Training Manual on Accessing Climate Finance in India

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Development Alternatives

Training Manual
on
Accessing Climate Finance in India

About the Training Manual

This training manual is prepared under the financial support by Department for International Development (DFID) for the project Strengthening Performance Management in Government (SPMG) being implemented in Madhya Pradesh state of India. SPMG is an initiative of Department for International Development (DFID) to provide assistance to Government of Madhya Pradesh for strengthening planning and governance systems. One of the key focus areas of SPMG is to ensure environmental sustainability and climate compatible development in the state. As part of this initiative, Development Alternatives (DA) is recognized by Government of MP and DFID to provide technical support to Madhya Pradesh State Knowledge Management Centre on Climate Change (SKMCCC), EPCO. DA is assisting SKMCCC in facilitating integration of climate change concerns into departmental activities and plans, through strengthening technical capacities and generating strategic knowledge.

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Introduction

This course has been designed to provide the participants with the basic knowledge of climate finance mechanism and to enable them to participate effectively in the process of National Development Goals through low carbon development pathways and build a climate impacts resilient society by access and mobilization of climate change funds available from sub-national, national, and international (bilateral/multilateral) sources.

The basic objectives of the course are:

1. Supporting the sub-national process in India on climate finance access and leveraging by strengthening the capacity of Government of Madhya Pradesh officials to access, manage and deliver on targets of State Action Plan on Climate Change.
2. Imparting capacity building by providing skills, learning and practical examples to enhance understanding on national and international climate finance landscape and enable them to participate in global climate change finance mechanism such as Green Climate Fund, Adaptation Fund, Climate Investment Fund etc.

Abbreviation/Glossary

COP	–	Conference of Parties
DoFW&AD	–	Department of Farmer Welfare and Agriculture Development
DoAH	–	Department of Animal Husbandry
DoCI&E	–	Department of Commerce, Industries and Employment
DoE	–	Department of Energy
DoF	–	Department of Finance
DoH&FP	–	Department of Horticulture and Food Processing
DoH&E	–	Department of Housing and Environment
DoHFW	–	Health and Family Welfare Department
DoT	–	Department of Transport
DSM	–	Demand Side Management
GoI	–	Government of India
GoMP	–	Government of Madhya Pradesh
GoMP	–	CC Cell Government of Madhya Pradesh
INDC	–	Intended Nationally Determined contributions
MoEF	–	Ministry of Environment and Forests
MoH	–	Ministry of Health
MoHFW	–	Ministry of Health and Family Welfare
MoP	–	Ministry of Power
MoU	–	Memorandum of Understanding
MoUD	–	Ministry of Urban Development
MoWR	–	Ministry of Water Resources
MPCAs	–	Medicinal Plant Conservation
NAMAs	–	Nationally Appropriate Mitigation Actions
NRED	–	New and Renewable Energy Department
MPREC	–	Madhya Pradesh Renewable Energy Corporation
UNFCCC	–	United Nation Framework Convention on Climate Change

Module 1
Climate Science and Policy Framework for India

1.1 Assessing the Impacts of Climate Change

United Nations Framework Convention on Climate Change (UNFCCC), in its Article 1 defines climate change as: "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods."

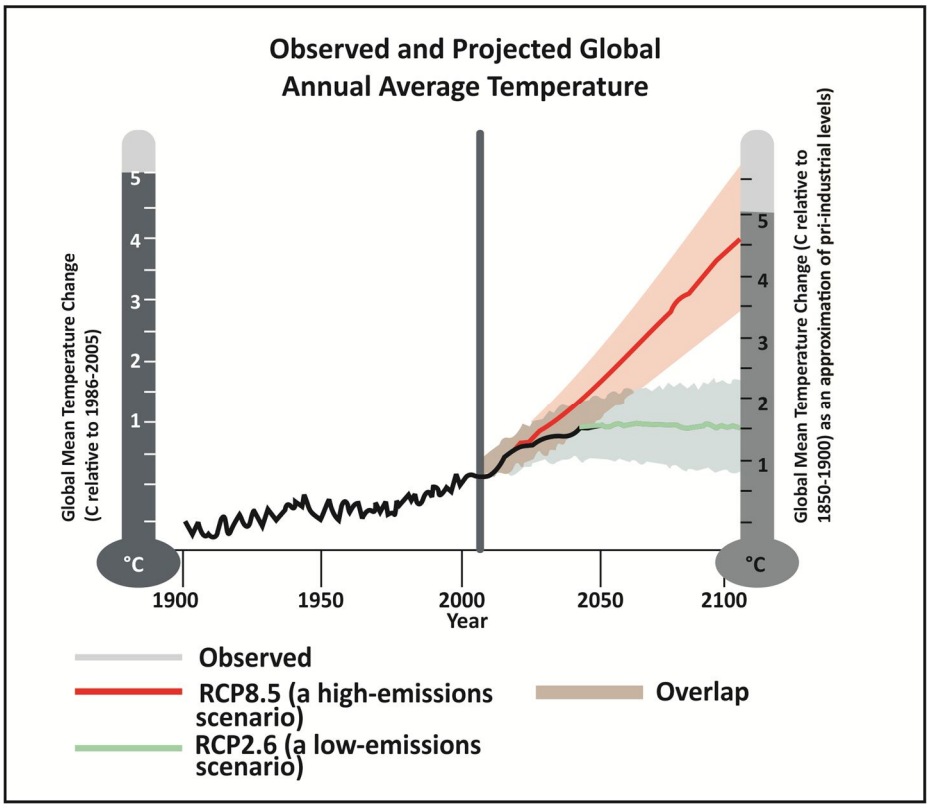
Latest Climate Science Observations

As per the fifth assessment report from IPCC, climate change activities like deforestation, fossil fuel utilization for power generation, industrial air pollution, city as well transportation emission increases, will result in a minimum 2.5 Degree Celsius rise in surface temperature.

The present day climate change analysis unfolds a0.85-degree C increase in world's temperature when compared to the mid-19thcentury.

Climate change will cause widespread damage and destruction to ecosystem, threat to species and animals, humans, disease outbreak, change in pattern of cultivation which, on the whole, attributes to global economic crash, increase in poverty and affects all the basic SDGs (Sustainable Development Goals).

Figure 1: Observed and projected global and annual average temperature



Source: *IPCC Climate Change 2014: Impacts, Adaptation, and Vulnerability: Summary for Policymakers*

Recent Global Observed Climate Impacts

- Ice-loss from glaciers and ice sheets has continued for the consecutive second straight year, with an ice-free passage through Canada's Arctic islands, and accelerating rates of ice-loss from ice sheets in Greenland and Antarctica.
- Thermal expansion—warm water occupies more volume than cold—the melting of ice sheets and glaciers around the world is contributing to accelerating ice-melting rates and an ultimate extent of sea-level.

Impacts of Climate Change in India[1]

- Unusual and unprecedented spells of hot weather are expected to occur far more frequently and cover much larger areas with impact on Agriculture
- Unpredicted summer monsoon spells all over India.
- Droughts are expected to be more frequent in some areas, especially in north-western India, Jharkhand, Orissa and Chhattisgarh. Crop yields are expected to fall significantly because of extreme heat by the 2040s.
- Alterations in the flows of the Indus, Ganges, and Brahmaputra rivers could significantly impact irrigation, affecting the food production and livelihoods.
- Water scarcity, rising temperatures, and intrusion of sea water would threaten crop yields, mainly reductions in both rice and wheat.

Table 1: Details of climate induced disasters that occurred in India and their cost implications, 2015

Sl. No.	State	Type of Disasters	Financial Assistance Projected by the State [Rs. in Crores]
1.	Kerala	Floods/ landslides-14	141.65
2.	Nagaland	Floods/ landslidse-14	271.03
3.	Karnataka	Floods -14	266.76
4.	Uttar Pradesh	Floods -14	457.30
5.	Arunachal Pradesh	Floods/ landslides-14	2420.29
6.	J & K	Floods/ landslides -14	43959.56
7.	Kerala- (2nd memo)	Floods/ landslides-14	258.32
8.	Meghalaya	Floods/ landslides-14	422.30
9.	Andhra Pradesh	Cyclone Hudhud/ floods -14	21640.63
10.	Himachal Pradesh	Floods/ landslides/ cloudbursts-14	832.67
11.	Odisha	Cyclone Hudhud/ flood -14	777.12
12.	Assam	Floods/ landslides-14	2534.88

Source: *A discussion paper on India's Intended Nationally Determined Contributions (INDCs) July 2015 by Green Works Consulting, INECC*

[1] http://www.worldbank.org/en/news/feature/2013/06/19/india-climate-change-impacts

In addition to climate extreme events happening in other states, for Madhya Pradesh an assistance from the NDRF in respect of Madhya Pradesh to the tune of Rs. 2,033 Crores for the drought affected districts has been allotted recently. This indicates the recent incidences of climate related events in different states of the country including Madhya Pradesh. (All India Press Trust of India, Updated: December 29, 2015).

Table 2: Loss and damage assessment

Type of Disaster	Year of Occurrence	Loss (Life and Monetary)	Funding Mechanism
Heavy rainfall, floods and landslides in Uttarakhand	2013	10000 human life PWD loss-150 crores Tourism loss-57 crore	1000 Crores-Central fund USD 400 million - International Banks
Very severe cyclone storm in Odisha	2013	Odisha, Phailin damaged crops over 500,000 hectares of agricultural land. The state may lose 1 million tonnes of rice output due to the cyclone and heavy downpour	1000 Crores Central fund
Heavy rainfall and floods in Jammu and Kashmir	2014	Floods in Jammu and Kashmir have caused an immediate loss of Rs 5,400-5700 Loss of life-215	USD 250000- America Rs. 400 Crores- Central Fund
Cyclone affecting coastal area of Andhra Pradesh	2014	Rs 219,00 Crores loss; Human loss -61	Rs 1000 Crores-Central Fund

Source: *A discussion paper on India's Intended Nationally Determined Contributions (INDCs) July 2015, By GreenWorks Consulting, INECC*

Climate Change Impacts in Madhya Pradesh

Madhya Pradesh is well known for its agriculture and horticulture sector and more than 70 percent of the total population depends upon agriculture as the main source of income. Agriculture in Madhya Pradesh faces major challenges related to climate change. Besides the general problems that are faced, like the decline in soil fertility and ground water levels, climate related factors like droughts, excessive rainfall, frost and hailstorm are causing a significant year-to-year variation in terms of production and productivity.

As per the report published by B. Venkateswarlu and V. U. M. Rao (2012), district-wise rainfall intensity assessment reveals that the central and the north-eastern Madhya Pradesh is getting a decreased rainfall intensity in Kharif season and the eastern Madhya Pradesh gets a decreased rainfall in the Rabi season when compared with the historic baseline years.

As of reports from Duhan (2013), maximum and the minimum temperatures have already increased by 0.6 C and 0.62 Degree Celsius, respectively. The effect of climate change impact in both the rainfall and temperature is such that it is ultimately altering the present day agricultural pattern in Madhya Pradesh. Rice, wheat, Bengal gram, soya and horticulture crops have become highly prone to the climate change.

On analysing and projecting the 2030 climate scenario of Madhya Pradesh, rising frequency of heavy to very heavy rainfall will culminate into hail storms and flooding in the entire state of Madhya Pradesh.

Some of the observations and projections for climate change impacts in Madhya Pradesh are as follows:

- Increase in the rainfall by 11.6 per cent in the Kharif season
- Increased rainfall intensity will cause more floods and soil erosion as Goswami et al (2006) analysis observed that the frequency of extreme rainfall events (> 100 mm) will increase leading to flooding.
- Expected daily an average increase of 1.81 to 2.0 Degree Celsius in the maximum temperature and 2.0 to 2.40 Degree Celsius rise in the minimum temperature in all the districts of Madhya Pradesh

1.2 India's Position in International Climate Change Negotiation at COP 21-Paris

At the Warsaw conference, after the Durban platform, all the parties and observer nations delineated the necessity of an individual country-specific national communications (Intended Nationally Determined Contributions) to build a transparent and strong agreement which should be practically enforceable; and, which yields on ground a reduction in temperature below 2^0C and also mutually benefits the developing nations' macroeconomic indicators like GDP and achievement of the Millennium Development Goals (MDG)/SDGs. All Parties to the Convention agreed to prepare 'Intended Nationally Determined Contribution' (INDC) for the period post-2020.

Communication of INDCs would help the Convention/climate community to preview the aggregate effect of contributions from all Parties and thereby assess if such contributions are adequate to limit global average temperature rise to 2 Degrees Celsius. The role of INDC thus fulfils this need of a clear concise and committed movement towards a climate resilient future.

Paris Agreement

The Paris Agreement and accompanying COP 21 decision from the UNFCCC is a positive sign for all the countries and the NGOs that helped the negotiations to happen successfully for launching the new international climate change agreement at Paris. With the developing countries' push, a win-win situation was achieved, when the developed nations were made to take the lead in the climate change process, apart from the discussions that happened on the climate finance and the loss and damage assessment for the small island countries.

In the Indian perspective analysis, there is wide scope for the state and central government to sink and act in achieving the INDC commitments, as laid in the National Communication notes submitted to the UNFCCC. India would require proper policy and financial structuring to attract the foreign investment to make the INDC happen, keeping aside the political disagreements. The Paris success is vested in the hands of the national and domestic interest to reduce the GHG emissions into the atmosphere.

Salient Features of the Paris Agreement

- Reaffirm the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees;
- Establish binding commitments by all parties to make "Nationally Determined Contributions" (NDCs), and to pursue domestic measures aimed at achieving them;
- Commit all countries to report regularly on their emissions and "progress made in implementing and achieving" their NDCs, and to undergo international review;

- Commit all countries to submit new NDCs every five years, with the clear expectation that they will "represent a progression" beyond previous ones;
- Reaffirm the binding obligations of developed countries under the UNFCCC to support the efforts of developing countries, while for the first time encouraging voluntary contributions by developing countries too;
- Extend the current goal of mobilizing $100 billion a year in support by 2020;
- Extend a mechanism to address "loss and damage" resulting from climate change, which explicitly will not "involve or provide a basis for any liability or compensation;"
- Require parties engaging in international emissions trading to avoid "double counting;" and
- Call for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to be counted towards another country's NDC.

The climate finance needs projected by India in its INDC, submitted to UNFCCC, are 2.5 trillion USD to undertake mitigation and adaptation measures by 2030. The requirement is huge while international sources are very scarce. While GCF is supposed to flow 100 billion USD by 2025 as a commitment by the developed world, the amount is to be disbursed to 196 countries with priority to most vulnerable and poor. This leaves India as an emerging economy far behind in line to receive substantial funds that can flow to its states for effective implementation of SAPCC. Thus, we need to rely on domestic sources that can provide us adequate and predictable funds necessary for devising long term 'perspective plans'. Some of such examples have been shared in Module 3.

1.3 India's Nationally Determined Contributions to UNFCCC in 2015

- To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation.
- To adopt a climate-friendly and a cleaner path than the one followed hitherto by others at corresponding level of economic development.
- To reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 level.
- To achieve about 40 percent cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030, with the help of transfer of technology and low-cost international finance including support from Green Climate Fund (GCF).
- To create an additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent through additional forest and tree cover by 2030.
- To better adapt to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, Himalayan region, coastal regions, health and disaster management.
- To mobilize domestic and new & additional funds from developed countries to implement the above mitigation and adaptation actions in view of the resource required and the resource gap.
- To build capacities, create domestic framework and international architecture for quick diffusion of cutting edge climate technology in India and for joint collaborative R&D for such future technologies.

International Solar Alliance- India and the France have had entered into an International Solar Alliance due to be established in India, and promote solar technology implementation in the developing countries. This

action will help India to achieve their 2022 and 2030 commitments in increasing the penetration of solar technology in the Indian states. This activity will boost the collective cooperation among all the 120 nations that support the agreement in improving the research and development activities, enhance knowledge sharing and brainstorming process to invent new low-cost technologies and arrangement of appropriate sources of finance like the funds, FDI, in implementing the solar based systems. The initiative could support India to achieve the goal of 100 GW of solar electricity in the total installed capacity of India by 2022.

Measures to Meet India's Climate Financing Needs

The Prime Minister's Council has had a role in the governance of climate finance to the extent that it formulated India's National Action Plan on Climate Change (NAPCC - see box), and the budgetary allocations in the Twelfth Five Year Plan were based on the Missions outlined in the NAPCC.

Table: 3: National Action Plan for XIIth Plan period for NAPCC mission outlays

Mission	Nodal Ministry	Status of Approval PM's Council	Approval by Union Cabinet	Envisaged Outlays	Financial Outlay Allocated for 12th Plan Period
National Solar Mission (NSM)	Ministry of New and Renewable Energy (MNRE)	✓	✓	Rs.4337 crores	Rs.8795 crores
National Mission for Enhanced Energy Efficiency (NMEEE)	Ministry of Power (MoP), Bureau of Energy Efficiency (BEE)	✓	✓	Rs 425.35 crores	Rs.190 crores
National Mission on Sustainable Habitat (NMSD)	Ministry of Urban Development (MoUD).	✓	✓	Rs.1000 crores	Rs.950 crores
National Water Mission (NWM)	Ministry of Water Resources (MoWR)	✓	✓	Rs. 89,101crores	Rs. 89,101crores (Rs.196 crores approved)
National Mission for Sustaining the Himalayan Ecosystem (NMSHE)	Department of Science and Technology, Climate Change Programme Division (DST) eco-system	✓	✓	Rs. 1695 crores)	Rs. 1500 crores (Rs.500 crores approved
National Mission for a "Green India" (NMGI)	Ministry of Environment and Forests (MoEF). ✓ ✓ Rs 46,000 crores	✓	✓	Rs. 45,800crores	(Rs. 13,000 approved)
National Mission for Sustainable Agriculture (NMSA)	Ministry of Agriculture (MoA)	✓		Rs 1,08,000 crores	Rs.1,08,000 crores (Rs. 13,034crores approved)
National Mission on Strategic Knowledge for Climate Change (NMSKCC)	Department of Science and Technology (DST)	✓		Rs. 2650 crores	Rs.2500 crore

Source: From The coordination of climate finance in India, Vyoma Jha, CPR, December 2014

1.4 Climate Finance Required to Meet Climate Commitments

Climate Finance access in predictable and new and additional form is crucial to drive the climate agenda in developing countries that are following the fossil fuel pathway out of compulsion and willing to move towards alternatives sources in the shortest possible time, subject to availability or 'means of implementation'. India in its INDC has estimated that USD 2.5 trillion will be required for meeting India's climate change actions between now and 2030. The bill of climate change agenda is very high for an economy of 2,183 billion USD. The agreement needs to bring clarity towards a predictable climate finance regime that could support long term planning in developing countries. This would also mean a clear definition of 'climate finance' and sources that could be termed new and additional.

Assessing the Finance Needs to meet INDC Commitments

- Preliminary estimates indicate that India would need around **USD 206 billion USD** (at 2014-15 prices) between 2015 and 2030 for implementing adaptation actions in agriculture, forestry, fisheries infrastructure, water resources and ecosystems.
- An **Asian Development Bank** study on assessing the costs of climate change adaptation in South Asia indicates that the approximate adaptation cost for India in energy sector alone would roughly be about **USD 7.7 billion in 2030s.**
- NITI Aayog (National Institution for Transforming India), or the erstwhile Planning Commission of India, indicates that the mitigation activities for moderate low carbon development would cost around **USD 834 billion till 2030** at 2011 prices, apart from technology transfer requirement.

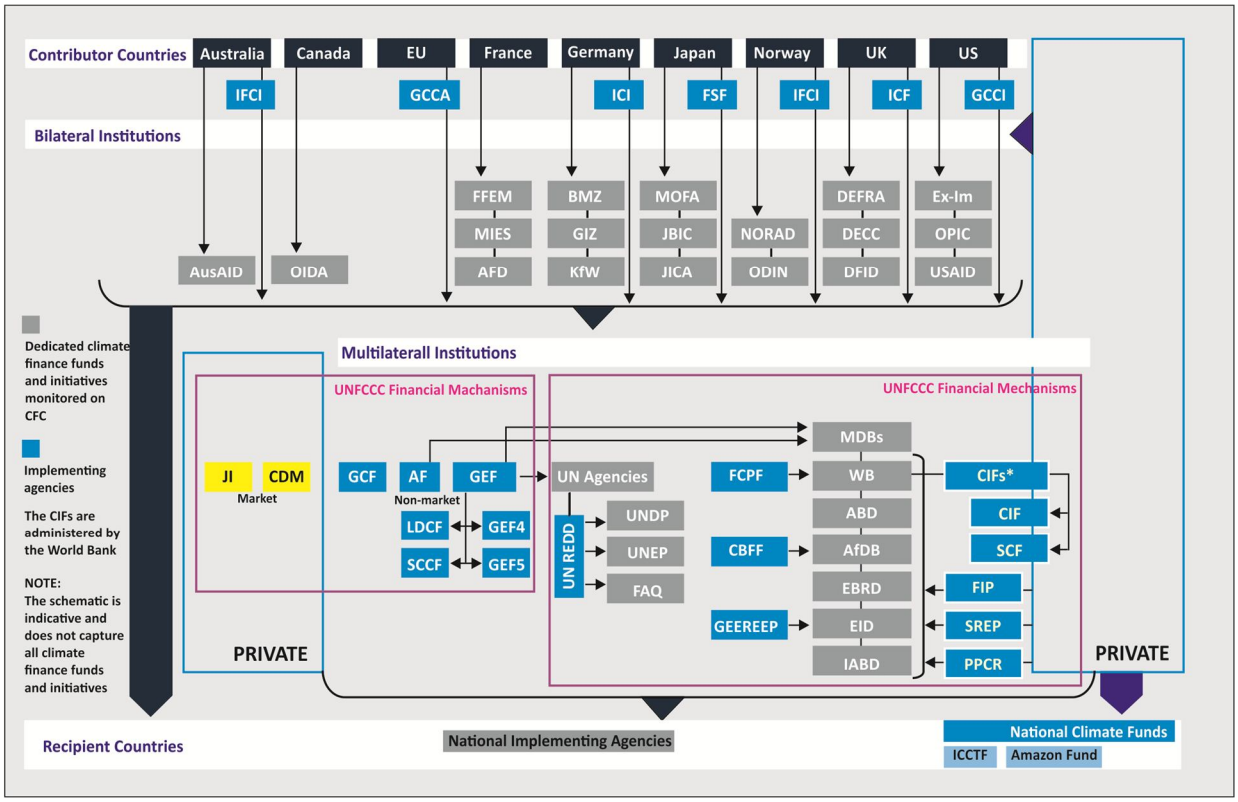
Module 2
International Climate Finance Landscape

The *Bali Action Plan,* agreed to in 2007 at the thirteenth Conference of the Parties (COP13) to the United Nations Framework Convention on Climate Change (UNFCCC), identified 'financing' as a key component in reaching a future global agreement on climate change. Industrialized countries explicitly agreed to finance efforts of developing countries to pursue low-carbon development and to adapt to the adverse effects of climate change.

The Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) emphasises climate finance as an obligation of developed countries to provide 'new, additional, adequate and predictable' financial flows targeting adaptation and mitigation investments.

After the Bali Action plan, under the *Copenhagen Accord*, developed countries pledged to mobilize 'fast-start' (short-term) finance to the amount of 30 billion dollars for 2010-2012, as well as a long-term 100 billion dollars per year from 2020.

Figure 2: Diagrammatic Representation of Climate Change Fund Flow



Source: *"The Global Climate Finance Architecture-Climate Funds Update."*
http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/ publications-opinion-files/8685.pdf

2.1 Sources of International Climate Finance

The various funds detailed above originate from public, private, philanthropic and carbon market sources. ODA, offered by developed countries, forms the bulk of public finance, and a large proportion of this is through bilateral channels (85%), with the rest being channelled through the multilaterals (15%) (CFU 2013)

2.1.1 Bilateral Source of Funding

Bilateral sources of money are largely contingent on the continuing political commitment of the donor countries, which may itself depend on prevailing economic circumstances. This can affect the predictability of climate finance. Without long-term commitments it is more difficult to plan ambitious, climate-resilient growth strategies which require financial support.

1. International Climate Fund of United Kingdom

The International Climate Fund (ICF) is the primary channel of United Kingdom's climate change finance. The ICF is designed to help developing countries adapt to climate change, embark on low carbon growth and tackle deforestation. The ICF's funding portfolio is split between capital contributions/concessional loans and grant finance. The majority of contributions to multilateral funds (CIFs, etc.) are in the form of concessional capital. Grants are used primarily as a mechanism for bilateral contributions. **The current approved funding from ICF is 3.6 USD million for solar project in India.**

The ICF aims to drive urgent action to tackle climate change by supporting low carbon growth and adaptation in developing countries.

Activities Supported by the ICF Include

- Building global knowledge and evidence
- Developing and scaling-up low-carbon and climate resilient programmes including forestry
- Building capacity in the public and private sectors and supporting country level action; and
- Mainstreaming climate change into UK development aid

Case Study

DFID had undergone a research and development study on the rural non-farming sector of two Indian states, Orissa and Madhya Pradesh.

The objectives of this study sought to inform policy on two interrelated topics namely:

1. The sources of farm and non-farm income in rural households; barriers to uptake of non-farm employment; and opportunities which could be translated into policy recommendations.
2. The effect of local governance on the development of the Rural Non-Farm Employment RNFE in particular and rural development in general; and the opportunities for making local governments more responsive to local needs.

DFID lay out the following recommendations, for alleviating poverty and growth in the Orissa and Madhya Pradesh through:

- Institutional development for more effective local governance for economic development and to mobilize producers and savings
- Development of an enabling environment for private enterprises
- Constructive disengagement by government at all levels coupled with wider deregulation.

2. Germany's International Climate Initiative (IKI)

The International Climate Initiative (IKI) finances from Germany, funds climate projects in developing and newly industrialized countries, as well as countries in transition economies.

The ICI focuses on promoting a climate-friendly economy, measures for climate change adaptation and for the preservation or sustainable use of carbon reservoirs/Reducing Emissions from Deforestation and Forest Degradation (REDD).The ICI uses a variety of approaches including grants, concessional loans and where appropriate, project-based contributions to international funds. India received funding of **40.2 USD (Million)** of funding till to date from Germany's international climate initiative.

Activities Supported by the ICI

- Measures to reduce emissions, including energy efficiency and renewable energies project
- Adaption to climate change
- Developing and implementing national adaptation strategies in partner countries
- Conservation and sustainable use of natural carbon reservoirs/REDD+ (Reducing Emissions from Deforestation and Forest Degradation).

Case Study

The UNEP, along with the ICI and the Indian Government, had proposed a project activity of "Promoting Low carbon transportation in India" with the objective of strategically linking the transport aspect of India's National Action Plan on Climate Change (NAPCC) with urban transport renewal and the development of smart cities. The project aimed to achieve two overall goals: creating an enabling environment for coordinating policies to achieve a sustainable transport system, and building cities' capacity to improve mobility while lowering CO2 emissions.

The recommendations of the project study are summarized below

- Electricity cleaning, including the uptake of electric vehicles and the decarbonisation of electricity in India's power grid.
- CO2 reduction from implementation of stringent fuel economy targets consistent with the vision set under the Global Fuel Economy Initiative.
- Sustainable mobility, including passenger transport initiatives such as faster implementation of metro and Bus Rapid Transit (BRT) systems, along with improved integration of non-motorised transport modes, the use of feeder buses, and a higher share of rail in intercity transport.
- Biofuel penetration, facilitated through national policies and enabling mechanisms, as well as the carbon price.
- Interventions in the freight transport sector through the implementation of dedicated freight corridors, demand reduction for coal freight, etc. Significant energy-efficiency impact is already evident in the business-as-usual scenario and further co-benefits can be achieved in the low-carbon scenario from air pollutant reductions.

3. United States Agency for International Development (USAID)

United States Agency for International Development is another bilateral funding agency, which involves in funding climate change mitigation activities through loans and grants across the Asian and African countries and its primary focus is on clean energy technology engagement with India in the following manner:

PFAN is a public-private network that helps clean energy projects and entrepreneurs in developing countries obtain private investment. **Since 2008, PFAN has helped more than 40 clean energy projects secure more than $400 million in private finance in India. More than 150 more projects are in PFAN's pipeline, seeking nearly $5 billion in investment.**

Apart from the mentioned funds, India had bilateral financial pledges from other countries like Canada, Denmark, EU, France, Germany, Italy, Japan, Kuwait, Netherlands, Norway, Saudi, Sweden, Switzerland, and United Kingdom[2].

REDD+ supported by USAID in India

- The objective of the project will contribute to USAID/India's Assistance for accelerating India's transition to a low emission economy by taking REDD+ actions to scale. The project aims to reduce emissions from deforestation and forest degradation and enhance sequestration through afforestation, conservation, and sustainable management of forests by addressing the sectoral barriers, build human and institutional capacity, develop and deploy improved scientific methods for carbon inventory and reference baselines, and actively engage stakeholders and create an enabling environment for REDD+ implementation in India. The project is based upon the GOI's NAPCC and the Green India Mission.
- The USAID will work with MOEF to support implementation of national policies and programs, and will contribute to MOEF's efforts to establish and implement programs through collaboration with the new REDD+ cell. The program will also look for active engagement with communities and local governments in supporting REDD+ activities.

4. The Other Bilateral Funding Agencies are:

- SDC (Switzerland provides grant: loan % as 40:60 for power sector projects)
- Indo-German Development Cooperation (GIZ, KFW etc.)
- SIDA (No grants, only technical assistance)
- NORAD (Mainly dealing in environmental sector for institutional cooperation)
- Indo-French Development Cooperation (Climate change**)**

[2] http://www.dif.mp.gov.in/mannual.pdf
http://finmin.nic.in/the_ministry/dept_eco_affairs/MI/mi_index2.asp

Bilateral Funds for SAPCC of Madhya Pradesh

- The renewable energy /non-conventional and environment based project activity is given prior importance through Danish and United Kingdom's bilateral funding and Madhya Pradesh can focus Danish funding for the aforesaid activity.
- The Rural Climate Change & Electrification Projects from Madhya Pradesh can seek funding from Germany bilateral funding agencies. **(More about funding refer Annexure3)**

2.1.2. Multilateral Funding Agencies

1. Global Environment Facility (GEF)

National Intermediaries for GEF

The GEF Empowered Committee chaired by Secretary (E&F) guides, approves and overlooks GEF operations in the country. The Ministry of Environment and Forests & Climate Change (MoEF&CC) is the GEF Operational Focal Point (GEF OFP) for India for coordination and operational matters. Department of Economic Affairs (DEA) in Ministry of Finance is the GEF Political Focal Point (GEF PFP) for India dealing with policy and governance issues. The GEF Empowered Committee chaired by the Secretary (E&F) guides, approves and overlooks GEF operations in the country. GEF 5 is the present cycle of funding eligible for India only through grants for the projects under NAPCC (National Action Plan on Climate Change). GEF funds full-sized projects, medium-sized projects, enabling activities, and programmatic approaches. UNDP is one of the implementing agency that helps developing countries like India to obtain grant for their climate change mitigation activity.

Types of Project, Eligible for GEF Funding

- Energy efficiency activities in chillers, sme sector, commercial buildings, railways
- Sustainable land and ecosystem management (a multidisciplinary approach to address land degradation and dry land biodiversity concerns from adaptation perspective) and marine conservation (mainstreaming marine conservation with production landscapes in Cooringa and Malvan).
- Development of sustainable urban transport programme
- Energy Efficiency initiatives in tea processing, brick industry sector, and agricultural pump set amongst others.
- Projects on Bio-safety and strengthening Access and Benefit provisions in the Biological Diversity Act
- Solar thermal/ power, coal fired generation rehabilitation project, alternate energy, clean technology programme for SMEs.

2. Special Climate Change Fund

The SCCF builds on the experience of the GEF implementing agencies, and doesn't have a dedicated mechanism to engage with national governments. So far, a total USD 9.82 million has been approved for two adaptation-related projects (being managed by the WB and the ADB).

3. Adaptation Fund under UNFCCC

The Adaptation Fund is a financial instrument under the UNFCCC and its Kyoto Protocol (KP) and has been established to finance concrete adaptation projects and programmes in developing country Parties to the

Kyoto Protocol, in an effort to reduce the adverse effects of climate change facing communities, countries and sectors. Adaptation fund has committed US$330 million in 57 countries since 2010 to climate adaptation and resilience activities. To date, 51 projects have been approved with the majority in the implementation stage. The Fund is financed with a share of proceeds from Clean Development Mechanism (CDM) project activities as well as through voluntary pledges of donor governments. The share of proceeds from the CDM amounts to two percent of Certified Emission Reductions (CERs) issued for a CDM project activity.

Activities supported include:

- The Adaptation Fund uses six categories for its projects and programmes: agriculture, rural development, food security, water management, coastal management, disaster and disaster relief (DDR), and multi-sector issues such as water resources management, land management, health, infrastructure development and fragile ecosystems. Similarly, improving the monitoring of diseases and vectors affected by climate change, and related forecasting and early-warning systems, and in this context improving disease control and prevention are a part of the focus.
- Supporting capacity building, including institutional capacity, for preventive measures, planning, preparedness and management of disasters relating to climate change
- Strengthening existing and, where needed, establishing national and regional centres and information networks for rapid response to extreme weather events and utilizing information technology

Adaptation Fund Procedure

The Adaptation Fund can be accessed by NIE (National Implementing Entity). The NIE in India is NABARD, through which adaptation fund can be accessed and the organization that require Adaptation Fund must submit the proposal through NABARD and the UNFCCC Accreditation panel will select the projects, which are governed by UNFCCC Accreditation principles and standards and gives approval for the funding. NABARD has earlier been accredited by the Adaptation Fund Board (AFB) of UNFCCC as the only National Implementing Entity (NIE) for India. In all, five projects (amounting to US $ 7.07 million) have been submitted to AFB, of which three projects (with an outlay of US $ 5.0 million) have been approved by AFB.

Building adaptive capacities of small inland fishers for climate resilience and livelihood security, Madhya Pradesh received an Adaptation fund of USD 1.79 Million.

(Sample NABARD proposal submitted to Adaptation fund details[3] can be referred in the link.)

4. Asian Development Bank

The climate change funding from ADB, started in operation from the year 2008. The ADB facilitates funds to the Developing Member Countries (DMC), for their effective climate change mitigation/adaptation activities by the non-concessional loans, equity investments, and loan guarantees. The priorities of project which will be funded from ADB are:

- Clean energy, sustainable transport and low-carbon urban development
- Reduced emission from deforestation and degradation and improved land use management

[3] http://www.adaptation-fund.org/wp-content/uploads/2015/04/AFB.PPRC_.16.10-Proposal-for-India-3.pdf

Eligibility and Submission Procedure

Projects are submitted to the ADB's user departments, which act as a national intermediary to the Climate Change Steering Committee (CCSC) in ADB for CCF (Climate Change Fund) support. The CCSC reviews and makes recommendations on the applications for CCF allocation. Applications are reviewed in six batches and are due on 31 January, 31 March, 31 May, 31 July, 30 September, and 30 November.

In India, there are 42 mitigation projects with USD 1906 million, and 5 adaptation project with USD 210 million USD funded by ADB. Madhya Pradesh transportation and power sector project is already funded by ADB.

5. Clean Technology Fund from the World Bank

The CTF aims to provide middle-income countries with highly concessional resources through concessional loans, grants, and guarantees through the MDBs to explore options to scale up the demonstration, deployment, and transfer of low carbon technologies in India.

The CTF works through the implementing channels of the multilateral development banks (MDBs), with ministries of finance as the starting point in most countries.

The CTF supports a range of low-carbon technologies and initiatives:

- Renewable energy: concentrating on solar power, solar photovoltaic, geothermal, wind, small hydro
- Sustainable transport: bus rapid transit, public transportation, high-efficiency vehicles, modal shifts
- Energy efficiency: industry, building, district heating, municipal lighting, appliances

Government of Madhya Pradesh can leverage the advantage of the funds available for India in consultation with the DEA; MoEF was the main entity responsible for drafting the Investment Plan, while the Country Focal Point (CFP) was the MoEF. For more world bank funds see Annex.4.

Impact of Clean Technology Fund for MP SAPCC (Funding Window of CIF for India at a Global Scale)

- The **$5.3 billion Clean Technology Fund (CTF)**, a funding window of the Climate Investment Funds, was established in 2008 to provide scaled-up financing to middle income countries to contribute to the demonstration, deployment and transfer of low carbon technologies with a significant potential for long-term greenhouse gas emissions savings.
- **CT'F's $1.2 billion** is contributing to development of over **1.2 GW** of concentrated solar power across MENA, Chile, India and South Africa -- about **1/3 of 3.4 GW** global installed capacity.
- CTF's concessional financing, channelled through five partner multilateral development banks (MDB), focuses on large-scale, country-led projects in renewable energy, energy efficiency, and transport.
- CTF differs from other mitigation focused fund, and climate instruments, as it works with large **transaction value projects with very few countries**, including India.
- During the World Bank financial year (July 2013-June 2014), funding for India was $5.2 billion ($2.0 billion in International Bank for Reconstruction and Development - (IBRD), $3.1 billion in International Development Association and $0.1 billion in CTF or Clean Technology Fund) across 16 projects.

[4] http://finmin.nic.in/the_ministry/dept_eco_affairs/MI/mi_index2.asp

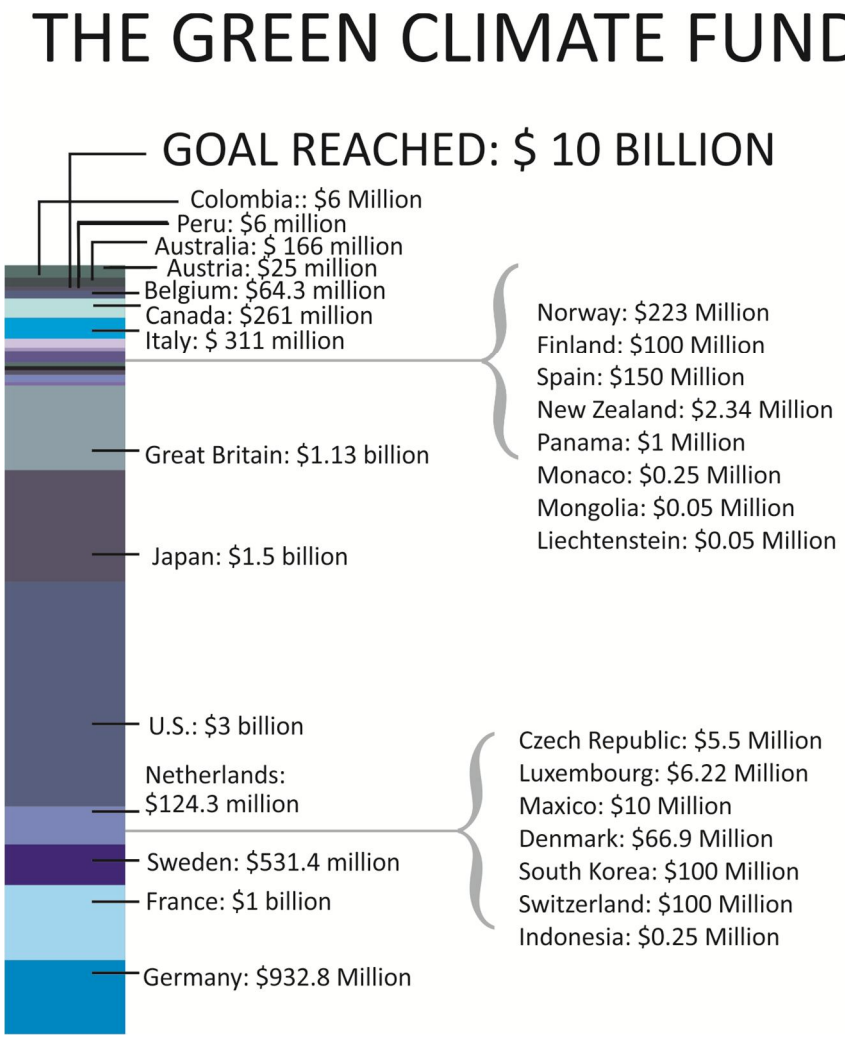
6. Green Climate Fund (GCF)

The projects should be developed based on national climate change based strategies/policies/ communications with priority areas in mitigation/adaptation or integrated approach towards climate change.

Assessment of Scale of Size under GCF funding

- Micro proposals: up to and including US$ 10 million [in total project size / GCF funding amount];
- Small proposals: above US$ 10 million and up to and including US$ 50 million [in total project size / GCF funding amount];
- Medium proposals: above US$ 50 million and up to and including US$ 250 million [in total project size / GCF funding amount]; and
- Large proposals: above US$ 250 million in [total project size / GCF funding amount]

NABARD acts as the focal point for GCF in India. (GCF is covered extensively under sub- national mechanism - Module 5)



Source: *GCF Website, as of March 2015*

Module 3
National Climate Finance Landscape

3.1 Sources of Climate Finance in the National Context

Climate change finance either mitigates or adapts to the ill consequences of climate change by the following means. Finance is sourced from public, private and public-private sectors and it can be channelled through various intermediaries, notably BFIs, MFIs, development cooperation agencies, the UNFCCC (various funds including those managed by the Global Environment Facility), non-governmental organizations and the private sector.

The financials flows can flow from developed to developing countries (North-South), from developing to developing countries (South-South), from developed to developed countries (North-North) and domestic climate finance flows in developed and developing countries.

Financial Flow Diagram

3.1.1 Public Climate Finance Sources

1. Budgetary Support

- The **public climate finance budgetary** support is the main source of public climate finance in India as sectoral funding for ministries such as ministry of water, agriculture, power, renewable energy etc. for adapting and mitigating climate change. Additional budgetary allocations have been also made from the 13th Finance Commission (FC) for the period 2010-15. In view of the urgent need for action for combating climate change, the 13th FC has recommended three types of grants to state governments of Rs.5000 Crores each, viz. for forest cover, renewable and water sector.
- The state can seek additional funds from existing central schemes to implement climate related action at the state level, for instance, Sikkim deployed funds from the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) to implement actions in the water sector (Dubash and Jogesh 2014, pp.19-20).
- The Finance Bill created a corpus called the **National Clean Energy Fund (NCEF)**out of a cess at the rate of Rs.200 per tonne of coal purchased during the Budget 2014- 15 (PTI 2015)to avail Rs 5000 Crores benefit, which can be used to promote renewable energy technology implementation in India. As per the information from MNRE, (August 2015), the amount of funding collected for NCEF was 16388.81Crores for the financial year 2015 and the estimated fund for the year 2015-16 will be Rs. 13118.04 Crores.

2. Subsidies

- The government also supports the renewable energy sector through **generation-based incentives (GBIs),** direct subsidies, tax exemptions, cheap credits or reduced import duties under the first phase of the **National Solar Mission**. Soft loans and capital subsidies are also provided for off-grid projects.

- The Government of India has introduced Renewable Purchase Obligations (RPOs) with tradable Renewable Energy Certificates (RECs) that are helping drive the expansion of the solar and wind sectors.

REC and RPO are renewable energy certificates that are given to the industries, who implement solar or renewable based power systems. The REC is in compliance with state RPO (Renewable Purchase Obligations). Each and every state has a target of RPO to promote the Renewable power generation systems in India. This REC can be traded as regulatory instruments in the power exchangers to mutually benefit the generator and customers.

3. Market Mechanisms

The **Bureau of Energy Efficiency (BEE)** under the Ministry of Power is responsible for overseeing various cap and trade schemes and other market mechanisms for financing under the National Mission for Enhanced Energy Efficiency (NMEEE), namely Perform, Achieve and Trade (PAT), Energy Efficiency Financing Platform (EEFP), Market Transformation for Energy Efficiency (MTEE), Framework for Energy Efficiency Economic Development (FEEED).

- **PAT** is a market-based mechanism that enhances the cost effectiveness of improvements in energy efficiency in energy-intensive large industries and facilities, through certification on energy savings that could be traded. In the 12th Five Year Plan, the PAT scheme is likely to achieve about 15 million tonnes oil equivalent of annual savings in coal, oil, gas, and electricity (including 6.686 million tonnes of oil equivalent energy savings of first phase).
- **Market Transformation for Energy Efficiency (MTEE)** - Accelerating the shift to energy efficient appliances in designated sectors through innovative measures to make the products more affordable.
- **Energy Efficiency Financing Platform (EEFP)** - Creation of mechanisms that would help finance demand side management programmes in all sectors by capturing future energy savings.
- **Framework for Energy Efficient Economic Development (FEEED)** - Developing fiscal instruments to promote energy efficiency.

4. National Adaptation Fund on Climate Change (NAFCC)

National Adaptation Fund on Climate Change (NAFCC) with a budget provision of **Rs.350 Crores** for the **year 2015-16** and **2016-17**, has an estimated requirement of **Rs.181.5 Crores** for financial year **2017-18**. The objective of the fund is to assist State and Union Territories that are particularly vulnerable to the adverse effects of climate change in meeting the cost of adaptation. The National Bank for Agriculture and Rural Development (NABARD) has been appointed as the National Implementing Entity (NIE) responsible for implementation of adaptation projects under the (NAFCC).

5. Compensatory Afforestation Fund Management and Planning Authority (CAMPA)

The Union Cabinet, chaired by Prime Minister Narendra Modi, cleared a Bill on April 29 to unlock the compensatory forestation fund of **Rs. 38,000 Crores**, the use of which is currently being supervised by the Supreme Court. The Compensatory Afforestation Fund (CAF) Bill, 2015, will be introduced in Parliament during the current session.

The Bill intends to establish a **National Compensatory Afforestation Fund (CAF)** and state-level CAF to credit amounts collected by state governments in lieu of forest land diverted for non-forest purposes. CAF authorities will be created at the centre and state level to control and manage these funds. As per the Bill, a

monitoring group will also be established to assist the national authority in evaluation of activities undertaken from amounts released from the national CAF and state CAFs.

Government of India is hoping to pass **CAMPA** during the upcoming winter section of the Parliament, as it will serve as an effective tool for massive afforestation under INDC commitment. Government allotted Rs.21903 lakhs to Madhya Pradesh till date from CAMPA.

3.1.2 Climate Finance from Private Sources

1. Debt Instruments

The most common debt instruments are **Local Currency Loans**, which generally are in the range of about 70 per cent of the total project costs through conventional term loans. Domestic banks (both public and private sector banks) and Non-Banking Finance Companies are the major sources of debt in India. IREDA and Power Finance Corporation (PFC), two government-backed NBFCs, lead debt financing of RE projects in India. As of March, 2012, IREDA and PFC have financed over 4 GW, which represents roughly 15 percent of the total 29.8 GW RE capacity installed in the country (USAID 2013, p.26).

- Government backed NBFCs include Indian Renewable Energy Development Agency, Power Finance Corporation, Power Trading Corporation, Rural Electrification Corporation, and Indian Infrastructure Finance Company Ltd.
- Private NBFCs include L&T Infrastructure Finance, Tata Capital
- Public sector banks include State Bank of India, Canara Bank, Central Bank of India, Punjab National Bank, Andhra Bank
- Private sector banks include ICICI Bank, Axis Bank, HDFC Bank, IDFC Bank, Standard Chartered Bank

The other kind of debt instrument is a **Foreign Currency Loan**, which is provided to RE project by **Development Banks**, **Export-Import (EXIM) Banks** and **International Banks**. Loans from this bank carry low interest rates ranging between three and six percent, with tenures between 10 and 18 years.

A number of private equity investors are also active in the Indian renewable energy market, where equity usually comprises 30 to 40 percent of the total project cost, with the rest of the project financed through debt. One of the notable trends is that most equity investments in Indian RE companies have been made at the parent company level, and not at the project level. In addition, development finance institutions, such as IFCs, have also recently started providing equity funds to large and small-scale RE projects. For instance, IFC has also provided funds to private equity funds like **Nereus Capital** (-focused private equity fund) and **SBI Macquarie Infrastructure Trust** (USAID 2013, pp.34-35).

2. Partial Risk Guarantee Facilities

Partial risk guarantee facilities assume the lender's' default risk on a part amount of the debt provided to the project, thereby improving a project's credit rating and reducing the perceived investment risk. The Indian RE, however, have seen a limited presence of partial risk guarantee facilities. One of the first partial risk guarantee facilities in India was ADB's India Solar Generation Guarantee Facility. ADB has invested 12, 150 Million USD partial risk guarantee program for solar projects with government backed power purchase agreements, and as of June 2012, two solar projects with capacities of 25 MW and 10 MW have been funded using ADB's guarantee facility.

The World Bank Group's Partial Risk Sharing Program (PRSP) also provides partial risk and credit guarantee products to support projects taken up by governments and private investors in developing countries. The objective of these products is to promote capital inflow into infrastructure development. PRSP has also provided financial support internationally for clean energy projects through these guarantee instruments (USAID 2013, pp.37-40).

3.2 Financial Intermediaries in Accessing Climate Finance

Financial intermediaries in the national systems include (a) national agencies, such as central and sector ministries, (b) national financial institutions, such as development banks, and (c) climate change funds established to mobilise and disburse climate finance.

Multilateral and bilateral intermediaries play a significant role in mobilising and disbursing national climate finance in collaboration with national entities.

- ### National Financial Entities (Agencies)

The financial intermediaries in the national climate finance landscape will be the state and central ministries, national financial institution such as the development banks and National Climate Fund initiatives along with bilateral and multilateral funding agencies.

- ### National Financial Institutions

The national financial institutions include private banks and microfinance institutions (MFIs). National financial institutions are viewed favourably as an intermediary for national climate finance as they are the available pool for the international and national sources of public and private climate finance, which can effectively disburse the funds from the investors**.** In India, NDBs are already channelling climate related expenditures – such as energy, transport and agriculture like National Bank for Agriculture and Rural Development (NABARD), Small Industries Development Bank of India (SIDBI), Industrial Development Bank of India (IDBI), and Infrastructure Development & Finance Company of India (IDFC).

- ### National Climate Fund

National Climate Fund (NCFs) serves as a vehicle for receiving international funding through bilateral and multilateral sources and could be used to finance actions not only at the national level but also at the state level for agreed priorities and thrust areas. NCF acts like a financial pool by collecting National Clean Energy Fund. NCFs are also referred to by donors as basket funds when donor funding is channelled to specific expenditures of particular ministries. India has NCEF (National Clean Energy fund) as its NCF.

Module 4
Climate Finance for State Action Plans on Climate Change

The governance structure of climate finance mechanism of Government of India is evolving and is currently dispersed, missing the well-guided, documented, procedures under the National Climate Policy regime.

The NAPCC has called on states to document State Action Plans on Climate Change (SAPCCs) through a proper MoEFCC-led process, coordinated by state environment departments. A common framework was created by MoEFCC to guide the preparation of SAPCCs in consultation with bilateral and multilateral agencies. The processes of preparing of SAPCCs within States were contributed by other relevant line departments related to climate change and this has made the process of consultation and preparation inclusive and widely acceptable to all stakeholders.

4.1 Opportunities to Meet the Goals and Targets of State Action Plan on Climate Change (SAPCC)

The Government of India has laid down the following targets for 2022 through INDCs and streamlined the targets for India as per Table 3, given below. Madhya Pradesh as a state is rich in natural resources and the schematic outline on the Madhya Pradesh's natural wealth and its growing growth trend will make the state an important competitor among the Indian states in availing the below-mentioned national policy benefits and subsidies and international funding for the climate adaptive and mitigation measures and mutually helping the state as well as the centre's target of 2022.

Madhya Pradesh –*Fact Sheet*

- Madhya Pradesh state is rich in terms of natural resources – forests, wildlife, mineral wealth and water bodies. The state has the largest forest cover in the country, with **94.69 lakh Ha of legally designated forests**. It has 20%of the nation's (and 10% of the world's) tiger habitats. Madhya Pradesh is among the top eight mineral rich states of the country, producing about 23 major and minor minerals and contributing to 15.39% of the total coal production of the country during 2009-10.
- The State is drained by rain-fed rivers and receives 1160 mm average rainfall annually.
- In all, 52.5 million People of Madhya Pradesh are involved in **primary sectors like agriculture, horticulture, fishery, livestock, poultry and forestry**.
- Madhya Pradesh is a home to nine major rivers that originate within the state; with an estimated annual run-off of about 81719 hectare metres.
- Madhya Pradesh has a large population of rural and tribal people, with a high dependence on agriculture, forests and fishery for their livelihood. It has **the highest concentration of tribal population** as compared to other major states of India (20.27% as against 8.20% at all India level, according to the 2001 census) and home to about 46 recognized scheduled tribes.
- Approximately one crore tribal people are residing in about 22,000 villages in the vicinity of forests, who are largely dependent on **the forests for their livelihood.**
- **The Gross State Domestic Product (GSDP)** is only 3.6% of the total Indian Gross Domestic Product. Of this, the primary sector comprising of agriculture, forests and fisheries, contributes 26% to GSDP, with 43% of the workers being cultivators and 29% agricultural labourers.

- **Transport:** Madhya Pradesh has 73,311 km of roads, of which 60,000 km are surfaced. It has 4,286 km of national highways, 8,728 km of state highways, 10,817 km of major district roads (MDRs), and 48,590 km of other district roads (ODRs)/village roads. The road network is 45 km/100 sq. km in Madhya Pradesh
- **Power:** Madhya Pradesh has a total installed power generation capacity of 8,539 MW, which comprised 4,582.9 MW under state utilities, 3,525 MW under central utilities and 216.1 MW under the private sector. Coal-based thermal power and hydro power contribute around 51.4% and 38.7% to the total installed capacity, respectively. Balance generation capacity is based on nuclear and renewable energy sources. The present average energy consumption per capita in the State is 580.34 kWh.
- The state's energy requirement is currently dependent on conventional energy sources and the state offers viable solar sites having potential for production of more than 5.5 kWh/sq. m for the Solar PV based Power generation and utilization.

Table: 4: Details of National Missions aligning with SAPCC

Mission	MPSAPCC Implemented Programmes/Schemes	Departments	State budget, Rs crores
National Solar Mission (NSM)	• Industrial investment promotion assistance - 50 to 75% of commercial tax for 4-5 years • 5-year electricity duty exemption on captive power generation • For thrust sector industries - 25 % capital subsidy • Interest subsidy of 3 - 5 % on term loan for 5-7 years • Concessional registration charges & stamp duty exemption for term loan • Land on 75 % concessional rate for mega projects • Entry tax exemption for 5 years • Project Reports Cost Reimbursement scheme • Subsidy on ISO Certification, patent registration & technology acquisition • VGF funding of up to 40% (20% GoI+ additional 20% State Government. • Special Packages for Mega projects • Impetus to Climate Change relevant research and development and capacity building	NRED, MPREC	330
National Mission for Enhanced Energy Efficiency (NMEEE)	• Review of MP Industrial Policy 2004 to address climate change concerns • Implementation of Perform, Achieve and Trade Mechanism • Capacity building of personnel and institutions to integrate Climate Change concerns in planning and actions • Enhance efficiency in generation of power • Exploration and feasibility assessment of new technologies using conventional fuel • Structure green tariff for incentivizing the production of clean energy	DoE, DoC& IUVN, MoP, NRED	68

	• Improved mechanism for use of energy efficient pumps for irrigation • Campaign for implementation of ECBC Codes		
National Mission on Sustainable Habitat (NMSD)	• Ensure energy efficiency in residential and commercial sectors and green building • Develop Urban Storm Water Management Mechanism • Efficient solid waste and waste water management • Sustainable urban transport and enhanced rail connectivity • Regulated and planned urban expansion • *Efficient urban water supply system • Monitored and regulated groundwater exploration • Promote sustainable infrastructure and wise water practices • Public awareness about Climate Change induced health risks • Need for Climate Change relevant research and development • Capacity building to integrate Climate Change concerns in city planning	UADD, DoT, EPCO, GOMP, DOH&E	252
National Water Mission (NWM)	• Develop comprehensive water data base in public domain • Accelerate surface water development activities in the state • Promote recharge of groundwater with special focus on over exploited areas • Plan for efficient water supply systems and management • Encourage water management practices like water auditing, regulated exploration of groundwater, water recycling, etc • Enhance basin level integrated watershed management • Review of existing water storing structures in view of excess precipitation • Restoration of traditional water storing structures as groundwater recharging structures • Impetus to climate change relevant research and development • Capacity building- institutional and personnel to integrate climate change concerns in planning	WRD, MoWR, Research Institutes, SDMA	667
National Mission for a "Green India" (NMGI)	• Develop Forest Management (Working) Plans based on the different forest types in view of Climate Change * Enhance forest conservation, Afforestation (with special emphasis on Compensatory Afforestation) and Reforestation activities through viable models • Priorities soil and water conservation measures as part of SFM practices • Reduce over-dependence on forests for energy by alternate energy sources	FD, DoA, DoAH, MNREGA, MPCST	883

	• Strengthen forest fire management mechanism throughout the year • Create corridors for species migration • Support and develop market linkages for forest based livelihood opportunities • Impetus to Climate Change relevant research and development • Study on impacts of Climate Change on MP forests Types and create awareness • Ensure availability of adequate feed, fodder and water for livestock in drought and flood conditions • Enhance capacity for disease surveillance, forecast, monitoring and management • Ensure adequate housing and dedicated water bodies for livestock to overcome heat stress • Promote rearing of indigenous species that can adapt to changing climatic conditions • Promote use of livestock waste for use as organic manure • Create infrastructure f or processing, storage and transport of livestock products • Develop best practices of fish rearing suitable for different agro-climatic zones of MP • Creating fish seed banks for easy availability to fishermen • Impetus to Climate Change relevant research and development • Capacity building institutional and personnel to integrate Climate Change concerns in planning		
National Mission for Sustainable Agriculture (NMSA)	• Promote soil and water conservation technologies • Promote dry land agriculture and horticulture • Plan for cropping systems suitable for each agro-climatic zone • Introduce policies for managing climate risks for a sustainable productivity • Enhancing dissemination of new and appropriate technologies and strengthening research • Creation of agriculture Information management including information on climate forecast • Additional impetus to mechanization and accessibility to markets • Creation of rural business hubs for diversification of livelihoods • Capacity building of communities on sustainable harvesting, water management, • Use of fertilizers, sustainable agro-residue management etc. • Promotion to climate change relevant research and development • Capacity building to integrate climate change concerns	DoH, DoF DoA, MPSMFPF, FD RD, Agri Universities, WED	778 (Agri) 348 (Horticulture) 589 (Animal Husbandry) 34 (Fisheries)

National Mission on Strategic Knowledge for Climate Change (NMSKCC)	• Improving the strategic knowledge, R & D, Capacity building initiatives are inbuilt under each category of schemes inclusive of the budget figures.		

Table 5: Climate agenda outlined in country's NDC to UNFCCC

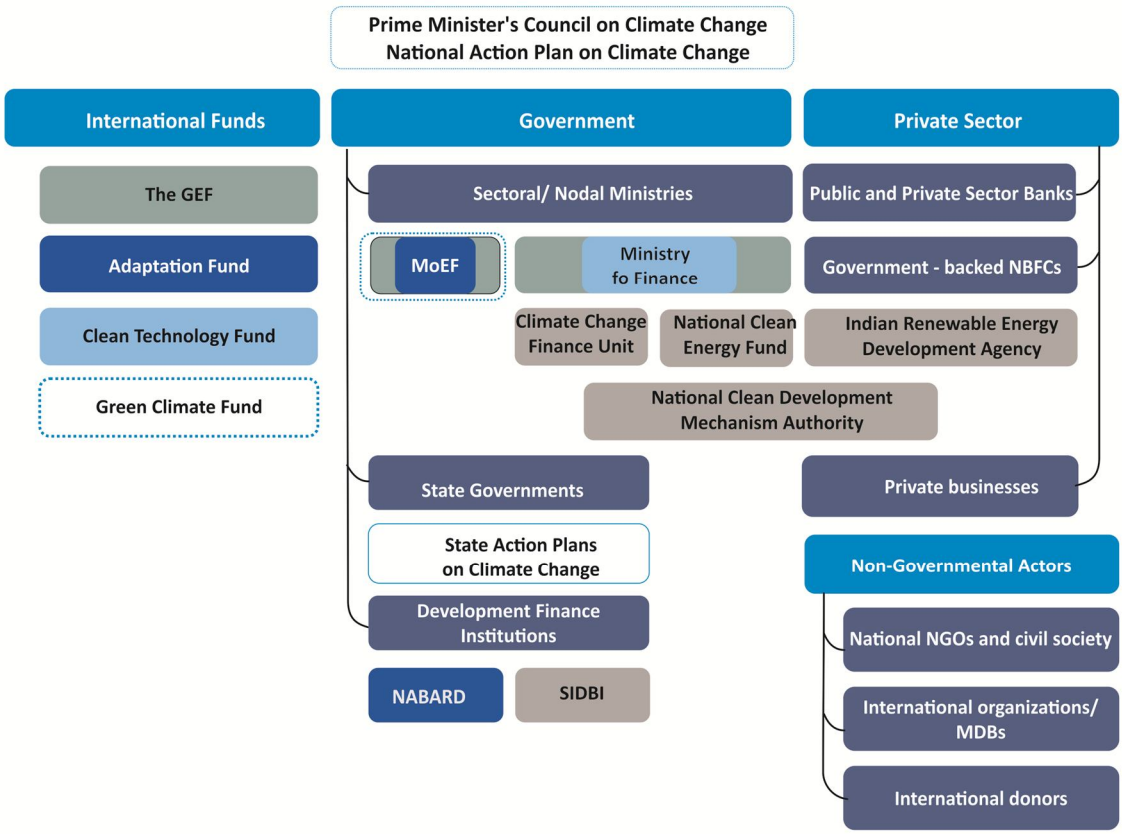
Policies	Milestone 2022
Clean Energy Policy	Wind-60 GW
	Solar -100 GW by implementing 25 solar park, Ultra mega solar project, canal top solar project, solar pump for agricultural purpose etc.
	Biomass- 10 GW
	Hydro and Hydel power with vast potential of100 GW is available, to be utilized by promotional policies
	Nuclear -63 GW (2032)
Clean Coal Policies	144 power plants assigned to improve the energy efficiency Provision of stringent emission standards
National Smart Grid	Green corridor to reduce transmission power loss. USD 6 billion is allotted for this purpose
Enhanced Energy Efficiency Measures	Demand side energy efficiency by replacing light bulbs, super-efficient lamps, and standard and labelled air coolers. Benchmark to ensure 10 % energy savings by 2019. Partial Risk guarantee fund for energy efficiency and Energy conservation building code are other measures Formulation of net Zero energy building based on GREHA rating
	PAT scheme
	Zero Effect Zero Defect (ZED) with Make in India – For small and medium enterprise energy efficiency scheme. (Newly launched scheme)
Developing Climate Resilient Development Centre	Smart city programme-100 smart cities are identified for transforming into energy efficient cites Atal Mission for rejuvenation and Urban Transformation (AMRUT)-New scheme launched and covers 500 cities for providing basic amenities
Waste to Wealth	Swachh Bharatin 4041 towns to be litter free Solid waste management projects
Safe, Smart Green transportation	Laying Dedicated fright corridor, MRTS and solar powered toll plaza
Planned Afforestation	Green India Mission -5 million hectares of massive afforest ration scheme sequestering 100 million tone of CO2 equivalent annually. National Agro-forestry Policy (NAP), REDD-Plus policy, Joint Forest Management; National Afforestation Programme and proposed devolution of about USD 6 billion under Compensatory Afforestation to states.
Other important measures covering NAPCC's 8 missions	National Initiative on Climate Resilient Agriculture (NICRA) Soil Health Card and 100 mobile soil testing authorities National Agro forestry Policy National Water Mission (to enhance efficiency by 20 %), water quality improvements across rivers in Indian states.

	National Mission for clean Ganga cleaning project. Promotion of rural livelihood by MGNERES, INR 347 billion (USD 5.5 billion) in 2015-16, aims at enhancing livelihood in the rural areas. National Rural Livelihoods Mission which has the objective to cover 70 million rural poor households, across 600,000 villages in the country through self-managed self-help groups and federated institutions to support the rural communities in strengthening their livelihood.

On analysing the fact sheet and the Table 4 and 5, Madhya Pradesh is gifted with plenty of natural resources that can be effectively transformed into many climate change mitigation project activities with proper planning and State Government actions**.**

The present climate finance landscape is loosely structured and fragmented. There is no single climate finance clearing house or national climate change secretariat for managing the climate risks in India. There are multiple layers and functions within the institutional frameworks of National and Sub-National Administration, which dilute the process of fund approval and disbursement and monitoring and verification outcome and results. Furthermore, Government of India engages with different international funds through different institutions in order to channel climate finance into climate-related activities domestically. There are multiple feedbacks and decision-making channels which delay the outcome. The following figure 5 depicts the complex structure in place –

Figure 3: Climate finance administration and governance- existing framework



Source: V Jha, CPR

The bilateral agencies in India works with MoEFCC as the Nodal Ministry for climate change project formulation, approval and decision-making in consultation with central and state government agencies. The bilateral agencies also work with various grassroots NGOs/CSOs. Between 2007 and 2013, bilateral agencies have provided about 3,222.6 Crores (US$ 513 million) for climate change in the form of instruments such as grants, loans and technical assistance – including, for instance, in the preparation of SAPCCs, and in "climate proofing" ODA-funded projects and activities.

Multilateral agencies, governed by their own access modalities and approval system, have provided about 53,422 Crores (US$ 8.5 billion) as climate finance to India during this period. The countries submit their projects through multilateral implementing agencies (such as the World Bank, the UN Development Programme, UN Environment Programme or regional development banks) for access to multilateral funds. Decisions on which projects get funded are then taken by the Board or CEO of the multilateral agencies). But, there is lack of clarity in obtaining the complete climate finance fund flow, due to various fragmented funding agencies and procedures.

The Adaptation Fund has pioneered a "direct access" modality, which included the option overcoming the challenges to access multilateral implementing agency. Here in this case, project proposals are submitted to a National Implementing Entity (NIE) accredited by the Adaptation Fund Board (AFB). NIEs are "national legal entities nominated by Parties and recognised by AFB for the fiduciary standards and demonstrating ability to comply, as a minimum, with the environmental and social policy approved by the Board in India. It is responsible for screening projects that are submitted from India to the Adaptation Fund, and getting them endorsed by the MoEFCC, which is the National Designated Authority (NDA). Endorsed projects are then forwarded to the AFB for consideration. So, although the ultimate decision on whether to fund a project or activity is still taken by the AFB, the process is more accessible by local communities and their representatives.

Know-How, Funding Procedure & Access Modalities for Government of Madhya Pradesh: Exploring the Sample GCF Options for Madhya Pradesh

The Green Climate Fund was designated as an operating entity of the financial mechanism of the UNFCCC, in accordance with Article 11 of the Convention. Arrangements will be concluded between the Conference of the Parties (COP)

The fund has to ensure that it is accountable to, and functions under the guidance of, the COP. The GCF fund offers 50:50 fund ratio for adaptation and mitigation programmes.

The fund is governed and supervised by a Board that will have full responsibility for funding decisions and that receives the guidance of the COP. Funds are disbursed through accredited intermediaries. Funding Secretariat is based at Songdo, Incheon City, Republic of Korea in S. Korea, and has the Trustees with administrative competence to manage the financial assets of the Fund.

In climate finance landscape, the fund will play a key role in channelling new, additional, adequate and predictable financial resources to developing countries and will catalyze climate finance, both public and private, and at the international and national levels. The Fund will pursue a country-driven approach and promote and strengthen engagement at the country level through effective involvement of relevant institutions and stakeholders.

The fund will be scalable and flexible and will be a continuously learning institution guided by processes for monitoring and evaluation. The Fund will strive to maximize the impact of its funding for adaptation and mitigation, and seek a balance between the two, while promoting environmental, social, economic and

development co-benefits and taking a gender-sensitive approach. The fund will provide simplified and improved access to funding, including direct access, basing its activities on a country-driven approach and will encourage the involvement of relevant stakeholders, including vulnerable groups and also addressing the gender aspect.

NABARD has been accredited by Green Climate Fund (GCF) Board as one of the National Implementing Entity (NIE) for GCF in India. NABARD, as one of the NIEs of the Green Climate Fund, is responsible for management and oversight of project implementation. NABARD is already supporting projects, many of which can be classified under climate finance. Over 28% of NABARD's cumulative disbursements have links with climate change adaptation and mitigation. Specifically, NABARD's thematic areas of forestry, agriculture, animal husbandry, land development, minor irrigation, etc., have projects / components with emission reduction potential.

Procedures for Government to Access GCF Funds Directly

Input About Accreditation Priorities

GCF will disburse funds through accredited intermediaries who will structure financial mechanisms for proposals selected by the Board.

Fast tracking process considers the entities who are already accredited by the GEF, Adaptation Fund and EU's Devco.

- Board has identified and will assess certain gaps in fiduciary and ESS standards from each existing fund
- Key goal was to accredit national, sub-national and private sector intermediaries from developing countries
- **Fit-for-purpose approach** will lower the barriers for national entities to access Fund resources directly by allowing entities to apply for different levels of accreditation based on:
- Nature and scale of intended activities (under $10 m, $1050m, $50 -250m, >250m)
- Grant making, technical assistance, different types of financing
- Capacity to handle environment, fiduciary and social risks

Project Investment Guidelines

The Fund's initial investment guidelines cover 6 criteria and 24 scopes.

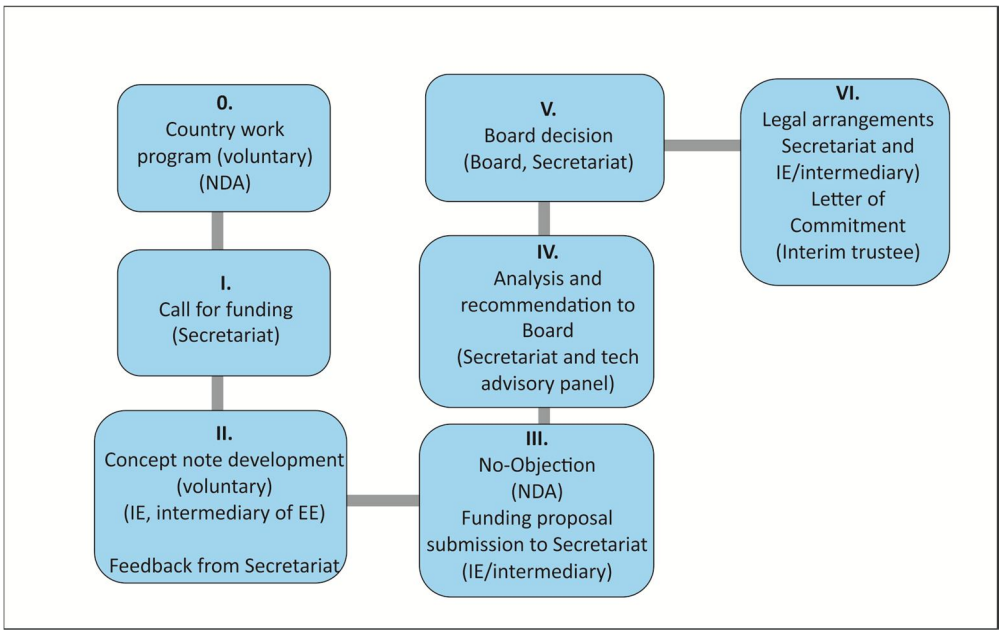
Table 6: Criteria for investment guidelines of GCF

Criteria	Description
Impact potential	Mitigation and adaptation impact
Paradigm shift potential	Impact beyond a one-off project/program investment
Sustainable development potential	Wider benefits and priorities (economic, social and environmental)
Needs of the recipient	Vulnerability and financing needs of beneficiary country and population
Country ownership	Beneficiary country ownership of and capacity to implement a funded project or program
Efficiency and effectiveness	Economic and financial soundness of program or project

GCF Project Cycle

STEP 1- (Call for Funding and Borrower Country Government formalities)

Figure 4: GCF Project Cycle



*For GEF direct assessment funding and detailed flow chart, refer Annexure1

Source: *Presentation: Green Climate Fund, Ned Helme, President, Centre for Clean Air Policy on 27/10/2014*

Module 5

Climate Financing Instrument Matters - *Options*

The section mostly focuses on examples of financial instruments and supported project-specific framework. The sectoral focus of this section will be more on renewable energy considering the commitment of 175 GW by Government of India by 2022.

Any decision to use public or concessional funds to support renewable energy technologies (RETs) represents a commitment of scarce public resources to fund investments. In principle, the private sector should be capable of funding such investments itself, given an appropriate enabling framework; indeed, the private sector does so in many countries. In doing so, it increases the resources available to other activities that may be far less amenable to private funding, such as health care and social welfare. Efficiency is therefore the key to the selection of the appropriate financial instruments to support RET investments. The aim should be to use those instruments that deliver the greatest amount of private funding for the smallest amount of public funds (thus achieving the greatest leverage).

Table 7: Risks and barriers in project financing: An example of technology deployment

	Financing Barriers						Project Risks			
	Lack of Long-Term Financing	Lack of Project Financing	High and Uncertain Project Development Costs	Lack of Equity Finance	Small Scale of Projects	High Financial Cost	High Exposure to Regulatory Risk	Uncertainties Over Carbon Financing	High Costs of Resource Assessments	Uncertainties Over Resource Adequacy
On-Grid										
Wind	Hi	Med	Lo	Lo	Lo	Med	Med	Med	Lo	Med
Solar	Hi	Med	Lo	Med	Med	Hi	Med	Med	Lo	Med
Small hydro	Hi	Med	Med	Med	Med	Lo	Med	Lo	Med	Hi
Biomass	Hi	Med	Lo	Lo	Med	Med	Med	Med	Lo	Hi
Geothermal	Med	Med	Hi	Med	Lo	Lo	Med	Lo	Hi	Med
Off-grid										
Solar/micro-hydro	Med	Lo	Med	Hi	Med	Med	Lo	Lo	Lo	Med

Source: Authors
Note: Lo = Small or no impact (mitigation of risks is desirable); Med = Moderate impact (mitigation of risks is likely to be required); Hi = Significant impact (mitigation of Risks is generally necessary if the project is to proceed)
Lack of market funds is not included in the figure. This financing barrier could affect any technology and is driven by the size of domestic capital markets, not the specific risks of any technology

Source: *Authors: Financing Renewable Energy: Options for Developing Financial Instruments Using Public Funds: The World Bank – CIF*

Leveraging Private Investments a Choice of Financial Instruments

Leverage is the additional funding that is mobilized by the instrument concerned. For example, if the contribution of $1 in funding through the instrument leads to an additional $1 in financing from other sources, then the leverage will be two times as much. As an example of the leveraging that can be delivered with different instruments, assume that $10 million in public funds is available for the Renewable Energy

Technology (RET) investments. One option would be to inject these funds directly into individual projects. Another would be to offer guarantees for project investments. Assuming that the guarantee is for 50 percent of debt financing, and that debt represents 80 percent of the total project financing, then $1 of public funds would guarantee $2 of debt financing and $2.50 of project financing. The resulting leverage would be 2.5 times. Experience with World Bank guarantee instruments has shown even higher levels of leverage. During the period 2004–06, six guarantee operations were concluded for a total exposure of $ 444.5 million, mobilizing a total of approximately $1.933 billion (that is, average leverage of approximately 4.3 times). Meanwhile, direct injection of funds may not deliver any additional private investment.

Table 8: Private funding details of India

Financing Intermediary	Eligibility criteria	Financing schemes
Analysis in Financing mechanism and Financial Intermediary		
NABARD	Offering loan via Composite Loan Scheme (CLS) for SME Integrated Loan Scheme (ILS) Rural Housing and capital cum interest subsidy scheme for Renewable Energy and direct finance for Agriculture and rural areas, credit link subsidy scheme for small industries, rural innovation und and acts as a National entity for adaptation fund and GCF.	Long term loan is given by NABARD to State Co-operative Agriculture & Rural Development Banks (SCARDBs) Regional Rural Banks (RRBs) State Co-operative Banks (SCBs) Commercial Banks (CBs) State Agricultural Development Finance Companies (ADFCs) Scheduled Primary Urban Co-operative Banks (PUCBs) North East Development Finance Corporation (NEDFC) Non-Banking Financial Companies (NBFCs) Short term loan for fisheries apart from Agriculture and rural sectors
SIDBI	Waste to Energy Projects, Common Effluent Treatment Plants Industrial pollution control technologies, Sustainable transport solutions (e.g., Transport operators using cleaner energy such as LPG/CNG, etc.) Commercial Green building (Co-generation of energy and use of Renewable Energy, CDM registration related expenditure and any Climate Change Mitigation projects. (xxvi)Green micro finance (micro loans up to 5 lakhs to micro enterprises for green / energy efficient equipment measures through various micro finance intermediaries or NBFCs. Any sector-Out phasing of ozone depleting substances	
IREDA	All renewable energy projects executed by Private Sector Companies/ firms • Central Public Sector Undertaking (CPSU) • State Utilities/ Discoms/ Transcos/ Gencos/ Corporations • Joint Sector Companies	Line of Credit Short term loan assistance Bridge loan assistance Policy on Underwriting of Debt/Loan Syndication. Guarantee Assistance Scheme to RE suppliers/Manufacturers/EPC Contractors

		FI under consortium/syndicated Loans/ multi banking arrangements by charging lead fee Direct Discounting of GBI Claims payable to renewable energy developers under MNRE Scheme for Generation Based Incentive (GBI) for grid interactive wind and solar power projects direct discounting of MNRE capital subsidy payable to accredited channel partners and State Nodal Agencies (SNA) for installation of Solar water heating systems
Indian Infrastructure Finance Company Ltd.	Deals with promoting infrastructure development of airport/power sector/ metro rail/gas pipelines of public and private sectors and private public partnership projects	• Long term debt; • Refinance to Banks and Public Financial Institutions for loans granted by them • Take out financing • Subordinate debt • Credit enhancement • Any other mode approved by the • Ministry of Finance from time to time • Loan can be provided by international funding
L& T Infrastructure (Non-Govt./ NBFC)	Providing project debt financing (No external borrowing) to Solar SPV , EPC companies, Infrastructure Developers,& Infra-debt Fund	• Term loan • Debentures • Securitized and subordinate debt • Convertible and non-convertible debentures • Shares • Equity based funding to Infrastructure under infra-debt fund
State bank	Agriculture road & urban infrastructure Power and utilities Oil & gas, other natural resources Ports and airports Telecommunications Non-infrastructure sector: Manufacturing: cement, steel, mining, engineering, auto components, textiles, Pulp & papers, chemical & pharmaceuticals Tourism & hospitality, educational Institutions, health industry. The minimum project cost is Rs. 200 crores (Rs. 100 crores in respect of services sector). The minimum proposed term commitment is of Rs. 50 crores from SBI.	• Rupee term loan • Foreign currency term loan/convertible bonds/GDR/ADR • Debt advisory service • Loan syndication • Loan underwriting • Deferred payment guarantee
ICICI bank	Apart from agro-financing, technology financing through World Bank and USAID	No detailed info can be sketched

HDFC	Power (generation, transmission and distribution) /Renewable Energy (wind, solar and hydro)transportation fertilizers, cement, mining, telecommunication, oil & Gas,	Equity capital markets
Axis Bank	Private finance for the private organization for their project appraisal activity and construction finance for the constructional activity/To rural and SME enterprises	Loan and working capital finance

Source: *Summarized reference collected from all the websites*

Annexure 1
Available GEF-5 Funds for India

Table 9: Available GEF Funding for India Which MP can concentrate (GEF -5, 2010-2014)

Allocation and Utilization of Resources in India in GEF-5**| All Amounts in USD Focal Area	STAR GEF-5 Indicative allocation	Allocation Utilized	Projects Awaiting Council approval***	Allocations yet to be Programmed
Biodiversity	30,580,000	22,370,000	0	8,210,040
Climate Change	93,750,000	67,248,400	0	26,501,600
Land Degradation	5,100,000	540,000	0	4,560,000
Total	129,430,000	90,158,300	0	39,271,700

Annexure 2
Financial Lending Instruments

Most of the MDBs have the following lending instruments namely, one type of lending facility is used to provide financial assistance on market-based terms, typically in the form of loans, but also through equity investments and loan guarantees and the Non-concessional assistance is, depending on the MDB, extended to middle-income governments, some creditworthy low-income governments, and private sector firms in developing countries. Secondly the other type of lending window is used to provide financial assistance at below market-based terms

Table 10: Type of Financing Instruments of the Major MDBs and New Commitment Figures

MDB	Type of Financing	Type of Borrower	New Commitments, 2014 or FY2015 (Billion $)
International Bank for Reconstruction and Development (IBRD)	Non-concessional loans and loan guarantees	Primarily middle-income governments, also some creditworthy low-income countries	23.53
International Development Association (IDA)	Concessional loans and grants	Low-income governments	19.00
International Finance Corporation (IFC)	Non-concessional loans, equity investments, and loan guarantees	Private sector firms in developing countries (middle- and low-income countries)	10.54
African Development Bank (AfDB)	Non-concessional loans, equity investments, and loan guarantees	Middle-income governments, some creditworthy low-income governments, and private sector firms in the region	4.64
African Development Fund (AfDF)	Concessional loans and grants	Low-income governments in the region	2.30
Asian Development Bank (AsDB)	Non-concessional loans, equity investments, and loan guarantees	Middle-income governments, some creditworthy low-income governments, and private sector firms in the region	10.23
Asian Development Fund (AsDF)	Concessional loans and grants	Low-income governments in the region	3.09
European Bank for Construction and Development (EBCD)	Non-concessional loans equity investments, and loan guarantees	Primarily private sector firms in developing countries in the region, also developing-country governments in the region	10.75
Inter-American Development Bank (IDB)	Non-concessional loans and loan guarantees	Middle-income governments, some creditworthy low-income governments, and private sector firms in the region	12.65

Annexure 3
Exploring in Detail Few Bilateral Funds in India

India and Sweden

The agreement on development cooperation was terminated in 1998 but support through multilateral organisations and Indian NGOs continued with an overall objective to support poor and vulnerable groups and with special focus on women and children.

From 2005 partner driven cooperation was the main form of support promoting partnerships between actors (municipalities, authorities, universities, business etc.) in Sweden and India with the potential to be self-sustaining. Main areas were environment and health and the cooperation also resulted in the signing of Memorandums of Understanding in energy, environment and health. These MoUs will continue to guide cooperation between the two countries on a mutual and cost-sharing basis. SIDA Swedish International Development Agency (SIDA)[5]

India and Finland

On the basis of an excellent knowhow of environment and energy sector in Finland, key areas of cooperation between Finland and India are nowadays fight against climate change, air quality, sustainable energy solutions, waste management, water and sustainable production and consumption. They offer abundant business opportunities.

The Joint Working Group on Environment (JWGE) between Finland and India provides a vital platform for meetings and discussions between officials but also brings companies, research organizations and experts of the two countries together. Moreover, number of Finnish NGOs work in India, through Ministry of Foreign Affairs.

India and UK Government (DFID)

From now on, DFID will approve no new financial grant aid to India. Nevertheless, DFID will responsibly complete by 2015 project commitments to ongoing projects. All new programmes will be either technical assistance or private sector initiatives financed using returnable capital; and working together on global development issues.

After 2015 technical assistance and returnable capital programme will focus in three thematic areas, on urbanisation, economic development and empowering women and girls which reflect the Government of India's priorities.

DFID will strengthen their partnership with India on global development issues like food security, and climate change. This new approach offers a more up-to-date way of working with India to tackle poverty as it continues to grow and develop.

DFID will continue to work with other UK government departments through joint units on trade, energy, growth & climate change, and joint networks on research and education.

Source: Operational Plan 2011-2016
Update: December 2014.

[5]For More Refer: http://www.swedenabroad.com/en-GB/Embassies/New-Delhi/Development-Cooperation/Development-Cooperation-with-India/

India and Norway

The Indo-Norwegian collaboration covers clean and renewable energy, climate change mitigation and adaptation, biodiversity, polar research, natural hazards management and waste management.

Technical and institutional capacity building is the main goal of Norway's India cooperation. In the Indo-Norwegian collaboration Norway shares expertise, resources, experience and engagement with India, resulting in continuous development of these issues

India and Germany

The cooperation projects are carried out on behalf of the German Federal Ministry for Economic Cooperation and Development as well as the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)

Germany's International Cooperation Agency GIZ and the German Development Bank KfW. GIZ is charged with implementation of technical cooperation and KfW with implementation of financial cooperation projects respectively

Indo-German development cooperation programme focuses on the following mutually agreed priority areas:

- Energy
- Environment, Protection of Natural Resources
- Sustainable Economic Development

The proposals for implementation of development cooperation projects are forwarded to the German Government, through the German Embassy, by the Department of Economic Affairs (DEA) of the Indian Ministry of Finance. The DEA is the central coordinating authority of the Indian Government responsible for development cooperation.

Annexure 4
Examples on Projects and Participation of Climate Finance Stakeholders

Influence of NSM (National Solar Mission) and Climate Finance Flow in India

The example of the Rajasthan Sun Technique Concentrated Solar Power (CSP) Plant, the largest CSP project worldwide using the promising Linear Fresnel technology and one of the most advanced and cost-effective plants under India's ambitious Jawaharlal Nehru National Solar Mission (JNNSM), shows the involvement of a series of public and private stakeholders in financing the CSP plant.

Public Sector Stakeholders

National and Local Government

The Ministry of New and Renewable Energy (MNRE) and the NTPC Vyapar Vidyut Nigam (NVVM), are key stakeholders responsible for policies and power purchase. The implementation of this phase is in hands of NVVN, a subsidiary of the National Thermal Power Corporation (NTPC), the largest power producer in India. The NVVN also laid out guidelines for selection of developers for commissioning grid connected solar power projects in India.

Foreign Public Lenders

Development Finance Institutions and export credit agencies such as FMO (Dutch Development Bank), Asian Development Bank (ADB) and Export-Import Bank of the United States (US EXIM) provide long dated debt to the project, extending available maturities from 10 to 18 years.

Private Sector Stakeholders

Project Developer: Reliance Power Limited

Reliance ADA, a large Indian conglomerate, developed the project through its subsidiary Reliance Power, holds the full equity in the Special Purpose Vehicle and is responsible for engineering, procurement and construction through Reliance Infrastructure, another Reliance ADA subsidiary.

2. Projects/Programme

Solar Photovoltaic Plant Sakri

KfW supported this project in the form of concessional financing on behalf of the German government and the full 125 MW capacity is in operation since March 2013.

Promotion of a Sustainable Energy Supply Based on Hydropower

On behalf of the German government, KfW is supporting this endeavour through long term concessional financing and complementary technical assistance (TA).

Promotion of Renewable Energies and Energy Efficiency through IREDA

The First Line of Credit used for the refinancing of twenty-six wind energy projects (94 MW), three bagasse-based cogeneration projects (53 MW) and five solar photovoltaic plants (169 KWp) for which IREDA created target-oriented financing opportunities.

Energy Efficient Housing (NHB) - Setting Standards as in Germany

German development bank KfW Entwicklungsbank (KfW) commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) is financing a Promotional Programme for Energy Efficient New Residential Housing in India.

The Programme intends to apply the decade-long German experiences of successfully promoting energy efficient residential buildings to the residential building sector in India. KfW therefore provides a Line of Credit of EUR 50 million to the National Housing Bank (NHB). This Line of Credit is used by NHB for refinancing individual home buyer loans for energy efficient new residential housing under the Programme title Energy Efficient Homes. Apartments eligible for refinancing have to meet a minimum standard of 30%* improvement in energy efficiency over the benchmark building

Green Energy Corridors

The integration requires transmission infrastructure for the evacuation of RE power as identified in the comprehensive transmission plan called “Green Energy Corridors” prepared by POWERGRID Corporation of India (PGCIL) in 2012.

In this context, the German side expressed its willingness to consider providing concessional loans of up to one billion Euros over the next years through KfW under Indo-German Financial Cooperation.

750 million Euros have already been committed in the past two years by the Government of Germany for financing the Inter-State and Intra-State projects under the Green Energy Corridors Project. Germany is also providing technical assistance for forecasting, balancing, market design and network management in connection with the grid integration of renewable power under Indo-German Technical Cooperation to be realized through “Deutsche Gesellschaftfür Internationale Zusammenarbeit (GiZ) GmbH”.

US-India

Activities in India focus on reducing carbon emissions by promoting renewable energy sources, energy efficiency, and cleaner fossil fuel technologies

Forest PLUS Programme: The Partnership for Land Use Science (Forest-PLUS) is a technical assistance program of USAID/India. USAID/India and India's Ministry of Environment, Forests, and Climate Change (MoEFCC) designed Forest-PLUS to improve the management of forested landscapes in India, particularly in ways that mitigate climate change.

This will position India to participate in any Reducing Emissions from Deforestation and forest Degradation (REDD+) mechanism that emerges from international negotiations.

The U.S.-India Partnership to Advance Clean Energy (PACE-D) (Deployment)) development and promotion of energy efficient technologies such as smart grids; increasing the supply of renewable energy by promoting commercial deployment of renewable energy technologies; building capacity for the development of low

carbon, cleaner fossil fuel technologies and management practices; and developing relevant GHG mitigation programs.

PACE-D aims to help accelerate India's transition to a high performing, low emissions, and energy-secure economy.

The South Asia Regional Initiative for Energy Integration Program (SARI/EI): It promotes regional energy security through increased trade, investment, and access to clean energy. SARI/EI will enhance clean energy through policy analysis, feasibility studies, and demonstration projects promoting the use of clean energy resource

4. CTF in India –Project Snapshots

Himachal Pradesh Environmentally Sustainable Development Policy Loan

The program is centred on Government of Himachal Pradesh (GoHP) objective to promote inclusive green growth and sustainable development, in six priority areas that are part of GoHP's environmental reform agenda exists, includes multiple sectors

MDB	:	IBRD
Thematic Focus	:	Energy Efficiency
CIF Funding ($US M)	:	100.0 /
Expected Co-financing ($US M	:	2058.0

DPSP I: Renewable Energy Mini-Grids and Distributed Power Generation Program CTF

This Sub-program seeks to catalyze growth in access to electricity by addressing primarily financial barriers to private sector led distributed power generation and "mini grid" development from renewable energy (RE) in the CTF pilot countries of India, Indonesia and the Philippines.

MDB	:	ADB
Thematic Focus	:	Solar
CIF Funding ($US M)	:	34.3
Expected Co-financing ($US M)	:	0.00

Rajasthan Renewable Energy Transmission Investment Program

The Investment Program will expand the development of renewable energy sources in Rajasthan and contribute to national energy security. The outcome would be a cleaner energy mix and more efficient and effective generation and transmission system in Rajasthan over time.

MDB	:	ADB
Thematic Focus	:	Solar
CIF Funding ($US M)	:	200.00
Expected Co-financing ($US M)	:	600.00

5. Partial Risk Sharing Facility for Energy Efficiency (PRSF)

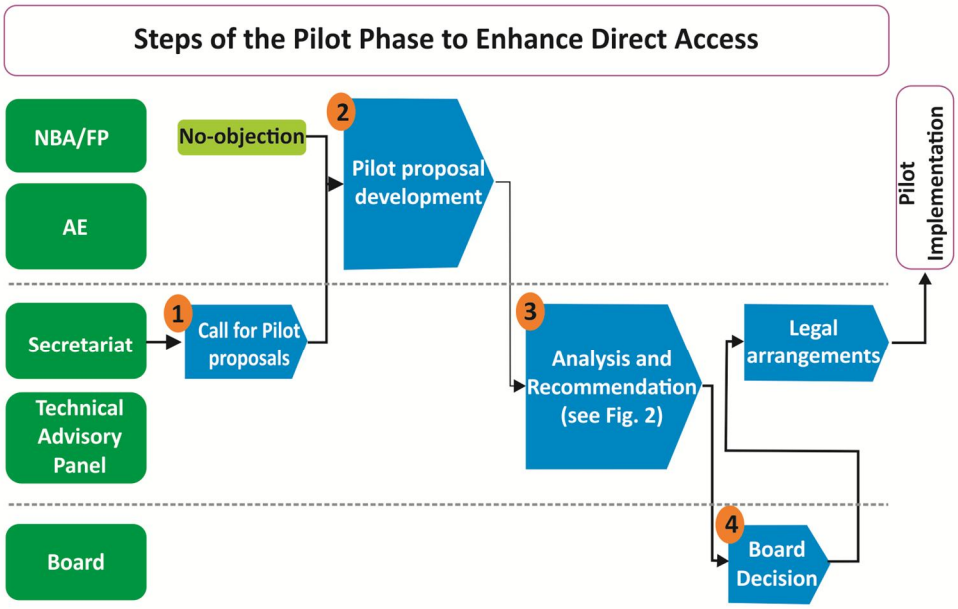
The project development objective is to assist India in achieving energy savings by: (a) mobilizing commercial financing using risk sharing mechanisms; and (b) catalysing ESCO-implemented energy efficiency projects. The Project will accomplish this by (1) leveraging project funds to encourage private sector investment in energy efficiency projects, and (2) providing complementary technical assistance and capacity building.

MDB	:	IBRD
Thematic Focus	:	Energy Efficiency
CIF Funding ($US M)	:	25.00
Expected Co-financing ($US M)	:	153.00

Annexure 5

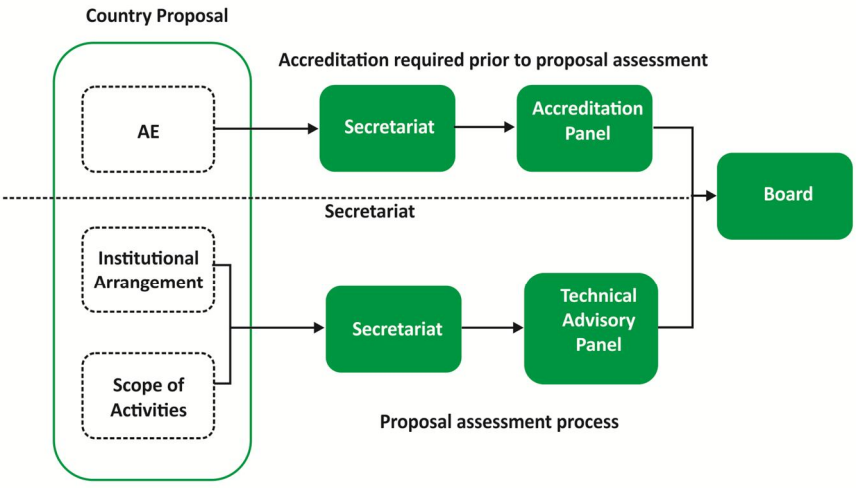
GCF Pilot program implementation cycle for Enhanced Direct Access (Flow Chart -Pilot Project)

Pilot Proposal Assessment flow chart, GCF



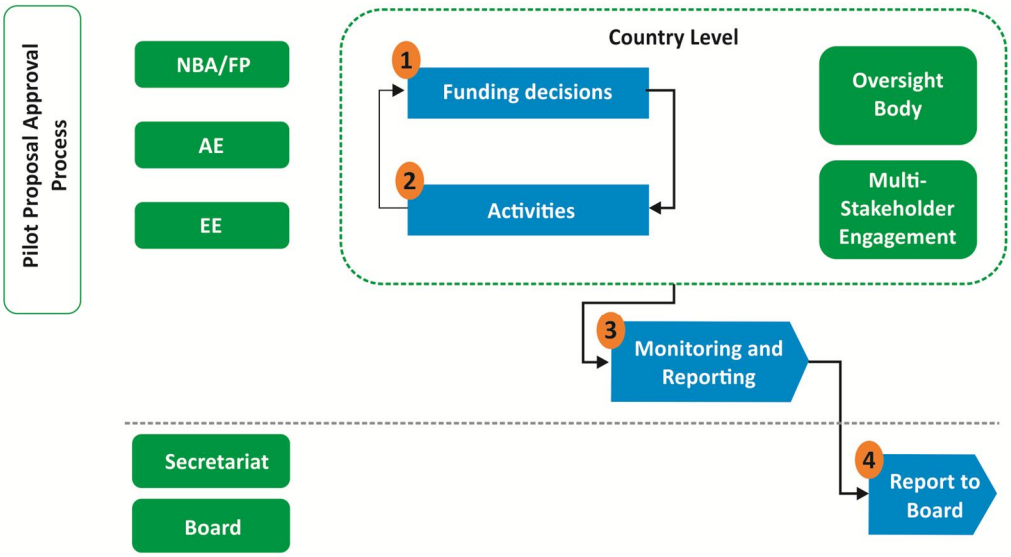
* Abbreviations: AE = Accredited Entity, FP - Focal Point NDA = National Designated Authority

Source: *Additional Modalities that Further Enhance Direct Access: Terms of Reference for a Pilot Phase, Document Reference: GCF/B.10/05 21 June 2015, Meeting of the Board 6-9 July 2015 Songdo, Republic of Korea Provisional Agenda item 10*



* Abbreviations: AE = accredited entity

Pilot project Implementation flow chart, GCF

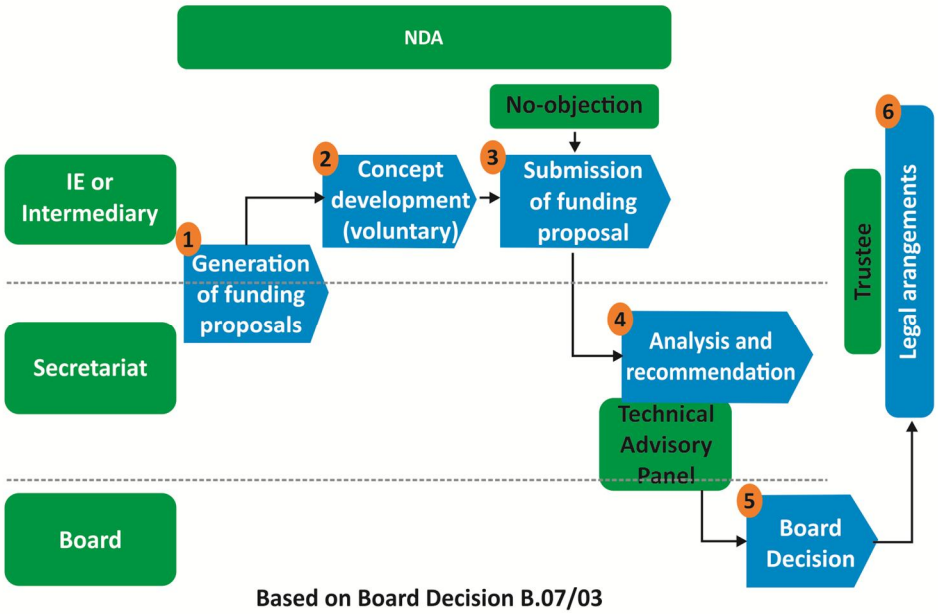


* Abbreviations: AE = Accredited Entity, FP - Focal Point NDA = National Designated Authority

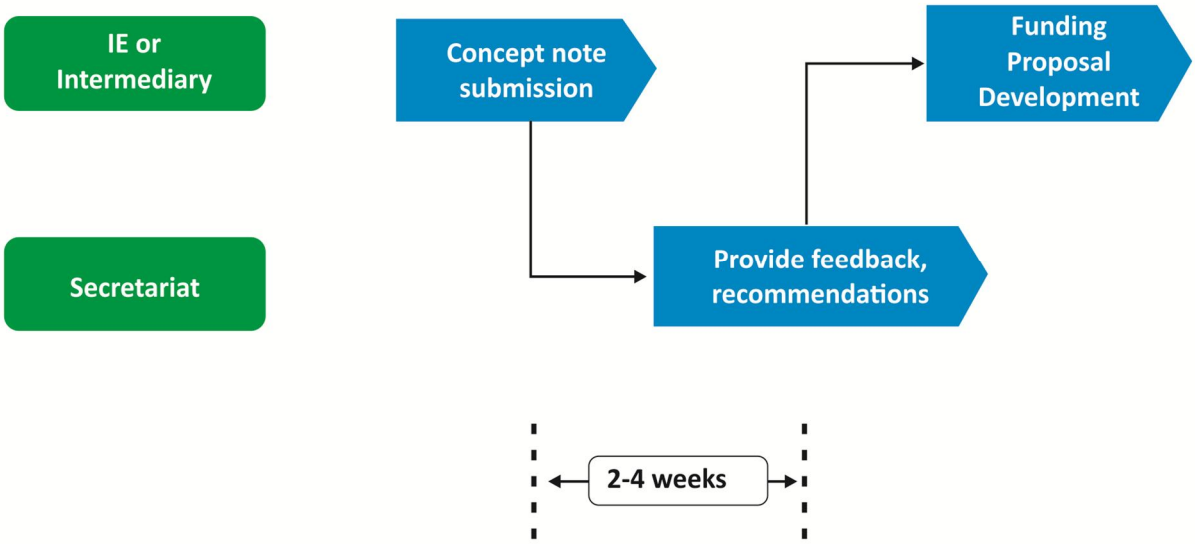
Pilot Phase Project implementation through Direct Assessment (Available funding Statistics)

The Pilot Phase will initially aim to provide US$ 200 million for at least ten pilots, including at least four pilots to be implemented in Small Island developing States, the least developed countries and African States. The proposals will be selected on the basis of the Fund's Initial Proposal Approval Process, Investment Framework and Results Management Framework and will be approved by the Board.

Concept Note Development, GCF

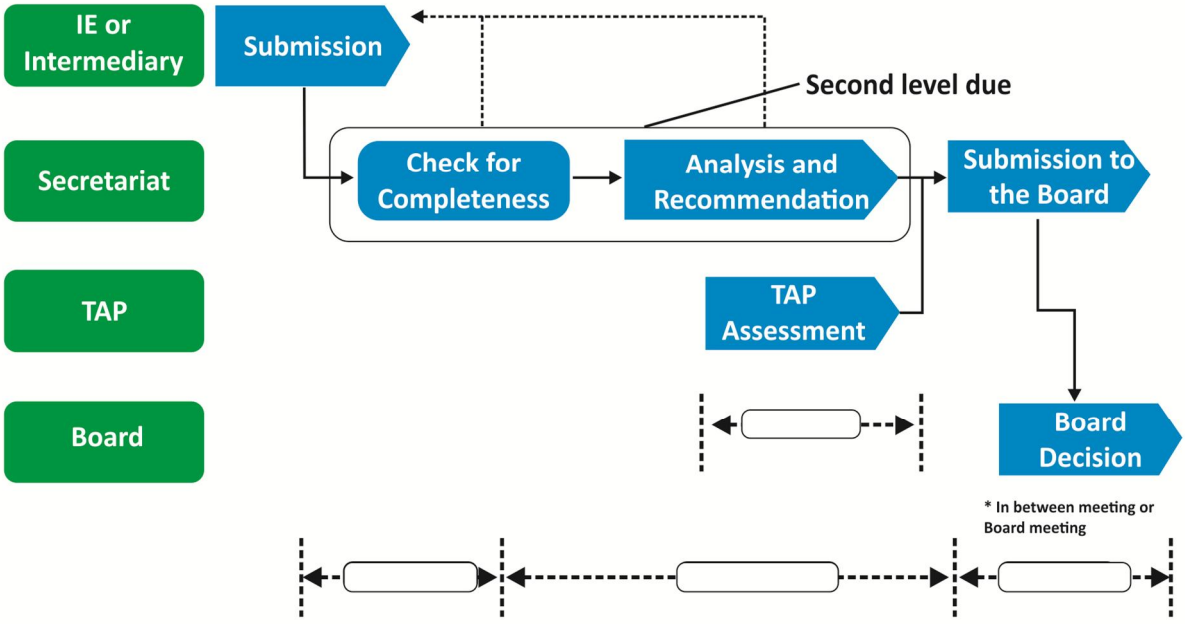


Based on Board Decision B.07/03



Concept Development (Voluntary Process)
Source: *GCF*

Completion and Project Approval Phase



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Annexure 6

Mobilising Climate Finance through NAMA and Community Health Sector in Madhya Pradesh – *suggestions*!

NAMA Opportunities for Madhya Pradesh

NAMA projects will effectively get GCF funding. Madhya Pradesh Government can develop the NAMA accordance with the existing State Action Plans on Climate Change (SAPCC), A NAMA-coordination office in MoEF is supported by GIZ, Germany with the funding resources from Ministry of Environment, Nature Conservation Building & Nuclear Safety (BMU)

Existing pipeline: NAMAs that couple broad-based climate action with sustainable development objectives should be well positioned to win GCF support

Increasing the pipeline: Countries should develop strong national and sector-wide NAMA proposals that align with GCF investment criteria

Speedy preparation needed to benefit from anticipated 2015 deployment of funds NAMAs can leverage additional funding through newly approved financial mechanisms such as equity and guarantees to be designed and approved by intermediaries

Linking NAMA and INDC

The commitments made by Government of India in their INDC submission can be met out with the NAMA supported projects to meet the goals of INDC. The Sectoral NAMA as supported and Bilateral NAMA can be considered from MP.

Table 11: Priority sector for NAMA and GCF funding in Madhya Pradesh

Mitigation	Option M_1:	Reducing energy use from buildings and appliances
	Option M_2:	Enabling reduction in the emission intensity of industrial production
	Option M_3:	Increasing access to transportation with low-carbon fuels
	Option M_4:	Providing households with access to low-carbon, modern energy
	Option M_5:	Supporting the development, transfer and deployment at scale of low-carbon power generation
	Option M_6:	Reducing emissions from agriculture and related land use management
	Option M_7:	Supporting implementation of the phased approach to REDD+
Cross sectoral	Option C_1:	Facilitating design and planning of sustainable cities
	Option C_2:	Joint mitigation and adaptation approaches for the integral and sustainable management of forests
Adaptation	Option A_1:	Support across the full range of adaptation result areas
	Option A_2:	Support for a selective set of selective set of sectoral result areas
	Option A_3:	Support for selected themes cutting across result areas (“Flagships”)
	Option A_4:	Facilitating capacity for programmatic and transformative activities
	Option A_5:	Facilitating scaling up of effective community-based adaptation (CBA) actions
	Option $_6$:	Supporting coordination of public goods such as “knowledge hubs”

Health Sector

The majority of international health aid6 is delivered for specific uses or programmes which is termed vertical funding. Vertical funding is implemented via programmes targeting a specific area of activity or product, organizing/coordinating each step of the process to achieve the targeted result.

While in, horizontal funding is used for plans/projects aimed at improving the primary health-care system (i.e. building the minimum health infrastructure irrespective of the type of disease and vaccine). In the health sector for example, the GAVI Alliance and The Global Fund prepared programmes targeting types of diseases/vaccines and involving stakeholders at each level of the chain (e.g. preparation of country plans, production of vaccines, logistical delivery of vaccines, campaign of vaccination) to achieve a reduction in the diseases/reach a certain rate of vaccination.

Global Alliance on Clean Cooking

Household air pollution causes acute respiratory infections, lung cancer and heart disease, among other serious illnesses. More people die each year from cooking smoke than from malaria, tuberculosis and HIV/AIDS combined. The urgency to transition billions of people to cleaner cooking is enormous.

The Global Alliance for Clean Cook stoves is a public-private partnership that seeks to save lives, improve livelihoods, empower women, and protect the environment by creating a thriving global market for clean and efficient household cooking solutions.

The Global Fund

The Global Fund is a 21st-century partnership organization designed to accelerate the end of AIDS, tuberculosis and malaria as epidemics.

The Global Fund is founded in 2002, the Global Fund is a partnership between governments, civil society, the private sector and people affected by the diseases. The Global Fund raises and invests nearly US$4 billion a year to support programs run by local experts in countries and communities most in need.

http://www.theglobalfund.org/en/

The Rockefeller Foundation (RF)[7]

The Rockefeller Foundation (RF) continues to support projects intended to improve public health through two major initiatives: disease surveillance and transforming health systems.

Bill & Melinda Gates Foundation[8]

The Foundation works with India's central and state governments, nonprofit organizations, community groups, academic institutions, and the private sector. The foundations intervention includes maternal and child health, health and nutrition services, vaccines and routine immunization, family planning, agricultural development, sanitation, and the control of infectious diseases.

[6] http://cleancookstoves.org/about/our-mission/
[7] http://rockefeller100.org/exhibits/show/health/transforming-health-systems
[8] http://www.gatesfoundation.org

Annexure 7

An Architecture proposed for Future National Planning System - *Mobilisation, Approval and Devolving Climate*

As per the UNDP study report on the climate finance architecture in India, the following system is proposed for effective central state fund flow for climate change mitigation activities 9 Each of the States can have a State Climate Fund, into which contributions from the INCF (and other national and international sources) would flow. A State Climate Finance Council (SCFC) of the State Climate Fund, chaired by the Chief Minister and including the ministers of all key sectors, would be responsible for governing this fund in a manner that ensures further devolution to the PRIs and integration with existing programmes.

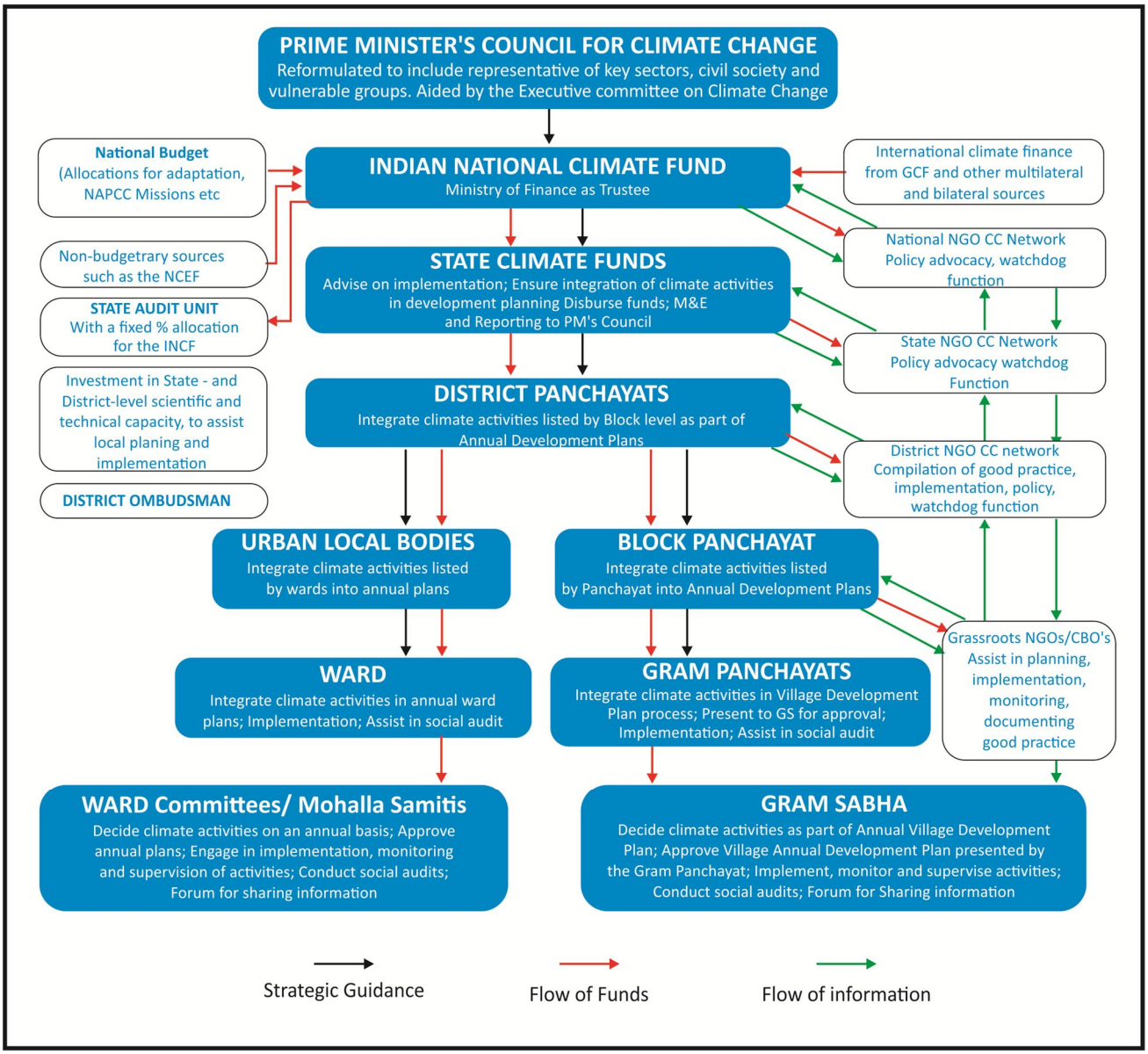
The SCFCs would be assisted by State Executive Committees for Climate Change, including high-ranking representatives from key State Departments, and representatives from PRIs, organizations of workers and disadvantaged groups (with reservations for women and disadvantages groups), and civil society organizations.

The functions of State Executive Committees would include advising State governments on implementation; monitoring implementation; reviewing monitoring and redressal mechanisms; disseminating information on climate change and access to climate finance; and preparing annual reports for the State Legislature.

States will have to deal with adverse climate impacts each year, the State Climate Funds should also include a State Climate Emergency Fund for dealing with such situations. Innovative ways of working with insurance companies could be sought in this regard.

[9] http://www.oxfordclimatepolicy.org/publications/documents/Consolidation_and_Devolution_final.pdf

Figure 5: Suggestive National Climate Finance Framework in India



Source: *Consolidation and Devolution of National Climate Finance, the Case of India: Anju Sharma, Benito Muller, Pratim Roy*

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