and coastal resources management. Except for wind energy, the other three are yet to be operationalised.

[1]Majori and islands submerged in Bay of Bengal
[2]Uttarakhand (2013), Kashmir (2014-15) and Ladakh (2010) floods

Missions on solar energy, energy efficiency and sustainable habitat will contribute to decelerate emissions with a strong focus on increasing the share of renewables (including nuclear and biofuels). India's INDCs puts this figure at 40% cumulative electric power installed capacity by 2030 'with the help of transfer of technology and low-cost international finance, including Green Climate Fund. This puts forth a very clear ask from global climate finance to address energy poverty in India. There is a huge finance needed to achieve the INDC target of 175 GW. Further renewable energy is not seen as bankable as when its volume goes up the subsidies aren't possible.

The mission on afforestation, or the Green India mission will contribute to both mitigation and adaptation as about 350-400 million people depend on forests for their basic needs and their livelihoods. Finance will be raised through internal programmes, including the controversial Compensatory Afforestation Fund Management and Planning Authority (CAMPA) which earns huge amounts from cutting trees for timber and infrastructure development and then uses these funds for compensatory afforestation that does not match the richness of the depleted forests. The INDC targets to create an 'additional carbon sink' of 2.5 to 3 billion tones of CO2 equivalent through additional 'forest and tree cover' by 2030, depending on external finance to fill the gap.

Given India's susceptibility to climate-induced disasters, projected to worsen following rising climate uncertainties, India also has an institutional set-up on disaster management, backed by legislation and national, State and sub-State-level Disaster Management Authorities under the Ministry of Home. Drought lies with the Ministry of Agriculture and epidemics with the Ministry of Health. These institutions are also dealing with climate change impacts. Much of the finance available for disaster management is through relief funds at the national and State levels – mainly the Prime Minister's Relief Fund at the Centre and State-level Chief Minister's Relief Funds. The National and State-level Calamity Funds were merged in 2010 with the newly constituted National and the State level Disaster Response Fund. Union Territories get their relief funds directly from the Home Ministry.

The government has also started schemes such as Pradhan Mantri Ujjwala Yojana (PMUY), UJALA and PAHAL in the energy sector. These are inititated at the state level and provide sustainable development goal benefits particularly Goal 12 (Ensure sustainable consumption and production) and Goal 7 (Ensure access to affordable, reliable, sustainable and modern energy). These are also reached while helping in reducing GHG emissions. The PMUY is an ambitious social welfare scheme that focuses on replacing the unclean cooking fuels mostly used in the rural India with the clean and more efficient LPG (Liquefied Petroleum Gas) focusing mostly on BPL households. Unnat Jyoti by Affordable LEDs for All (UJALA) is a national program that promotes LED bulbs as they consuming less than one—tenth of the power as compared to a 100-W incandescent lamp. It will result in saving huge amounts of electricity.

The Disaster Response Funds allow just 5% of the funds for preparation of disaster management plans 'based on hazards, risk and vulnerability analysis' obviously done with some other undefined funding; for capacity building of all stakeholders; and the amorphous 'strengthening' of these national- and State-level Disaster Response Funds. All financial requirements for community-based disaster preparedness (CBDP), infrastructural preparedness, restoration, reconstruction and mitigation (disaster risk reduction) is to be built into the normal budgetary heads of the State-level plans. There is no discussion within programmes and institutions yet on loss and damage despite the looming threats for large vulnerable regions, especially along the coast and the Himalayan ecosystem.

Thus, the scale and scope of climate finance required in India is huge and the financing architecture is complicated. India's multi-pronged approach, explained below, to deal with this crowded institutional space for climate finance leverages private finance and uses fiscal instruments and market mechanisms to generate public finance. Thus, the NAPCC and the SAPCCs, are not backed by a coherent climate finance strategy. Initially planned to be funded by the 12th Five-year Plan, the large budgets proposed by SAPCCs were then opened to donor funds. Engagement with the private sector, both as a recipient and provider of climate finance, has been growing but again largely in an ad hoc manner. India is, however, clear on its approach to international climate finance and has been quick to set up systems to access the Adaptation Fund and the GCF by appointing the National Bank for Agriculture and Rural Development (NABARD) as the National Implementing Entity (NIE) for the two global funds.

Innovative and new approaches

Yes, India has created new institutions, funds and various innovative schemes, the latter especially to target and leverage private funds, in response to new sources of global climate finance.

In 2011, Department of Economics in the Ministry of Finance set up a Climate Change Finance Unit (CCFU) to advise and guide the Ministry of Environment and Forests (MoEF) as well as to lead on global climate finance issues. The CCFU has included climate finance in the Economic Surveys, released prior to the annual Union Budgets. It has contributed to the design of the Adaptation Fund and brought together different stakeholders, including civil society, on climate finance issues for contributions to the Green Climate Fund. The CCFU, however, is not an apex institution on climate finance.

In 2010-11, the National Clean Energy Fund was created to promote clean energy, funded through an initial carbon levy of Rs. 50 which has now quadrupled to Rs. 200 per tonne of coal. This Fund is governed by an Inter-Ministrial Group with the Finance Secretary as the Chair. Its mandate is to fund research and development of innovative clean energy technology in the fossil and non-fossil fuel based sectors.

India has also set up two funds, one each for adaptation and energy efficiency. The Ministry of Environment, Forests and Climate Change (MoEF&CC), the India's nodal negotiating agency, operates a National Adaptation Fund established in 2014 with a corpus of Rs. 100 crore that ratcheted up to Rs. 350 crore (USD 55.6 million) in 2015. India's National Adaptation Fund was set up with the aim of bridging the gap between the need and the available funds. States have been asked to submit projects and the first set of these are in the process of being approved.

The INDC mentions introduction of Tax Free Infrastructure Bonds for funding of renewable energy projects. There are also plans to build a corpus of USD 25 billion by floating five green energy funds of USD 5 billion each with the help of public and private financial institutions. It may be added here that energy security, an electoral promise of the present ruling Party, is critical for India which imports 80% of its crude oil and 18% of its natural gas requirements, running up an energy import bill of about USD 150 billion, expected to double by 2030 under a business-as-usual scenario.

India has reiterated several times that 'private sector is the prime mover and prime agent' for scaling up climate finance and 'studies show that public funds for mitigation can (globally) leverage private investment by widely ranging factors from 1:2 to 1:10.' Other reports have said that bulk of India's climate finance is expected to come from private investments. Already, 80% of the renewable energy capacity installed is in the private sector. This is in line with the projections by the International Energy Agency (IEA) that private businesses and private households will contribute 40% of global climate investments each and only 20% will come from government sources.

India follows a combination of carbon pricing instruments and regulatory policies to leverage private finance. Clean Development Mechanism (CDM) has played a large role in private finance with India having been the second largest receiver of CDM projects after China. Other instruments include equity finance, debt instruments and partial risk guarantee facilities. The National Mission for Enhanced Energy Efficiency (NMEEE) has offered the Partial Risk Guarantee Fund (PRGF) wherein risk coverage of bank loans for energy efficiency is expected to leverage 30 times the Government's investment of USD 20 million as seed money.

The Venture Capital Fund for Energy Efficiency (VCFEE) is equity finance for EE projects to leverage more private finance. Then there is the Renewable Energy Certificate (REC) scheme that mandates the government electricity regulators at national and state levels to buy at least 5 % of renewable-sourced power, thereby giving incentives to the private sector to scale-up investments in renewable energy. The Perform, Achieve and Trade (PAT) scheme involves trading energy savings among identified high-energy consuming industries. Then there are voluntary market-driven standards like the National

Carbon Tax May not Change Behaviour

State experience has also shown that fiscal instruments alone may not yield desired energy efficiency or demand-side management goals even if it fills the coffers with climate finance.

Maharashtra, for instance, endeavoured to build in energy efficiency into its power utilities by imposing a load management charge to incentivize residential and industrial units whose consumption was above or below a certain limit.

The scheme generated a fund of Rs 700 million in just a couple of months but was withdrawn because it was not changing consumption patterns - consumers were not aware of the need for energy efficiency or ways to achieve it.

The fund has subsequently been used to generate awareness and provide alternatives like compact fluorescent lamps (CFLs) at reduced rates to increase energy efficiency.

Building Code (NBC), Energy Conservation Building Codes (ECBC) and the EE rating programme for domestic and other appliances that encourage more investment in energy efficiency by the private sector.

States have also pioneered fiscal instruments to address environment and climate change. The Sikkim government, known for its commitment to environmental conservation, imposed a cess as early as 2005 on the price of non-biodegradable materials entering the State to promote use of less-polluting materials and reduce post facto compliance costs of managing the effluents. The cess is deposited in the Sikkim Ecological Fund (SEF), backed by the Environment Cess Act. The SEF has been used for building awareness, garbage management and for rejuvenating soil, water and forests, thus, contributing strongly to climate change adaptation and mitigation.

Several states such as Karnataka, Tamil Nadu, Maharashtra and Andhra Pradesh have imposed Green Tax on motor vehicles - mostly on those older than 15 years for personal vehicles and 7-8 years for those plying commercially – since 2002 onwards. There are also some more specialized taxes like the Air Ambience Fund by the New Delhi government which levies Rs 0.25 on selling of every litre of diesel to support clean air policies. Interestingly, the Himachal Pradesh government has introduced a voluntary Green Tax that any duty-conscious citizen can donate towards a fund which will be used to make Himachal a carbon-neutral State.

IV. Talking Numbers: An Indication of Climate Finance Required

Multiple allocations in crores of rupees (billions of dollars) for climate plans, disasters and low-carbon energy pathways seem to lead to the USD 2.5 trillion climate finance ask made by the Indian INDC.

Climate finance was first addressed in India's Economic Survey 2011-12. This was confined to the estimated cost of the NAPCC. A segment titled 'Climate Change Finance' in Chapter 12 on Sustainable Development and Climate Change gave an overview of the available public, private and international climate finance sources. The cost estimate for the NAPCC was put at Rs 251,350 (about USD 38 billion). The subsequent Economic Survey 2012-13 put this figure at Rs 230,000 crore (approx USD 35 billion). The consecutive Economic Survey 2013-14 gave a financial outlay of Rs. 256, 836 crores (approx. USD 42 billion) for the NAPCC during the 12th Five-year Plan (2012-2017).

Then, the 13th Finance Commission (2010-15), established to allocate certain revenue resources from the Centre to the States, recommended for State allocation of Rs 5000 crores (USD 757 million) each per annum towards forests, renewable energy and water sector management.

The Centre has also allocated Rs 61,220 crore (USD 9.3 billion) towards State Disaster Response Fund for the period 21015-20 though disaster response is the primary responsibility of State governments. However, given worsening extreme events, the Centre has taken this step.

On SAPCCs, the Economic Survey 2011-12 said the costs of the State action plans were 'significant by any standard.' For instance, the then available Orissa SAPCC was pitched at requiring Rs 1700 crore (approx. USD 257 million) for implementation. Implemented between 2011-15, the budget almost doubled to Rs 3207 crore (approx. USD 485 million) during the fiscal year 2014-15 and cumulative the State spent Rs 7000 crore over the five years. Not all SAPCCs have given budgets and where these are available, these are based on broad estimates rather than close-to-accurate calculations because of the uncertainties involved and also because of lack of technical expertise on climate finance budgeting. Some SAPCCs like that of Assam have given a more detailed calculation but that is an exception rather than the rule.

There is a strong link between adaptation-focused Missions, including Green India Mission wherein adaptation is seen as a co-benefit of mitigation, with the SAPCCs because the sectors they address are State subjects. Thus, for instance, the National Mission on Sustainable Agriculture (NMSA), critical to all the States and Union Territories, estimates a requirement of Rs. 108,000 crore (over USD 16 billion) from 2011-2012 to the end of the 12th five year plan. The NMSA is ideally going to be implemented by the States and given a large budget crunch, many of the components have been dovetailed into existing agriculture programmes.

India's mitigation-related Missions and flagship programmes like 100 Smart Cities have specific budgets. The emphasis on solar power has, for instance, hiked India's ambition to installing 100 GW (giga watt) of solar power by 2022 at an investment of Rs 6 crore (USD 0.9 million). However, most of the domestically raised money is leveraged and sourced from the private sector or multilateral and bilateral donors. Much of the programme budgets across sectors like infrastructure development and transport rely on public funds and increasingly on multilateral and bilateral finance.

Spending on adaptation

The NAPCC in 2008 put 2.63% of the GDP in 2006-07 as India's spend on 'adaptation to climate variability.' The identified 'adaptation' programmes in the NAPCC spanned eight areas - (a) crop improvement and research (5.93%); (b) drought proofing and flood control (3.04%); (c) forest conservation (0.49%); (d) poverty alleviation and livelihoods preservation (44.65%); (e) rural education and infrastructure (26.85%); (f) health (10.75%); (g) risk financing (4.83%); and (h) disaster management (3.46%). Subsequently, no new figures were given until the INDC document. The INDC revised downward the adaptation expenditure to 1.45% of the GDP in 2000-01 and then increased it to 2.82% of the GDP in 2009-10, higher than the 2006-07 figure.

No methodology has been shared for arriving at these figures and nor does one know if the adaptation budgets are new and additional to development budgets. It does not seem so because the INDC categorically states that 80% of the adaptation expenditure is on building 'human capabilities and livelihoods, viz., poverty alleviation, health improvement, disease control and risk management.'

A 2010 research study , and perhaps the only one, examined the 2006-07 figure to conclude that the correct figure in actuals should be 1.7% of the GDP, revised to 2.68% of the GDP as per 2009-10 budget estimates. More significantly, the findings showed that the expenditure was essentially on anti-poverty development programmes and were not 'additional' investments on climate resilient components. Being a monsoon-dependent and disaster-prone country, India has to invest in the above programmes anyway. Yet, programmes like forest conservation, risk financing and disaster management that contribute more to climate resilience are at the bottom of the expenditure.

A subsequent 2014 study for three financial years in four States found the same development-dominated spending was true for State-level budgets. In other words, India still needs to differentiate between expenditure on business-as-usual development in a disaster-prone country and the additional expenditure on helping people adapt to climate uncertainties.

However, with the setting up of a National Adaptation Fund in 2014, it is expected that India will begin to distinguish between development and adaptation budgets. For instance, flood-resilience will be part of the development budget in the vast Indo-Gangetic plain but additional funds required to deal with increased frequency and intensity of floods will require adaptation funds. Again, in India's hot and humid weather, dealing with vector diseases will be developmental spending but with changing erratic rain patterns and longer summers, the extended months of surveillance will count as adaptation spending. Of course, it is also critical to understand that for a country like India, the line between development and adaptation finance may often be blurred with mutual co-benefits between the two.

Climate finance is also about choosing where to shift subsidies. India's continuing emphasis on finance for 'super-critical technologies' for coal-based power plants – which, according to the INDC, will continue to have a share of up to 70% of the installed power capacity in 2030 – will mean an opportunity cost for renewable energy. While it is understandable that India has to eradicate energy poverty, it is equally true that it has to reduce its coal import bill and clean its energy production. In sum, there is a need to move from climate finance for super-critical technologies for coal to support research and development on 'super-critical' technologies for renewable energy.

The global dimension

To meet the huge climate action budgets, India is taking a pro-active approach to be an active recipient of global climate finance from the Adaptation Fund and the Green Climate Fund (GCF) even as it walks the talk of investing domestic climate finance towards resilient, low-carbon growth. India has reiterated the need for the rich nations to meet their climate finance commitments and for this to be measureable, reportable and verifiable (MRV).

India asserts its sovereign right of taking the decision on how much it needs for what. India's bottom line is that global finance must enhance its own domestic capacity to finance climate-related projects. Apart from NABARD, the Environment Ministry had also endorsed Small Industries Development Bank of India (SIDBI) and IDFC Limited to apply for accreditation to the GCF and is encouraging other public sector units and the private sector to design appropriate business models and get accreditation as NIEs.

While India views the Green Climate Fund as the main arm of global, multilateral climate finance, it is also accessing climate-related funds administered by the World Bank, the Asian Development Bank and other multilaterals and bilaterals. India is among the largest recipient of multilateral climate finance for mitigation. India has favored grants as climate finance but is not averse to concessional loans, in contrast to island States and LDCs.

While India is open to public climate finance leveraging private climate finance domestically, on international fora it has argued for all climate finance flows from developed to developing countries to be defined as public finance or 'non-profit private' finance. Thus, even if rich countries leverage private funds, their governments would still guarantee assured, predictable and transparent climate funding. This is also in line with India's steadfast 'polluter pays' assertion. India has always maintained that climate finance has to be 'new, predictable and additional' to development aid.

While global climate finance has a strong bias towards mitigation, India has in recent times begun to emphasise equal weightage to mitigation and adaptation. Interestingly, in the discussions on whether global finance should be results-based or needs-based, Latin American and Asian countries, including India, are arguing for a needs-based approach. Indeed, India has articulated that the USD 10 million limit that GCF has set for the country is too low, too inadequate.

Availability of global climate finance and its mechanism is going to be key for India even though it has not explicitly made its INDCs conditional to external climate finance. There was hope that there would be a clear, well-articulated finance package in the COP21 agreement. Indeed, the report by the Organisation for Economic Co-operation and Development (OECD) and Climate Policy Institute (CPI) that the rich nations provided in 2014 almost two-thirds of the promised USD 100 billion as climate finance was rejected outright by the four BASIC countries (Brazil, South Africa, India and China) at a press conference during the COP21 negotiations. The report has been disregarded as creative accounting methodology by civil society and think tanks. Still, by their own admission, adaptation-mitigation balance was lop-sided with only 16% of the USD 57 billion flowing to adaptation measures from 2013-2014. These kinds of controversies will remain until climate finance is truly predictable, assured and transparent.

V. Conclusion and Recommendations

Indeed, climate finance has to be predictable, assured and transparent to be part of the planning process and to make a difference. Climate finance has to be predictable to ensure sustained flow of climate finance, preferably for multi-year funding cycles at least between 5-10 years. It has to be assured, because action will depend on knowing that climate finance will be available for a certain time period and in certain quantities. It has to be transparent to be accountable publically and to ensure good governance of the funds and their outcomes.

With no internationally accepted definition of climate finance , much of the development funds for poverty reduction programmes have been termed as 'adaptation to climate variability' in the NAPCC and several SAPCCs with little scrutiny or understanding by government departments. India must put in place a process to asses and monitor the total quantum of climate finance required with identified sources. Climate finance must also fall into the purview of accountability institutions like the Comptroller and Auditor General, or judicial bodies such as the National Green Tribunal, with clear guidelines on its scrutiny.

India's Intended Nationally Determined Contributions (INDC) document does not hinge specific climate actions on external funds. Nor does it quantify a domestic climate finance target to meet its energy intensity target of 33-35% or the 'additional' adaptive resources it needs to attain food, water, housing and energy for all its citizens. Given the magnitude of climate-related vulnerabilities (see Section 1) that limit India's move towards sustainable development, some specific numbers on climate finance at this stage would have helped clarify how far India is willing to go on its own.

A basic commitment for public funds for mitigation till 2030 would have been a good starting point. The 2014 Planning Commission's Expert Group Report for instance, suggests the requirement of an additional 1.5% of the GDP (2011 prices) for a 6.9% annual low-carbon growth till 2030 even if it does not show a roadmap on how these funds will be generated over the next decade-and-a-half.

Given the myriad programmes, schemes, institutions and actors involved in climate finance, there is a need to evolve a system to ensure good governance of this climate finance. One study has suggested setting up a system in line with India's employment guarantee scheme under the Mahatma Gandhi National Rural Employment Guarantee Act. However, this would externalize climate finance planning and implementation from the delivery system which is done through line agencies.

For proper governance and efficiency of climate finance a three-pronged strategy is suggested:

(a) Clarify the scope of climate funds with regard to sourcing, requirement and utilisation so that these add value to ongoing 'business-as-usual' development programmes and/or activities in a transparent and measurable manner;

(b) Where stand-alone adaptation programmes are financed, climate finance must leverage public development funds;

(c) Climate finance must be made core to India's financial and resource planning; and,

(d) A sector-based approach with basket funding from external budgets must be adopted with incentives for convergence of programmes/schemes and sector-based monitoring of energy efficiency and adaptive capacity.

The above must be guided by three principles:

(a) Equity considerations in line with climate justice so that climate finance is needs-based rather than results-based;

(b) Gender-budgeting of climate finance is non-negotiable; and,

(c) Climate finance is part of all decentralized plans made by village panchayats, urban local bodies and (integrated) district planning authorities.

India's announcement in INDC that it requires USD 2.5 trillion (at 2014-15 prices) for mitigation and adaptation measures over the next 15 years, till 2030, also reflects the wide gap between demand and supply though India has not made it clear how much of this requirement it will leverage from its own resources. Since island states and LDCs have the first call on global climate finance, India is cautious to expect to get a large share from the pot which may not grow very fast unless the Paris agreement is particularly successful in implementation on the finance front. If, as it seems may well be the case, industrialised countries (Annex 1) fail to own up their responsibility to finance climate solutions in developing countries, India's price for climate resilience will have little meaning. This leads us to ask if the slew of developing country (non-Annex) conditional INDCs subject to external support from developed countries will just remain on paper?

Numbers become even more important at this stage because the cumulative INDCs are projected to meet between 66% to 90% of the global emission reduction required to keep the earth's average temperature below the agreed 2 degree celsius. With the Paris Agreement still to deliver hard funds and credible pathways to additional, public and adequate climate finance, countries like India will need to revise their climate finance requirements as they would have to deal with stronger climate uncertainties, pushing back development goals and eroding development gains. Indeed, the Paris Agreement gives little optimism with regard to achieving the agreed Sustainable Development Goals by India and other UN members as accelerating global warming due to anthropogenic reasons promise to deepen developmental challenges with inadequate finance to deal with these threats.

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