SNAPFI STUDY

International Climate Finance and support to national climate policy processes in emerging markets

International study

JULY 2021

FGV | SÃO PAULO SCHOOL OF BUSINESS ADMINISTRATION
Center for Sustainability Studies

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List of Acronyms

ADB	Asian Development Bank
AF	Adaptation Fund
AfDB	African Development Bank
ANC	African National Congress
ATMA	Agriculture Technology Management Agency (Maharashtra)
Bappeda	Regional Planning Agency
BAU	business as usual
BMU	Federal Ministry for Environment, Nature Conservation and Nuclear Safety
BRIDCUL	Bridge, Ropeway, Tunnel and Other Infrastructure Development Corporation of Uttarakhand Limited
CBI	Climate Bonds Initiative
CBIRC	China Banking and Insurance Regulatory Commission
CBK	Central Bank of Kenya
CCS	Carbon Capture, and Storage
CCUS	Carbon Capture, Utilisation, and Storage
CDM	clean development mechanism
CIC	Climate Innovation Centre (Maharashtra)
CMA	Capital Markets Authority
CPI	Climate Policy Initiative
CSP	Climate Support Programme
CSRC	China's Securities and Regulatory Commission
DAC	development assistance countries
DDMAs	District Disaster Management Authorities (India)
DEA	Department of Environmental Affairs (South Africa)
DEFF	Department of Environment, Forestry and Fisheries (South Africa)
DEG	German Investment Corporation
DFFE	Department of Forestry, Fisheries and the Environment

DFI	Development Finance Institution
DMMC	Uttarakhand State Disaster Management and Mitigation Centre
DOA	India's Department of Agriculture
EE	energy efficiency
ESG	environmental, social and governance
ETS	emissions trading scheme
EU	European Union
FIGs	Farmers Interest Groups
FMO	Dutch Development Bank
FPCs	Farmer Producer Companies
GCF	Green Climate Fund
GFDRR	Global Facility for Disaster Reduction and Recovery
GGGI	The Global Green Growth Institute
GHG	greenhouse gas
GIZ	Gesellschaft für Internationale Zusammenarbeit
GoI	Government of Indonesia
IBRD	International Bank For Reconstruction And Development
ICBC	Industrial and Commercial Bank of China
ICF	International Climate Finance
ICMA	International Capital Market Association
IDA	International Development Association
IFC	International Finance Corporation
IFP	Investment Project Financing
IKI	International Climate Initiative
IP	intellectual property
IPCC	Intergovernmental Panel on Climate Change
JI	joint implementation
JRDNA	Joint Rapid Damage Needs Assessment
KBA	Kenya Bankers Association

LGCCSP	Local Government Climate Change Support Programme
MDB	multilateral development bank
MoEF	Ministry of Environment and Forestry
MoEMR	Ministry of Energy and Mineral Resources
MoF	Ministry of Finance
MoFA	Ministry of Foreign Affairs
MoNDP	Ministry of National Development Planning
NABARD	National Bank for Agricultural and Rural Development
NAFAB	National Adaptation Funds Advisory Body
NAFMII	National Association of Financial Market Institutional Investors
NAPCC	National Action Plan on Climate Change (India)
NBI	National Business Initiative (South Africa)
NDA	South Africa National Development Agency
NDMA	National Disaster Management Authority (India)
NDC	National Determined Contribution
NDRC	National Development and Reform Commission
NGFS	Network for Greening the Financial System
NGO	non government organisation
NIE	National Implementing Entity
NSE	Nairobi Securities Exchange
ODCH	Owner Driven Construction of Houses (Uttarakhand)
PBOC	People's Bank of China
PIUs	Project Implementation Units
PoCRA	Maharashtra Project on Climate Resilient Agriculture Project
PPP	public private partnership
PV	photovoltaics
PWD	Public Works Department (Uttarakhand)
R&D	research & development
RBF	results-based financing

RE	renewable energy
RPJMN	National Medium Term Development Plan
SALGA	South African Local Government Association
SANBI	South African National Biodiversity Institute
SC	scheduled castes
SDMA	State Disaster Management Authorities
SDGs	Sustainable Development Goals
SEO	state-owned enterprise
SFI	Sustainable Finance Initiative
SGF	Community Adaptation Small Grants Facility
SGGP	Sustainable Green Growth, Climate and Environment Program
SHGs	women self help groups
SIEP	Sustainable and the Inclusive Energy Program
SIL	Specific Investment Loan
SMEs	small and medium-sized enterprises
SMV	special mission vehicle
SNA	skill gap analysis
SPV	special purpose vehicle
ST	scheduled tribes
TCFD	Task Force on Climate-related Financial Disclosures
TNA	training need assessment
UDRP	Uttarakhand Disaster Recovery Project
UNEP FI	United Nations Environment Programme Finance Initiative
UNFCCC	United Nations Framework Convention on Climate Change
US	United States of America
USAC	Uttarakhand Space Application Centre
USDMA	Uttarakhand State Disaster Management Authority
VCRMC	Village Climate Resilient Agriculture Management Committee
WWF	World Wildlife Fund

United Nations Office, Geneva
by Mathias P.R. Reding

CHAPTER ONE

Introduction

This report is part of the project "Strengthen national climate policy implementation: comparative empirical learning & creating linkage to climate finance", which aims to develop studies that contribute to implementation of the Nationally Determined Contributions (NDCs) in Brazil, Germany/EU, India, Indonesia and South Africa. Coordinated by DIW Berlin and financially supported by the Germany's Federal Ministry for the Environment, Nature Conservation and Nuclear Safety this project began in July 2019 and has a duration of four years.

Each year, the project consortium will produce an international study on a topic of common interest that is relevant to the interface between climate finance and policies.

The international study for the first year (2019-2020) — entitled "Transformational change towards low-carbon development in emerging economies: insights from international climate finance cases" — investigated how International Climate Finance (ICF) can support transformational change to achieve the goals of the Paris Agreement in emerging nations. Drawing on twelve case studies in which ICF supported transformational change processes in emerging economies, a number of propositions emerged. Three factors were found to be preconditions for achieving transformational change:

1. **Identification of domestic support needs:** Domestic actors must signal to international donors what and where their needs are (e.g. technical cooperation, finance), and international donors must be open to addressing those support needs. Moreover, ICF projects should allow a certain degree of flexibility during implementation without changing the final project goal.
2. **Alignment between ICF contributions and domestic policies and programmes:** A common vision of transformational change among international and national partners was found to be a prerequisite for successful ICF outcomes.
3. **Domestic prerequisites:** ICF requires political will to succeed and transparency as a basis for trust.

In addition, four factors were found to support transformational change under specific conditions:

1. **Political visibility:** High-level political visibility of programmes can improve the implementation of policies and create the backing needed for ambitious climate policies.
2. **Institutional innovation:** The creation of new institutions can be a crucial element of ICF when it addresses specific challenges that are difficult to address through existing institutions.
3. **Stakeholder participation:** Engaging a wide range of stakeholders can ensure broad participation in and the legitimacy of programmes, supporting transformational change outcomes when actors share a common vision.
4. **Implementation modalities:** Direct access and the successful combination of technical and financial components can increase the scope of ICF by reaching more local actors and enabling more potential recipients to use the financing effectively.

The full report can be found here.

Considering that the majority of ICF has been directed toward project-based interventions (*funding role* of ICF) (Vivid Economics, 2020c), this year's international study will analyse how international partners can contribute to climate policy processes in emerging markets (enabling role), thereby facilitating the channelling of financial flows to low-GHG-emission and climate-resilient development, as described in Article 2.1.c of the Paris Agreement.

BOX 1

Article 2.1.c of the Paris Agreement

The Paris Agreement, under the United Nations Framework Convention on Climate Change, entered into force on 4 November 2016. As recently as May 2021, 191 Parties had ratified the Agreement[1] (out of 197 Parties to the Convention) (UNFCCC, 2020). It lists three major goals "to strengthen the global response to the threat of climate change" in its Article 2.1:

a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;

b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and

c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development (UNFCCC, 2015b).

The research questions of this study are the following:

1. How do national actors (decision-makers) in emerging economies use policy to strengthen the domestic enabling environment for enhancing finance flows[2] toward climate change mitigation and adaptation?
2. How can international climate finance (ICF) mechanisms and instruments support strengthening of the domestic enabling environment[3] in emerging markets?
3. Which factors and conditions contribute to (or prevent) the success of the climate finance instruments adopted?

1 Available at: https://unfccc.int/process/the-paris-agreement/status-of-ratification

2 according to Article 2.1c of the Paris Agreement

3 i.e., support the design, development and/or implementation of public policies that seek to align financial flows with climate change mitigation and adaptation

4. Which factors and conditions contribute to (or prevent) the success of cooperation between the national government and international donors?

The structure of this report is as follows. In the first section, this report provides an overview of the literature on climate policies and climate finance. It also assesses the factors which affect the adoption of these policies, the success of climate finance in supporting this progress and successful cooperation between development partners and national governments.

Next, this report presents five case studies (one each from India, Indonesia, South Africa, Kenya and China, as in Table 1) developed by the SNAPFI partners in which international partners contributed to climate policy processes in emerging markets. A case study was also conducted in Brazil, but the research team has not obtained authorisation for publication by the organisations involved.

The criteria for selection of the case studies were:

1. Policy toward climate change mitigation or adaptation;
2. Policy may or may not have already been implemented;
3. Policies should be related to one of the following: financial sector reform; fiscal policy; sector policy; trade policy; carbon pricing; or national/regional adaptation policy.

TABLE 1

Case studies†

Country	Type of climate policy	Public policy	National partners involved	International partners involved	Brief description
Brazil	Financial sector reform	Confidential case study	Anonymous national partner	Anonymous international partner	Confidential case study
China	Financial sector reform	Policies related to the green bond market	Financial sector stakeholders (bond issuers, underwriters and certifiers)	Anonymous technical assistance providers	Technical assistance providers built capacities amongst key stakeholders of the green bond market in the form of trainings, workshops, and conferences. They also cooperated with individual banks to issue certified green bonds and to build a pipeline of projects.
Kenya	Financial sector reform	Green Bonds Programme Kenya	Kenya Bankers Association, the Capital Markets Authority, Central Bank of Kenya,	Dutch development bank FMO, FSD Africa, Climate Bonds Initiative, International Finance Corporation (IFC), WWF Kenya	The Kenya Bankers Association (KBA), with local and international partners, launched the Green Bonds Programme Kenya in 2017. International partners supported capacity building amongst key stakeholders and the development of guiding principles for the issuance of green bonds.
India	Adaptation policy	Climate adaptation in Agriculture sector (Maharashtra); Resilience building in disaster management (Uttarakhand)	Uttarakhand: National Disaster Management Authority (NDMA), local level implementation;	The World Bank	Initiation of adaptation actions, through capacity building, technical assistance, and resilience building initiatives in different sectors of the country.

Country	Type of climate policy	Public policy	National partners involved	International partners involved	Brief description
Indonesia	Sectoral policy	Policies related to renewable energy and energy efficiency	Ministry of National Development Planning, Ministry of Energy and Mineral Resources, the Ministry of the Environment and Forestry, the Ministry of Finance, the Indonesian Investment Coordinating Board and provincial government agencies	Asian Development Bank, Government of Norway (financing the Global Green Growth Institute)	The Asian Development Bank offers policy-based financing to develop renewable energy and energy efficiency regulations, whereas the Global Green Growth Institute develops policy recommendations on both topics.
South Africa	Adaptation policy	Measures to create an enabling environment to fund adaptation	Department of Forestry, Fisheries and the Environment (DFFE), South African National Biodiversity Institute (SANBI)	GIZ, Green Climate Fund (GCF), Government of Flanders	Activities to build capacity for a broad range of stakeholders to access and absorb funding for adaptation.

Source: The authors, based on the case studies developed by the SNAPFI partners. An extended version of this table can be found in Appendix 1.

† While International Climate Finance is generally defined as international public finance provided by developed countries to developing countries for mitigation and/or adaptation activities (Vivid Economics, 2020), we note, in the the case studies analysed, that a wide range of stakeholders, from the public, private and civil society sectors, are involved in the provision of climate finance instruments.

Later, this report compares and contrasts the literature review with the findings from the case studies, analysing whether or not the cases provided empirical evidence of the factors and conditions identified as critical for the success of the climate instrument and of the cooperation, and whether or not new research propositions were derived from the cases. The study concludes by discussing its limitations and offering suggestions for future studies.

Grounded in economic reasoning, we expect that this study will be of particular interest to the climate-finance donor community, climate finance practitioners such as Multilateral Development Banks (MDBs), bilateral organisations and specialised climate funds, and developing country government departments and agencies engaged in climate finance.

NOAA Research vessel
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CHAPTER TWO

Literature review

Authors:

Julian Payne, **Cor Marijs, Imad Ahmed** (Vivid Economics)

The chapter is structured as follows:

- Section 1 provides an overview of climate policies, including their benefits and limitations
- Section 2 presents the challenges to adopting these climate policies
- Section 3 discusses a range of climate finance instruments and how they support climate policy development
- Section 4 identifies factors for the success of climate finance in supporting policy development
- Section 5 undertakes a deep dive into the factors that enable and prevent cooperation between development partners and recipient governments

2.1 Climate policies

Addressing climate change at the domestic level entails integrating economic, social, and environmental objectives, as well as implementing normative measures to attain them. Cost-effective climate action can be spurred by targeted measures to reduce greenhouse gases (GHGs) as well as policies which promote increased resilience to both physical and transition risks. This may require changes in existing economic structures, as well as social, technical, and behavioural innovation. As such, an iterative, responsive policy framework is needed; one which aims to enhance resource efficiency, environmental and economic performance, as well as social objectives over time.

Climate policy is essential to address the market failures associated with inadequate climate action. Market failures such as a lack of information, externalised costs and benefits, and limited technical capacity prevent firms from allocating resources in a socially efficient manner (CPI, 2020a; GCF, 2017). Markets have so far failed to adequately understand and value the risks and costs of climate change and thus fail to adjust the cost of capital (Carbon Tracker, 2020). Investors can be unaware of potential physical and transition risks and thus make suboptimal business decisions, such as understanding the potential for less productive and stranded assets in low-carbon transitions (NGFS, 2019; TCFD, 2017; UNEP, 2016). Underinvestment can also occur when funding of new technologies generate public goods – benefits to society that do not necessarily generate additional cash flows and hence are not captured by financial returns (Pauw, Kempa, Moslener, Grüning, & Çevik, 2021; Varian, 2010).

There are several taxonomies of climate policies in the reviewed literature. A taxonomy developed by the Intergovernmental Panel on Climate Change (IPCC) was selected for the purpose of this study. Alternative taxonomies are also available. For example, Vivid Economics (2020) examines a framework of 8 climate 'levers', some of which go beyond policy instruments, such as project-based financing. Bhandary at al. (2021) identify 9 climate policies, though some of these can also be defined as instruments rather than policies.

The IPCC's climate policy taxonomy covers a comprehensive range of real and potential climate policies while avoiding double-counting (IPCC, 2007; IPCC, 2014). The taxonomy identifies 5 overarching types of policies, including economic instruments, regulations, information programmes, provision of public goods or services, as well as voluntary actions. A description of these climate policies is provided below in Table 2.

TABLE 2

Taxonomy of climate policies

Climate policies		Description
Economic instruments	**Taxes**	Taxes act as levies on undesirable activities and generate revenues that go to the government; for example, carbon taxes impose a fee on the emissions of GHGs. Tax relief or reform can also incentivise low-carbon and climate-resilient activities.
	Tradable allowances	Tradable allowances establish a limit on aggregate emissions by specified sources. They require emitters to hold permits equal to actual emissions and allow permits to be traded among sources.
	Subsidies	Subsidies include direct payments, tax reductions or price support from a government to a private entity for implementing a practice or performing a specified action.
Regulations		Government regulation acts as rules or directives aimed at reducing emissions and promoting climate resilience. This can include both promoting or disincentivising specific technologies or activities.
Information programmes		Information programs are public disclosures of environmentally related information for customers. They address barriers to investment/ purchase where there is limited information and can take the form of labelling, rating, certification, or other public disclosures.
Provision of public goods or services		The government can address the under-provision of public goods through supply-side funding; investment to support low-carbon infrastructure (via research and development (R&D) for example); demand-side policies to enhance intellectual property (IP) rights and strengthen regulatory standards; and via supporting institutional change.
Voluntary actions		Voluntary actions are agreements between government authorities and private parties to improve environmental performance beyond compliance/ regulation. Examples include labelling, management systems, standards, and education campaigns.

Source: Vivid Economics; IPCC, 2007; IPCC, 2014

Table 3 below illustrates examples of how these climate policies can be applied to the energy and transport sectors. Tradable allowances have been observed to have been most successful when applied to the energy sector because mature technologies allow diversification from carbon-emitting sources of power generation (Cullenward & Victor, 2020). Subsidies also help introduce new low-carbon technologies, such as carbon capture, usage and storage (CCUS) (BEIS, 2020), which add costs to power generation but are not yet price competitive against facilities without CCUS, even when carbon is priced. The taxonomy could also be applied to other sectors of the economy.

TABLE 3

Examples of climate policies in energy and transport

Climate policies		Energy	Transport
Economic instruments	**Taxes**	Carbon taxes; tax credits	Fuel or vehicle taxes; Congestion charges; Vehicle registration fees
	Tradable allowances	Emissions trading (e.g., EU ETS); Emission credits under the Kyoto Protocol's Clean Development Mechanism (CDM); Tradable Green Certificates	Fuel standards (sometimes incorporate market-like features including trading among suppliers)
	Subsidies	Fossil fuel subsidy removal; Feed-in-tariffs for renewable energy; Capital subsidies and insurance for Carbon Capture and Storage (CCS)	Biofuel subsidies; Vehicle purchase subsidies; Feebates[ß]
Regulations		Efficiency or environmental performance standards; Renewable portfolio standards for renewable energy; Legal status of long-term CO2 storage	Fuel economy performance standards; Fuel quality standards; GHG emission performance standards; Restriction on use of vehicles in certain areas; Urban planning and zoning restrictions
Information programmes		Utility information[Δ]; Appliance labelling	Fuel labelling; Vehicle efficiency labelling
Provision of public goods or services		Research and development; Infrastructure expansion	Investment in transit and human powered transport
Voluntary actions		Energy management systems	Product eco-labelling

Source: Vivid Economics; IPCC, 2007; IPCC, 2014

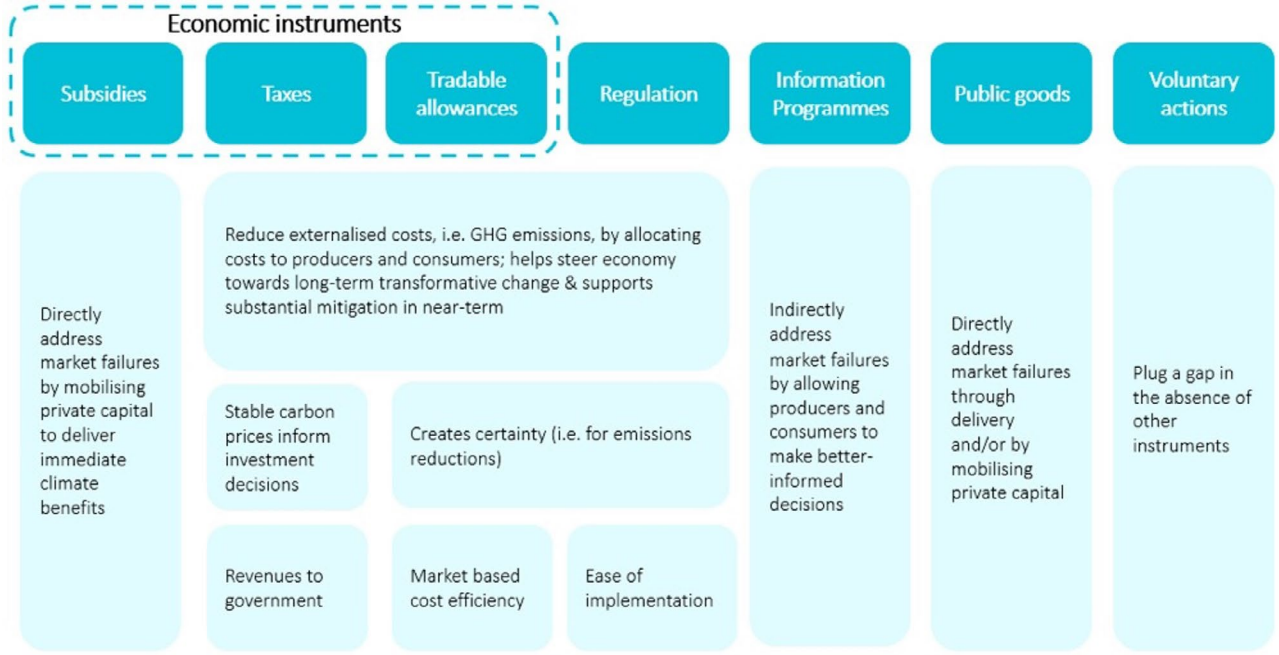
[ß] Self-financing systems of fees and rebates.

[Δ] Enhanced transparency of information about utility providers which improves public and private decisions.

The benefits and limitations of these types of climate policies depend on policy design and country conditions. Impact primarily varies according to macroeconomic conditions, institutional structures, and the maturity of a country's financial system. Other factors include the cost of and familiarity with the technologies that are being deployed in a country (Bhandary et al., 2021).

FIGURE 1

Benefits of adopting climate policies



Source: Vivid Economics

The following sub-sections assess the benefits and limitations for each of the climate policies presented above. This assessment considers mobilisation effectiveness, economic efficiency, environmental integrity, and equity considerations. This approach buildings on the review of climate interventions conducted by Bhandary et al (2021), incorporating other literature to provide additional insight to assess instruments.

2.1.1 Subsidies

Subsidies can be directly effective at addressing climate action, though success is highly dependent on programme design. Positive subsidies help low-emitting products and technologies replace high-emitters. They can also promote the prevalence of resilient outcomes and steer the choices of stakeholders towards more climate-friendly activities. Perverse climate subsidies lower the prices of fossil fuels or activities that increase emissions, and so where these exist, subsidy reduction or removal would have positive effects for climate change and public revenues (IPCC, 2014). Two effective types of subsidies include tax credits and feed-in-tariffs.

- **Benefits:** Subsidies, in the form of climate tax credits for example, can facilitate private research and development investment into precompetitive innovative low-carbon or climate resilient technologies (Nordhaus, 2015). Bhandary et al. (2021) found tax credits to be medium-high in terms of environmental integrity if climate-friendly sectors are targeted.

They also find them to be medium-high in terms of equitable outcomes because theoretically all can access them, though those with the highest tax burdens may benefit most. Subsidies in the form of feed-in-tariffs are highly effective in mobilising capital and promoting environmental integrity. Feed-in-tariffs are popular among investors and household consumers of solar rooftop photovoltaics (PV) for example (Bhandary et al., 2021). Direct end-user subsidies can also be effective for targeting specific sectors, such as solar panel subsidies for homeowners.

- **Limitations:** The environmental effectiveness and cost-effectiveness of subsidies depends on programme design (IPCC, 2007). They can be captured by politically favoured but inefficient targets, such as the use of ethanol as a fuel (Nordhaus, 2015). Tax credits are comparatively middle-ranking in terms of mobilising capital and low ranking in terms of economic efficiency because of potential free riders who would have pursued socially beneficial activities in the absence of the support schemes (Bhandary et al., 2021). Feed-in-tariffs can lead to higher costs due to the lack of price competition (Bhandary et al., 2021).

2.1.2 Taxes

Taxes can be effective at reducing undesirable activities if set at appropriate levels but can prove politically contentious. Like tradable allowances, taxes price commodities or externalities, so that consumers and producers are economically incentivised to make more climate-conscious decisions.

- **Benefits:** Taxes increase the cost of production and consumption for activities associated with negative externalities, thus reducing the occurrence of the activity. If set within a stable economic environment, they provide price certainty on this cost, unlike tradable allowances (Nordhaus, 2015).
- **Limitations:** Their efficacy depends on whether they are set at a rate that induces behavioural change (IPCC, 2007). Since they are charged on activities, they can be regressive, though the impact can be ameliorated with policy design and revenue recycling (IPCC, 2007). Taxes are often politically unpopular. For example, the French government's introduction of carbon taxes that induced the gilets jaunes protests has been critiqued on the basis that portions of revenue were intended to cut taxes for the wealthy rather than being recycled to poorer citizens (Piketty, 2020).

2.1.3 Tradable allowances

Tradable allowances can be effective at creating emissions certainty but are most suited to less trade-sensitive sectors that have mature technologies. Also known as marketable permits or cap-and-trade systems, allowances can either be auctioned, in which case initially generated revenues go to the government, or allocated to industry incumbents, in which case new market entrants are disadvantaged (Nordhaus, 2015).

- **Benefits:** Like taxes, tradable allowances provide a price signal to consumers and producers on the environmental cost of goods and services, and so reduce the extent to which unsustainable production and consumption impose externalised costs (Nordhaus, 2015). Unlike taxes, they provide certainty over the maximum emissions that can be expected from sectors of the economy that trade in emissions allowances (Vivid Economics, 2019).
- **Limitations:** Low and volatile carbon prices disincentivise investment in low-carbon solutions (Cullenward & Victor, 2020; Nordhaus, 2015; Vivid Economics, 2020d). For carbon markets to be effective, the sector for which carbon is traded should not be trade sensitive and abatement technologies should be relatively mature (Cullenward & Victor, 2020). This means sectors and regions for which carbon markets can be effective are fewer. For example, these instruments are more easily adopted in the EU because the EU acts like a single market with a single regulator, hence with reduced concerns for trade implications, at least within the European market (Cullenward & Victor, 2020).

2.1.4 Regulations

While regulation lays the foundation for climate action, in practice their efficacy depends strongly on design. Regulations and standards' cost efficacy and distributional equity depends on scheme structure and targeted outcomes. They are popular with regulators in countries with weakly functioning markets (IPCC, 2007). On the one hand, they can provide some degree of certainty in outcomes and are politically durable. On the other, they can be relatively cost inefficient.

- **Benefits:** Regulations are more politically durable than price-based policy. They can be more difficult to roll-back than taxes, and the costs are embedded within implementation instead of requiring upfront investment. This is relevant for policy makers particularly when the economic and social rewards of climate policy are often not immediate or tangible. Regulation can be easier to shift costs and benefits as needed to address political opposition and can be tailored to specific issues or sectors. There is also a direct connection between a regulatory requirement and the environmental outcome, which provides some certainty (IPCC, 2007).
- **Limitations:** Because it is difficult for regulators to determine the amount of change that is possible at a reasonable economic cost, regulation is generally more expensive per unit of emissions reduction than a price-based policy. Regulation is also unlikely to achieve ambitious targets except in some sectors and can be overly stringent at other times. It is difficult for policymakers to select the most appropriate regulations and they often opt for expensive or counterproductive regulations (IPCC, 2007; Jaffe, Newell, & Stavins, 2003; Nordhaus, 2015). Finally, regulations also do not economically incentivise polluters to strive to exceed the mandated reductions in pollution (IPCC, 2007; Jaffe et al., 2003; Sterner, 2003).

2.1.5 Information programmes

Information programmes motivate firms to become less carbon-intense in their operations. A lack of relevant information constrains firms, investors, and consumers' ability to make environmentally conscious decisions. Disclosure of high-quality information enables them to hold firms to account for their processes through their production and consumption decisions (IPCC, 2014; Krarup & Russell, 2005). Pressure for voluntary climate-related corporate disclosures have picked up significant momentum with the release of the Task Force on Climate-related Financial Disclosures (TCFD) recommendations in 2017 for example (TCFD, 2017).

- **Benefits:** Information programmes can effectively address barriers to investment where there is limited awareness of technologies and their future benefits. This may for example be the case with energy efficient appliances and heating solutions with relatively uninformed consumers, or in industrial processes where technological advancements are rapid and markets are less mature. Information programmes can be low cost (IPCC, 2007) and should be simple to implement (Bhandary et al., 2021). Pressure from governments for firms to voluntarily disclose information can also be effective. If disclosures show that emissions intensity is high, this can increase the cost of debt and negatively impact shareholder value (Bhandary et al., 2021). In the longer term, this voluntary disclosure pressure may therefore motivate firms to invest in cleaner projects (Bhandary et al., 2021), incentivise the transition towards low-carbon solutions, and assist with the transition to mandatory regulatory disclosures.
- **Limitations:** There is lack of standardisation and enforcement across companies and countries in information programmes (Bhandary et al., 2021), which impedes their efficacy and comparability. Voluntary disclosure pressure can be a very slow process, also impacting effectiveness.

2.1.6 Provision of public goods and services

Government provision of public goods and procurement policies which enable public goods can achieve socially optimal outcomes. A changing climate will typically be a 'public bad'. Actions by governments to counteract climate change or improve resilience can thus be seen as 'public goods' (IPCC, 2014).

- **Benefits:** Where markets are unable to meet the needs of society in an environmentally efficient manner because of a lack of captured value, the government can step in to provide or maintain the socially optimal supply (Frischmann, 2013). As a large purchaser, government procurement policies focused on carbon efficient goods and services can also generate significant public goods via the associated mitigation or adaptation benefits of these procurement choices.

- **Limitations:** Provision of services can be expensive and is not required in all instances where there are market barriers. It may be more effective for the government to address market imperfections by enabling market provision of the required goods and services (Pauw et al., 2021). For example, stronger IP laws can address positive externalities or information programmes can address incomplete information (Pauw et al., 2021).

2.1.7 Voluntary action

Firms can be motivated to engage in voluntary actions with governments over climate actions to avoid future mandatory alternatives. Voluntary actions refer to actions taken by firms and other actors beyond regulatory requirements. Voluntary actions are in most cases the consequence of an explicit negotiation process between the regulator and the polluter (IPCC, 2014). Their environmental efficacy depends on the targets set, as well as third-party involvement in design and involvement in monitoring (IPCC, 2007). Their cost efficacy depends on the extent of government incentives and penalties (IPCC, 2007).

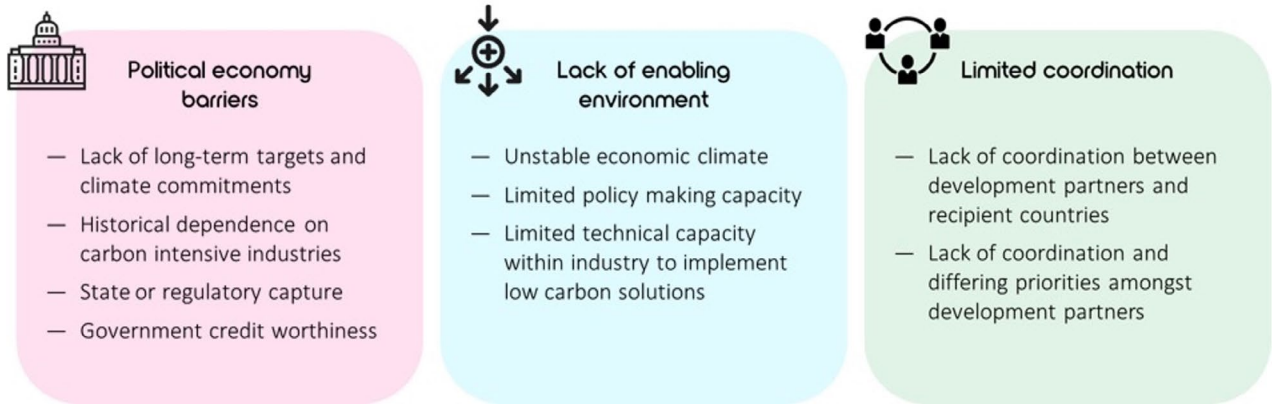
- **Benefits:** Voluntary actions are often politically popular (IPCC, 2007). A voluntary agreement can result in higher abatement and net social benefits than regulation if the potential for private enforcement is high and the ability of agency enforcement is low (Langpap, 2015).
- **Limitations:** Asymmetric information means that voluntary agreements can have relatively weak impacts on urgently needed progress. Voluntary actions require significant administrative staff in the government (IPCC, 2007) and polluters could see them as a means to avoiding future mandatory alternatives from the regulator (IPCC, 2014; Metz, 2010). If this is so, they could subvert the introduction of necessary sector-wide regulation. Further, if the regulator does not have statutory authority to provide regulatory relief, the voluntary agreements can leave the polluter more vulnerable to legal challenges through citizen lawsuits (Langpap, 2015).

2.2 Challenges to adopting climate policies

The adoption of climate policy faces three types of challenges: political economy-related barriers, a lack of a suitable enabling environment and limited co-ordination between stakeholders (Vivid Economics, Adam Smith International, Factor, & PBL Netherlands Environmental Assessment Agency, 2020). Political economy barriers refer to the degree to which the political economy or socio-economic contexts decrease the likelihood of policy change. The lack of an enabling environment refers to a scenario where local factors either reduce the ability of enacting climate action in a region or reduce the efficiency of the region's capacity. Finally, limited co-ordination amongst development partners to minimise administrative and implementation burden can also reduce the adoption of climate policies. Figure 2 presents the main barriers that fall into these categories.

FIGURE 2

Barriers to the adoption of climate policies



Source: Vivid Economics

2.2.1 Political economy barriers

The lack of ambitious and tangible climate commitments by governments disincentivises the adoption of climate policies (CPI, 2019). High-level commitments like NDCs provide a broad framework for the development of detailed climate policy packages and necessitate policymaking to meet mitigation and adaptation targets. The ambition of these commitments signals the government's willingness to undertake meaningful climate action. Low ambition at the national level can permeate down to sub-national governments and institutions, resulting in anaemic adoption and implementation of climate policy.

This lack of commitment is further compounded by a historical dependence on carbon intensive industries in many countries. Countries that rely on fossil fuels revenues for public expenditure or that have large investments in fossil fuel energy and industry perceive significant trade-offs between achieving economic growth and implementing climate policies (GCF, 2017; HM Government Prosperity Fund, 2018). This disincentivises them from adopting stringent climate policies, which despite being favourable in the long-run, may be seen as restraining growth potential. Historical dependence on carbon intensive industries may also lead to institutional inertia, whereby decision-makers favour the use of incumbent carbon-intensive technologies. Finally, countries endowed with large deposits of carbon-intensive resources or pristine carbon sinks can be reluctant to leave them untouched due to the potential financial gains to be made (Cullenward & Victor, 2020).

Strong relationships between government and carbon-intensive industries can dilute and delay sectoral reform as regulatory agencies become dominated by the interests of the industry they are charged with regulating. Regulators can be susceptible to lobbying from both industry as well as down-stream beneficiaries of this industry support, such as employees (as in China and Algeria) or disadvantaged groups dependent on subsidised fossil fuels (as in South America) (Vivid Economics et al., 2020). This may result in a delayed or ineffective climate response by regulators and other government agencies.

State capture is a rare but possible reason for lack of comprehensive climate policy. Beyond the regulatory capture outlined above, politicians can be influenced by coercive actions or through corruption to make decisions that are societally suboptimal. This is illustrated by ongoing investigations into state capture of the African National Congress (ANC)'s high officials under South African President Zuma's administration (Climate Action Tracker, 2019).

Low government creditworthiness, and high political and investment risk may lead to ineffective climate policy. Developing countries face a high cost of capital due to the low creditworthiness of government ministries and regulators, particularly in the energy sector (Vivid Economics et al., 2020). Investment in abatement technology is therefore unattractive for commercial capital and may remain so even if policy incentives are implemented.

2.2.2 Enabling environment

Unstable economic climates, limited policymaking capacity and a lack of technical expertise within industry pose challenges to the adoption of effective climate policy. Unstable economic climates are not conducive to green investment. Difficulty in enforcing contracts, poor investor rights and protections and inadequate foreign investment and repatriation laws deter investment (GCF, 2017). This may render policy incentives ineffectual or result in a lack of adherence to regulatory policies like standards, deterring governments from adopting climate policies.

Low policymaking capacity hinders adoption of climate policy. Successful decarbonisation requires strong policies and regulatory frameworks. For example, strong capacity within Ministries of Finance and sector ministries in setting strategies and agenda, establishing public–private partnerships (PPPs), and launching blended finance mechanisms can help achieve greening of the financial sector and support investment in green sectors. The design and implementation of carbon pricing instruments also requires significant institutional capacity. However, governments are often unable to select the appropriate policy, and also allow for inconsistencies between different policies due to a lack of capacity (Nordhaus, 2015).

Limited technical capacity within industry limits firms' ability to diversify away from carbon-intensive technologies. Labour markets may lack the number of suitably trained workers needed to deliver the green transition (ILO, 2019). Project developers' corporate governance and accounting standards and skills in preparing investible projects may be lacking, which diminishes the size of the investible pipeline, as, for example, in India (CPI, 2020a; GCF, 2017).

Amongst financial institutions, there is a lack of knowledge and skills around the benefits and risks of investment in green sectors, of suitable financial products that can achieve scale, and of how to measure and report on environmental, social, and governance risks (Vivid Economics et al., 2020). These factors make the implementation and execution of climate policy difficult.

2.2.3 Limited coordination between key stakeholders

A lack of coordination amongst development partners, and between development partner and recipient country government makes climate policy less effective. Typical barriers relating to a lack of coordination include mismatched priorities, high levels of bureaucratic or administration burden, and inefficient resource allocation (including both duplication and policy gaps). Coordination barriers can lead to severe restraints on the rate of uptake and effective implementation of climate policies.

Fragmented sources of political support and financing can pose a significant administrative burden on partner governments and result in suboptimal outcomes. Climate support and its funding is delivered through a range of institutions including multilateral funds (like the Green Climate Fund (GCF)), national development and aid agencies, development banks as well as monitoring bodies such as the Intergovernmental Panel on Climate Change or the United Nations Framework Convention on Climate Change's (UNFCCC) Standing Committee on Finance. This wide range of sources results in a complex web of actors, a proliferation of norms, and significant administrative burden for countries seeking to demonstrate compliance. The complexity involved in managing multiple sources of information, assistance and financing may reduce transparency, result in inequitable funding, or deter recipient governments from accessing support (Pickering et al., 2017). Additionally, the multiplicity of implementation channels and differing donor priorities can cause resources to be spread too thin, or across competing objectives (Lundsgaarde et al., 2018). This may translate to a lack of resources for policy implementation.

Limited bilateral communication between donor agencies or government ministries can also inhibit the effectiveness of resource allocation. Lack of donor coordination results in duplication and missed opportunities to identify synergies across initiatives (OECD, 2016). Additionally, inconsistent messages and practices from development partners impose administrative costs on partner governments (OECD, 2003). A lack of clarity may dull the effectiveness of policy solutions. Limited coordination amongst domestic actors also creates similar issues. Taking the energy sector as an example, implementing climate policy can require coordination across government roles including regulatory, planning, and financial departments (Lundsgaarde et al., 2018). Lack of effective cooperation can therefore generate severe delays and inefficiencies in these processes.

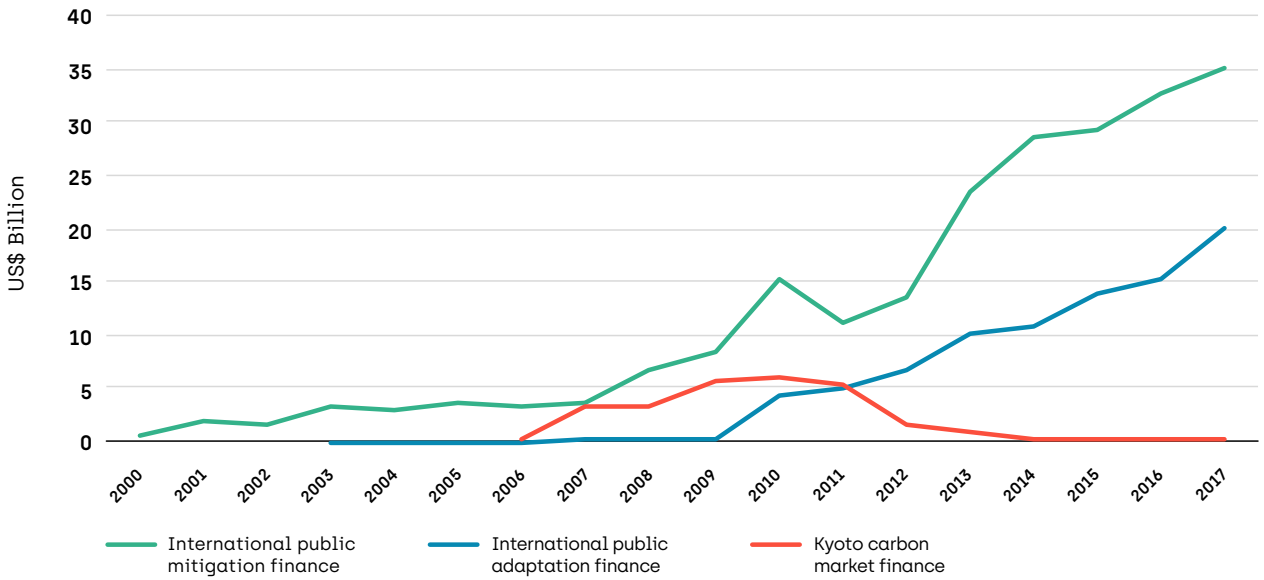
2.3 Climate finance instruments and mechanisms to support climate policy

International public climate finance seeks to fund mitigation and adaptation actions to address climate change. The transformational goal of international climate finance is to reduce greenhouse gas emissions, shift to a low-carbon development path, and increase the climate resilience of developing countries (IKI, 2020). International public finance is provided by developed countries to developing countries at market or at below market rates for mitigation and/or adaptation activities. This can often be in the form of dedicated climate finance, which is specifically focused on climate outcomes provided by specialized multilateral and bilateral climate funds. Multilateral and bilateral organisations can also fund climate development finance that blends both development and climate outcomes (OECD, 2019d).

International climate finance flows have expanded significantly over the last decade. Climate negotiations and support started in 1994 with the United Nations Framework Convention on Climate Change (UNFCCC) entering into force. From the mid-2000s onwards flows into carbon market funding for climate action began to increase via market-based mechanisms under the Kyoto protocol. This funding peaked in 2010 and decreased substantially into the end of the Protocol's first commitment period in 2012. However, international public climate finance instead picked up in pace, for both mitigation and adaptation, with large increases leading up to and following the negotiation of the Paris Agreement in 2015 (Vivid Economics, 2020d).

GRAPH 1

The evolution of climate finance and carbon market flows since 2000



Note: MDB and bilateral international public climate finance apportioned to mitigation and adaptation objectives based on the total amount of the project and the relative value of mitigation and adaptation finance in that project. Finance from multilateral climate funds tagged as "multiple foci" is apportioned to adaptation and mitigation finance based on the relative value of climate finance of each type in a given year. The Kyoto Protocol introduced three market-based mechanisms for the purchase of emissions reductions or allotted emissions units. Kyoto carbon market finance includes financial flows to selected countries (see Appendix for full list) for emissions credits under the Clean development mechanism (CDM), Joint implementation (JI) and Emissions trading (ET).

Source: Vivid Economics, based on OECD, 2018; ODI, 2019; UNEP DTU Partnership, 2019; World Bank, 2018

A range of instruments can be used by development partners, which have varying benefits and limitations when it comes to supporting different climate policies. However, while there is significant research available on the types of instruments available, analysis is limited when it comes to a framework for assessing the mechanisms through which this finance supports climate policies.

2.3.1 Types of climate finance instruments

A range of climate finance instruments are utilised to support transformative climate policy. These finance instruments include approaches that are well known, particularly grants to support investments and climate projects, and instruments that have been less frequently used, including blended finance approaches. However, even widely used instruments may need to be deployed in new ways to support transformative change. Table 4 sets out 9 different climate finance instruments considered in this analysis.

TABLE 4

Taxonomy of climate finance instruments

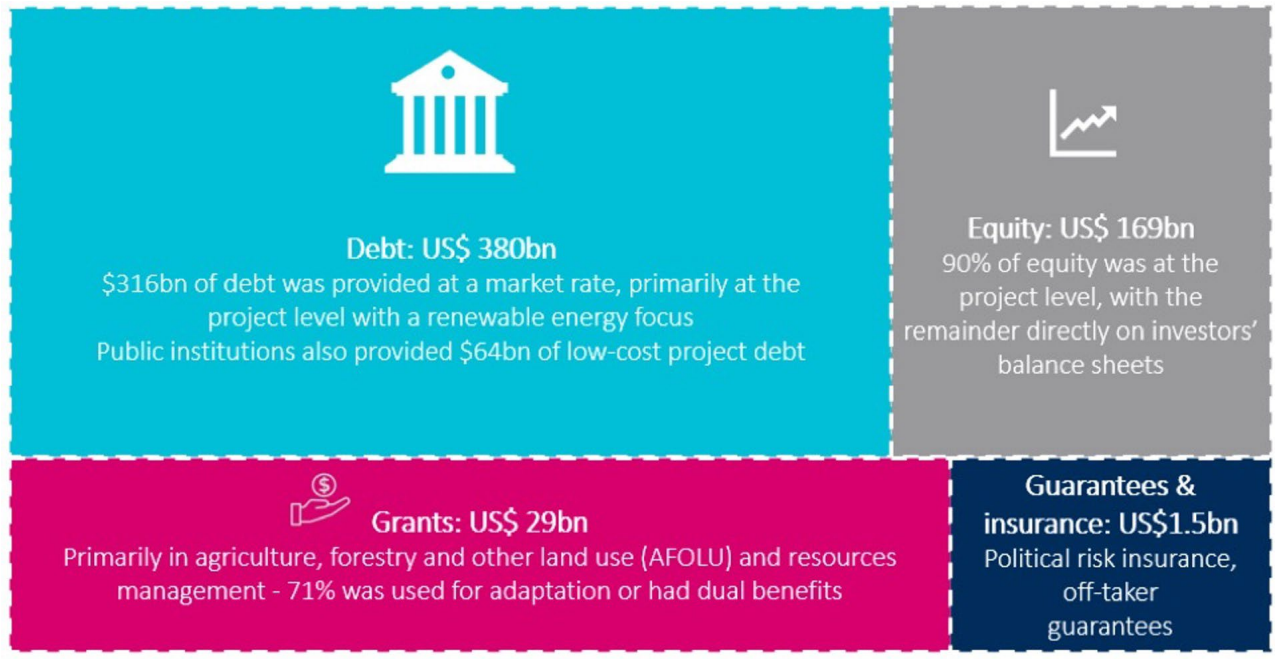
Climate finance instruments		Description
Investment financing	**Equity**	The provision of public finance in the form of an equity stake/shareholder investment to support an enterprise or one of a series of discrete projects. Typically provided on terms not available from private capital providers and often intended to mobilize private capital.
	Investment loans	The provision of public finance in the form of loans to government projects, an enterprise, or a series of discrete projects. Typically provided on terms not available from private capital providers and often with the intention of mobilizing private capital.
	Investment grants	The provision of public finance in the form of cash, goods, or services, for which no repayment is required. May be used to support government projects, infrastructure or the provision of goods/services in the private sector (e.g. enterprise support), public sector (e.g. infrastructure investment), or civil society/academic sectors (e.g. climate services provision).
	Guarantees	The provision of support by a public actor to transfer certain risks from investors or national governments to a public actor. Guarantees can help recipients manage financing, policy, or climate physical risks that they cannot absorb.
	Intermediated financing	The provision of financial support through intermediaries such as banks, microfinance institutions or other actors, rather than providing funding to end recipients directly. Examples include credit lines or fund capitalisation for re-granting/investing.
Results-based financing		The provision of funds to a recipient is linked to the achievement and independent verification of a pre-agreed set of results from an investment or policy. This includes prizes and competitions and payments for investment and policy outcomes.
Policy-based financing		The provision of public finance conditional on the borrower fulfilling their policy commitments. Such public finance is typically fungible in the borrower's budget (budget support).
Trade finance		The provision of finance to bridge the gap in time between import payment and export receipt of payment, mitigating risk on the part of both the buyer and the seller by providing credit, payment guarantees and/or insurance for transactions. This typically takes the form of credit for either buyers or sellers between companies, or a bank intermediated guarantee.
Technical assistance		The provision of finance in the form of grants or non-financial assistance provided by specialists, to finance or provide support in the form of information sharing, expertise, skills training, knowledge/best practice sharing or other consultation services.

Source: Vivid Economics

A large portion of public climate finance has been project-based and provided in the form of market-rate loans for renewable energy projects. According to CPI (2019), annual flows into investment financing rose to US$ 579 billion, on average, over the two-year period of 2017 and 2018, representing a US$ 116bn (25%) increase from 2015 and 2016. These figures account for domestic, bilateral, and multilateral public funds, differing from the bilateral public funds from Development Assistance Countries (DAC) highlighted in Graph 1. A mapping of these estimated volumes of investment financing across different instruments is presented in Figure 3.

FIGURE 3

Annual flows into climate financing over 2017 and 2018



Source: CPI

Climate finance must look beyond investments and projects and towards other instruments to have a broader impact. Project-based financing can be constrained by capital requirements, may not align with national development priorities and may distort markets, especially with the use of market-rate loans from public institutions (CPI, 2019; Vivid Economics, 2020d). Technical assistance, results-based financing, policy-based financing, and trade finance are further instruments that can help achieve climate policy objectives.

The combined impact of technical assistance and direct financial support may be multiplicative rather than additive. This is because it ensures that financial support is adequately embedded in national action, reaches its full potential to be effective, and therefore can be scaled up and replicated beyond a single project (Vivid Economics, 2020d).

Results-based financing (RBF) can support multiple climate levers by supporting direct action, incentivising new approaches, and laying the ground for carbon pricing. RBF is a proven effective tool to support a programme of changes that cuts across multiple climate levers. Within projects and programmes, an approach of unlocking financing upon achievement of pre-agreed results can be effectively linked to creating policy and incentive frameworks with a far greater reach than enabling immediate investments within that project or programme (Vivid Economics, 2020d).

Policy-based financing and trade financing tend to have a narrower focus on certain climate levers. However, they have the potential to be geared towards new areas and support action in policy areas where it has not yet broadly been applied (Vivid Economics, 2020d).

2.3.2 Mechanisms through which international climate finance influences policy

International climate development partners play an important role in financing mitigation and adaptation activities, but also plays an important role in facilitating domestic climate policies. International climate development partners can offer financing at below market rates to both governments and the private sector to reduce the pressure on budget-constrained governments who would otherwise not be able to provide concessional finance needed to enable action. When used strategically, this finance in turn can enhance the possibility of crowding in private finance (OECD, 2015; Vivid Economics, 2020d). Investment instruments have broader potential than just investment opportunities, as is the case with non-project financing instruments, as mentioned above.

There is currently no clear framework or theory of change for how international climate finance instruments impact climate policies. DIW Berlin conducted a literature review in which they found that the effectiveness of climate finance on the development of national climate and development policy frameworks can only be assessed through deep analysis of transformational change processes in developing countries. They found the bulk of existing analysis existed at a project level, with more comprehensive analyses not yet conducted in a systematic manner and not applicable at a national scale (DIW Berlin, 2020).

While providing a theory of change that maps instruments to climate policies is beyond the scope of this research, an indicative framework can be outlined. The approach builds on existing literature related to the mechanisms by which climate finance influences policy. Critically, a comprehensive mechanism by which climate finance enables climate policy would also need to account for the different forms of international climate finance and the types of climate policy. This should be a key area for further research going forward.

ODI (2011) identifies several broad dimensions used to evaluate how activities influence policy. These are presented below:

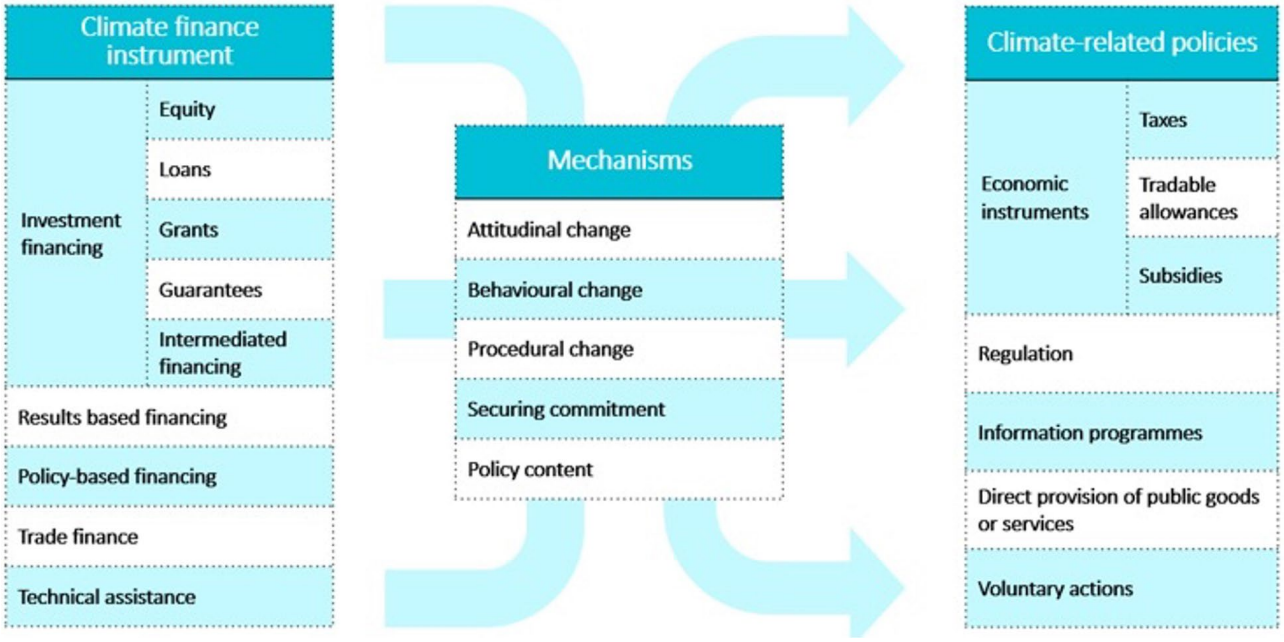
- **Attitudinal change:** Raising awareness and framing debates, changing the attitudes or perceptions of key stakeholders and getting the issue on to the political agenda;
- **Behavioural change:** Influencing behaviour change among key stakeholders to ensure meaningful and sustainable implementation;
- **Procedural change:** Securing change in the process for policy decision-making, such as opening new spaces for policy dialogue;
- **Securing commitment:** Encouraging discursive commitments, for example promoting the endorsement of international declarations;
- **Policy content:** Supporting legislative change by developing material to inform or be incorporated into policies

In terms of its transformative potential, the long-term success and efficacy of climate finance will hinge upon how well the mechanisms influence actors. Climate finance should enable depth of change, scale of change and these changes should be sustainable. To achieve depth, the mechanism should address root causes. To achieve scale, changes must also go beyond the boundaries of the intervention itself (World Bank, 2016). These can come through catalytic effects, demonstration effects, replication of innovation or positive externalities (World Bank, 2016). To achieve sustainability, the changes affected through the mechanisms should not harm the prospects of long-term economic growth (World Bank, 2016).

Climate finance can support climate policy if the relevant stakeholders are engaged in ways that impact attitudes, behaviours, and procedures, and if the financing instruments secure commitment and help develop policy content (ODI, 2011). Below we provide an illustrative and indicative way in which this framework could be illustrated.

FIGURE 4

Framework for how climate finance impacts climate policies



Source: CPI

Climate investment financing can affect attitudinal change and help secure financial commitments. Investments into funds or institutions may attract co-financing and spur recurring fiscal commitments to those vehicles or institutions. This can be from among (a) recipient governments, in the form of subsidies or the provision of public goods or services, and (b) private investors, as guarantees and concessional financing de-risk project and programmes and attract additional capital.

Results-based financing can help affect procedural and behavioural changes among recipients, including civil society organisations, financial institutions, and recipient government entities. It can also incentivise emitting industries to transition to lower carbon intensity activity. Results-based financing can affect behavioural and attitudinal change among the broader public and firms seeking funding.

Policy-based financing and technical assistance can help affect procedural changes, deliver policy content, and effect behavioural change among recipient government entities. Policy-based financing can be used to address capacity constraints and improve information efficiency, as well as help in the design of new sector policies. It can help stabilise the regulatory and policy environment, create a more conducive environment for investment in innovation and assist with securing further public and private commitments.

Technical assistance can help recipient government entities with the design and implementation of economic instruments and policies. These include regulation, information programmes, the policies behind the provision of public goods and services, and voluntary actions. Technical assistance also provides governments with information, expertise, and best practice when designing reforms, as well as supports the implementation of sector-specific policies by knowledge and best-practice sharing. It also provides market intelligence to set up efficient innovation policies and supports the private sector by providing regulatory and strategic advice.

Mapping the causal process and interplay between climate finance and policy in practice would require data on inputs from international climate development partners and outputs from recipient governments. This should be a key area for additional research going forward.

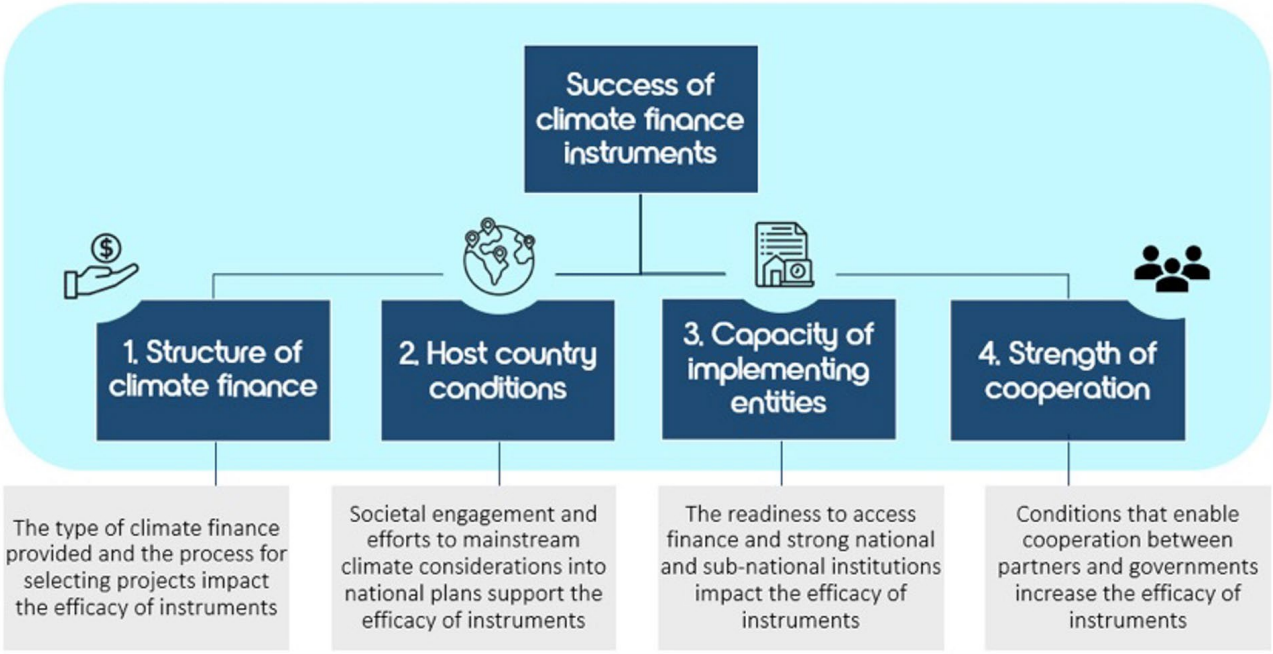
2.4 Factors that support the success of climate finance

There are four factors that contribute to (or prevent) the successful delivery of climate finance and support policy development. These include (a) the structure of climate finance, (b) host country conditions, (c) the capacity of implementing entities, and (d) the strength of cooperation. The structure of climate finance relates to the type of climate finance provided and the process for selecting projects. Host country conditions are the political, economic, and social factors that will determine how well climate initiatives are adopted. The capacity of implementing entities relates to the strength of national and sub-national institutions, as well as institutional transparency and ability more broadly. Conditions that enable cooperation relate to both internal and external coordination between development partners and recipient government.

These factors help determine the successful uptake of climate finance instruments and their corresponding impact on climate policy. The right choice of instruments and the right appraisal tools will help to effectively secure financial commitments in the most transformative and demonstrative opportunities. Host country conditions, ranging from engagement with civil society to integration of climate change in national plans, inform the successful implementation of climate finance instruments and policies. The capacity of implementing entities to plan, monitor and evaluate and learn from experience also play an important role in supporting the adoption of these policies. Finally, ensuring cooperation between different stakeholders is a key enabling factor, with extensive research undertaken on the drivers of success in this area. This analysis is significant enough to warrant specific discussion, so an additional in-depth framework is considered independently in Section 6.

FIGURE 5

Factors affecting the success of climate finance instruments



Source: Vivid Economics

2.4.1 Structure of climate finance

The appraisal processes and structure of international climate finance will determine whether finance responsively addresses needs. The success of climate finance depends both on the narrow success of the specific investment or initiative supported, and on the broader success in transforming political and financial systems and markets to enable future climate financing and investment.

Continued development partner support and successful adoption depends on the quality of processes and tools for selecting financed projects that are responsive to the needs of the country. Development partners and governments should have transparent processes and robust ex-ante appraisal tools for estimating interventions' environmental, social, economic, and financial benefits. This helps prioritise resources for the most transformative and demonstrative opportunities (OECD & IEA, 2013). Processes and tools should strike the right balance between rigour and administrative costs and allow for data availability constraints. Such tools could include marginal abatement cost curve analysis, options analysis, impact assessments, cost-benefit analysis, and multi-criteria analysis (OECD & IEA, 2013).

The right types of finance should be selected for the right purposes. Development partners need to consider the full suite of financial options to incentivise investors to engage in new areas that they perceive to be higher risk. Public funding remains a crucial source of finance, driving higher overall funding allocations and greater influence on the institutions that drive change (Anyango-van Zwieten, Lamers , & van der Duim, 2019). This is particularly the case for adaptation, where recognition of social costs is more nascent. The public financing need for policies such as biodiversity protection remains significant (OECD, 2020). On the other hand, blended models with private investment are increasingly common for mitigation strategies. Small grants can complement the use of less and non-concessional financial instruments and greatly increase impact by enabling private investments to achieve their target returns without increasing costs to end-consumers (ODI, 2014). Partial local currency guarantees can also mobilise local capital for projects without inducing moral hazard.

There is a key role for technical assistance in supporting successful climate financing. Technical assistance as an instrument can support the efficacy of climate finance in promoting climate policies, as well as directly mobilise additional investment into these mitigation and adaptation activities (CPI, 2015). Technical support can be used to test the feasibility and efficacy of investments into certain policies. Development assistance of this kind addresses knowledge, regulatory, risk and viability gaps that prevent low-carbon and climate-resilient investments. Capacity building promotes the creation of environments conducive to investment in climate activities (CPI, 2015). This can facilitate action that needs to be taken at the government level in order for financial instruments to become fully effective (IPCC, 2014).

Climate finance can also catalyse private investment, multiplying the benefits of climate policies via transformation of the broader investment landscape. Meeting the investment levels required for mitigation and adaptation places a heavy burden on political will. As of 2014, the public sector dominated investment in infrastructure – a key sector for climate finance –, accounting for more than 75% of infrastructure spending in developing countries (ODI, 2014). This burden can be reduced if concessional finance can mobilise private capital (OECD & IEA, 2013). While some investors have integrated sustainability considerations, a requirement for broader private engagement is demonstrating attractive risk-adjusted returns.

2.4.2 Host country conditions

Positive host country conditions are fundamental to the successful implementation of climate finance instruments that support policy development. Such positive conditions entail that the political economy, market failure and enabling environment barriers are low. This is made possible when (a) climate change is an important and mainstream policy issue for the government, (b) civil society, firms and local government have a say in planning, tracking, and monitoring of climate interventions, and (c) opportunities to invest in climate-mitigation and resilience are available and attractive to the private sector.

High-level political attention and transparency in decision-making processes helps raise national awareness on the importance of climate action and signals serious intent. In India, national and state action plans on climate change as well as the government's financial investment were seen as strong indicators by development partners of domestic commitment to climate mitigation and adaptation (Doshi & Garschagen, 2020).

Integration of climate mitigation and adaptation into national plans and budgets as a mainstream issue makes the positive impact of climate finance more likely. For climate finance to be effective, climate change cannot be treated as a "niche" policy area (OECD, 2016). Government ministries responsible for national planning and budgeting must mainstream climate actions and finance into the decision-making of sectoral government entities (OECD, 2016). This also encourages development partners to channel funding through country-owned systems, reducing transaction costs by avoiding the creation of parallel processes (OECD, 2016).

Well-organised accountability systems help track climate expenditures. Granular tracking helps monitor outputs and outcomes. Applying a budget code to track climate related expenditures across sectors increases climate finance accountability and helps overcome transparency issues between development partners and recipient governments. Strong national statistical systems also help track finance, assess impacts as well as measure progress towards GHG reductions across broader portfolios of investment activities such as in energy (OECD, 2016).

Civil society, local government, and private sector engagement in planning, tracking, and monitoring increase climate policy adoption and improve implementation efficacy. Recipient national governments find that engaging stakeholders in the formulation of national action plans, as well as tracking and monitoring are beneficial. Enhancing the enabling environment for the private sector, demonstrating the commercial viability of climate-smart technologies and mobilising investments via financial instruments help mobilise private investments (OECD, 2016; UNDP, 2013). Involving civil society and local government helps ensure that adaptation finance is targeted to the needs of the most vulnerable to climate change (OECD, 2016). However, it should be noted that engagement requires more than mere participation, particularly with regards to ensuring processes are in place to deal with issues such as imbalances of power and the risk of organizational capture by interest groups (Sharma, 2008).

Having major trading partners that are aligned with respect to climate objectives helps the host country government access climate finance instruments to meet its intended climate objectives. Harmonised action with trade partners or an ability to issue import tariffs enables governments to implement emissions reduction targets without harming local industry. Membership of climate clubs with trade partners or an ability to impose import tariffs on the products and services of countries not participating in emissions abatement can help alleviate free-riding and prevent harming local industry through climate policy (Nordhaus, 2015; Vivid Economics, 2020d).

2.4.3 Capacity of implementing entities

Administrative capacity in the state's national and subnational entities provides confidence to development partners that the state is ready to access climate finance. Entities should be able to uphold high standards of governance, as well as effectively plan, monitor, and evaluate. National development finance institutions often represent entities ready to access climate finance. This capacity also extends to local organisations or corporations for development partner funding which directly invests in projects through local stakeholders.

Implementing entities should have high governance standards to conform to development partner requirements and to effectively implement programmes and policies. They should have strong fiduciary capabilities, as well as environmental and social safeguards to circumvent multilateral implementing bodies. Further, the monitoring, reporting and verification of financial flows, expenditures and results is critical to building and maintaining a consistent level of transparency and accuracy (UNDP, 2012). Entities charged with this responsibility should not only be able to demonstrate results, but also build an evidence base of why an intervention worked in order to inform policies and interventions in the future (OECD & IEA, 2013). The results provide evidence to development partners that their climate funds are being made good use of, and help justify or scale-up commitments (OECD, 2014). The entities should have staff who are able to conduct expenditure reviews, staff who can inventory greenhouse gases, and staff who are able to independently verify results (UNDP, 2012).

Implementing entities should be competent at planning the use of climate finance in an efficient and equitable manner. Planning for the supply, management and use of financial resources for mitigation and adaptation allows decision-makers to articulate their climate priorities and the financial resources required to meet them (UNDP, 2012). Assessing the climate finance flows against requirements allows policy-makers to match their priorities with available resources, and so allows them to plan on how to integrate resources and sequence them over time (UNDP, 2012). Thus, implementing entities should have staff who are able to formulate projects and programmes, conduct baseline assessments; make investment and financial flow assessments; conduct expenditure reviews; and perform cost-benefit analysis (UNDP, 2012).

While not always appropriate, the capability to catalyse private finance can be highly beneficial for implementing entities. As discussed earlier, there is still a major role for traditional public finance in supporting climate action which lacks private incentive. However, significant success can be generated by climate finance instruments which mobilise private capital for climate outcomes. The implementation of this will depend on how well implementing government agencies are able structure finance solutions that give private investors the risk-adjusted returns that they seek. Staff at the implementing entity should be able to structure blended facilities to catalyse private investment and have expertise in private sector pricing incentives (UNDP, 2012).

Delivering resources requires national systems that provide financial oversight and management as well as execution services such as procurement, contracting and hiring (UNDP, 2012). These systems must have a local supply of expertise from which to procure skills and undertake project activities. Further, coordination among entities (UNDP, 2012), as discussed above, ensures that project-level activities are in line with national development planning and strategies. As such, implementing entities should be capable of transparently evaluating and prioritising projects on an ex-ante basis, making the necessary procurements and supervising the day-to-day administration of project activities (UNDP, 2012).

Implementing entities should be able to draw lessons from experience to scale-up successful pilots and make adaptations where improvements can be made to climate-finance programmes. In addition to providing development partners with evidence that they should scale-up their commitments, positive results should inform recipient governments of the potential to scale-up pilot trials (OECD, 2014). Where interventions have not worked as well as they could have, implementing entities should be able to take prompt corrective actions and incorporate learning into the design of future actions (EDF, CPI, ODI, & Brookings, 2011). Such proactive learning prevents institutional path dependent lock-in and inertia (Mahoney, 2000).

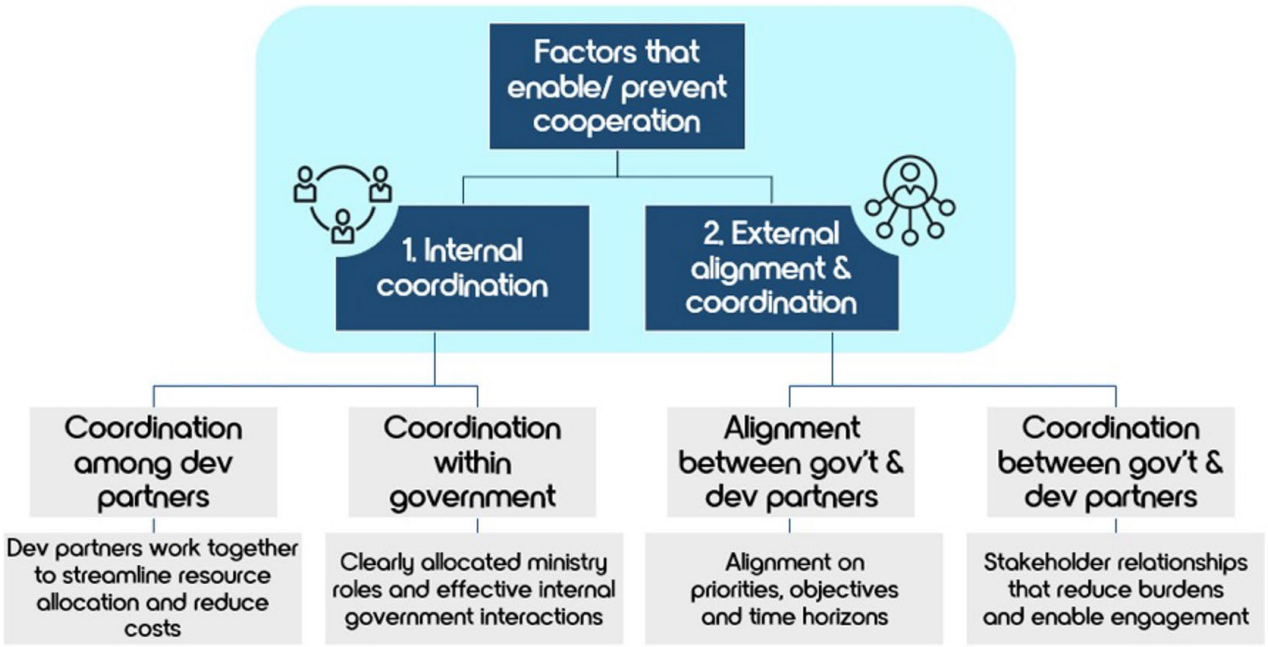
The National Bank for Agricultural and Rural Development (NABARD) is an example of a successful programme which enabled India to efficiently access adaptation finance. NABARD is successful as a development finance institution on account of its strict fiduciary standards, rigorous rules and regulations, compliance with high environmental and social standards, and transparency. It also benefited from its extensive presence at the district level and its vast network of 5,600 cooperative, regional, commercial, and rural banking partners. This was essential in increasing the impact of funding. Development partners are confident of the quality and relevance of projects proposed by NABARD because of the clear selection process that mirrors theirs. For example, the bank checked for the risks and vulnerability of adaptation projects and requires comparisons against business-as-usual scenarios. It requires projects to align to the National Action Plan for Climate Change and the State Action Plan for Climate Change priorities. Importantly, NABARD earned the commitment and trust of communities, having spent time with members, which further facilitated the successful implementation of projects (Doshi and Garschagen, 2020).

2.5 Deep dive: Strength of cooperation

Successful cooperation between the recipient government and development partners requires internal coordination as well as external alignment and coordination between these parties. Within government, clearly allocated roles and responsibilities among ministries enhance communication and transparency, enabling development partners to identify domestic priorities and to align financing behind these. Among development partners, coordination improves resources allocation by avoiding duplication and identifying synergies across initiatives. Between international development partners and recipient governments, alignment around priorities, objectives and time horizons helps promote the efficient allocation of capital and enhance the impact of funding. Coordination is also key to reduce bureaucratic, communication or administrative barriers and prevent delays in accessing international climate finance.

FIGURE 6

Success factors for development partner-government cooperation



Source: Vivid Economics

2.5.1 Internal coordination

Prerequisites to cooperation between governments and development partners are (a) coordination within government and (b) coordination amongst development partners (OECD, 2016). To enable development partners and recipient governments to effectively communicate with one another and execute programmes together, they must first be internally aligned. Inconsistent messages and practices among development partners impose a cost on partner governments. Similarly, arms of a government acting towards competing objectives can subvert agreements settled with development partners.

Coordination within government

Intra-governmental coordination and agreement on roles and responsibilities are key to the effective allocation of domestic and external resources. Clearly allocated roles and responsibilities among ministries enhance communication and transparency, enabling development partners to identify domestic priorities and to align financing behind these (OECD, 2016).

Coordination between the Ministry of Finance, the Ministry of Environment, as well as the Ministry of Planning are of particular importance to improve the effectiveness of resource allocation. Although roles allocated to each ministry may vary across countries, frequently allocated responsibilities for these three departments are respectively (a) the establishment of a coordination mechanism, (b) the formulation of a national climate change plan, and (c) the monitoring of national emission reductions and the tracking of climate related expenditures (IDB, 2013). In Bangladesh and Cambodia, for example, the responsibility for management of multi-donor trust funds resides with the environmental ministries, while resources are channelled through the finance ministries (UNDP, 2013). Having a venue for these departments to meet regularly, such as a central steering-committee or joint task force, and having a functioning secretariat for formal coordination helps achieve this end (von Lüpke & Well, 2019).

Integration at a government level across types of climate finance can also be important. Climate finance tends to focus more often on mitigation-related activities, with a resulting lack of funding channelled towards adaptation financing (Lundsgaarde et al., 2018). There is evidence that there are significant benefits from governments increasing their focus on cross-cutting policies (that incorporate both mitigation and adaptation outcomes) as well as the mainstreaming of climate change adaptation into local government policies (England, Dougill, & Stringer, 2018).

Focusing on a small number of key sectors by a small number of ministries might enable greater impact in tackling climate change. While a 'whole of government' approach is often recommended to respond to climate change, UNDP (2013) recommends that governments may be able to stay more strategically focused by concentrating mitigation and resilience efforts in a small domain of key sectors.

Coordination amongst development partners

Development partners with overlapping areas of work should coordinate together to use partner government systems where possible, share information, and agree on their respective roles. Sharing information on their operations within a sector and internally resolving differences before approaching partner governments limit the costs of negotiation and the administrative burdens for all parties (OECD, 2003). Using partner government systems where possible, and otherwise using common procedures or adopting joint working arrangements, also similarly reduces these burdens. Development partners should consider appointing a lead institution amongst themselves to achieve greater coherence, as was the case in Bosnia and Herzegovina where KfW was designated as the lead agency because of its specific sector knowledge and capacity. This made administration quicker and simpler. One progress report was commissioned every six months and submitted to the other development partners (OECD, 2003).

Development partners should acknowledge the challenges that have emerged in historical global funding partnerships and work to address these. Many multilateral funds do not sufficiently assess the comparative advantage of different development partners, including where an increased focus on the potential for the division of labour could create an improved use of funding (Amerasinghe et al., 2017).

2.5.2 External coordination

Cooperation between governments and development partners requires alignment of priorities as well as stakeholder coordination. Alignment refers to agreements on common objectives and approaches to monitoring and evaluation, as well as on time horizons. This alignment will improve resource efficiency and potential investment impact. Coordination refers to stakeholder interactions between development partners. A good framework for aid coordination will enable leadership by partner governments, simplify working relationships, reduce administrational burdens, and create flexibility where it may be lacking.

Alignment between development partners and recipient governments

Development partners and governments should agree on their common objectives. Governments and development partners will need to align approaches to climate financing to support the necessary coordination mechanisms and incentive frameworks across a government's planning and budgeting cycle (OECD, 2016). Governments should own their own strategies and play an active role in their design (OECD, 2008). From this point, the core emphasis of the literature does start to diverge.

On the one hand, there is evidence that indicates that external funding should match national priorities, rather than the other way round (OECD, 2016). International climate finance should be participatory and nationally owned, otherwise transformational change risks being perceived as and becoming a pressure imposed on developing countries (Winkler & Dubash, 2016).

For many developing countries, climate policy is embedded in a larger context of sustainable development objectives, defined through a national process. There can therefore be potential tension between climate finance and nationally driven sustainable development (Winkler & Dubash, 2016).

On the other hand, some groups advocate for the promotion of drivers that change the policy process and strategically influence the political will of the government. Advocacy groups influence discourse and negotiation processes by providing timely and precise information to the right actors at the right moment in time (Crewe & Young, 2002; von Lüpke & Well, 2019). Political will to change policies is essential for effective policy assistance, but there are many cases where this political will has to be generated (FAO, 2002). There are difficult situations where the donor and government are not in agreement. Continued efforts are occasionally needed to negotiate and persuade a government to change its views to allow the possibility of jointly developing and modifying policies to make them more effective (FAO, 2001, 2002). Identifying drivers of change and conducting advocacy and capacity-building for government can help generate will and a domestic constituency for change (FAO, 2002). To what extent international development partners can legitimately finance civil society organisations that match their agenda to influence policy discourse is an unanswered question that needs to be explored further.

Development partners and partner governments can benefit from agreeing on a framework for reviewing & monitoring impact. Simple and common indicators are often helpful, as well as basing conditionalities upon a common national framework. This should draw from a national framework on climate change where one exists (OECD, 2003, 2008). Such a framework could use simple, measurable, and easily verifiable performance indicators. Where several development partners are funding the same operations, they should strive to use common indicators where possible. Further, the budget support review should be integrated into the partner government's review process (OECD, 2003).

Coordination between development partners and recipient governments

Effective working relations between development partners and governments benefits from being built on an institutional framework for coordination that reconciles different interests, internal rules, and cultures in a constructive way. A good framework for aid coordination enables leadership by partner governments, simplifies working relationships, and creates flexibility where it may be missing. It also facilitates dialogue between donors, the government, civil society, and firms. Such a framework should set out a consensus between governments and development partners on objectives and strategy, and agree on the fora to manage dialogues (OECD, 2003).

Partner governments should attempt to coordinate with development partners to link aid to development planning & budgeting. Partner governments should chair and lead when it comes to consultative groups of development partners in order to better coordinate aid between partners and themselves where such arrangements persist (OECD, 2003). Development partners and governments should willingly engage in collective and transparent dialogues on concerns. To facilitate this, there should be a process for raising concerns (OECD, 2003).

Intended aid flows ought to be communicated by development partners with governments in a timely manner to allow governments to integrate the aid into their budgets. Best practice guidance for donor-recipient co-operation emphasises the need for clear two-way communication where development partners provide sufficient information to partner governments on their financing plans, in addition to the traditional flow of monitoring and evaluation data from recipients to development partners (OECD, 2003). For example, at the Accra Agenda for Action, donor and recipient countries recommended that development partners provide 3-5 year forward information on planned aid to partner governments (OECD, 2008). Recipient governments have in the past sought clarity regarding planned activities, procedures, reports and evaluation results (OECD, 2003). Development partners should set out the objectives, and indicative operations they plan to support for each of their substantive country programmes.

Development partners should attempt to structure their aid over a multi-year horizon and time disbursements to match governments' policy development. The timing of disbursements can enhance the partner governments' macroeconomic management and their ability to plan long term activities. Development partners should only suspend support within-year in exceptional circumstances that are clearly defined. They should also strive to be transparent about the circumstances under which aid flows may vary (OECD, 2003).

Shanghai's financial centre
by Markus Winkler

CHAPTER THREE

Case study 1: China

Transforming the finance sector with technical assistance: A case study of China's green bond market

Authors:

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3.1 Introduction

China is the largest emitter of carbon dioxide (CO2) emissions accounting for nearly one third of total global CO2 emissions (IEA, 2020). Under the Paris Agreement, China has pledged to reduce its carbon intensity by up to 65% below 2005 levels by 2030 (People's Republic of China, 2016). In 2020, China further announced intentions to achieve carbon neutrality by 2060 (Pike, 2020). To reach this goal, it is estimated that China will need investments in the order of USD 14 trillion (CPI, 2020c).

Considering the size of the country's domestic finance sector, its investment activities abroad, and a strong foreign demand to invest in China, changes to the Chinese financial sector have global repercussions. China's finance sector is one of the largest and most rapidly growing worldwide. For example the Shanghai Stock Exchange is expected to rank among the global top three exchanges in terms of total funds raised, and China's four largest banks - the "Big Four"[4] - are the largest worldwide (CPI, 2020c; KPMG, 2020). Further, China provides considerable foreign investments, notably under the government's Belt and Road Initiative that dedicates USD 1 trillion to foreign infrastructure in 126 countries over the next ten years (ASIFMA, 2019; CPI, 2020c; Jun et al., 2019; World Bank, 2021).

For China to meet its climate goals, the finance sector needs to be fit for purpose to (re)direct investment flows to the greening of all economic sectors. The Chinese government recognised the need for green investment guidelines and a definition of what constitutes green economic activities early on. Notably, the China Banking and Insurance Regulatory Commission (CBIRC) adopted the Green Credit Guidelines in 2012, providing China's 21 largest commercial banks with a definition of green activities (CBI, 2020a; Lin, Yunhan, & Yue, 2021). In the subsequent years, China enacted a number of finance sector reforms to ease green finance flows (CPI, 2021). As a result, China has rapidly scaled green finance volumes. At the same time, the country is also one of the largest funders of high-emitting assets. China's "Big Four" alone contributed USD 240 billion to the fossil fuel industry between 2016 and 2019 of which USD 106 billion went towards coal mining and coal power (CPI, 2020c).

Building on the efforts and first achievements of the Green Credit Guidelines and as part of sectoral reforms, China launched a green bond market in 2016. A year earlier, the People's Bank of China (PBOC) and the National Development and Reform Commission (NDRC) released first green bond guidelines (Zhang, 2020).

4 The four public and largest banks Industrial and Commercial Bank of China, China Construction Bank Corporation, Agricultural Bank of China and the People's Bank of China are often referred to as China's "Big Four".

To establish a green bond market, a country might need to overcome a number of barriers. In China these include(d) lack of awareness of climate risks, knowledge barriers on green bonds as a finance instrument and capacity barriers to issue green bonds, among others. Technical assistance, as an instrument used by international donors in particular for knowledge transfer and capacity building, can support countries in reducing these barriers. In this report we assess whether and to what extent technical assistance provided by international donors to China's green bond market contributed to transformative change in the finance sector.

To gauge the impact of the technical assistance activities, we use the framework of transformative change put forward by Vivid Economics (Vivid Economics, 2020b). We elaborate on this framework in Section 4.

BOX 2

Green bonds

Green bonds are a fixed-income debt instrument aimed to raise capital to fund green projects and assets. They can be used to mobilise (additional) resources for (large-scale and long-term) climate mitigation or adaptation projects, beyond bank lending and equity financing. Green bonds differ from traditional bonds by the commitment of the issuer to use the bond's proceeds exclusively for green purposes. The explicit labelling of bonds as green can facilitate the connection between green projects and the increasing demand for green investments (European Commission, 2016).

The main actors in the green bond markets are:

- **Green bond issuer:** Any entity (company, government agency, financial institution) that develops, registers and sells a bond.
- **Green bond underwriter:** Financial institution that organises the issuance of the green bond.
- **Green bond investor:** Individuals, companies or institutional investors who buy a green bond with the expectation to receive a financial return.
- **External reviewers or verifiers:** Entities that verify the "greenness" of the project/asset or that verify compliance with green bond standards. This can include credit rating agencies, auditors and intermediaries (such as stock exchanges) and investors.

The green bonds issuer has an obligation to track, monitor and report on the use of proceeds which leads to additional costs. Therefore, a **minimum issuance volume** is usually required. At the same time, green bonds can have a **green premium** (interest rebate) meaning that capital providers might be willing to accept lower returns when compared to traditional bonds. This in turn means that issuers might be able to raise capital at lower costs (Löffler, Petreski, & Stephan, 2021).

For this research study we conducted two confidential interviews with organisations that provided technical assistance to stakeholders in the context of China's green bond market. We complemented the interviews with desk research.

Section 2 outlines key actors and developments in China's green bond market. Section 3 provides an overview of the main enabling factors and barriers to the green bond market. Section 4 discusses whether and to what extent various technical assistance activities helped reduce these barriers, and we assess how these activities contributed to transformative change, following the six principles introduced above. Section 5 outlines lessons learned, thereby focusing on both policy-makers and providers of technical assistance.

3.2 China's green bond regulatory framework

3.2.1 Regulatory framework and institutional set-up

In 2015, China started building its green bond market to raise capital in the wider finance sector. The regulatory framework has continuously developed since. Today, the regulatory landscape is complex, which can lead to confusion amongst market participants, particularly for foreign investors (CBI, 2020a, Interview 1, 2021, Interview 2, 2021). The Chinese green bond market is regulated by various institutions depending on the type of issuer. Chinese bonds are categorised as follow:

- Financial bonds, issued by financial institutions, including policy banks and commercial banks, traded on the interbank market.
- Corporate bonds, issued by listed companies on the Shanghai or Shenzhen Stock Exchanges.
- Enterprise bonds, primarily issued by state-owned enterprises (SOEs) and more generally non-listed companies, typically traded on the interbank market but also on the Shanghai and Shenzhen stock exchanges.
- Sovereign bonds, issued by public sector entities such as municipalities, provinces or the government. The Ministry of Finance is the regulating institution for this type of bond but has not published any regulations (CPI, 2020b).

We provide an overview of Chinese regulators in the green bond market, including a brief explanation of their role and key policies on green bond issuance in Table 5. We also summarise the timeline of key green bond regulations in Figure 7. We apply the same colour-code to regulators in Table 5 and Figure 7 to ease understanding of China's complex regulatory framework.

TABLE 5

Overview of China's key regulators in the green bond market, their role and main policies

Regulator	People's Bank of China (PBOC)	National Association of Financial Market Institutional Investors (NAFMII)	National Development and Reform Commission (NDRC)	China's Securities and Regulatory Commission (CSRC)	Shanghai and Shenzhen Stock Exchanges
Market segment and role of regulator	Financial and corporate bonds		Enterprise bonds	Corporate bonds (securities and futures market)	
	As China's central bank, the PBOC is responsible for carrying out monetary policy and regulation of financial institutions and maintaining national financial stability, as determined by People's Bank Law and Commercial Bank Law.	NAFMII is an association of investors under the umbrella of the PBOC. It constructs the voluntary and self-regulatory rule system in the interbank market to enhance self-regulation.	As China's macroeconomic management agency, the NDRC formulates and implements industrial policies, relevant laws and regulations concerning national economic and social development, economic system restructuring and market access to non-Chinese stakeholders.	CSRC performs a unified regulatory function: 1) formulates policies and development plans for the securities and futures markets, 2) supervises the following capital markets: issuance, listing, trading, custody and settlement of stocks, convertible bonds, bonds of securities companies, and bonds and other securities.	As the two independently operating Chinese stock exchanges, overseen by the CSRC, they operate the securities and futures markets platforms.
Key policies	› Notice on Green Financial Bonds No.39. which includes the Green Bond Endorsed Project Catalogue (2015) › Announcement No. 20 on Green Bond Assessment and Verification Guidelines (2017)	› Guidelines on Green Note of Non-Financial Enterprises (2017)	› Guidelines on Issuing Green Bonds (2015) › Green Industry Guidance Catalogue (2019)	› The Code of Corporate Governance for Listed Companies in China No 06 (2017) › Announcement No. 20 on Green Bond Assessment and Verification Guidelines (2017)	› Shanghai & Shenzhen each released a Notice on Launching the Pilot Programme of Green Corporate Bonds (2016)
	Green Bond Endorsed Project Catalogue (2020) **Released by PBOC, NDCR and CSRC** **and in cooperation with the China Banking and Insurance Regulatory Commission (CBIRC)** **to align to green credit guidelines**				

Obs: All operate under the State Council of the People's Republic of China, the chief administrative authority of the People's Republic of China.

Source: (CBI, 2020a; CPI, 2020a; Zhang, 2020; Lin, Yunhan and Yue, 2021).

The People's Bank of China (PBOC), the National Development and Reform Commission (NDRC) and the Securities and Regulatory Commission (CSRC) are the three key regulators of China's green bonds market. The PBOC released a "Notice on Green Financial Bonds" (PBOC Document No.39) in 2015. It defined what a green bond is, outlined green labelling requirements and defined eligible projects in the Green Bond Endorsed Project Catalogue (referred to as the "2015 Catalogue" hereafter) (PBoC, 2015; Zhang, 2020). Shortly after, the NDRC released the "Guidelines on Green Bond Issuance" (NDRC No. 3504) specifically targeted at state-owned enterprises (SEOs). The Guidelines have different green bond requirements and are based on an alternative set of eligible projects (Zhang, 2020). In 2017, the Securities and Regulatory Commission (CSRC) published the "Guiding Opinions for Supporting the Green Bonds", based on PBOC's 2015 Catalogue (Zhang, 2020).

The Shanghai & Shenzhen stock exchanges and the National Association of Financial Market Institutional Investors (NAFMII) also released own green bond regulations applicable to their respective markets. In 2016, the Shanghai & Shenzhen stock exchanges each released a Notice on Launching the Pilot Programme of Green Corporate Bonds for any green bond issued through the stock exchange. In 2017, the National Association of Financial Market Institutional Investors (NAFMII), a voluntary association of institutional investors working under the umbrella of the PBOC, released their own voluntary Guidelines on Green Debt Financing Tools for Non-Financial Enterprises (NAFMII No. 10, 2017). The voluntary Guidelines apply to green bonds issued by financial institutions other than banks and traded on the inter-bank market (Zhang, 2020).

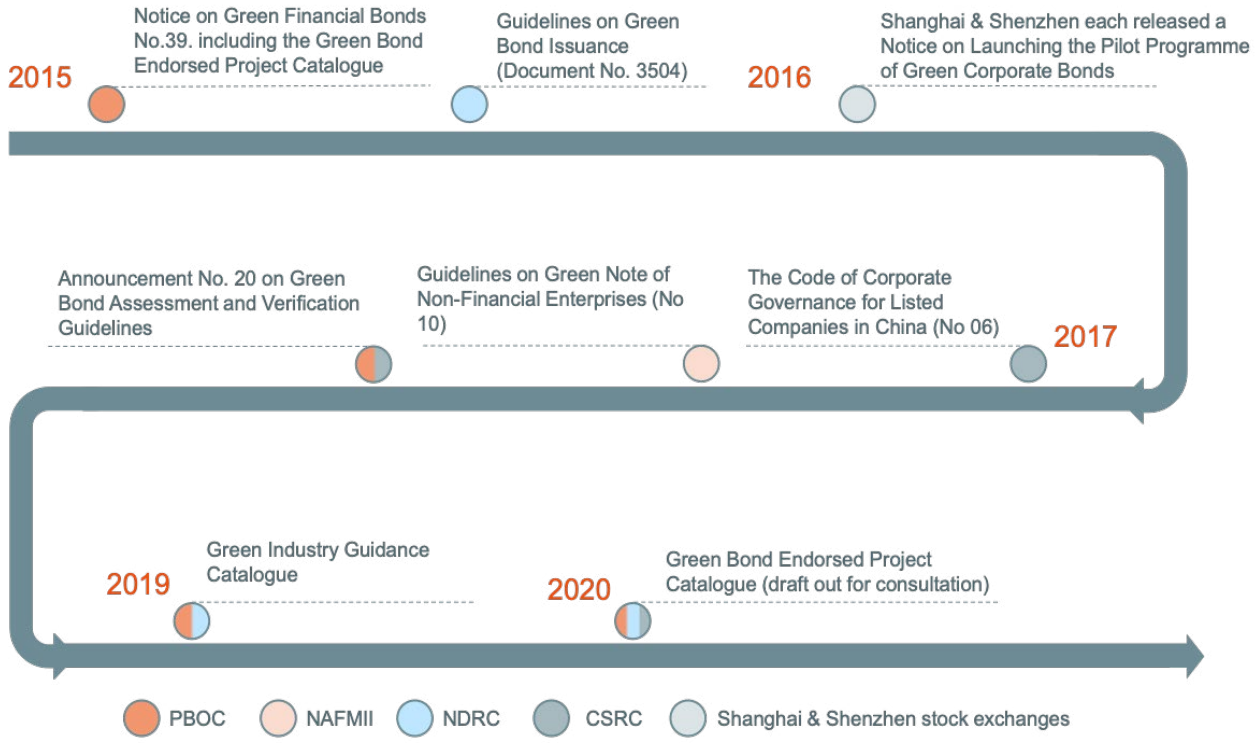
To strengthen the green bond regulatory framework, the PBOC and CSRC jointly released the "Green Bond Assessment and Verification Guidelines" in 2017 (Announcement No. 20 2017). The Guidelines introduced regulatory requirements for the verification of green bonds. They stipulate verification methods, reporting requirements and require green bonds verifiers and certifiers to have relevant qualifications and credentials (CBI, 2018b).

In a first effort to harmonise green bond regulations and the definition of green activities, the NDRC released the Green Industry Guidance Catalogue in 2019 with six other public institutions, including the PBOC (Lin et al., 2021). The Catalogue more clearly defined boundaries and encouraged the further harmonisation of standards both within China and with international standards, laying the foundation of a taxonomy - a classification system, establishing a list of environmentally sustainable economic activities.

To fully harmonise the definition of green activities between market segments, PBOC, NDRC and CSRC put forward a revision of the Green Bond Endorsed Project Catalogue (referred to as the 2020 Catalogue hereafter) for public consultation in July 2020 (Lin et al., 2021). The Catalogue was also developed in cooperation with the China Banking and Insurance Regulatory Commission (CBIRC) to align green bond regulations to green credit guidelines.

FIGURE 7

Timeline of key regulations in China's green bond market



Green bond requirements and definition of green activities

Green bond requirements and definitions of green activities diverge between regulations. On the one hand, the PBOC limits the proceeds of green bonds to specifically green assets and projects - in other words the raised capital cannot be spent for other, potentially non-green activities. To ensure this goal is being met, the PBOC provides rules on the allocation of proceeds including ring-fencing or earmarking, requiring robust environmental information disclosure and encouraging issuers to arrange an independent party to review or certify the bond in terms of its use of proceeds and environmental performance (Lin et al., 2021). On the other hand, the NDRC guidelines allow up to 50% of proceeds to be used for general purposes (CBI, 2020a). This is problematic because investors do not know what half of the raised capital is used for and thus have no guarantee these proceeds fund green activities.

Furthermore, current Chinese green bond guidelines deviate from international green bond standards. Most notably three sub-categories of the 2015 Catalogue allow coal-related activities, including efficiency-related improvements for coal-fired power generation (CPI, 2020b). As a result, international investors have so far lacked confidence in the ambition of Chinese green bond standards. At the same time, China is interested in attracting foreign (green) investments. Therefore, the three key regulators (PBOC, NDRC and CSRC) put forward the 2020 Catalogue (a list of eligible green activities) to harmonise green bond regulations amongst China's green bond markets as well as with international green bond guidelines (Lin et al., 2021).

The 2020 Catalogue provides clear definitions of sustainable economic activities in China, and in line with international green bond guidelines (for example the Green Bond principles[5] or CBI's green bond standard[6]), and the recently released European Taxonomy[7] (Lin et al., 2021). It is based on PBOC's 2015 Catalogue but aligns with the Green Industry Guidance Catalogue (2019) issued by the NDRC. One major change in the proposed 2020 Catalogue is the exclusion of clean coal investments in green bonds. Once the 2020 Catalogue is adopted by regulators, any bond (or loan) that meets the criteria of the 2020 Catalogue will be recognised as green, no matter in which market it is issued or what type of bond it is (CBI, 2020a).

3.3 Enablers and barriers to the Chinese green bond market

3.3.1 Enablers

In this section, we outline the enabling factors that played an important role in the implementation of China's green bond market.

Political buy-in and national commitment to environmental protection

Severe air and water pollution and soil degradation has led to environmental concerns amongst the public, and public concerns, in turn, have increased political buy-in for environmental protection (Interview 1, Interview 2, 2021). China was one of the first countries to sign the Paris Agreement and thus committed to the goal to keep global warming to 2°C and pursue efforts to limit it to 1.5°C (UNFCCC, 2015a).

Further, China's 13th Five Year Plan laid down the strategy and pathway for the country's development between 2016 and 2020. It includes concrete environmental and energy efficiency targets and combined the goal of economic growth (GDP growth rate of 6.5-7% per annum) with environmental protection. In 2020, China further announced intentions to achieve carbon neutrality by 2060 (Pike, 2020) and China's 14th Five Year Plan draft released in 2021 is generally aligned to the previous Five Year Plan. This suggests continued commitment to environmental protection and climate action, but also no enhancement of that commitment (Climate Action Tracker, 2021).

5 The Green Bond Principles (GBP) are voluntary process guidelines that recommend transparency and disclosure and promote integrity in the development of the green bond market by clarifying the approach for issuance of a green bond: https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/.

6 The Climate Bonds Standard and Certification Scheme is a labelling scheme for bonds and loans, where bonds and loans that are consistent with the 2 degrees Celsius warming limit in the Paris Agreement are certified: https://www.climatebonds.net/standard.

7 The EU taxonomy is a classification system, establishing a list of environmentally sustainable economic activities: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en.

China also led international efforts to promote green finance. It initiated the G20 Green Finance Study Group and co-founded the Central Bank and Supervisor's Network for Greening the Financial System (Lin et al., 2021). These high-level commitments directly impacted key regulators, major state-owned enterprises (SEOs) and senior executives across the economy and enabled the uptake of green bonds (Interview 1, 2021).

Domestic and international demand for green investments

Political buy-in for green finance has led to domestic demand for green bonds. Further, peer pressure amongst investors throughout Asia enabled a quick uptake of green bonds amongst finance sector participants. Issuers pursued first mover benefits and the rapid gain of market shares (Interview 1, 2021). International investors are also increasingly looking at green investment opportunities in China (Interview 1, 2021). This demand ensured a certain level of willingness-to-change and a continuous interest in capacity building by various stakeholders in the green bond market (Interview 1, Interview 2, 2021).

3.3.2 Barriers

The implementation of the green bond market faced a number of barriers. In this section, we highlight the main obstacles.

Lack of awareness of climate risks and benefits of green bonds

A **lack of awareness of climate risks** in the Chinese finance sector limits the interest for green finance products, including green bonds (Interview 1, 2021, Interview 2, 2021). Climate change risks can broadly affect financial assets twofold: 1) they can have a physical impact on assets for example through more frequent floods and 2) transition risks which can lead, among others, to an early shut down of assets before the end of their financial lifetime for example due to market or technological reforms. Both physical and transition risks can lead to material financial risks for an investor and, in the worst case, insolvency. The lack of awareness and monitoring of these risks means that investment decisions may lead to the financing of new assets prone to physical or transition risks, with significant repercussions on the Chinese economy (Harper Ho, 2018).

There is also a **lack of understanding of what green finance consists of** (Interview 1, 2021, Interview 2, 2021). Many finance actors associate green finance with environmental, social and governance (ESG) reporting, the latter also not being well understood in the finance community (Interview 2, 2021). In addition, many credit officers are not aware of green finance products, do not know when to use them and do not know about their benefits (Interview 2, 2021). As a result, they usually do not consider green bonds as a debt instrument when advising clients.

Knowledge barriers

A perceived trade-off between economic viability and green projects hinders the uptake of green bonds (CBI, 2020b, Interview 1, 2021, Interview 2, 2021). Financial institutions often associate green finance with profit loss in comparison to other finance instruments they offer to their clients. This is also due to the fact that green bonds tend to have higher transaction costs and lower interest rates (green bonds often comprise of low risk investments) (CBI, 2020b). This shows that the **benefits green finance and more specifically green bonds can entail are not well understood.** As a result, most banks are reluctant to invest in the required resources to acquire comprehensive understanding of the green bond market (Interview 1, 2021).

The initial **economic slowdown due to the COVID-19 pandemic reinforced the perceived trade-off.** In 2020, some banks lowered the stringency of their due diligence procedures to rapidly provide credits to carbon-intensive companies, based on the belief this would boost economic growth (Interview 2, 2021). In contrast, green bond issuance decreased in China while international green bond markets have seen a surge in green bond issuance in 2020 (CBI, 2020c). China issued a bit over 10 billion USD by the third quarter of 2020 compared to almost 60 billion USD in 2019 (CBI, 2020c).

There is a lack of **empirical evidence** assessing the extent to which the greening of financial assets would undermine or improve financial performance in China (Interview 2, 2021). Such evidence is important to enable informed decision-making. However, sustainable finance considerations are not incorporated or taken up by academia, larger businesses or local NGOs. There are for example few Chinese economists and finance sector consultants with expertise in green bonds. Currently, many finance sector stakeholders are reluctant to develop and use green bonds and green products more generally (Interview 2, 2021).

Capacity barriers

The Chinese government committed to the greening of its economy and its finance sector. It launched a domestic green bond market with two key policies by the end of 2015 (see Section 3). There was however a **lack of capacities** within the Chinese finance sector to implement the green bond market guidelines. To seize the potential of the green bond market capacities had to be built amongst key market stakeholders: green bond issuers, underwriters, investors and external reviewers or verifiers.

Regulatory barriers

The Chinese government put regulatory pressure on state-owned enterprises to deleverage, or in other words **reduce debt**. State-owned enterprises were encouraged to reduce their debt levels (CPI, 2020b). Such measures constrain the issuance of new debt that might be needed to finance a green transition, including for the issuance of green bonds. However the Chinese government has recently announced it would focus on maintaining debt levels at the largest state-owned enterprises rather than further reducing it (Bloomberg, 2021). This shift allows SEOs to take on new debt when existing debt expires.

3.4 Technical assistance activities and their contribution to transformative change

Technical assistance is an important instrument to support climate action. It can take the form of information sharing, training programmes, capacity building workshops, best practice sharing and other consultation services (Vivid Economics, 2020b). International donors can complement technical assistance activities with financial support, including concessional loans, but this does not necessarily have to be the case.

Technical assistance is typically used to address institutional capacity issues, but can more generally spur change by drawing on existing know-how and international best practices. Technical assistance activities can contribute to lowering barriers that constrain potential financial sector reforms, including the development of a green bond market. International donors can provide technical assistance to the public sector, including government authorities and central banks, or to other entities, such as private banks, companies or civil society organisations.

To gauge the impact of technical assistance on the green bond market and the wider finance sector in China, we use the **six principles of transformative change** put forward by Vivid Economics, noting that not all six principles need to be met to lead to transformative change (Vivid Economics, 2020b).

The principles stipulate that actions and investments should **strategically** target key priorities and action areas needed to achieve a low-carbon and climate resilient development path to ensure transformative change. Building a knowledge and regulatory foundation with key stakeholders can spur **systemic change** and drive broad and deep changes within key markets and policy environments. Aggregated smaller actions or fewer, larger actions can deliver **high-impact** large-scale mitigation or adaptation benefits and actions or investments that have the potential to increase in **scale** themselves or that are replicable in other contexts are also most likely transformative. Further, actions or investments that are able to continue after any initial support is withdrawn or in the face of changing future conditions lead to **self-sustaining** change and actions or investments that are long-lasting or permanent lead to **enduring change**. Both are more likely to lead to transformative change.

Awareness raising and know-how transfer

By invitation of the Chinese Government, technical assistance activities to raise awareness of green finance instruments started well before the establishment of the green bond market in 2015 (Interview 1, 2021). For instance, as early as 2006, the International Finance Corporation (IFC) launched the Energy Efficiency Finance Programme aimed at stimulating energy efficiency investments in China through technical assistance, a loan guarantee mechanism, and outreach and dissemination activities (IEG-World Bank, 2010).

Further technical assistance activities included raising banks' corporate clients' awareness and understanding of direct and indirect climate change impacts on their economic activities through tools and guidance materials and how to incorporate such risks into financial decision-making. For example, the United Nations Environment Programme Finance Initiative (UNEP FI) and the German international cooperation agency, GIZ, launched the Natural Capital Finance Alliance. They offered a tool that enabled banks to quantify the potential impact of drought on corporate loan portfolio performance (UNEP Finance Initiative, 2016).

Towards 2015, interviewed providers of technical assistance focussed their activities at raising awareness of green bonds as a finance instrument, the importance of transparency to ensure investor confidence and the benefits of green bonds for various stakeholders. Technical assistance took the form of trainings, workshops, and stakeholder conferences, directed at bankers, underwriters, investors, certifiers, providers of insurance and asset managers. Over 200 financial institutions have since participated in such activities (Interview 2, 2021). Providers of technical assistance combined in-house expertise and international best practice experiences. For example, they used the Green Bond Principles, used for voluntary green bond certifications and published by the International Capital Market Association (ICMA).

Due to support of technical assistance providers, environmental risks to financial assets as well as the benefits of green bonds are now well understood in a number of financial institutions and companies. Providers of technical assistance report that today financial institutions understand the risk that climate change poses to their assets and how to translate these risks into financial risks (physical and transition risks), notably the potential impact of future carbon pricing. Climate change is however not yet mainstreamed in the wider finance sector, despite long-term technical assistance to raise awareness of climate change risks on the economy and financial assets (Harper Ho, 2018, Interview 1, 2021, Interview 2, 2021).

The extent to which technical assistance raised awareness and built know-how on green bonds is difficult to assess. Providers of technical assistance report having contributed to building a consensus amongst stakeholders, creating the required understanding on the role of green bonds, and brought in international expertise on key elements required for a functioning and credible green bond market (Interview 1, 2021, Interview 2, 2021). Whilst green bonds are understood better amongst financial institutions, there is still limited awareness of green finance options outside of those departments specifically targeting green finance (Interview 2, 2021). Creating the knowledge foundation amongst key stakeholders is an essential requirement for **systemic** change, however raising awareness alone does not lead to transformative change.

Supporting first movers and building a green bond market eco-system

Providers of technical assistance strategically supported the implementation of China's green bond market by raising awareness and building know-how amongst key stakeholders necessary to build the green bond eco-system (Interview 1, Interview 2, 2021). They focussed their efforts on building capacities with ambitious financial institutions to enable them to become first movers in China's green bond market. First movers take on more risk and supporting them can help to kick-start a new market. Capacity building also led the foundation for the creation of China's green bond market and first movers spurred **systemic change**: the green bond market successfully launched in 2016 and gained traction in the following years.

Specifically, technical assistance helped financial institutions to develop green finance products by drawing from international best practice tailored to the country context. For example, one of the interviewed providers of technical assistance cooperated with a well-established European green bond underwriter to merge best practice know-how and knowledge of the Chinese context in training sessions and workshops (Interview 1, 2021). However, initial Chinese green regulations were not as stringent as international best practice. As a result, green bonds issued in China entail controversial investments such as "clean coal". It is thus difficult to assess whether the green bond market leads to **high impact** change to green the Chinese economy. China continues to strengthen the regulatory framework, for instance with the introduction of the Green Bond Assessment and Verification Guidelines in 2017 or the draft 2020 Catalogue. This is a promising sign to encourage **high-impact** green activities to spur transformative change.

Providers of technical assistance further supported financial institutions to identify corporate clients and build a pipeline of green projects. Technical assistance activities also targeted the development of public-private partnership projects to further mobilise the private sector in the green bond market (Interview 1, 2021).

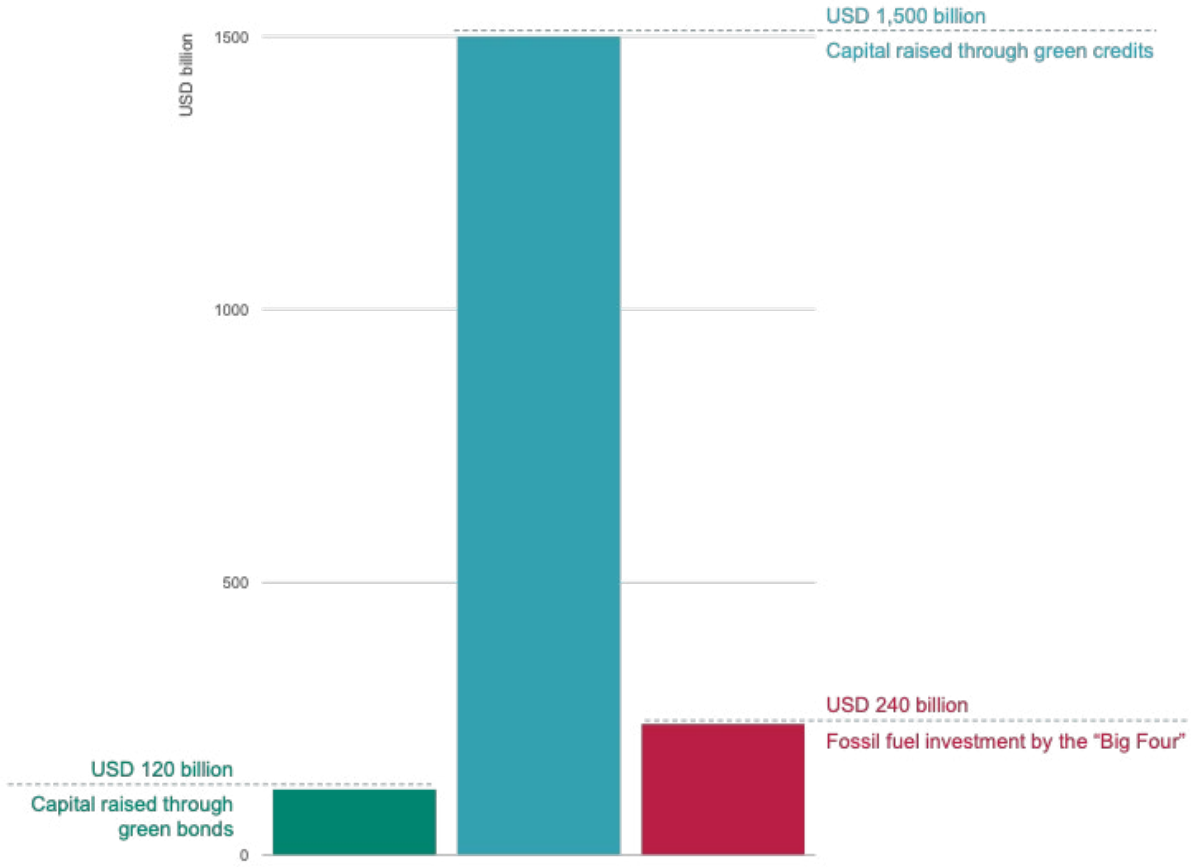
A green bond regulatory framework, top-down high-level commitments by banks coupled with newly built bottom-up capacities quickly led to the issuance of first green bonds in 2016 (Interview 1, 2021). Within the first year of its launch, the Chinese green bond market raised over USD 25 billion (CBI, 2020a). The issuance of the first green bonds by a few financial institutions created traction amongst peers to enter the green bond market (Interview 2, 2021). As a result, the green bond market has seen continued growth since its launch in 2016.

While green bond figures are sizable, capital raised through green bonds is still relatively small compared to other green finance products or traditional finance instruments (CPI, 2020b). For instance, China's green loans had reached a cumulative total of over USD 1500 billion in 2019, accounting for around 10% of the country's total credit balance (CPI, 2020b). In contrast, Chinese green bond issuance reached a cumulative total of USD 120 billion by the end of 2019, or less than 1% of total green credit volumes (Graph 2) (CBI, 2020a; CPI, 2020b).

Whilst the credit and bond market encompass different stakeholders, the difference in green finance volumes raised is significant. It is also noteworthy to mention that whilst finance volumes raised through green bonds increased rapidly, China's "Big Four" alone contributed twice the size of the green bond market (USD 240 billion) to the fossil fuel industry between 2016 and 2019 (Graph 2), of which USD 106 billion went towards coal mining and coal power (CPI, 2020c).

GRAPH 2

Cumulative investment volumes between 2016 and 2019 through green bonds, green credits, and fossil fuel investments by the "Big Four" in the same time period.



Building capacities with SMEs and smaller or rural banks

In more recent years, the mandate of providers of technical assistance has shifted towards small and medium sized enterprises (SMEs) and smaller or rural banks (Interview 1, 2021, Interview 2, 2021). This is an indication that the market has reached a certain scale. Larger companies, banks and investors have understood the role of green finance products and have the human and financial resources to prepare for the uptake of new finance models such as green bonds. For those stakeholders, support shifted from grant-based technical assistance to advisory services.

Today, the public sector is still very involved in the transformation of the finance sector. The green bond market is dominated by public entities such as public banks, state-owned enterprises or other government-backed entities (CBI, 2020b). There is thus potential to scale the green bond market by tapping into private sector finance flows. For example, today over 500 private equity funds exist, exceeding USD 8 trillion (Asset Management Association of China, 2020), Interview 2, 2021).

Therefore, technical assistance has been supporting smaller, rural and non-government backed banks that have more difficulties in investing required resources to shift to green finance products such as green bonds (Interview 1, 2021, Interview 2, 2021). Building capacities in the wider finance sector is important to ensure a long-lasting uptake of the green bond market and to avoid that know-how and first mover benefits remain within large banks and corporations. For example, the Ma'anshan Rural Commercial Bank, a smaller and rural Chinese bank, received technical assistance from the IFC to green its financial products (Maanshan Rural Commercial Bank, 2019). The Bank issued its first green bond in June 2020 to finance solar and water sewage treatment infrastructure projects amounting to USD 57 million (CBI, 2021).

There are encouraging signs that China's green bond market **scales** clearly labelled green finance flows. Annual bond issuance data suggests that capital raised through the green bond market may have been additional to the capital that would have been raised without the existence of the green bond market (CPI, 2020b). Additionality of finance flows is however difficult to clearly assess, as funded projects may have been financed through other finance instruments but not reported as green. Whilst there has been a continuous increase of capital raised through green bonds (with a green label) since 2016, unlabelled green activities in bond issuances have also continuously increased (CPI, 2020b).

Supporting credible certification schemes

Technical assistance efforts also focus strongly on the establishment of the "second opinion" principle in green bond certification schemes. Third-party certification by external reviewers or verifiers ensures that assets and projects are reviewed by an independent entity. Such entities verify the "greenness" of proposed projects and assets and/or verify compliance with green bond standards. Such schemes are important to avoid greenwashing and build investor confidence.

Providers of technical assistance organised separate and more targeted trainings for know-how transfer and capacity-building activities on the second opinion principle and on the concept of the shades of green (Interview 1, 2021). These trainings specifically targeted domestic verifiers and certifiers. In such trainings, providers of technical assistance drew from existing international best practice experiences, for example by bringing in the expertise of a well-established green bond verifier (Interview 1, 2021). Technical assistance was also provided in the form of training series by the Sustainable Banking Network (IFC, 2021).

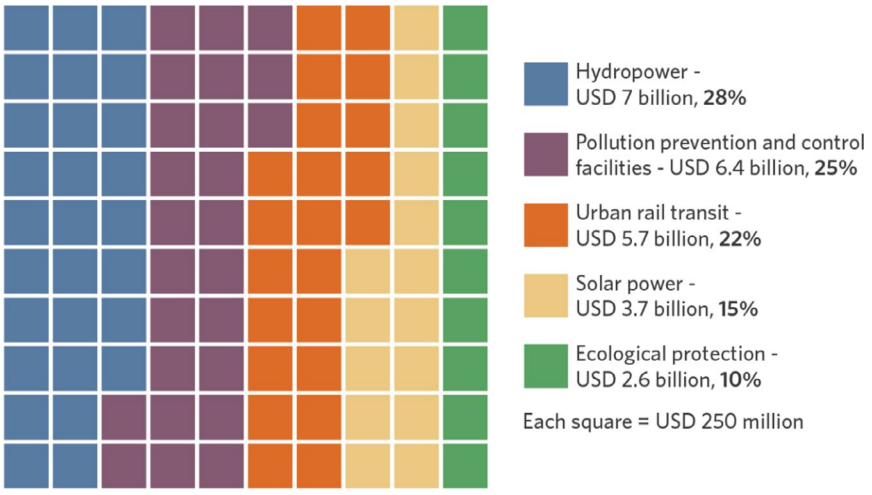
Whilst many green bonds in China are certified, including by the Climate Bonds Initiative, more than a quarter of issued bonds do not have any certification (CBI, 2020a; Lin et al., 2021). Further, as discussed in Section 2, domestic definitions of green activities currently differ from international best practice. To better understand the potential impact of Chinese green labelled bonds, we assess the type of projects financed by green bonds (Figure 8).

Green bonds have mainly raised capital for "clean energy" and "clean transport" accounting for around half of total capital raised through green bonds (CBI, 2020b). Some funded activities such as solar power or urban rail transit have a clear transformative impact. This suggests **high impact** change.

On the other hand, the impact of other funded activities such as hydropower or pollution prevention and control facilities need a more careful assessment. For example, PBOC's 2015 Catalogue allows three sub-categories with coal-related activities under *pollution prevention and control*. This includes efficiency-related improvements for coal-fired power generation (CPI, 2020b). Such investments are more likely detrimental to climate goals and do not foster transformative change. Between 2016 and April 2019, *pollution prevention and control* activities accounted for a quarter of proceeds, possibly undermining China's transformation to a low carbon economy (Figure 8). Further, around a third of raised capital through China's green bond market was not clearly labelled, mainly due to green bonds issued by financial intermediaries, that incorporate funds not yet allocated to specific end-uses (CPI, 2020b).

FIGURE 8

Use of proceeds in the Chinese green bond market between 2016 and April 2019.



Source: (CPI, 2020b)

Despite technical assistance to share international expertise and best practice, the Climate Bonds Initiative reported that 38% of total issuance volumes in 2017 did not meet their standards (CBI, 2018a). The share of non-aligned capital was mainly due to "clean coal" investments and use-of-proceeds not yet allocated to specific projects (CBI, 2019, 2020b; CPI, 2020b). Efforts to harmonise Chinese definitions of green activities with international standards (see Section 2 for more information on China's regulatory framework), led to a drop of non-aligned capital raised to 26% in 2018, and 25% in 2019 (CBI, 2019, 2020b). However, non-aligned capital raised increased in absolute terms, as China's green bond market continues to grow.

Supporting research and empirical evidence

Providers of technical assistance also provided support to research and empirical evidence in China's green bond market (Interview 1, 2021). Notably, the Climate Policy Initiative and the Climate Bonds Initiative have released several reports on China's green bond market, partly in cooperation with Chinese organisations. Such evidence is important for informed decision-making and can increase confidence. However, many economists and finance experts still lack knowledge on green bonds (Interview 2, 2021). Technical assistance activities supporting research and empirical evidence help to overcome the barrier of a perceived trade-off between economic viability and green projects. This suggests **strategic change**.

Prospects of China's green bond market

As the Chinese green bond market is still quite young, it is difficult to assess whether the change is **enduring** and **self-sustaining**. Providers of technical assistance do not expect the Chinese government to revert key green bond regulations in the future. This is due to high-level political buy-in and a strong interest from investors seeking green finance options in the Chinese market. China continues efforts to harmonise green bond guidelines internationally and has committed to decarbonising its economy in the long term, suggesting lasting political buy-in for the green bond market. The recent Green Bond Endorsed Project Catalogue 2020 draft jointly released by China's key green bond market regulators, will most likely come into force soon. Once in place, there is little room to "downgrade" the proposed guidelines as there is strong investor pressure from within China as well as from foreign investors to issue ambitious green bonds.

3.5 Lessons learned

Top-down commitments and bottom-up action is key for the rapid development of a green bond market

Top-down commitments at the highest political levels and the development of strategic visions ensure that strong signals guide the finance sector. Such commitments can also create incentives to overhaul existing business-models and develop and use green finance instruments, including green bonds. Aligning the strategic visions of banks, investors and companies with the goals of sustainable, low-carbon and resilient development by raising awareness and understanding amongst top executives can have a strong impact on the scale and speed of change of their respective organisations. Anchoring this vision with senior management, including through personal involvement in the transformation, enables stakeholders to act as first movers.

Driving **bottom-up action** is essential to implement this top-down vision. Change needs to be enabled bottom-up by raising awareness, and creating know-how and capacities across operational teams including underwriters or investment officers. These actors need to understand the added value of green bonds to implement transformative change in daily decision-making.

In China, top-down commitments led to the launch of the green bond market at an extraordinary speed, however bottom-up action is lagging behind and the full potential of green bonds is not fully seized.

A holistic approach engaging all relevant stakeholders is needed for the implementation of a green bond market

Technical assistance should include support to all key stakeholders that build a green bond market to enable successful green bond issuances and market growth. Key stakeholders needed to build the green bond market include regulators to provide the needed policy framework, bond issuers such as banks or companies, underwriters that assess risks institutional investors such as insurance companies to buy green bonds, certifiers to ensure third-party certification of green bonds and avoid greenwashing.

Technical assistance should be dynamic and able to adapt to changing requirements

Political buy-in and regulatory support, coupled with public environmental concerns, enabled a certain "willingness to change" amongst key financial stakeholders such as banks and (green bond) certifiers. Since first technical assistance activities started more than 15 years ago, technical assistance has gone through several phases. Technical assistance should adapt to the evolving barriers and needs in the process to establish a credible and functioning green bond market.

Sharing international best practice can be useful to drive change

In-depth expertise of green bonds and the Chinese finance sector in the technical assistance team and the collaboration with issuers and certifiers from other countries was key for successful technical assistance. Providers of technical assistance deployed experts and collaborated with leading international green bond partners, such as banks, certifiers or think tanks.

Technical assistance providers should ensure local presence

As ownership by local stakeholders is important, providers of technical assistance need to invest time in building good relationships and acquiring trust. Dedicated on-site teams to provide technical assistance ensure close collaboration with local institutions, a good understanding of the domestic market and a tailored integration of international best practice expertise to develop local know-how.

Technical assistance can help to identify first movers and build their capacity

First movers have a crucial role to play in the transformation of the finance sector as they lead by example. A useful entry point for technical assistance is the identification of a few leaders that have the potential to be first movers and spur transformative change. Two examples of first movers that fully transitioned to green finance are the Industrial and Commercial Bank of China (ICBC), one of the 21 largest Chinese banks, and the Ma'anshan Rural Commercial Bank, a smaller Chinese bank that received technical assistance to green its financial products (CPI, 2020c; Maanshan Rural Commercial Bank, 2019). These banks have issued certified green bonds compliant with stringent definitions of green projects.

Technical assistance can support transformative change, however it cannot create it

Technical assistance to green China's finance sector started well before the creation of the green bond market. Many efforts were required to raise awareness amongst key regulators and ministries to create the required political buy-in. Technical assistance helped to build the required consensus to reform (parts of) the finance sector; however local actors were the agents of change. Once political buy-in was in place for the green bond market, the green bond policy framework was implemented quickly (Interview 1, 2021).

Central Bank of Kenya, Nairobi
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CHAPTER FOUR

Case study 2: Kenya

Transforming the finance sector with technical assistance: A case study of the Green Bonds Programme Kenya

Authors:

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4.1 Introduction

In its updated NDC, Kenya commits to reduce its greenhouse gas (GHG) emissions by 32% below business-as-usual levels by 2030 and to ensure a climate resilient society. The government estimates that it needs USD 62 billion to implement actions to achieve these goals (Ministry of Environment and Forestry, 2020).

Given limited public resources, the Kenyan government recognises the need for additional climate finance to meet its climate goals (Odhengo, Wafuke, & Magero, 2020). Kenya considers green bonds as one major instrument that could contribute to meet its mitigation and adaptation goals. Notably, Kenya's **Green Economy Strategy and Implementation Plan**[8], the **National Climate Change Action Plan**[9] and the **National Policy on Climate Finance**[10] all identify green bonds as a key instrument to finance projects with a large GHG abatement potential or with high climate resiliency benefits (Odhengo et al., 2020). **A green bond is a type of fixed-income instrument that is specifically destined to raise money for climate and environmental projects** (See Box 3 for more information on green bonds).

In 2017, the Kenya Bankers Association (KBA), together the Nairobi Securities Exchange (NSE) and international donors such as the Climate Bonds Initiative, the Dutch Development Bank FMO and FSD Africa launched the **Green Bonds Programme Kenya**. However, several barriers hinder(ed) the establishment of a green bond market in the country. These include: the availability of concessional finance in mature economic sectors; an interest rate cap; and limited knowledge on how green bonds work and benefits they may bring. **Technical assistance activities** played a role in lowering some of these barriers. The international donors involved in the Green Bonds Programme provided technical assistance as an instrument for knowledge transfer and capacity building, amongst others.

Establishing a green bond market can contribute to transformative change in the finance sector. This sector, as an intermediary, is to play a key role in ensuring that Kenya's climate finance needs are met. However, to help Kenya achieve its climate goals, the finance sector needs to align with the goals of low-carbon and resilient development.

8 The Green Economy Strategy and Implementation Plan (GESIP) identifies a number of strategies aimed at accelerating a transition towards a globally competitive low carbon pathway. It also outlines a plan aimed at eliminating fiscal constraints leveraging on international financial mechanism (Ministry of Environment and Natural Resources, 2016).

9 The National Climate Change Action Plan (NCCAP) sets out adaptation and mitigation actions for the period 2018-2022 (Ministry of Environment and Forestry, 2018).

10 National Policy on Climate Finance aims to position Kenya to better access climate finance to help advance the Vision 2030 agenda (National Treasury, 2016).

In this chapter, we assess **whether and to what extent the technical assistance activities provided in the context of the Green Bonds Programme Kenya contributed to transformative change in Kenya's finance sector.**

To gauge the impact of the technical assistance activities, we use the framework of transformative change put forward by Vivid Economics (Vivid Economics, 2020b). We elaborate on this framework in Section 4.

BOX 3

Green bonds

Green bonds are a fixed-income debt instrument aimed to raise capital to fund green projects and assets. They can be used to mobilise (additional) resources for (large-scale and long-term) climate mitigation or adaptation projects, beyond bank lending and equity financing. Green bonds differ from traditional bonds by the commitment of the issuer to use the bond's proceeds exclusively for green purposes. The explicit labelling of bonds as green can facilitate the connection between green projects and the increasing demand for green investments (European Commission, 2016).

There are different types of green bonds, including sovereign and corporate green bonds. **Sovereign green bonds** are issued by a national government, whereas a **corporate green bond** is issued by a private company.

The main actors in the green bond markets are:

- **Green bond issuer:** Any entity (company, government agency, financial institution) that develops, registers and sells a bond.
- **Green bond underwriter:** Financial institution that organises the issuance of the green bond.
- **Green bond investor:** Individuals, companies or institutional investors who buy a green bond with the expectation to receive a financial return.
- **External reviewers or verifiers:** Entities that verify the "greenness" of the project/asset or that verify compliance with green bond standards. This can include credit rating agencies, auditors and intermediaries (such as stock exchanges) and investors.

The green bonds issuer has an obligation to track, monitor and report on the use of proceeds which leads to additional costs. Therefore, a minimum issuance volume is usually required. At the same time, green bonds can have a green premium (interest rebate) meaning that capital providers might be willing to accept lower returns when compared to traditional bonds. This in turn means that issuers might be able to raise capital at lower costs (Löffler et al., 2021).

For this research study, we conducted two confidential interviews with representatives of the Dutch development bank FMO and FSD Africa. These organisations provided technical assistance, in addition to financial support, to Kenyan banks and other stakeholders in the context of the Green Bonds Programme. In addition, we conducted a confidential interview with a representative of the KBA. We complemented these interviews with desk research.

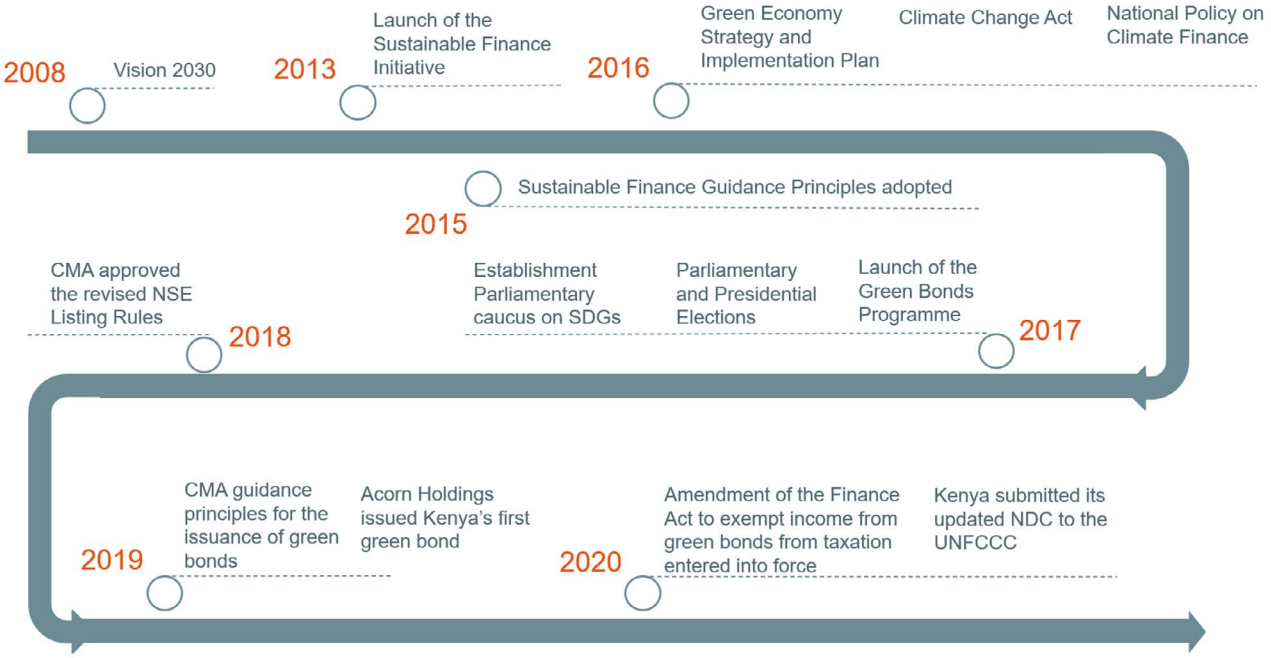
Section 2 outlines key actors and developments in the Green Bonds Programme Kenya. It also discusses the Green Bonds Programme in the context of wider developments in Kenya's finance sector. Section 3 provides an overview of main enabling factors and barriers to the Green Bonds Programme. Section 4 discusses whether and to what extent various technical assistance activities helped reduce these barriers, and we assess how these activities contributed to transformative change, following the six principles introduced above. Section 5 outlines lessons learned, thereby focusing on both the providers of technical assistance and policy-makers.

4.2 The Green Bonds Programme Kenya and wider financial sector reforms

For Kenya to meet its climate goals, it is essential that all sectors, including the finance sector, align with the goals of sustainable, low-carbon and resilient development. In Kenya, various actors undertake efforts to achieve a sustainable finance sector that meet the country's climate goals, including the government and the banking sector. Figure 9 provides an overview of key events and policy documents in Kenya since 2008.

FIGURE 9

Milestones in Kenya's climate policy framework and the Green Bonds Programme



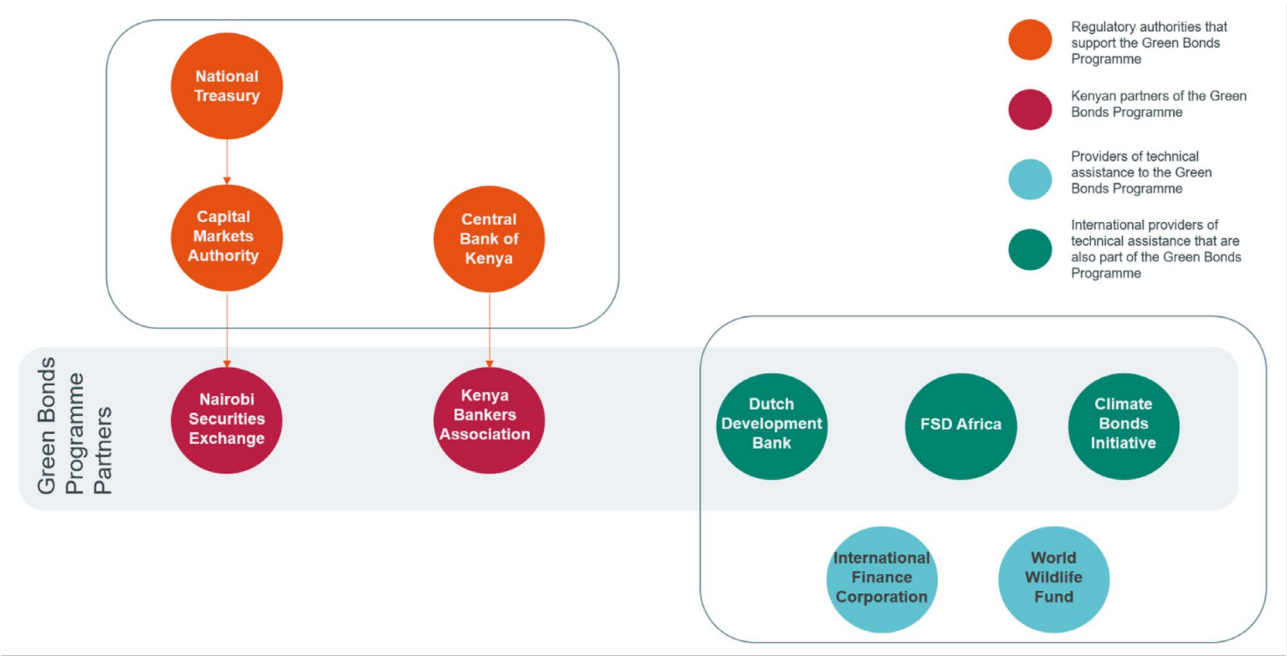
The banking sector plays an important role in Kenya's economy. The sector's assets contributed to 49.5% of nominal GDP in 2018 and the sector provided 81% of tracked domestic private sector climate-related expenditures in the same year (Central Bank of Kenya, 2019; Odhengo et al., 2021). The banking sector also undertakes efforts to increase awareness on the need for green finance. Notably, the **Sustainable Finance Initiative (SFI)**, which was initiated by the KBA, adopted five guiding principles that support banks to balance their business goals with environmental and social concerns. The principles focus on economic viability; growth through inclusion and innovation; managing and mitigating social and environmental risks; resource scarcity; and business ethics and values (Kenya Bankers Association, 2015; Sustainable Banking Network, 2019). The SFI's principles laid down the foundation for future workstreams, including Kenya's Green Bond Programme (Interview 1; Interview 2; Interview 3, 2021).

The KBA, NSE, Climate Bonds Initiative, the Dutch development bank FMO and FSD Africa launched the Green Bonds Programme in 2017. Their objectives include: promoting financial sector innovation; developing a pipeline of green investments; developing a pool of Kenya-based licensed verifiers; developing a cooperative fixed income fundraising facility to enable smaller banks and corporates to take advantage of the wholesale debt capital markets; and leveraging Kenya's experience to catalyse similar programmes in other East African countries (Green Bonds Programme Kenya, 2020).

Key regulatory authorities - the National Treasury, the Capital Markets Authority (CMA) and the Central Bank of Kenya (CBK) – endorse and therefore provide critical support to the Green Bonds Programme; while the International Finance Corporation (IFC) and the World Wildlife Fund (WWF) Kenya supported various workstreams under the Green Bonds Programme (see Figure 10) (Green Bonds Programme Kenya, 2019).

FIGURE 10

Overview of the most relevant actors involved in Kenya's Green Bond Programme



The Green Bonds Programme contributed to the establishment of an ambitious green bonds policy framework in Kenya. The programme partners supported the drafting of the **NSE Listing Rules** with provisions for green bonds. These rules are based on the Climate Bonds Standard and the Green Bond Principles, which were developed by the Climate Bonds Initiative and the International Capital Market Association (ICMA), respectively (Climate Bonds Initiative, 2020; ICMA, 2018). The CMA approved the NSE Listing Rules in December 2018 (Nairobi Securities Exchange, 2019).

Further, the KBA and NSE, with support from FSD Africa, the FMO and Climate Bonds Initiative developed a **Green Bonds Issuer's Guide**. This document provides background information on green bond markets internationally and an overview of international best practices. The document also outlines step-by-step how to issue a green bond in Kenya (Green Bonds Programme Kenya, 2019).

Based on the work that the organisations behind the Green Bonds Programme had undertaken, the CMA published a **Policy Guidance Note on Green Bonds** in 2019 (CMA, 2019). This document outlines the requirements that issuers of green bonds must meet.

Importantly, the Guidance Note stipulates that the proceeds of green bonds must be used "to finance or refinance new or existing projects that generate climate or other environmental benefits that conform to green guidelines and standards [...] including Green Bond Principles [...]; Green Bond Standards such as the Climate Bonds standard [...]; government policies and guidelines such as [...] the Green Economy Strategy[11] [...]; and any other standard acceptable to the Authority" (CMA, 2019).

In August 2019, the Nairobi-based real estate business **Acorn Holdings issued the first - and thus far only - Kenyan green bond**, worth KES 4.3 billion (USD 40 million). This was the fifth green bond issued in Africa (Climate Bonds Initiative, 2019). The proceeds are used to finance the construction of seven low-carbon residential buildings in Nairobi. These buildings will provide several thousand rental housing units for students (Acorn, 2020). Two other issuances are planned for spring 2021, but further details are unavailable at the time of writing (Interview 2, 2021).

To increase the attractiveness of green bonds to investors, the CMA submitted a **proposal to exempt investors from paying withholding taxes on their interest earning from infrastructure bonds, including green bonds** in 2018. The following year, the Kenyan government amended the Finance Act to include this exemption, which came into force on 1 January 2020 (Republic of Kenya, 2019).

4.3 Enabling factors and barriers to the Green Bonds Programme Kenya

4.3.1 Enablers

Five enabling factors played an important role in the establishment of Kenya's Green Bond Programme. We outline these here.

Involvement of the Kenya Bankers Association and domestic finance sector engagement

A key enabler of the Green Bonds Programme was the strong involvement of the Kenya Bankers Association (Interview 1, 2021). The KBA brought the various programme partners (i.e. the NSE, FSD Africa, the FMO and Climate Bonds Initiative) together and played a crucial role in getting relevant decision-makers on board (Interview 1; Interview 3, 2021).

11 The Green Economy Strategy and Implementation Plan (GESIP) identifies a number of strategies aimed at accelerating a transition towards a globally competitive low carbon pathway. It also outlines a plan aimed at eliminating fiscal constraints leveraging on international financial mechanism (Ministry of Environment and Natural Resources, 2016).

The Kenyan finance sector is generally well aware of the need for green, sustainable finance and was therefore open to the development of a green bond market. In 2015, the banking industry adopted the SFI Guiding Principles, which inform "financiers on how to optimise the balancing of their business goals with the economy's future priorities and socio-environmental concerns" (KBA, 2015). In addition, the SFI developed an online training for all Kenyan bankers to increase their understanding of sustainable finance. Through its principles and trainings, the SFI laid the groundwork for other workstreams on green finance, including the Green Bonds Programme Kenya (Interview 1, 2021).

Strong government focus on climate change risks and adaptation and mitigation measures

The Kenyan government has developed and implemented a range of policies aimed to increase climate resilience and to shift to a low-carbon development path. In particular, the Vision 2030 long-term development plan, the 2010 Constitution, the Green Economy Strategy and Implementation Plan and the National Policy on Climate Finance outline Kenya's ambitions for sustainable development. The preamble of the 2010 Constitution provides that "the people of Kenya [are] respectful of the environment [...] and determined to sustain it for the benefit of future generations" (National Council, 2010). The word "sustainable" is included seven times in the Constitution, for instance in Article 10, which stipulates that "sustainable development" is one of the country's national principles (National Council, 2010). The 2016 Climate Change Act provides the legal framework for the promotion of "climate-resilient low-carbon economic development" (Republic of Kenya, 2016).

In addition, Kenya has had a parliamentary caucus on the Sustainable Development Goals (SDGs) since 2017. In its *SDGs and Business (KPCSB) Strategic Plan 2019-2023*, the caucus specifically mentioned green bonds as a finance instrument to redirect and raise finance for mitigation and adaptation projects (Kenya Parliamentary Caucus on SDGs, 2019). Further, the Plan identifies pursuing and initiating a "friendly taxation regime" as key activities to "promote and influence passing of legislation supportive of the sustainable development goals and businesses".

With its 2010 Constitution and various climate policies, the Kenyan government sent a strong signal to the private sector and created a conducive environment for finance sector reform. The parliamentary caucus on SDGs helps drive the development and implementation of regulatory reforms and incentives for green bonds, and green finance more generally (Interview 2; Interview 3, 2021).

International developments, notably the adoption of the Paris Agreement and the SDGs in 2015, further contributed to increased awareness in the private sector. For instance, many banks now include references to the SDGs in their environmental, social and governance (ESG) reports (Interview 1, 2021).

Large pipeline of green projects

Kenya has a large potential for green, sustainable projects, for instance in the energy and manufacturing sectors (SBA Africa Ltd, 2019a, 2019b, 2019c). However, when the Green Bonds Programme was launched in 2017, investors often did not label green investment opportunities as such (Interview 2; Interview 3, 2021). In addition, there was no local capacity to verify green projects.

In combination with increased awareness and capacity building, the large potential for green investments has also enabled the Green Bonds Programme to further develop and to attract the interest of various investors and potential bond issuers (Interview 2; Interview 3, 2021).

Important decision-makers on board

Shortly after launching the Green Bonds Programme, the KBA and other programme partners involved decision-makers from the CBK, the CMA and the National Treasury. Their endorsement has given the programme necessary traction (Interview 2, 2021). Their involvement also helped ensure that important regulations, such as the withholding tax exemption for income from green bonds, were proposed to Parliament. The Parliamentary caucus on the SDGs contributed to the successful passing of this exemption (Interview 3, 2021).

4.3.2 Barriers

The establishment of the Green Bonds Programme, and the development of a green bond market in Kenya, faced a number of barriers. We highlight the six main obstacles here.

Green Bonds have to compete with development finance

As in many lower-middle-income countries, Kenyan project developers may have access to favourable sources of finance, for instance grants or concessional loans from multilateral development banks (MDBs) or international donors (Interview 1; Interview 2; Interview 3, 2021). While concessional finance is particularly useful to support nascent markets, green bonds are generally used to attract finance for more mature sectors, for instance the energy sector. In Kenya, however, a substantial share of international public finance is channelled to finance projects in the energy sector (Odhengo et al., 2021). Accordingly, issuing a green bond is not necessarily attractive for many Kenyan companies. In addition to the higher interest rates, a green bond issuance is generally also more complicated and time-consuming than negotiating over grants and concessional loans (Interview 3, 2021).

Unstable political situation

The Green Bonds Programme was launched in March 2017. In August that year, Kenya also had its Parliamentary and Presidential elections, which were won by Uhuru Kenyatta. However, the Kenya Supreme Court annulled the results after the losing candidate had filed a petition.

Following the controversial re-elections in October 2017, President Uhuru Kenyatta was installed for his second term in office, but political turmoil continued for various months.

In Kenya, like in many other African countries, election years usually see a decrease in economic growth. In those years, the government has a strong focus on election campaigns and decisions on other pressing topics are postponed (Institute of Economic Affairs Kenya, 2017). Further, there is doubt about the regulatory and policy direction in which the country will go after the elections. Fear of post-election violence causes further economic contraction (Dahir & Kazeem, 2019). For these reasons, there was large uncertainty of Kenya's political and economic future at the start of the Green Bonds Programme, which made it challenging to develop a new product for the financial market (Interview 1; Interview 2, 2021).

Interest rate cap

In 2016 interest rates were capped at four per cent above the Central Bank's lending rates (nine per cent in August 2018). This has hampered the issuance of bonds, including green bonds, because investors would usually ask for a premium above government debt, which yielded at approximately 12 per cent in 2018 (Green Bonds Programme Kenya, 2019). For instance, "a planned pooled green bond facility – developed by KBA with financial backing from FMO – did not meet the pricing models" (Ella Milburn, 2019). In November 2019, Parliament removed the interest cap (Miriri, 2019). This was the result of two processes: the KBA and banks lobbied with Parliament to review the cap (Interview 3, 2021) and the International Monetary Fund (IMF) made removal of the cap a precondition for renewal of its credit facility (Amadala, 2021).

Conventional sovereign bonds crowd out corporate green bonds on the market

Bonds issued by the National Treasury dominate on Kenya's conventional bond market, accounting for around 99% of total turnover in recent years (Capital Markets Authority, 2020). This has two reasons: first, government bonds are generally less risky and cheaper than corporate bonds. Second, the National Treasury occasionally issues infrastructure bonds, which are exempt from a withholding tax and therefore more attractive to investors. This makes it challenging for corporates to successfully issue green bonds.

However, with the amendment of the Finance Act in 2019, which extends the withholding tax exemption to green bonds, it has become more attractive for corporates to issue green bonds. Further, this barrier hindered the issuance of corporate green bonds, but not sovereign green bonds. While the Kenyan government indicated it would issue a sovereign green bond in the fiscal year 2018/19 (Green Bonds Programme Kenya, 2019), this has not happened to date.

Currency of issuance

The currency of issuance is a barrier to the development of a green bond market for many developing countries (Banga, 2019). A global currency, such as the US Dollar or the Euro are more attractive to international investors, but pose a large financial risk to the issuer, because exchange rates may change substantially over the course of the bond period. Likewise, green bonds that are issued in Kenyan Shilling, are not as attractive for international investors, as they would lose money if the US Dollar or the Euro substantially decrease in value compared to the Kenyan Shilling. Currency hedging could reduce this barrier but would increase the costs of issuing a green bond (Interview 3, 2021).
While green bonds issued in Kenyan Shilling are not necessarily attractive to international investors, Kenya has a large pool of domestic investors. If they step in and invest in green bonds, currency issue does not have to be a barrier to the development of a green bonds market (Interview 1; Interview 3, 2021).

Lack of knowledge on green bonds

Generally, the Kenyan financial sector is aware of the risks and investment opportunities that climate change poses (Interview 3, 2021). However, a lack of knowledge on how to issue and potential benefits of green bonds amongst potential issuers and investors was initially a big hurdle to the Green Bonds Programme Kenya (Interview 1; Interview 2, 2021). Specifically, investors did not know whether the product would be beneficial to them (Interview 2, 2021). In the absence of a regulatory framework and an established green bonds market, many potential issuers did not have the technical expertise to issue a green bond. Further, a lack of Kenya-based licenced verifiers made it challenging to set up a green bonds market (Interview 2, 2021).

4.4 Technical assistance activities and their contribution to transformative change

4.4.1 Technical assistance

Technical assistance is an important instrument to support climate action. It can take the form of information sharing, training programmes, capacity building workshops, best practice sharing and other consultation services (Vivid Economics, 2020b). International donors can complement technical assistance activities with financial support, including concessional loans, but this does not necessarily have to be the case.

Technical assistance is typically used to address institutional capacity issues, but can more generally spur change by drawing on existing know-how and international best practices. Technical assistance activities can contribute to lowering barriers that constrain potential financial sector reforms, including the development of a green bond market. International donors can provide technical assistance to the public sector, including government authorities and central banks, or to other entities, such as private banks, companies or civil society organisations.

4.4.2 Six principles of transformative change

To gauge the impact of technical assistance on the green bond market and the wider finance sector in Kenya, we assess to what extent technical assistance supported six principles of transformative change, as proposed by Vivid Economics (Vivid Economics, 2020b). However, technical assistance activities do not have to align with all six principles to lead to transformative change.

The principles stipulate that actions and investments should **strategically** target key priorities and action areas needed to achieve a low-carbon and climate resilient development path to ensure transformative change. Building a knowledge and regulatory foundation with key stakeholders can spur **systemic change** and drive broad and deep changes within key markets and policy environments. Aggregated smaller actions or fewer, larger actions can deliver **high-impact** large-scale mitigation or adaptation benefits and actions or investments that have the potential to increase in scale themselves or that are replicable in other contexts are also most likely transformative. Further, actions or investments that are able to continue after any initial support is withdrawn or in the face of changing future conditions lead to **self-sustaining change** and actions or investments that are long-lasting or permanent lead to **enduring change**. Both are more likely to lead to transformative change.

4.4.3 Technical assistance in the context of Kenya's Green Bonds Programme

The KBA has partnered with international donors in its efforts to green Kenya's financial sector for more than a decade. For instance, FMO, the German Investment Corporation (DEG), UNEP Finance Initiative and IFC provided support to Kenya's Sustainable Finance Initiative, which is led by the KBA (Sustainable Banking Network, 2019).

Various international organisations provided technical assistance to Kenyan stakeholders, including banks, in order to build a green bond ecosystem. Banks play an important role as financial intermediary between potential issuers and investors. Banks may issue green bonds to raise capital for investments; or may underwrite sovereign and corporate green bonds.

The first phase of technical assistance activities started in 2017 with an assessment of the regulatory framework in Kenya and of international standards for green bonds (Interview 2, 2021). Throughout the first phase, technical assistance focused on: labelling green investments as such; capacity building; promoting a regulatory framework conducive to green bonds; and setting up a Special Purpose Vehicle (SPV).

The first phase of technical assistance activities will officially end in 2021. However, in the private sector, not all companies understand how to get their green bonds verified and how to finance this verification, so additional technical assistance may still be necessary on a case-by-case basis in the next one or two years (Interview 2, 2021).

In the following sections, we outline what technical assistance activities entailed; explain how these helped reduce barriers; and whether and how they contributed to transformative change in Kenya's finance sector.

Identifying green investment opportunities and labelling those as such

While many green investment opportunities existed prior to the Green Bonds Programme, these were not necessarily labelled as "green" or "low-carbon". The programme partners helped to identify green investment opportunities in key economic sectors in Kenya (i.e. agriculture, transport and manufacturing[12]); developed a pipeline of potential green bond issuers; and a pipeline of green investments that were labelled as such. Further, the organisations behind the Green Bonds Programme Kenya organised roundtable discussions and peer-to-peer learning sessions to share these findings and bring together potential issuers, investors and financial intermediaries (Green Bonds Programme Kenya, 2019).

Technical assistance aimed at identifying green investment opportunities targeted **strategic** and **systemic** change. Although green investment opportunities are now better labelled, it is unclear whether this has led to transformative change in the finance sector. For such change to occur, it is necessary that the green labels result in additional finance for green projects. However, studies that assessed green bond markets in other countries found that green bonds do not necessarily unlock new sources of capital for green investments and they play a limited role in making green investments financially viable (Ehlers, Mojon, & Packer, 2020; Maltais & Nykvist, 2020).

Further, the quality of green project matters – it is not enough for these projects to be greener than standard projects. Rather, they need to contribute to the climate objectives of the Paris Agreement.

12 The assessment reports can be found on the Green Bonds Programme Kenya's website: https://www.greenbondskenya.co.ke/publications (last accessed on 26 March 2021).

As of March 2021 only one green bond has been issued; the proceeds of which have been used to construct environmentally friendly apartments. We do not have the information to assess whether Acorn Holdings would have raised the money to build these apartments in the absence of a green bond programme – in other words, whether the green bonds led to additional green finance flows. Further, we do not know whether these buildings are net zero, or merely greener than standard apartment buildings in Nairobi.

Capacity building

The African green bond market is still in its infancy. Most issuances come from Development Finance Institutions (DFIs), including the African Development Bank (AfDB) and the IFC. In October 2019, corporates and sovereigns across the continent had issued a total of seventeen green bonds (Marbuah, 2020). Accordingly, the private sector had limited knowledge of green bonds, their potential benefits, and what requirements such bonds must meet. An important focus of the technical assistance activities was therefore on **capacity building** (Interview 1; Interview 2, 2021). The technical assistance providers targeted various stakeholders, including issuers, investors, and verifiers. Further, the KBA, FSD Africa, and the FMO created an e-learning module on green bonds to educate potential issuers, investors and financial intermediaries. The course aims to increase relevant actors' understanding of how green bonds can be used to attract and redirect green finance that contributes to the sustainable development goals (Sustainable Finance Initiative, 2021).

The FMO, together with the IFC, also contributed to capacity building by connecting the Kenya Bankers Association and the Mongolian Bankers Association, who signed a Memorandum of Understanding in 2017 with the aim to advance sustainable financing practices in both countries. This collaboration provided Kenyan banks with the opportunity to learn from the Mongolian banking sector's experience with green bonds (FMO, 2017).

By building capacities within Kenya, technical assistance providers helped to reduce barriers that a lack of technical expertise amongst potential issuers and investors posed. A core strategy of the technical assistance was to build capacities in the entire green bond ecosystem to spur **strategic** and **systemic** change. Actors in the financial sector now refer to the same definitions and documents when speaking about green bonds. This helped to build trust in green bonds and may enable more issuances in the near future.

However, while larger financial institutions understand how the green bonds market function, many potential issuers of green bonds in the private sector still lack the capacity and understanding to do so. Specifically, how to verify green bonds remains an obstacle and additional technical assistance targeted at those actors will be needed in the near future (Interview 2, 2021). Further, if no or few green bonds will be issued in the near to medium-term future, it is likely that knowledge of green bonds, as well as the capacities to issue and verify them, will diminish. Therefore, it is too early to assess whether the technical assistance contributed to **scalable, enduring** and **self-sustaining** change.

Promoting a regulatory framework

The technical assistance activities also promoted **a regulatory framework conducive to green bonds.** For example, the Green Bond Programme Kenya supported the preparation of the Green Bond Listing Rules, which outline the requirements that green bond issuers must meet and which were approved by the CMA in December 2018.

The technical assistance also focused on setting up the **Green Bonds Programme Kenya Advisory Committee**, which is meant to influence new policy incentives and regulations. Through this advisory committee, the KBA lobbied for a tax exemption for green bonds (Green Bonds Programme Kenya, 2019; Interview 3, 2021). In 2018, the Capital Market Authority **submitted a proposal to exempt investors from paying withholding taxes to the National Treasury and Parliament.** In 2019, the Kenyan government amended the Finance Act to include this exemption (Republic of Kenya, 2019). This may make green bonds more attractive relative to conventional government bonds.

A clear regulatory framework and financial incentives for potential issuers and investors are crucial factors in the establishment of a green bond market. Therefore, actions aimed at improving the regulatory framework likely have a **strategic** and **systemic** effect. However, with just one green bond issued to date, we cannot draw any conclusions on whether technical assistance activities aimed at promoting a regulatory framework contributed to transformative change.

Developing a Special Purpose Vehicle

The FMO supported the development of a Special Purpose Vehicle (SPV) - a business entity that is created by its parent company for a specific purpose and protects the parent business from financial risks incurred to the SPV. Under the Green Bonds Programme, the SPV was envisaged to take the form of a **pooled fund facility** that would aggregate the funds held by various banks and companies. This construction would allow smaller KBA member banks and corporates to access the debt capital markets. While the SPV was considered innovative and ambitious, it proved difficult to establish. The FMO involved an external consultant to understand how such a SPV would function and to get local banks interested. However, the pooled fund facility has not come off the ground, as the SPV-set up was too complicated and general economic conditions unfavourable (Interview 1, 2021).

Conclusion on technical assistance and transformative change

At first sight, the Kenyan Green Bonds Programme may not seem very successful yet, with only one bond issued as of March 2021. Whilst implementing partners would have expected more issuances, the programme and the technical assistance laid the groundwork for green bonds in Kenya (Interview 1; Interview 2, 2021). Many Kenyan banks now have the capacities to issue green bonds and there is a pool of Kenya-based certifiers, so rapid growth could take place any time. In that sense, technical assistance activities contributed to **strategic** and **systemic** change.

However, with merely one bond issuance thus far, it is not apparent whether and to what extent the technical assistance activities contributed to high impact, scalable, self-sustaining, and enduring change.

It is also too early to judge whether the technical assistance activities contributed to transformative change in Kenya's finance sector. It is still uncertain whether more green bonds will be issued in Kenya, and whether the Green Bonds Programme will serve as a blueprint for similar programmes in other African countries. For the Green Bonds Programme to contribute to transformative change, it is also key that proceeds are used to finance projects that contribute to the Paris Agreement goals; and that these projects are additional. In other words: the projects would not go ahead without the green bond (Maltais & Nykvist, 2020). Future assessments of technical assistance provided in the context of Kenya's Green Bonds Programme need to consider these aspects.

4.5 Lessons learned

4.5.1 Lesson for public authorities

Financial incentives and conducive policies are key preconditions for green bonds issuance

To successfully establish a market for green bonds, it is essential that policy makers support green bonds and provide a conducive regulatory framework and financial incentives.

The Central Bank of Kenya, the Capital Markets Authority and the National Treasury endorsed the Green Bonds Programme soon after its launch. For instance, the CBK's Governor serves as the Green Bonds Programme's patron (Green Bonds Programme Kenya, 2020). Having important decision-makers involved helped drive policy changes, for instance the amendment of the Finance Act that exempts income from green bonds from withholding taxes (Interview 2, 2021). In Kenya, the removal of the interest rate cap and the tax exemption for income from green bonds have made it more attractive to issue and invest in green bonds – although the number of issuances has not yet increased since the amendment.

Providers of technical assistance should try to involve and get the support from key policy-makers early on in the programme. However, involving key decision-makers can be challenging in countries where green bonds are a new product (Interview 2, 2021).

4.5.2 Lessons for providers of technical assistance

International donors should focus on developing a local market

As highlighted in Section 3.2, the availability of international development finance may compete with green bonds (Interview 1; Interview 2, 2021). Whereas green bonds are generally useful to finance established activities in more mature sectors, for instance in the energy sector, there is a need for international donors to increasingly support nascent technologies and sectors that do not receive private finance at scale (Odhengo et al., 2021). In Kenya, however, a substantial share of finance from multilateral and bilateral partners is used to finance more mature activities in the energy sector (Odhengo et al., 2021).

For potential issuers of green bonds it is generally more attractive to source finance at concessional terms from international donors than issuing a green bond at higher interest rates. Providers of development or climate finance may thus – unintentionally - disrupt the local market.

Providers of technical assistance need to make the development of a local green bond market a key priority. Specifically, international donors that provide financial assistance should consider whether this hinders the establishment of a green bond market.

Local ownership is key to the success of a green bonds programme

The financial sector plays a crucial role in the economy, as the intermediary that distributes capital flows to all parts of the economy. Therefore, private financial actors' involvement is necessary to transform the financial sector and align investments with the Paris Agreement's objectives.

In Kenya, the KBA was the driving force behind the Green Bonds Programme. As an association with 46 member banks, the KBA is an important organisation in Kenya's financial sector and played an important lobbying role for the programme at the political level. For instance, the amendment of the 2019 Finance Act was passed after the KBA had lobbied for this for two years (Interview 3, 2021). Technical assistance activities would have been more expensive and likely not as effective if the KBA had not been intrinsically motivated to drive the Green Bonds Programme (Interview 1, 2021).

Moreover, providers of technical assistance usually commit to providing support for a limited period of term. For the Green Bonds Programme to continue after international donors have pulled out, local stakeholders need to feel responsible.

Technical assistance activities should focus on sharing expertise to support the development of local capacities

One of the success factors of the Green Bonds Programme Kenya is the widespread awareness of how green bonds function across the market. As the technical assistance providers targeted a wide range of stakeholders, potential issuers and investors now understand what green bonds are and what benefits they may bring. In addition, there is now a large pool of Kenya-based verifiers. The focus on this wide range of stakeholders has been key to build an ecosystem for green bonds in Kenya (Interview 2, 2021).

Technical assistance providers should ensure local presence

As ownership by local stakeholders is important, providers of technical assistance need to invest time in building good relationships and acquiring trust. This is difficult to accomplish through virtual communications (Interview 1; Interview 2, 2021), so technical assistance activities are likely most successful if the providers of such assistance are based in the country or able to travel there regularly. In addition, good contact with local banks has been key in the Green Bonds Programme (Interview 1, 2021).

A stable political environment is key for developing a green bond market

The political environment can hinder or enable setting up a green bond programme. In the year that the Green Bonds Programme was launched, and technical assistance activities started, Kenya had parliamentary and presidential elections. This led to political and economic uncertainty and less trust in the potential of green bonds (Interview 2, 2021). Many African countries see a slowdown in economic growth, coupled with an unpredictable political situation during election years. Providers of technical assistance and financial sector actors alike, should ideally plan to establish a new product for the financial market in non-election years, when the political and economic situation is more predictable.

4.6 Acknowledgements

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Power cables in Surabaya, East Java
by Jimmy Ofisia

CHAPTER FIVE

Case study 3: Indonesia

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5.1 Introduction

5.1.1 Background

The Republic of Indonesia (RoI) has signed the Paris Agreement in New York on April 22, 2016, which was followed up by Law No. 16 of 2016 concerning the Ratification of the Paris Agreement to the UNFCCC. The greenhouse gas emissions reduction commitment is then strengthened through the Nationally Determined Contribution (NDC) document. In the NDC document, Indonesia has committed to reducing emissions by 29% using its own resources (unconditional) and 41 % with international support (conditional) from the business as usual (BAU) scenario in 2030. Therefore, Indonesia has the right to take advantage of various support, including international climate finance opportunities offered by the UNFCCC to address climate change issues in Indonesia and contribute to global efforts to reduce greenhouse gas emissions through achieving NDC targets.

Actions to address the problem of climate change in Indonesia and efforts to reduce greenhouse gas emissions, besides Indonesia's commitment to achieving its NDC target, are also contained in the national development goals as stated in the 2020-2024 National Medium Term Development Plan (RPJMN), especially in national priority 6 of 7 priorities regarding environment building, increasing disaster resilience and climate change. In order to support the GoI's commitment to financing climate change actions, as well as to achieve national development goals, several funding mechanisms have been developed by the GoI, namely Rupiah Murni[13] (RM), Foreign Loan, Domestic Loan, Government Securities (SBN), and Grants, included in the State Budget (APBN) (Ministry of National Development Planning, 2020). The largest source of funding for climate action comes from loans, then grants, and government securities. Currently, one of the climate finance strategies developed by the GoI to achieve the NDC target is the utilization of foreign loans and/or grants, both bilateral and multilateral.

International Climate Finance (ICF) aims to support transformational change in achieving the goals of the Paris Agreement, particularly in developing countries (SNAPFI, 2020). Indonesia is one of the developing countries that have ratified the Paris Agreement in 2016. As a follow-up, the GoI is committed to reducing greenhouse gas emissions, as stated in the NDC document. To achieve the emission reduction target, there are five sector categories and the proportion of their contribution in efforts to reduce GHG emissions by 29% from BAU 2030, namely: forestry (17.2%), energy (11%), agriculture (0.32%), industry (0.10%), and waste (0.38%) (RoI, 2016).

13 Ministry of Finance Regulation No 94/PMK.02/2017

The energy sector plays a key role in NDC achievement; in 2030 energy sector will still be the largest contributor to GHG emission. Under the current NDC, although the energy sector will reduce its emission by 19 % and 24 % against BAU, it is still a threefold increase against 2010 GHG emission.

On the other hand, as a developing country, Indonesia has an agenda-setting in the form of a development target in the RPJMN, directed at increasing the electrification ratio through policy formulation and decision--making by using coal as the energy primary source. Historically, power sector emission dominates the energy sector's total emission. In 2015, the power sector shared the highest GHG emission (± 40%), where coal power plants contributed almost 70% of emissions in the power plant (IESR, 2019). According to RUPTL 2019-2028, the coal plant fleet will double in the next decade locking the power sector as a primary GHG emission.

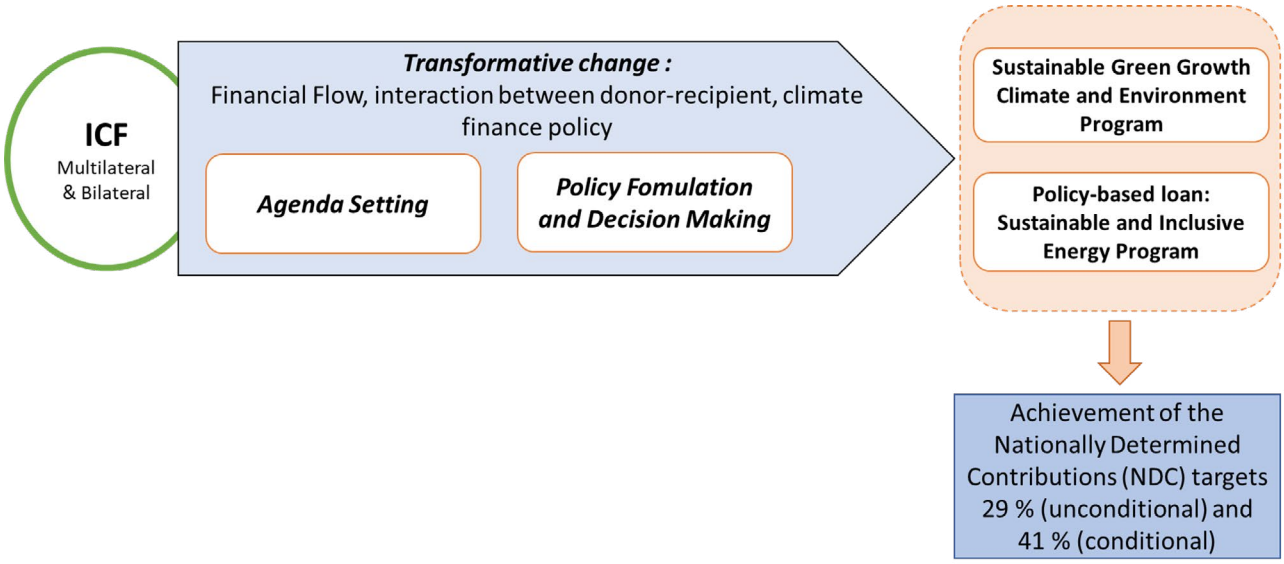
The difference between the NDC target and the development target necessitates an adjustment process by relevant national actors related to the energy sector, or in this case, named transformative change. The transformative change referred to the transformation from a coal-based energy source to renewable and more efficient energy to achieve the electrification ratio and the NDC target through ICF support. This study aims to identify the transformative change by the national actors, especially in agenda settings related to renewable energy and energy efficiency in the form of policy development. The transformative change encourages the achievements of both an increase in the electrification ratio in the national development target and a reduction in GHG emissions in achieving the NDC target. Based on the background of this research, the research question is: "How do national actors in Indonesia use International Climate Finance (ICF) to support the achievement of the Nationally Determined Contributions (NDC) targets?"

5.1.2 Framework and Scope

Support of ICF on the development of national policies towards climate objectives focuses on national agenda setting related to renewable energy and energy efficiency in policy formulation and decision making. Analyses on how Indonesia acquired funding opportunities through ICF to achieve the NDC target are conducted by reviewing two national programs that received international financial support, namely The Sustainable Green Growth, Climate and Environment program (SGGP) from the Global Green Growth Institution (GGGI) in the form of technical assistance and The Sustainable and the Inclusive Energy program (SIEP) from the Asian Development Bank (ADB) in the form of policy formulation. Reviews of these programs provide a picture of how national actors in Indonesia use ICF to determine agenda-setting that contributes a significant role in formulating the policy recommendation and decision making to support the achievement of NDC target on reducing GHG emission by 29% (unconditional) and 41% (conditional).

FIGURE 11

Framework of International Study



Source: Adapted from VIVID (2020)

5.1.3 Methods

This study was conducted in Indonesia as a case study, using qualitative analysis methods through content analysis. Primary data were obtained from the results of in-depth online interviews and limited discussion with relevant stakeholders. These interviews were conducted with international organizations, the private sector (national enterprise), and government officials, between December 2020 and March 2021. The interviewees were selected from relevant stakeholder institutions, namely the Ministry of National Development Planning (MoNDP) (Director of Development Funding Planning, Deputy Director of Renewable Energy and Energy Conservation, and Deputy Director of Multilateral Funding Cooperation), the Ministry of Energy and Mineral Resources (MoEMR) (Directorate General Renewable Energy and Energy Conservation), the Ministry of Finance (MoF) (Fiscal Policy Agency), and the Ministry of Foreign Affairs (MoFA) (Director for Economic Development and Environment) to represent relevant national actors, the State Electricity Company (PLN) (Environmental Specialist) as a national enterprise, and The Global Green Growth Institute (GGGI) (Green Investment Specialist). These interviews aimed to collect data to assess national actor perspectives regarding the transformative change in agenda settings by ICF assistances. In this study, ICF assistances are identified by assessing both SGGP and SIEP. Secondary data were obtained from regulations, programs and policies related to ICF, especially from the output of SGGP in the form of the policy paper and SIEP in the form of policy matrix, Indonesian planning documents (RPJMN), and other relevant literature.

5.2 Case Study

5.2.1 Description of The Case Study

5.2.1.1 Public Policies Under Study

This study analyses public policies that were developed concerning Renewable Energy Investment and Energy Efficiency. The policy development is supported by GGGI through grants mechanism in the form of technical assistance in the SGGP and by ADB through foreign loans mechanism in the form of policy formulation in the SIEP.

5.2.1.1.1 Description of Public Policy

1. **Renewable Energy Investment**
   The GoI has set targets to improve electricity access and promote clean energy with low emissions by encouraging energy mix and renewable energy achievement of 23 % by 2025 and 31 % by 2050 as in Presidential Regulations No. 22 of 2017. The target became a part of the NDC in reducing GHG emissions by 29% (unconditional target) and 41% (conditional target) in 2030, which requires commitment from all stakeholders in the energy sector and sufficient funds to encourage renewable energy through hydropower, solar power, geothermal power, wind power, and biomass utilization (Mudiantoro, 2019a). The implementation of clean energy and emission reduction needs government policies that should be stable and attract private investment in implementing and operating renewable energy (ibid).

2. **Energy Efficiency**
   In 2018, Indonesia contributed 1.7% of total global emissions, which is mainly caused by high energy consumption in the urban areas. As the energy sector contributes 66.71% of the total emissions (including fossil fuels for transportation), reducing emissions efforts from the sector is significant, for example, through energy efficiencies such as urban planning and transportation planning that accommodates population mobility by prioritizing public transportation modes, micro-climate regulation, and efficiency regulation for buildings. Energy efficiency activities that can be carried out in urban areas include energy efficiency of household appliances, retrofitting of heating Ventilation and Air Condition, and replacing energy-efficient lamps. The GGGI stated that the implementation of energy efficiency measures would greatly help Indonesia in achieving its NDC targets (Mudiantoro

5.2.1.1.2 Level of Public Policy Adoption

1. **Renewable Energy Investment**

   Regarding the renewable energy investment agenda, the SGGP produced a policy paper document containing policy recommendations. These policy recommendations are then used to introduce and accelerate renewable energy investment. Policy recommendations include subsidies, taxes, royalty systems, data management, actor capacity, and energy tariffs.

   In addition, the SIEP in the form of policy-based financing produces formal regulations in the form of laws and regulations related to renewable energy investment, including policies on the development and utilization of renewable energy, subsidies and tariffs for electricity procurement, licensing processes, and incentive mechanisms for renewable energy.

2. **Energy Efficiency**

   With regards energy efficiency agenda, the SGGP also produced a policy paper document related to energy efficiency. This policy paper contain policy recommendations related to energy efficiency policy formulation, actor capacity, coordination and cooperation between actors, funding mechanisms and schemes, measuring and inventorying energy use, and energy conservation (Mudiantoro,2019b).

   Besides, the SIEP produced formal regulations in the form of laws and decrees related to the energy efficiency agenda, including subsidies to enhance efficiency, incentivize a switch to cleaner fuels in the transportation sector, and utilize rooftop solar power.

5.2.1.2 Actors Involved and Respective Roles

1. **National Actors and Sub-National Actors**

   a. **Ministry for National Development Planning (MoNDP)**

   As a ministry with coordinating function, the MoNDP has a role in facilitating coordination between other ministries in Indonesia and international organizations, especially in the formulation of policies in planning and finding domestic and foreign sources of financing and allocating funds. Since 2013, the GoI, under the coordination of the MoNDP has been working with GGGI regarding the SGGP project that aims to develop strategies and approaches for green growth in Indonesia. In the SGGP, the MoNDP acts as the main counterpart and has the role in coordinating green-growth-related activities carried out by other ministries and local governments. In addition, with regards to the SIEP project, the program proposal is also carried out through The MoNDP (The Directorate-General of New Renewable Energy and Energy Conservation, 2021).

b. Ministry of Energy and Mineral Resources (MoEMR)

The MoEMR is a member of the steering committees chaired by the MoNDP and co-chaired by the GGGI. The MoEMR plays a role in creating an enabling environment and policies for project implementation, particularly in energy policy planning and investments for regional development. The MoEMR is responsible for planning and management of renewable energy and energy efficiency. The MoEMR has ambitious goals in the energy sector and has developed policies to advance the energy sector. Through the SIEP, The MoEMR issued several policies to support the implementation of programs related to renewable energy investment and energy efficiency (The Directorate-General of New Renewable Energy and Energy Conservation, 2021).

c. Ministry of Environment and Forestry (MoEF)

The MoEF is a member of the steering committees chaired by MoNDP and co-chaired by the GGGI. In the SGGP, the MoEF acts as a data provider related to the environmental quality index and forest. As a data provider, this ministry has a role in compiling relevant data from sub-national agencies, and technical partners to develops environmentally relevant policies and testing standards, criteria, and indicators related to NDC and SDG's. The MoEF is also responsible for cross-sectoral environmental and forest estate management and monitoring (GoI and GGGI, 2017b).

d. Ministry of Finance (MoF)

In the SGGP, the MoF is also a member of the steering committee chaired by MoNDP and co-chaired by the GGGI. As a steering committee member, the MoF is intensely involved in designing and developing monetary policy frameworks and de-risking instruments. This ministry also contributes to making inclusive and sustainable projects bankable (GoI and GGGI, 2017b). In the SIEP, the MoF also plays a role in raising funds for the formulation of the policy matrix related to renewable energy and energy efficiency agenda.

e. Indonesian Investment Coordinating Board (IICB)

The IICB is Indonesia's leading investment service agency and responsible for shaping a more conducive climate for investment. In the SGGP, the IICB contributed to offering incentives to local and foreign investors who use eco-friendly technology to reduce pollution and conserves energy (GoI and GGGI, 2017b). These incentives also provide an essential role to make energy-related projects bankable

f. Regional Planning Agencies (Bappeda) of Central Kalimantan, East Kalimantan and East Nusa Tenggara Provinces

The Regional Planning Agency (Bappeda) is the key counterpart at the provincial level. This agency has a role in facilitating coordination between other local government agencies, especially in the formulation of policies related to planning and budget allocation. At the provincial level, the Regional Planning Agency has a significant influence in encouraging investment, especially in sectors related to green growth (Government of Indonesia and GGGI, 2017b). Several provinces have projects related to green growth, including Central Kalimantan, East Kalimantan, and East Nusa Tenggara.

2. International Donors

a. Government of Norway

Since 2013, the GoI, with financial support from the Government of Norway has been working with the GGGI to develop strategies and approaches to achieve green growth. The Government of Norway provides financial support for sustainable green growth, climate, and environment program through GGGI in phases I, II, and III. Initially, the Government of Norway's finance focus on the forestry sector, but through a discussion process, the GGGI gave GoI the flexibility to finance other sectors, including the energy sector (Global Green Growth Institute, 2021).

b. Asian Development Bank (ADB)

In order to achieve renewable energy investment and energy efficiency agenda, ADB was contributed as main financiers in the SIEP. The ADB also becomes co-financiers to support the SIEP particularly in sub-program three, namely ASEAN Infrastructure Fund, Economic Development Cooperation Fund and KfW Bankengruppe.

3. Private Sectors/Others

a. PT SMI (Sarana Multi Infrastruktur)

PT SMI is one of the Special Mission Vehicles (SMV) under the MoF engaged in financing and preparing infrastructure projects (ptsmi.go.id). PT SMI is a state-owned enterprise (BUMN) that plays a role as a catalyst in accelerating infrastructure development in Indonesia. PT SMI is an infrastructure catalyst that assists project preparation in the renewable energy agenda. According to the interview result with the resource person from GGGI, PT SMI has also contributed to attracting private financing due to the development of the de-risking instrument by GoI (Global Green Growth Institute, 2021).

b. PLN (State Electricity Corporation)

PLN is a state-owned electricity company. PLN is the only authorized agency of electricity business permitted to provide electricity to the public. According to the interview result, the collaboration with PLN to build a conducive investment climate and reduce risks for green energy investors will significantly increase the chances of successful green energy projects (GoI and GGGI, 2017b). In terms of renewable energy projects, , PLN also contributed by supporting project fundings, implementing power plant projects, and formulating energy-related regulations (Ministry of Energy and Mineral Resources, 2021). Besides, PLN also issued a formal policy related to renewable energy development, namely PLN Regulation 0064.P / DIR / 2019, on Procedure for Connecting Renewable Energy Generators to the PLN Distribution System.

5.2.1.3 Period of The Cooperation

The cooperation period being analyzed here is cooperation between the GoI and the GGGI in the SGGP and cooperation between the GoI and ADB in the SIEP.

1. **Sustainable Green Growth, Climate and Environment Program**
   The GGGI implements the SGGP with the GoI through the MoNDP. SGGP consists of three phases, 2013-2015 for phase I (finalized), 2016-2020 for phase II (finalized), and 2021-2025 for phase III (ongoing) (Global Green Growth Institute, 2021).

2. **Sustainable and Inclusive Energy Program**
   The ADB implements the SIEP as primary lender with the GoI through The MoNDP. The implementation period of the SIEP is June 2013–September 2015 for subprogram 1 (finalized), October 2015–September 2017 for subprogram 2 (finalized), and October 2017–September 2019 for subprogram 3 (finalized) (Ministry of National Development Planning, 2021).

5.2.1.4 Social Dimensions in the Public Policy

1. **Renewable Energy Investment**
   Increasing access to clean energy through electricity provision with solar energy can encourage people in remote areas to access to electricity. Clean energy can reduce household exposure to the air pollution produced by biomass energy, usually produced from burning firewood (ADB, 2017). Access to electricity also encourage communities to have well-lit streets to deter crime and reduce incidences of violence against women (ibid). Related to gender issues, women have an essential role in activities such as cooking and the provision of wood or alternative fuel for lighting and cooking. Having reliable, sustainable, and affordable energy will significantly reduce the time and effort spent by women on activities to obtain fuel. Implementing renewable energy investment related to energy supply will also be an important input for women's activities. Women running home industries, businesses, and other enterprises might experience lower production costs and increased revenue (Asian Development Bank, 2015b).

2. **Energy Efficiency**
   Energy efficiency can increase access to modern forms of energy, stimulate economic growth, help create jobs, and also lower individual electricity bills (ADB, 2017). Through increased use of public transportation modes, energy efficiency can reduce emissions from motorized vehicles and reduce air pollution. Currently cities consume large amounts of energy due to high economic activity, thus contributing significantly to carbon emissions. The implementation of energy efficiency activities can reduce urban energy consumption in line with increasing economic activity (Mudiantoro, 2019b).

5.2.2 Climate Finance Instrument

5.2.2.1 Type of Climate Finance and Climate-related policies

The type of climate financing instrument, SGGP, through GGGI, provides grants in technical assistance to formulate policy recommendations for accelerating renewable energy investment and energy efficiency. GGGI focuses on developing business models, providing financial and technical support for pre-feasibility and feasibility studies during the project design stage, including advisory and evaluation services, and helps link project proponents with financial resources and access to capital (Government of Indonesia and GGGI, 2017a). In SGGP, technical assistance is provided in pre-feasibility support, facilitating financing, social and environmental studies, and identifying business plans for renewable energy projects in several locations, including Central Kalimantan, East Kalimantan and East Nusa Tenggara (Global Green Growth Institute, 2021). In addition, the SGGP also provides investment assistance in the form of guarantees through PT SMI to reduce the financial risk of private companies participating in renewable energy projects. (Mudiantoro, 2019a).

SIEP, a project financed by the ADB provides foreign loans to produce renewable energy investment and energy efficiency regulations. The difference between activities carried out under the SIEP project is that the deliverables of this project are in the form of a legalized policy to support the implementation of renewable energy and energy efficiency projects. In contrast, the SGGP project only produced policy recommendations that are used as a background study for the RPJMN 2020-2024. In the SIEP, the formal policies produced are generally in the form of ministerial regulations. However, SIEP also contributed to the preparation of presidential regulations relating to RE and EE, namely Presidential Regulation No 77/2018 and Presidential Regulation No. 55/2019. The following are policies/policy recommendations produced by the two programs in renewable energy investment and energy efficiency.

1. **Renewable Energy Investment**

   As a policy-based financing program, SIEP has supported the formulation of several renewable energy policies concerning renewable energy investment. These policies were output from SIEP-3 which generally aims to improve regulations to support increased access to clean energy and efficient energy. Climate-related policies which are the outputs of SIEP-3 include economic instruments, mainly related to subsidies. In this case, SIEP-3 encourages subsidy targeting. This policy was then outlined in MoEMR regulation 17/2019 and DGE Decree 348.K/20/DJL.3/2020. In addition, SIEP-3 also seeks to increase policy support related to access to clean energy and energy efficiency, especially with the newly established Indonesian Environment Fund Agency (BPLDH) as outlined in MoF Regulation No. 137 /PMK.01/2019 concerning the establishment of BPLDH and MoF Regulation No.182 / PMK.05 / 2019 concerning the Minimum service standard of BPLDH. These policies were derived from Presidential Regulation Number 77 of 2018 concerning Management of Environmental Funds.

With regards to renewable energy investment, GGGI, through its SGGP project, offers several types of policy recommendations, including economic instruments (subsidies, taxes, and royalty), information management programs mostly related to data management and community capacity in RE, and RE development policies (financing support, tariff adjustment, bankability, and project support). The policy recommendations from SGGP are still related to the output from SIEP-3: optimization of subsidies and Preparation and utilization of environmental funds from BPLDH. In more detail, policies produced by SIEP and GGGI are presented in the following Table 6.

TABLE 6

Climate-related Policies Regarding Renewable Energy Investment

Climate-related policies		Policy Descriptions	Actor	Supported by
Economic Instruments	Subsidies	Issued MoEMR regulation 17/2019	MoEMR	SIEP-3
		Subsidies for small-scale power providers, provides training costs subsidies and restructuring retail tariff	MoF, MoEMR	GGGI
	Taxes	Provides coal export tax and carbon tax mechanism	MoF, MoEMR	GGGI
	Royalty	Provide royalty system for all RE generators	MoEMR, MoEF	GGGI
Information Management Programmes		Built data management system related to RE, increases capacity and awareness of actors related to RE, and mapping RE technologies	MoEMR	GGGI
Regulation	Financing support	Issued Presidents Regulation No 77/2018, MoF Regulation No. 137 /PMK.01/2019, and MoF Regulation No.182/PMK.05/2019	MoF	SIEP-3
		Preparation and utilization of environmental funds from BPLDH	MoNDP, MoEMR, MoF	GGGI
	Tariff adjustment	Issued MoEMR regulations No. 03/2020, and MoEMR regulations No.19/2019	MoEMR	SIEP-3
		Reviews tariff adjustment mechanism	MoF, MoEMR	GGGI
		Set coal prices in accordance with DMO policies	MoF, MoEMR	GGGI
	Bankability	Issued MoEMR Regulation No. 4/2020	MoEMR	SIEP-3
	RE project support	Issued MoEMR regulation No 16/2019, MoEMR regulation No 13/2019, and PLN Regulation 0064.P/DIR/2019	MoEMR	SIEP-3
		Issued Government Regulation No. 24/2018, and MoEMR No. 39/2018	MoEMR	SIEP-3

2. Energy Efficiency

In terms of energy efficiency, both SGGP and SIEP have produced several efficient energy policies. SIEP-3 has produced an economic instrument related to energy efficiency, i.e., the procedures for providing subsidies to PLN based on specific fuel consumption outlined by MoEMR Regulation No. 09/2020 and MoF Regulation No. 174/174/PMK.02/2019.

Related to the MoEMR instrument in energy efficiency, SIEP also promotes the incentives mechanism on electric vehicle program, which was then supported by Presidential Regulation No. 55/2019 concerning accelerating battery-based electric vehicles program by the enactment of MoEMR Regulation No. 13/2020 concerning the provision of charging infrastructure for the battery-based electric motor vehicle. Besides producing several economic instruments, SIEP also promotes energy efficiency by creating technical regulations guiding solar rooftop PV and floating solar development and helped formulate MoEMR No 16/2019 to increase RE deployment supporting a green recovery from Covid-19. The MoEMR assistance provided by GGGI also resulted in several policy recommendations related to energy efficiency. The policy recommendations include economic instruments in subsidies, incentive and disincentive mechanisms such as additional building tax and penalties for excess energy use, information programs for capacity building, and knowledge related to energy efficiency principles and other regulations. In more detail, the policies produced by SIEP and GGGI are presented in the following Table 7.

TABLE 7

Climate-related Policies Regarding Energy Efficiency

Climate-related policies		Policy Descriptions	Actor	Supported by
Economic Instruments	Subsidies	Issued MoEMR Regulation No. 09/2020 and MoF Regulation No. 174/174/PMK.02/2019	MoEMR, MoF	SIEP-3
	Incentives and disincentives	Issued Presidential Regulation No. 55/2019 and MoEMR Regulation No. 13/2020	MoEMR	SIEP-3
		Issued energy efficiency policies in buildings	MoEMR, MoF	GGGI
		Develop innovative and effective funding mechanisms and schemes	MoF, MoNDP	GGGI
Information Management Programmes		Increase public and stakeholder understanding of energy efficiency	MoNDP	GGGI
Regulation	Coordination and collaboration	Increases coordination and cooperation between stakeholder and established Urban Development Agency	MoNDP, MoEMR	GGGI
	Urban energy efficiency	Formulation of methodologies and procedures for measuring and inventorying energy use and GHG emissions Strengthening the energy conservation market through reviewing ESCO and preparing MEPS	MoEMR	GGGI
	Project supports	Issued MoEMR regulation No 16/2019, and MoER regulation No 13/2019	MoEMR	SIEP-3

5.2.2.2 Factors and conditions contributing to the success of the adopted instruments

1. **Renewable Energy Investment**

In the context of renewable energy investment, several conditions affect the successful implementation of the SGGP and SIEP. The quality of coordination between government institutions is one of the conditions (Civil Society,2021). Some agencies, including MEMR, MoF, and MoEF, have a different focus on renewable energy development, so many policies are not aligned. Besides that, at the national level, stakeholder involvement in the development of the energy sector also often experiences changes (Civil Society,2021), and each stakeholder has a different vision and mission (political will) to influence the resulting policies (Global Green Growth Institute, 2021; MoNDP, 2021). As in the case of the SGGP, there were some policy recommendations related to energy investment that were included in the 2019-2028 RPJMN background study; however, during the political stage, many of these recommendations were not adopted (Global Green Growth Institute, 2021).

This dynamic condition has influenced the attractiveness of investment in renewable energy. One of the issues regarding renewable energy investment occurs in the development of BIO CNG by GGGI (Global Green Growth Institute,2021). GGGI has sounded the project to the private sector, but it is still challenging to secure their cooperation (G2B). This should be resolved by providing a favorable investment environment through various policies so that the private sector feels confident in investing in the project. Furthermore, related to investment, Indonesia also experiences difficulties in receiving co-financing due to its status as a member of the G20 and the 15 countries with the largest economies in the world, especially in obtaining soft loans (MoNDP, 2021). With this status, Indonesia is also no longer a priority for grant distribution by international funding (MoFA,2021).

2. **Energy Efficiency**

Similar to renewable energy investment, several conditions also determine the success of the SGGP and SIEP in the context of energy efficiency. In GGGI, when GGGI will provide technical assistance related to energy efficiency, there are many problems faced, especially capital constraints. Based on the interview results, capital constraints are caused by various factors, including the limited number of investors, an unsupportive banking system due to high project risks, and limited foreign loans. Limited foreign loans are also related to Indonesia's status as a member of the G20 and the 15 countries with the largest economies in the world (MoNDP, 2021).

Another condition that determines the success of the SGGP and SIEP is existing policies that have not been attracted investors to help implement projects related to energy efficiency (MoNDP, 2021). This was then confirmed in the thematic study of GGGI related to urban energy efficiency, which mentioned that currently, no policy could attract actors to switch from conventional energy use to the energy that is more efficient and environmentally friendly.

5.2.2.3 Co-financing by the private sector

There is financial support from the private sector to support renewable energy investment and energy efficiency, i.e., PLN, especially for projects in the energy sector such as geothermal power stations. PLN's financing system is a monopoly or vertically integrated, where PLN is the holder of the electricity business, especially for transmission and distribution, while power generation for energy projects can be financed by PLN or Independent Power Producer (IPP). Energy project financing by PLN is provided in the form of investments obtained from equity, soft loans to foreign and domestic banks, and bonds. Currently, PLN is issuing the Sustainable financing framework as an opportunity for PLN to finance energy projects, especially renewable energy (Manager of Climate Change and Safeguards the State Electricity Company-PLN, 2021).

5.2.3 Barriers Being Tackled by The Cooperation

1. **Sustainable Green Growth, Climate and Environment Program**

   a. **Public Finance and Capital Constraints**

   The Indonesian government has very ambitious green growth development targets/goals, but in sustainable green growth, the climate and environment program, these goals are hindered by limited investment, both domestically and internationally. This problem then causes project failure during project development (Global Green Growth Institute, 2021).

   In the case of public finance, national-level plans that aim to guide and provide green growth opportunities in Indonesia have not been adopted in sectoral development plans in ministries and/or provinces. This is due to budget constraints and capacity gaps among actors. Meanwhile, the lack of budget allocation for green growth is caused by the absence of green and inclusive planning and strategy in Indonesia (GoI and GGGI, 2017b). Based on these challenges, GGGI is contributing to building a systematic effort to mainstream green growth into government strategies and plans. The SGGP as technical assistance then plays a role in ensuring that green growth is mainstreamed in priority sector development strategies and plans, and adopted by relevant government authorities in Indonesia.

   b. **Limited Institutional and Technical Capacity**

   There are explicit knowledge and capacity gaps in the public, private and financial sectors. Limited knowledge capacity in public, private and financial sectors is an overarching barrier to the uptake and mainstreaming of green growth principles, concepts, and methodologies (GoI and GGGI, 2017b). At the national level, the mainstreaming of green growth in government budgeting and planning is lagging due to the limited capacity. At the sub-national level, sub-national governments also often have difficulty addressing the demands imposed by new climate change actions and new requirements in strategic environmental assessments. The private sector also has gaps hindering the project's bankability.

The private sector has limited knowledge about government regulations and lacks the capacity to develop and finance projects until the close financial stage(ibid).

Green project failure is also caused by the absence of project financing, the inadequate ability of the private sector in technology, and the assessment that was made was not detailed enough, so that many projects which have been developed eventually collapsed, particularly micro-hydro projects (PLTMH) in East Nusa Tenggara (Global Green Growth Institute, 2021).

2. **Sustainable and Inclusive Energy program**

   a. **Public Finance and Capital constraints**
   Widespread subsidies and the inability to recover costs have led to underinvestment by the public sector, particularly in the energy sector. Low tariffs and market prices combined with challenges in permitting, licensing, land acquisition, environmental approvals, and the perceived financial risk posed by monopolistic and subsidized public sector off-takers has resulted in inadequate private sector investment (Asian Development Bank, 2015a)

   b. **Limited Institutional and Technical Capacity**
   Ministries' policies failed to give a quick response to meet the timeframe required for project development to achieve the NDC targets. In addition, there are difficulties in carrying out policy reform due to differences in interests and perspectives of actors, for example in the case of restructuring the tariff system in SIEP-2, where policies cannot be reformed at stage 2, making it necessary to carry on the reform at SIEP-3 (MoNDP, 2021).

5.2.4 Quality of Cooperation

1. **Sustainable Green Growth, Climate and Environment Program**
   Several factors determine the quality of the cooperation between the GGGI and the GoI through the SGGP project, including a strong national-level engagement to ensure successful implementation at provincial, district and project levels, and a structured and regular information dissemination mechanism will further strengthen the program. Besides, individual as well as institutional stakeholders need to have an awareness and the required knowledge and skills related to green growth (GoI and GGGI, 2017b) There is also the issue of the knowledge gap and information dissemination capacity between actors. Other than that, because the program also involves many key actors at various levels, strong engagement with all key stakeholders become essential in supporting the program's success. The key stakeholders in these programs include national and sub-national governments, local non-government partners, such as communities, the private sector, and local NGOs (Global Green Growth Institute, 2021).

2. **Sustainable and Inclusive Energy program**
   Factors that encourage the quality of cooperation between the ADB and the GoI in SIEP include the capacity and ability of key stakeholders in coordination and collaboration. Coordination between ministries and development partners is essential in supporting success through co-finance, complementary programs, and review missions. Meanwhile, the collaboration aims to harmonized perceptions and align interests between stakeholders so that policy reforms can be successfully carried out (MoNDP,2021)

5.2.5 Final Considerations and Suggestions for Next Steps

5.2.5.1 Final Considerations

1. Support of the ICF basically encourages transformative change in Indonesia. In the case of the SIEP and SGGP projects, the transformation was carried out in the form of agenda settings related to Renewable Energy Investment and Energy Efficiency. The two agenda settings were derived in the form of policy formulation and policy recommendations, respectively, to support the achievement of the NDC targets 29 % (unconditional) and 41 % (conditional).
2. In this study, ICF is defined as international support to achieve NDC targets from 29 % to 41 % (conditional), but some clarification is still needed regarding the two projects in this study. (MoFA, 2021). From the interview conducted in this study, the resource person from MoFA determined SIEP as ICF. However, the program output is not categorized as supporting GHG emissions reduction from 29% to 41% by international support. This is because, at the project's development, the SIEP does not implicitly aim to respond to climate change issues. In contrast, the SGGP project has focused on climate change issues, and the output produced by this program contributes to GHGs reduction with international support from 29% to 41%.
3. The SGGP initiated activities that were carried out with a focus on the forestry sector, but in its progress, GoI was given the flexibility to carry out the agenda in other sectors, one of which was the energy sector. The program is led by the MoNDP, which chairs a joint steering committee representing participating government agencies such as the MoMER, the MoEF, the MoF, and the IICB, and provincial government agencies such as Central and East Kalimantan, that provide overall strategic guidance to the GoI-GGGI Green Growth Program. In its running, the SGGP produced output in the form of policy recommendations related to renewable energy and energy efficiency.

   Meanwhile, from the beginning, SIEP has focused on the energy sector, which also involved national actors both from the government such as the MoMER as an executing agency and the MoF, the MonDP, the MoEF, the IICB as an implementing agency, as well as private sector, i.e., the PLN as an implementing agency.

The output of this program is in the form of formal policies in the form of laws and decrees produced by executing agency (the MoMER) to support the implementation of renewable energy and energy efficiency.

5.2.5.2 Suggestions

Harmonizing Climate Change Related Policies and National Development Policies

As Indonesia's effort to achieve the NDC target, it is important to harmonize the NDC target with national development policies. Indonesia has two reference documents related to climate change, including the RPJMN (especially National Priority 6) and the NDC target. The RPJMN is a corridor for other climate change policies in Indonesia, while the NDC is evidence of Indonesia's commitment to the international community regarding the issue of climate change. In the context of policies related to climate change, national development policies must be able to reflect development targets that support the achievement of the NDC targets. For this reason, there is a need for alignment between energy sector development targets and efforts to reduce greenhouse gas emissions through RE and EE.

In addition, based on analysis that has been conducted, to increase the use of ICF in general and achieve the NDC target in Indonesia, the Government and actors related to climate change need to pay attention to the following matters:

- **Mapping of ICF contribution in Indonesia**
  Indonesia has many international donors related to climate change, but there is noprecise data mapping of the projects that have been carried out so that many projects have the same goals/objectives and are ineffective and inefficient. Based on this, the mapping of international climate finance (ICF) is one thing that needs to be considered in the future.
- **Project Proposal Supports (GCF)**
  The GCF supports developing countries like Indonesia to achieve low emission and resiliency on climate change. Regarding NDC targets, the GCF also contributes to the achievement of GHG emission reduction targets from 29% to 41% with international support. However, until now, Indonesia has not taken advantage of it. One of the problems is the difficulty of making a project proposal. Therefore, it is necessary to increase the capacity of stakeholders in Indonesia so that the GCF is more easily accessible.
- **Private sector participation in achieving the NDC target**
  In order to achieve the NDC targets, Indonesia needs enormous international funding support. In addition, the role of the private sector is also needed to achieve this target. Currently, there are many private sectors involved in climate change projects, one of which is PLN. However, until now the role of the private sector has not been recorded as a form of a national effort in reducing greenhouse gas emissions (29% GHG reduction by using its own resources). To respond to this, the formulation of carbon pricing regulations is currently expected to accommodate the role of the private sector to be noted in achieving the NDC target.

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Sugarcane seedlings in Uttar Pradesh, India
by Ashwini Chaudhary

CHAPTER SIX

Case study 4: India

Uttarakhand Disaster Recovery Project (UDRP) and Maharashtra Project on Climate Resilient Agriculture Project (PoCRA)

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6.1 Introduction

India is highly vulnerable to the impacts of climate variability and change on both natural and human systems with ecological, social and economic consequences. A developing country with a large population dependent on climate sensitive sources for their livelihoods clearly highlights the need for adaptation action in the country. Financial assistance for adaptation action has been limited as compared to funds for mitigation action, both from domestic and international sources.

The following case study is looking at international financial aid provided for adaptation action in the country, specifically by focusing on the international climate finance provided by the World Bank. The case study is looking broadly at initiation of adaptation actions, through the capacity building, technical assistance, and resilience building initiatives in different sectors of the country.

A subnational perspective is being considered to cover the geographic and economic diversity in the country. From a climate change perspective, the complex portfolio of hazard, risk and vulnerabilities are also best addressed at the regional level. The adaptation action plan has been developed from a sector and region specific perspective since the launch of the National Action Plan on Climate Change (NAPCC) in 2008. This is to ensure adaptation action planning and implementation is more needs based and inclusive of the distinct geographic, economic and social factors in every region. The adaptation actions developed at the regional level are also closely linked to grassroots development agendas of the state/ region, to ensure better enactment.

The aim is to understand how the technical support and capacity building provided through World Bank financial assistance, has resulted in or aims to change the institutional structure and governance arrangements at the sub-national level, as well as the specific sectoral level. Enhancing the capacity of institutions and governance structures allows better formulation and implementation of policies.
The projects being considered are:

- **Uttarakhand Disaster Recovery Project (UDRP):** The aim of the project was to enhance disaster management in the Himalayan state of Uttarakhand, with focus on infrastructural reconstruction, building the resilience of the communities, and helping build the institutional capacity to prepare for and manage the impact of future disasters
- **Maharashtra Project on Climate Resilient Agriculture Project (PoCRA):** The major objective of the project being studied is to enhance climate resilience and profitability of smallholder farming systems, in the state of Maharashtra

While there are over-arching National Missions and policies to guide, the implementation falls to the respective states. The projects have been designed with a multi-sectoral perspective, and are in alignment with national level policies and programs. For example, the PoCRA project is in line with the national level agricultural sector actions as covered under National Mission on Sustainable Agriculture. Similarly, the UDRP project is designed in alignment with Government of India's commitment of ensuring disaster risk mitigation at both the national and state level, as well as national level acts like Disaster Management Act, 2005, and working of institutional structures like the National Disaster Management Authority (NDMA), for resilience building.

6.2 Background of Projects

Uttarakhand Disaster Recovery Project (UDRP)

Uttarakhand, a state in the North-western Himalayas is highly susceptible to natural disasters. An assessment of the disaster management scenario in the state becomes of greater importance considering the Glacial Lake Outburst flood that happened on February 7, 2021. The cause of flooding has been attributed to the breaking off, of a portion of the Nanda Devi glacier, further resulting in landslides. This disaster highlighted not only the vulnerability of the state to frequent disasters because of changing climate but also to the reduced environmental capacity to sustain damages. Being a disaster sensitive state, with major disasters causing economic upheaval, the need for disaster management to be developed in the state has become of utmost priority. The need to focus on disaster management in the state has always been of importance, especially since the flooding disaster in 2013.

In June 2013, Uttarakhand experienced massive flooding triggered by multi-day cloudburst, with estimates showing how more than 9 million people were affected due to the flooding.[14] Economy of the state was affected, with tourism sector being badly hit, as well as huge loss of manpower and infrastructure.[15]

The large scale destruction can be attributed to a young mountain system, the complex terrain that exists, the unique exposure to hazards and associated risks, besides the fact of weakly planned disaster management in the state. This weak disaster management can be understood because of lack of co-ordination between different disaster management actors, lack of well-developed financial systems and slow disbursement of post-disaster relief.[16]

14 https://india.mongabay.com/2018/06/five-years-since-uttarakhand-floods-continued-disregard-for-the-environment-is-an-open-invitation-for-more-calamities/

15 https://www.lawctopus.com/academike/disaster-management-case-study-river-flooding-at-uttarakhand/

16 https://www.krishisanskriti.org/vol_image/08Jul201511070821%20%20%20%20%20%20%20Amita%20Tayal%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%2089-93.pdf

After the 2013 disaster, emergency financial assistance was requested from Asian Development Bank (ADB) and the World Bank for reconstruction. A Joint Rapid Damage Needs Assessment (JRDNA) was conducted by Global Facility for Disaster Reduction and Recovery (GFDRR), World Bank and ADB, in close collaboration with the state government, and estimated the physical damages across a range of sectors and calculated the cost of reconstruction at about $661 million, which also catalyzed an immediate response on behalf of the government. JRDNA informed a $250 million recovery and resilience project on behalf of the International Development Association (IDA).[17]

UDRP was developed with the aim of the project to enhance disaster management in the state, with focus on infrastructural reconstruction, community resilience building, and helping build the institutional capacity to prepare for and manage the impact of future disasters. There are six main components under this project:

1. Resilient Infrastructure Reconstruction
2. Rural Road Connectivity
3. Technical Assistance and Capacity Building for Disaster Risk Management
4. Financing Disaster Response Expenses
5. Implementation Support
6. Contingent Emergency Response

The focus of this case study is on the Technical Assistance and Capacity Building for Disaster Risk Management of the project, to understand its impact on the policy framework in the state, through governance and institutional changes.

Maharashtra Project on Climate Resilient Agriculture (PoCRA)

The specific project is centered around the agriculture sector in the state of Maharashtra, which is central to the economy of the state, with over 50% of the state's population dependent on this sector. However, the large dependence of the sector on highly erratic rainfall and weakly developed water sector, has caused the agriculture sector's growth to fluctuate over the past years. The challenges of high production cost, price fluctuations, lack of market access, and lack of agri-business opportunities, result in low profitability to farmers, making the agricultural sector not economically viable. Additionally, growing water scarcity, degrading land resources, stagnant farm productivity, and other impacts of climate variabilities, do not allow farmers to adapt to or respond to growing climate variability. With the growing climate variability, there was recognized the need of sector policies (water and agriculture), and investments to promote research on climate- adapted varieties.

17 https://www.cag.gov.in/webroot/uploads/download_audit_report/2018/Report_No_2_of_2018_Performance_audit_on_Reconstruction_of_Infrastructure_Post_2013_Disaster_in_Uttarakhand_Government_of_Uttarakhand.pdf

In order to address these challenges, the government of state of Maharashtra in partnership with World Bank conceptualized the PoCRA project, covering ~5000 villages in 15 districts in the state. The state has also been working on general objective of 'drought proofing' 5,142 village. This aim of the state government is at saturation point, and transformational change in the agriculture sector, through many government schemes, is under implementation. Through the state government's prime focus on convergence between PoCRA and the different programs, the aim is to strategically prioritize PoCRA's interventions planned in each cluster, select result based investments to be financed, and also phase-in the planned activities of the project, with investments planned in other projects. The main project components of the project are:

7. Promoting Climate-resilient Agriculture Systems
8. Climate-smart Post-harvest Management and Value Chain Promotion
9. Institutional Development, Knowledge and Policies for a Climate-resilient Agriculture
10. Project Management

The component of Institutional Development, Knowledge and Policies for a Climate resilient Agriculture, allows steps to be pursued towards adaptive management of agriculture sector. This includes: 1. Sustainability and institutional capacity development; 2. Formation of Maharashtra Climate Innovation Centre; 3. Targeting Knowledge enhancement and policies. The capacity development framework developed for the project is[18]:

11. System/ institutional development by establishment and capacity development of Village Climate Resilient Agriculture Management Committee (VCRMC)
12. Cooperation/ Network Development to facilitate scalability of the project
13. Human Resources Development
14. Organization Development at the community level
15. Farmer development

The focus of the study on this component of institutional and capacity development would allow better integration of various stakeholders in the working of a climate resilient agriculture sector, and may allow more targeted policies to be formulated or enhanced consequently.

18 http://krishi.maharashtra.gov.in/Site/Upload/Pdf/PoCRA_PIP.pdf

6.3 Description of case study

The policy impact of the international climate finance being provided, is being understood through its impact on the institutional structure and governance working of the specific sectors at the sub-national level. These impacts can be understood in terms of the technical assistance and capacity building activities, under the selected projects, and their level of implementation.

Adaptation action and building the climate resilience of a sector or a community should be supported by activities which strengthen the knowledge, capacity, and skill of the affected communities as well as improve the institutional structures of the sector. Hence, it becomes important to understand the technical assistance and capacity building components of any intervention, aimed at enhancing the proficiency of the institutional or governance structures.

More than short term objective of emergency response to adverse climate events, building a sector's capacity and capability to respond to and recover from extreme climatic events is critical, especially when looking at both the sectors under consideration in this study (disaster management through UDRP and agriculture through PoCRA). Additionally, since a multi-sectoral approach has been adopted in implementation of these projects, the institutional strengthening in the state's governance structures would allow effective implementation of sectoral policies. The impact of funding on institutional and capacity strengthening helps build an effective landscape for drafting or enacting the necessary policies. For example, through funding for PoCRA, the creation of robust institutional architecture, that helps guide smallholder famers[19] to adopt climate resilient technologies to buffer risk and vulnerability of rainfed farming, has been established.[20] The policy adoption of the funding can also be understood from the perspective of establishment of village level institutional structure of Village Climate Resilient Agriculture Management Committee (VCRMC).

Furthermore, human resource development, knowledge enhancement, institutional development and cooperation, and network development, allows for a holistic approach to be developed in the capacity building process in any sector. Knowledge enhancement of the necessary stakeholders also becomes important to understand the exact areas in need of intervention. For example, in UDRP, studies on slope stabilization, river morphology, and a State-wide multi-hazard risk assessment,[21] highlight efforts towards knowledge enhancement in the disaster management sphere in the state of Uttarakhand, which can also act as a blueprint for disaster management in the country.

Strengthening the institutional and governance structures of different states would allow better policies to be enforced or implemented in the required sectors.

19 farmers with up to 2 ha of farmland

20 http://documents1.worldbank.org/curated/en/589641573053287692/pdf/Disclosable-Version-of-the-ISR-Maharashtra-Project-on-Climate-Resilient-Agriculture-P160408-Sequence-No-03.pdf

21 http://documents1.worldbank.org/curated/en/191871601989349184/pdf/Disclosable-Restructuring-Paper-Uttarakhand-Disaster-Recovery-Project-P146653.pdf

Actors involved

UDRP, Uttarakhand:

- **National Level:** At the national level the National Disaster Management Authority (NDMA) has been developed under the Disaster Management Act, 2005, as the apex body for disaster management. The overall policies, plans and guidelines for disaster management in the country are laid out and implemented by this body. The state level implementation is overseen by State Disaster Management Authorities (SDMA) present in every state, as well as District Disaster Management Authorities (DDMAs) to oversee the necessary regional level activities. The Uttarakhand State Disaster Management Authority (USDMA), is the nodal institution for planning, co-ordination and monitoring of disaster prevention, mitigation, preparedness and management related initiatives of the state government.
- **Project level stakeholders:**
  - For technical and capacity building, Uttarakhand State Disaster Management and Mitigation Centre (DMMC) and Uttarakhand Space Application Centre (USAC) have been recognized, which are both autonomous bodies working under the aegis of the state government.
  - At the specific project level, a Project Management Unit (PMU) and separate Project Implementation Units (PIUs) have been established, under the USDMA, for different components of the project. The PMU is responsible for the Technical and Capacity Building Component of the project, with DMMC and USAC. At the local level the main actor ensuring the project implementation are the District Coordination Committees.[22]
  - The PIUs have been established under the departments like Bridge, Ropeway, Tunnel and Other Infrastructure Development Corporation of Uttarakhand Limited (BRIDCUL), Public Works Department (PWD), and USDMA, involved to implement project activities. The PIUs have been developed to serve as the technical expert teams for project implementation with respect to the specific components under the project.
- **International Stakeholders:** The case study under consideration has World Bank as the main international financial stakeholder. Additionally, prior to financial intervention, the Global Facility for Disaster Reduction and Recovery (GFDRR) conducted a Joint Rapid Damage Needs Assessment (JRDNA), in collaboration with World Bank and Asian Development Bank, to understand the amount of funding required for the project. Subsequently ADB and World Bank provided the necessary funding,

22 http://documents1.worldbank.org/curated/en/480291468043736445/pdf/813290PID0P14600PUBLIC00Box379832B.pdf

PoCRA, Maharashtra:

The working of the agriculture sector in the country falls under the administrative purview of the states. The project developed is targeted at sectors to allow the state to adopt drought proofing and climate resilient plans for agriculture sector, through community led multi-pronged strategy. The project implementation and the subsequent results can be understood through the three tier governance structure formed for the Project Management. The Project Steering Committee, is at the state level, with the main aim to give strategic and policy guidance at the design and implementation stages of the project activities. The Project Technical Advisory Committee, formulated under Department of Agriculture in the state, is designed to provide technical advice on the components and activities approved under the project. Three levels of project governance:

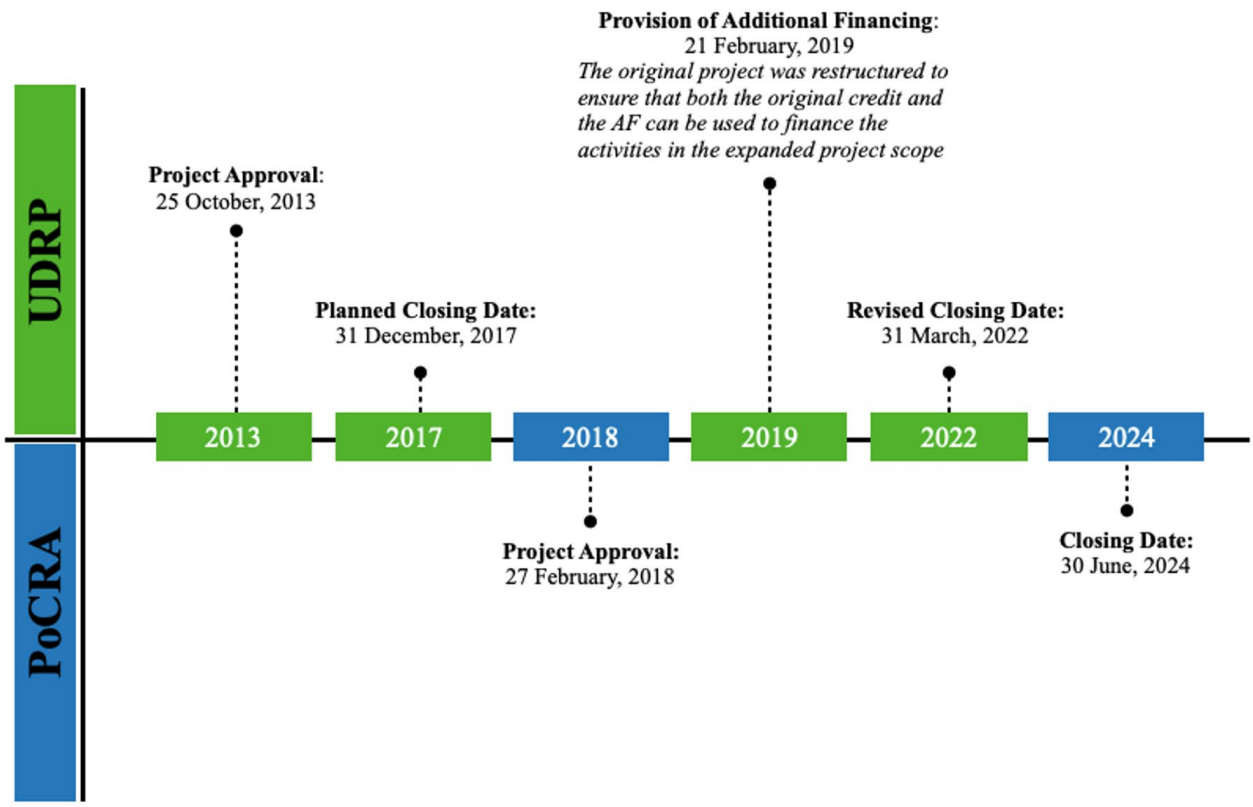
1. State level: Project Management Unit (PMU), under Department of Agriculture (DOA) is the nodal agency at the State level, responsible for the project implementation and subsequent governance strengthening of the agricultural sector in the state.
2. The field level implementation is overseen by Project Implementation Units (PIUs) at the District level. Establishment of PoCRA nodal offices at Division Level, with three divisions in the project area, and the function of coordinating with the districts under their jurisdiction, and procuring human resources for their areas. The District level structures are developed with aim to facilitate, collaborate, supervise, and bring convergence of the project at the local district level.
3. Village level structure: The third level of implementation is the village level, with community participation through Village Climate Resilient Committee (VCRMC). The VCRMC is responsible for (i) preparation of participatory village micro-plans, (ii) selection of beneficiaries for individual benefit activities, (iii) planning and execution of community works as per approved annual action plan, (iv) responsible for the maintenance of assets, and (v) facilitating social audit of the project activities.[23]

Training and Capacity Building: The responsibility of the Training Need Assessment (TNA) and Skill Gap Analysis (SNA) lies with the Agriculture Technology Management Agency (ATMA).[24] Knowledge building support and training arrangements will be supported from state level and regional institutes.

23 http://krishi.maharashtra.gov.in/Site/Upload/Pdf/PoCRA_PIP.pdf
24 http://krishi.maharashtra.gov.in/Site/Upload/Pdf/PoCRA_PIP.pdf

FIGURE 12

Period of partnership



Social dimensions

ICF is designed to enable social impacts through the funding being provided. The architecture of the climate finance provided for both the projects is designed to enable connecting communities to technical and financial assistance. Strengthening the institutional or governance structures also allows a broader impact to various communities being targeted.

UDRP, Uttarakhand

The unequal distribution of impacts of the 2013 disaster were observed, and the ICF through World Bank was aimed at ensuring a more equitable disaster recovery, rehabilitation and reconstruction. This can be specifically understood through the component of housing reconstruction in the financial aid of the project.

The Housing reconstruction program was designed using the Owner Driven Construction of Houses (ODCH) methodology, supporting flood affected population to build houses with disaster resilient techniques.[25] The New Housing Reconstruction Policy formulated as a result of the funding, can be understood as the impact of the financial intervention in strengthening the governance structure in the state. The specific social impacts of the funding from the infrastructure (housing) restructuring and capacity building perspective can be seen as:

- *Community Empowerment:* where communities are being encouraged for joint titling of land and joint bank accounts.
- *Skill Enhancement:* since the project is aimed at increasing the resilience of the communities against future disasters, the project sought to influence behavior and skill for masons in the state through hands-on training program for earthquake resistant construction and retrofitting techniques
- *Gender Inclusion:* recognizing the unequal impact of the disaster on women and girls, the project was designed to have a strong component of gender inclusion in the implementation phase. The project contributed to the financial empowerment of women by encouraging the co-ownership of bank accounts. Over 50% of the beneficiaries received their installments in joint bank accounts that enabled women to have an equitable say in financing home reconstruction.[26] Additionally, to curb open defecation as well as provide women and girls with privacy and safety, construction of toilets were ensured in every reconstructed house under the project.
- *Institutional support:* Engaging a technical and social support agency significantly increased awareness of women beneficiaries to their entitlements and supported single women headed houses to reconstruct damaged homes.

PoCRA, Maharashtra

The aim of the project, other than strengthening the institutional structure of the agricultural market, is resilience building for smallholder farmers. The social dimension of the ICF provision can be recognized from the framework of the project. The capacity development framework designed for this project allows an understanding as to how the finances provided enable an environment for scaling up the activities under the specific project. This can be understood from:

- *Community Empowerment and Gender Inclusion:* through the establishment and capacity development of VCRMC as a community institution at each village level. Community empowerment can also be understood through the targeted individual beneficiaries, where project planning has been done with individual beneficiary targeting as a guiding principle for project implementation.

25 https://www.gfdrr.org/sites/default/files/India%20Gender%20in%20Housing%20SOI.pdf
26 https://www.gfdrr.org/en/publication/results-resilience-gender-inclusion-post-disaster-housing-india

Most vulnerable farm households in a village are to be identified by the village community for assistance under the project, with priority given to marginal and small farmers, socially marginalized communities from the scheduled tribes (ST) or scheduled castes (SC), women farmers, and disabled farmers.[27] The aim is to identify the specific training needs of different groups of farmers and ensure uniform capacity building. The capacity building framework also ensures organization development at the community level by enhancing the capacity of community based organizations like Women Self Help Groups (SHGs), farmers Interest Groups(FIGs), and farmer Producer Companies (FPCs).

- *Skill and Knowledge Enhancement:* The aim of the project is skill enhancement of farmers through training at district and state level. Knowledge products like development of long term climate change model for the project area and its implications, thematic studies on climate resilience, creation of tools to carry out resource and opportunity analysis for project clusters, risk matrix on project activities, are aimed to be developed, with technical assistance of various public sector institutions.

- *Institutional Support:* in form of establishment of Climate Innovation Center at the state level. The aim is to also strengthen the institutional capacity to enable promotion and scaling up innovations of the project , through state level Climate Innovation Centre (CIC). The social dimension of CIC can be seen in form of support provided to local private sector capacity, with focus on entrepreneurs and SMEs, to assist them to commercialize and deploy emerging technologies and business models in growing climate sectors (e.g. climate-resilient agriculture, water, energy) and to provide local solutions to climate change.

6.4 Climate Finance Instrument

The projects being studied are financed by World Bank, with the financial instrument of **Investment Project Financing (IFP)** employed in both cases. IFP is based on provision of International Bank For Reconstruction And Development (IBRD) loan, International Development Association (IDA) commitment (in form of credit/grant) and guarantee financing to the respective national/state governments.[28] With a broad sectoral coverage, IFP funding is mostly used in the infrastructure, human development, agriculture, and public administration sectors, with medium to long term time horizons.

World Bank's IFP in the two projects under consideration becomes important because of its role as a vehicle for sustained global knowledge transfer and technical assistance. The technical support and expertise provided during the project implementation and the institutional building throughout the project is a characteristic of IFP instrument, which complements the objectives of the two projects. This allows the enhancement of the existing institutional and governance landscape in the specific sector/ region/ country of the project.

27 http://krishi.maharashtra.gov.in/Site/Upload/Pdf/PoCRA_PIP.pdf
28 https://www.worldbank.org/en/projects-operations/products-and-services#IPF

UDRP, Uttarakhand

For this specific project, emergency assistance was requested from World Bank after 2013 Cloud Burst and Flooding disaster in the state. With this background, the lending instrument used was Specific Investment Loan (SIL), which provides flexibility to build human and institutional capacity and the construction of infrastructure (in this case infrastructure in terms of roads, highways, bridges, housing reconstruction and public buildings).[29]

An indicator of effective implementation of the financing provided can be seen from the provision of additional financing for the project. The additional financing was requested by the Government of India for scaling up two components of the Parent Project (i.e., rural road connectivity and capacity building). The state's disaster management capacity has been enhanced as a consequence of the project, which has also translated into enhanced policies and institutions.[30]

PoCRA, Maharashtra

IFP provides guarantee financing, which acts as a catalyst to help governments to attract private-sector investments and commercial financing, being aimed at through this project as well. The aim is to allow PoCRA interventions to act as a blue-print to allow financial intervention in different activities through other programs, that work under the state's drought proofing objective. PoCRA funding is also aimed to be used by government of state of Maharashtra to leverage its resources with complimentary funding from Green Climate Fund (GCF), to scale up adaptation action in the state for rain-fed agriculture.[31]

6.5 Barriers being tackled

Both the projects under consideration tackle the major barriers of weak institutional and governance structures in the country. The major barriers addressed:

- *Weak Adaptive Capability:* The country's sectoral/ regional structural workings are not developed effectively to adapt to changing climatic conditions. With increasing impacts of climate change, the different sectors (in this case agriculture sector or disaster management) response to extreme climatic events is underdeveloped. The PoCRA project was developed with the short term plan of emergency response to climate variability and longer term action of strengthening the state's agricultural systems' capacity to cope, respond and recover from climate disturbances. UDRP was also designed with the same aim of building the resilience of disaster management in the state.

29 http://documents1.worldbank.org/curated/en/343161468268772952/pdf/817120PAD0Indi0100OUO0900Box379845B.pdf
30 http://documents1.worldbank.org/curated/en/318001551063686694/pdf/India-Uttarakhand-Disaster-Recovery-Project-Restructuring-and-Additional-Financing.pdf
31 http://documents1.worldbank.org/curated/en/704731519959668277/pdf/India-Maharashtra-PAD2483-PAD-02072018.pdf

- *Institutional capacity of state agencies:* The weak governance and institutional architecture of state government stakeholders has many times resulted in intensifying the impact of climatic events. With this in mind, the projects developed aim to strengthen the institutional capacities of the different sectors/ regions involved. For example, a component of PoCRA has been developed with the aim to strengthen the institutional capacities of regional level agriculture intervention through the establishment and capacity development of VCRMC. VCRMCs are developed as community level institutions to allow climate resilience through all interventions.
- *Lack of technical capacity and skills:* The weak technical capacity of different stakeholders in the sectors under consideration, also points out the barrier addressed through the projects. ICF has been provided with the long term aim of improving the technical capacity of the state in managing future disaster risks (in case of UDRP project) and building the resilience of the agriculture sector to climatic events (in case of PoCRA project). Both the projects also address the barrier of lack of local skill of stakeholders. For instance, the PoCRA project is aimed at enhancing the skills of smallholder farmers to adapt to climatic disturbances, which their failure to do previously was causing low productivity from the agricultural sector in the state.
- *Climate risk management:* Another major barrier addressed is at the national level, where the project is designed to support disaster and climate risk management by translating national risk mitigation strategies into effective policies and plans and strengthening the institutional capacity for disaster management and other sectors (for example agriculture sector in case of PoCRA) to climatic events.[32]

6.6 Quality of the cooperation

The projects under consideration show the cooperation between an international donor and sub-national governments. The factors that play an important role in contributing to the success of cooperation:

- The international support is designed to ensure interlinked challenges are being addressed in the specific sectors under consideration. Climatic impacts are being addressed from a needs- based perspective.
- The financial intervention is supported by the idea that the highest level of authority in the sector/state are in need of comprehensive, systematic, and long-term approach to cope with changing climate. This is supported by the design of the projects with focus on the long term action, especially with respect to strengthening the capacity of the stakeholders. Developing stronger institutional and governance structures in the specific states, are aimed to allow better preparedness and stronger adaptive capacity to future climatic events or disasters.
- ICF enables greater recognition of the barriers that need to be addressed, and through a multi-sector approach, enables broader targeting of the issues.

32 http://documents1.worldbank.org/curated/en/480291468043736445/pdf/813290PID0P14600PUBLIC00Box379832B.pdf

› The social dimension of ICF allows a wider variety of stakeholders to benefit from the funding provided. With a larger community impact based methodology of implementing the projects, ICF enables greater interaction with on-ground stakeholders.

Wind turbines in Western Cape
by Charl Folscher

CHAPTER SEVEN

Case study 5: South Africa

Building capacity in South Africa to access international climate finance

Authors:

Samantha Keen, Elin Lorimer and Harald Winkler (University of Cape Town)

The scope of this case study focuses on public policy[33] to facilitate access to finance in a timeous manner by a broad range of stakeholders in order to fund adaptation actions over the long term (DEFF, 2020). The aim of this case study is to understand current policy to build capacity for a broad range of stakeholders to access and absorb funding for adaptation **so as to enable substantial flows of climate change adaptation finance from various sources[34]** (DEFF 2019), and the relevant role played by domestic policy and international climate finance and capacity and technical support.

There is an acute shortage of adaptation projects in South Africa and funding for adaptation lags behind funding for mitigation. International funders claim that of their committed financial support to South Africa in the years 2014 to 2018, 1% of the committed amount targets adaptation activities, 6% target activities with both adaptation and mitigation benefits, with the remainder is offered for mitigation activities (Atteridge, in Winkler et al. forthcoming). Even if an accounting approach that includes domestic public budgets is included, adaptation-focused funding is a fraction of finance targeting mitigation activities. For the years 2017 and 2018, 7% of climate funding from international and domestic sources is estimated to target adaptation, and 13% to target activities with dual adaptation and mitigation benefits (Cassim, Radmore, Dinham, & McCallum, 2021). In answer to the urgent need for adaptation projects with locally nuanced interventions that deliver sustained impact, South Africa is building capacity for bottom-up development of climate project proposals in the public and private sector.

Central to SA's approach for provincial and local government is the bottom-up identification and understanding of vulnerability to the impacts of climate change, how to respond to this vulnerability and the design of appropriate interventions. This means that the context of local vulnerabilities and opportunities for increasing resilience, resources for intervention and absorptive capacity to execute adaptation projects is integral within the conceptualisation, design and development of proposals for adaptation projects.

33 The term 'public policy' as it is used in this case study includes the laws, regulatory measures and courses of action being taken by decision makers in national government and its agents.

34 National policy that addresses adaptation are listed below. The first two address both adaptation and mitigation.
National Climate Change Response White Paper (DEA 2011)
The draft South African Climate Change Bill (DEA 2018)
The National Climate Change Adaptation Strategy and Plan (DEFF 2020)
The recent draft Climate Change Bill (DEA 2018) and National Climate Change Adaptation Strategy and Plan (DEFF 2020) can be described as framework policy for the reason that they describe the institutional process and provision of resources for future climate action.

The DFFE is collating a portfolio of climate project proposals targeting priority vulnerabilities that should be ready for funding, developed by municipal and provincial government through the process of a subnational training programme. In terms of international cooperation, technical support for this programme is provided under a bilateral cooperation agreement with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

In the private sector, the identification of projects that can attract climate finance is underway in a process that will culminate in the development of a pipeline of public-private partnership project proposals for the Green Climate Fund (GCF). This multi-phase process started with capacity building to identify existing private sector initiatives with evidence of achieving desired adaptation outcomes and show promise for upscaling and aggregation. This process is being led by a partnership between the South African National Biodiversity Institute (SANBI) as a National Accredited Entity and the National Business Initiative (a business organisation), funded by readiness funding from the GCF.

Capacity building to provide small grants targeting highly vulnerable communities will require further innovation of the small granting system. SANBI, as SA's National Implementing Entity (NIE), is working on proposed innovations which build on experience from the first 'Enhanced Direct Access' project globally and one of two projects[35] that that pioneered implementation of the direct access funding mechanism. The Adaptation Fund (AF) funded South Africa's 'Community Adaptation Small Grants Facility (SGF)' project with a grant of USD 2,4 million (Adaptation Fund, 2019). The SGF established a small granting mechanism to make funding available within the NIE to provide climate finance directly to local organisations. Methodological development is taking account of learning in the SGF and from a broad range of stakeholders in the South African adaptation system for potential upscaling through the GCF. Innovations that are being considered include varying small grant size, project duration, associated fiduciary and project reporting responsibilities and capacity and compliance requirements at varying levels of responsibility, among others. This process of capacity building spans project funding that is in effect being stitched together from different sources. Learning from experiences in the SGF project was funded by the AF; readiness funding provided by the GCF provides for preparation and design for small granting going forward; the Government of Flanders is supporting institutional capacity at the NIE by funding a team that focuses on developing project proposals with a view to secure financing from the GCF and AF for future adaptation projects.

The assessment below follows a qualitative approach to describe national government and NIE efforts to build capacity. It draws on consultation with expert stakeholders via bilateral interviews, a public national workshop in which the NDA and NIE talked about progress and plans in this regard, and a desktop review of peer-reviewed and grey literature, mostly from southern Africa, over the period from September 2020 to March 2021.

The assessment looks at select dimensions of the policy and international support, in response to topics of interest within a broader case study of climate finance instruments, policy processes and international cooperation. It does not constitute a comprehensive catalogue or description of capacity building for accessing climate finance in South Africa.

35 The second direct access project funded by the AF was conceptualized and is being led by a district municipality in South Africa's uMngeni Catchment.

7.1 Public policy under study

The policy under study includes current activities led by the national Department of Forestry, Fisheries and the Environment (DFFE), (previously known as the Department of Environment, Forestry and Fisheries (DEFF) and before that as the Department of Environmental Affairs (DEA)), and its government agency, SANBI to enable access to climate finance for a broad range of stakeholders. These activities include 1.) training for subnational authorities to package proposals ready for climate finance, 2.) building technical capacity for the process of building a pipeline of project proposals for the GCF, and 3.) proposed innovation for enhanced direct access to climate finance in the form of small grants, and 4.) support to SA.

7.1.1 Actors involved and respective roles in the case study

7.1.1.1 National government (federal or subnational)

DFFE is SA's Focal Point to the UNFCCC and plays a central coordinating and policy-making role in environmental conservation and protection in South Africa.

The South African National Biodiversity Institute (SANBI) is the NIE and national Accredited Entity lead for adaptation in South Africa. Historically, SANBI is the government agency that coordinates research and monitors and reports on the state of biodiversity. SANBI was accredited to the AF in 2011 and to the GCF in 2016. SANBI's mandate more recently includes developing and implementing innovative approaches to climate change adaptation with a focus on vulnerable communities (SANBI, 2017).

7.1.1.2 International donor(s)

This case study focuses on capacity building efforts supported by the international donors through the arrangements that are described below.

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), of Germany implements the Climate Support Programme (CSP) as part of the International Climate Initiative (IKI) which is funded by the Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMU). CSP has in former phases provided support for the development of the country's National Climate Change Response Policy (CSP 1) and the draft National Climate Change Adaptation Strategy and Plan (CSP 2), and most recently (in CSP 3) technical support and capacity building support for the fourth phase of the Local Government Climate Change Support Programme (LGCCSP4) (GIZ, n.d.). CSP 3 progressed work on the draft National Climate Change Bill with technical and logistic support for public consultation processes in the nine provinces (GIZ, n.d.).

The GCF's readiness programme provided support to SANBI to strengthen its systems and for GCF project proposal development processes. These readiness activities included SANBI partnering with the National Business Initiative (NBI) to engage the private sector in South Africa's GCF proposal development process. SANBI has submitted three concept notes to the GCF, out of a current pipeline of seven projects.

The AF, a Special Fund established under the Kyoto Protocol, and now serving the Paris Agreement (UNFCCC, 2021), provided full cost grant financing for the South African Community Adaptation Small Grant Facility, which piloted 'enhanced' direct access. South Africa exhausted the initial USD 10 million country cap for funding from the Adaptation Fund, although the AF Board has recently raised the country cap to USD 20 million for single-country project funding (Adaptation Fund, 2021).

The Government of Flanders has awarded a subsidy to SANBI for the project 'Unlocking climate finance for climate change adaptation'. The funding will be used to strengthen the core institutional capacity of SANBI by funding a team that focuses on developing project proposals with a view to secure financing from the GCF and AF for adaptation projects (General Representation of the Government of Flanders in Southern Africa at the Embassy of Belgium, 2020).

7.1.1.3 Private sector actors

Private sector actors involved in activities linked to adaptation are the target of the NBI-SANBI partnership to develop a pipeline of proposals to the GCF for public-private partnership projects. The private sector is being considered increasingly relevant to funding adaptation and tracking private sector spending on adaptation is complex but is becoming increasingly important[36].

The National Business Initiative (NBI) has partnered with SANBI to identify specific projects funded by the private sector that can contribute to a national pipeline of adaptation, biodiversity and ecosystem-based adaptation actions. The objective of the partnership is to alleviate the acute shortage of domestic adaptation projects. The NBI-SANBI collaboration hosted a series of workshops in three phases to 1.) build awareness of stakeholders about climate science, adaptation and finance, 2.) develop a community of practice of multiple stakeholders with an understanding of what projects are both suitable for adaptation finance and can combined to provide impact at the necessary scale, and 3.) identify few high promise projects for incubation and further development (NBI, n.d.). SANBI and NBI will provide support to companies in writing proposals seeking GCF funding for biodiversity and ecosystem-based adaptation projects.

36 DFFE is working with the National Treasury Department developing a taxonomy for climate finance and this will include for the private sector.

7.1.1.4 Others

South African Local Government Association (SALGA) was technical partner with GIZ in the fourth phase of the Local Government Climate Change Support Programme (LGCCSP4).

The Adaptation Network, a multistakeholder network for organisations and individuals involved in adaptation work in South Africa, has functioned as the primary point of consultation with civil society organisations by government on adaptation issues in South Africa. Funding support for the functioning of this network is being provided via the Government of Flanders partially through their support for SANBI.

7.1.2 Partnership between the national government and international donor(s)

The Local Government Climate Change Support Programme (LGCCSP) funded under cooperation agreement with GIZ was launched in 2014, with phases I-III over the first five years to support municipalities to build climate resilience.

Support for SANBI's "Unlocking climate finance for climate change adaptation" project by the Government of Flanders, which falls under their 2017-2021 Country Strategy, was announced in December 2020.

The Community Adaptation Small Grants Facility was approved by the AF in October 2014, it began in September 2015 and, after no-cost project period extensions, the project is set to close in 2021.

GCF readiness funding to build SANBI's capacity to develop GCF funding proposals and manage and monitor GCF projects in South Africa was approved in 2017, for a period to 2020, and this work has continued into 2021.

7.1.3 Social dimensions

Inequality in the distribution of income and wealth brings about inequality of impacts from climate shocks, as has been depicted in the socio-economic impacts experienced since the onset of the COVID-19 pandemic. For this reason there is a strong component of just transition to adaptation in South Africa. Adaptation represents an investment opportunity to protect poor and vulnerable communities. Gender inequality and intergenerational relationships are an important part of the adaptation interventions. Gender aspects are highlighted; the LGCCSP4 draft training manual for subnational authorities for 'Financing Local Climate Action in South Africa' promotes formal gender impact assessments to inform project feasibility studies. Through the Flanders-funded project 'Unlocking climate finance for climate change adaptation' SANBI aims to raise awareness about women's vulnerability to climate change and to ensure women's participation in these programs".

7.2 Climate finance instrument

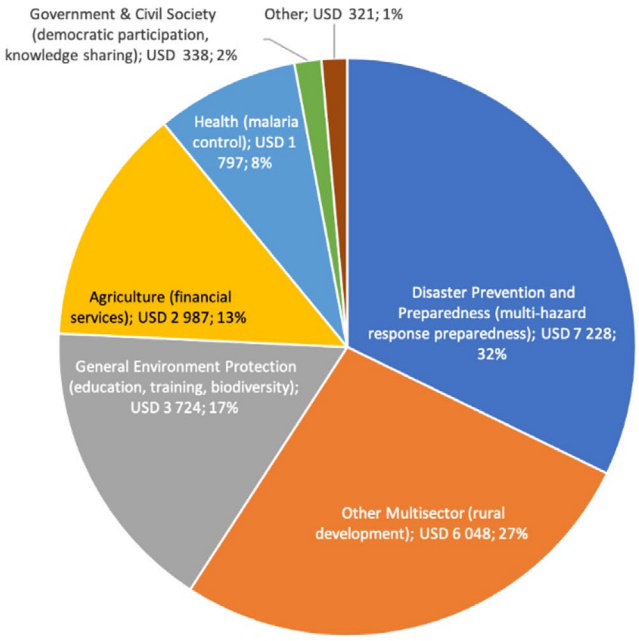
7.2.1 International climate finance[6]

Historically most international funding for climate action in South Africa has gone to mitigation (93% in the period 2014 to 2018), for the most part through debt instruments (Atteridge, in Winkler et al. forthcoming). Of the international funder-reported finance for mitigation activities for the period 2014-2018, 87% was offered though loans, of which just over half (53%) were concessional. Equity and shares in collective investment vehicles made up 3% of the total finance, of which two thirds had concessional features. Grants provided the remaining 11% of the international funding for mitigation activities. Put in other words, 42% of the all international funder reported finance (2014 to 2018) for mitigation has no concessional component.

Low levels of grant funding have been made available to support primarily adaptation-oriented activities in South African, with only US$22.4 million committed between 2014 and 2018, and almost half of that amount committed in 2014 (Atteridge, in Winkler et al. forthcoming). While this number excludes activities with mitigation and adaptation co-benefits, and broader development activities that would build community reliance, this nevertheless indicates a lack of prioritisation of adaptation action by either funders or the South African government.

GRAPH 3

Sectoral breakdown of finance supporting adaptation (exclusively) 2014 to 2018, (amounts shown in thousands, USD)



Adaptation funding has been provided almost exclusively through grants. 88% of the international funding during 2014 to 2018 was offered through grants, and the remaining 12% was a single market rate loan (ibid).

Demonstrating returns on private investment in the adaptation space, as well as the additionality of climate-related inputs remains a challenge. There is potential for the development of adaptation projects that could provide returns for investors. A specific example identified within the SANBI-NBI partnership to identify and develop prospective public-private partnership projects for climate funding is an ecosystem restoration project in the Eastern Cape in South Africa, where the transformation of savanna back to thicket vegetation is bringing about carbon sequestration benefits and an improvement in soil quality and the small-scale farmers report an increase in the land's productivity.

The potential for blended climate finance to attract private investment, including through micro-finance, small grants or guarantees are being considered.

7.2.2 Factors and conditions which have contributed (or could contribute) to the success of the instrument adopted;

Long-term support for climate finance projects have provided for adaptiveness, innovation and iterative learning in the programme for training subnational government entities and in building capacity for small granting.

'Direct access' through the AF has meant that instead of being accessed and programmed by international or multilateral institutions, SANBI as an accredited national entity has been able to access ICF, giving increased agency of the ways the funds were programmed and spent. SANBI's commitment to develop and innovate funding mechanisms for small grants that can be accessed in highly vulnerable communities has supported a series of international funding with overlapping objectives, with the expressed objective of scaling up and more widely targeting highly vulnerable rural communities. This includes the AF for small granting, readiness funding from the GCF for developing a climate project proposal pipeline, and the Government of Flanders subsidy to fund a SANBI 's institutional capacity. The AF's provision of full cost grant funding and the higher relative level of agency retained by the NIE through direct access has enabled innovation in the financing mechanism. Innovation is made possible by rich learnings from the SGF and feedback from civil society organisations via the Adaptation Network in South Africa, that that offers opportunities for bottom-up ownership of adaptation interventions. However, the high personnel requirements and concomitant administrative costs, as well as the stringent requirements of international climate finance continue to make this a challenging space to fund.

The GCF readiness funding activities are still in progress and the Government of Flanders subsidy was announced in December 2020.

7.3 Policies that may enable or constrain cooperation[11]

Building the capacity of subnational authorities to access climate finance supports overcoming some capital constraints. While subnational authorities can access fiscal grants that can be used for some climate actions, none of these intergovernmental grants are climate-specific. They are generally conditional and aimed at capital projects producing outputs (assets) rather than outcomes (Petrie et al., 2018). Many local authorities have human resource shortages and technical knowledge limitations that reportedly constrain them from making successful applications (DEFF, n.d.).

A complementary initiative in terms of mainstreaming climate into service delivery grant applications is the National Treasury's offer of the Infrastructure Skills Development Grant which can be used to fund capacity building for climate change mainstreaming in municipal planning offices (Petrie et al., 2018).

7.3.1 Limited resources and institutional capacity to implement sectoral interventions

As in many countries, responsibility for responding to climate change lies with the department for the environment (DFFE), which is a politically weak department, yet other national departments need to implement the actions, for example national departments for water, energy, transport, and agriculture. Capacity building at the subnational level is one of the initiatives to address limited resources and institutional capacity to implement sectoral interventions. DFFE's offer of training to subnational colleagues to package projects in a manner that is able to attract funders into the domestic adaptations received an 'overwhelming' positive response. DFFE reported that subnational and other stakeholders, not necessarily in government, want to gain this expertise. DFFE's approach to building capacity for implementation included by developing a generic methodology with all the critical elements that any funder would be looking for, for example how to take a logical framework approach and present a strong rationale as to why the proponent needs to undertake the proposed process, and rolling out training and support during the project development process. In the process of moving from policy and planning to implementation and the building of a portfolio of project proposals that are ready for funding, DFFE is itself building its own capacity. DFFE staff in the project report that as they work with more subnational colleagues they identify more impediments that hinder achieving desired adaptation outcomes. This has been instructive to identify at the institutional level how to improve the working of public institutions in the domestic adaptation system.

The Government of Flanders funding for institutional capacity means that SANBI is able to double the number of staff dedicated to working on climate finance for adaption from three to six people and to build capacity through a mentor process over a period of five years.

7.3.2 Information gaps

Capacity building to develop project proposals ready for funding for subnational authorities includes the provision of information resources to create understanding of what creates the vulnerabilities, the nature of the vulnerabilities, and how to respond. A 'National Climate Risk and Vulnerability Assessment Framework' (funded by the GIZ in a 1-year research project) provides information to guide assessment of vulnerability and weighting for prioritizing responses (DEFF, 2020).

In the process to identify public-private sector partnership projects, information gaps identified included, among others, what activities can be identified as being 'adaptation' measures and have the potential to access climate finance.

With regards to tracking adaptation funding, more work is needed on developing metrics, possibly as part of a taxonomy being developed by the national Treasury, as signaled in a technical report on financing a sustainable economy (Treasury & DEFF, 2020).

7.3.3 Public finance and capital constraints

Capacity building at the subnational level is one of the initiatives to address limited public finance for climate activities and dedicated personnel.

7.3.4 Perceived conflict with development

The response to climate change vulnerability and risk is inseparable from development activities. At the subnational level, adaptation interventions are found to be directly linked to service delivery. One example is the link between disaster risk, stormwater management and the municipal response to increase climate resilience, where an increase in river water volume as a result of a changing rainfall regime might necessitate building a bridge of higher elevation than because of increased river flow, to reduce flood damage. The cost of the bridge is perceived to be for 'service delivery', while the elevated height would be the additional adaptation component (DFFE staff, personal interview 1 October 20202). Another example of an adaptation component in service delivery might be the need for engineering assessment to mitigate against heat damage by melting bitumen on tar roads. For local authorities that need to find funding for the additional adaptation component of service delivery, the requirement to develop a climate rationale to source climate finance creates an additional administrative and technical resource burden. Local authorities are reported to struggle to fund adaptation elements of development.

7.4 Quality of the cooperation

Factors and conditions which have contributed (or could contribute) to the success of the cooperation between national government and international donor(s)

Cooperation between national government and international donors may in some instances not be in the interest of the national government or society. One example of this relates to weather-related insurance. Multilateral banks, international development donors, and the insurance industry are encouraging developing countries to increasingly use insurance to finance recovery from weather-related disasters (New et al., forthcoming). A proposal is emerging, that where anthropogenic climate change is associated with increased insurance premiums, there would be a case to be argued for a contribution from international climate funds (ibid). The proposal lays out the argument that, in the absence of properly accounting for the relationship between anthropogenic climate change, related disaster risk and the cost of insurance, by pushing for developing countries to rely on insurance for weather damages, developed countries are shifting responsibility for the costs of addressing climate change to those that bear the impacts (ibid).

Co-financing can serve as an indicator of finance leverage, intervention sustainability or a level of country ownership; however as a broadly applied requirement, co-financing favours regional and international financial intuition Accredited Entities over national entities (Omari-Motsumi & Barnett, 2019). Governments without ready access to capital and other finance can offer non-financial contributions that are good indicators for finance leverage, intervention sustainability and country ownership. For example, the mainstreaming of climate considerations in governance and planning can bring about future leveraging of public budgets, or mobilising in-kind support for projects can derive local ownership and protection of projects (ibid). It follows that recognition of co-financing in the sense of co-contribution may create more opportunities for cooperation and strengthen cooperation in a more holistic sense.

Support for institutional capacity within government and government agencies is shown to enhance cooperation. The AF and the GCF offer grants to support the accreditation processes for access to the funds, and dedicated readiness funding to Direct Access Entities. GCF readiness funding is being used for institutional capacity to support project identification, build partnerships and for proposal development to develop a pipeline of project proposals for the GCF. Accreditation with the AF has also allowed national entities to build their capacity and subsequently fast-track their accreditation with funds such as the GCF, which have more stringent accreditation and funding requirements.

Retaining technical capacity can be a challenge for direct access entities that rely on project funding. Readiness resources provide much needed financial support in the period before project funds are available. Securing predictable long-term funding will reduce risk of eroding technical capacity through loss of staff in periods between periods funded by pilot and later by scaling-up projects.

7.5 Final considerations and suggestions for next steps

The initiatives for building capacity mentioned in this case study are long term processes. It also takes time to build an evidence base of benefits to secure fiscal budget for public sector activities. A common theme emerging in conversations with stakeholders across the adaptation system is the need for predictable and sustained funding, especially for building and retaining institutional capacity, however international climate finance remains uncertain for the medium- to long-term. This problem raises the question:

What is the scope for innovation to secure reliable flows of finance to the AF and GCF under operating entities of the financial mechanism under the UNFCCC and its Paris Agreement?

The tendency of donors to want to show that finance is leverage limits opportunities to mobilise funds for adaptation. Adaptation projects are commonly funded through the public sector (Cassim et al. 2020) and achieving financial returns on investment in adaptation is a challenge. Perhaps other funding mechanisms could be blended, such as at the small scale, could small grants be attractive to public-private partnerships? Thinking more broadly about the potential for linking financial mechanisms, is there potential to explore the emerging index-based insurance and other forms of micro-finance to small granting?

The AF and the GCF are able to offer full-cost grant finance. Governments with constrained budgets and limited access to capital are denied access to development banks and donors that require co-financing. Recognising benefits in kind that can be well achieved by bottom-up co-creation of adaptation interventions, for example local support for projects, and that build local ownership and intervention sustainability can enhance transformation impacts. Understanding of these types of transformative impacts may add bottom-up relevant nuance to conversations of transformative action with international climate finance and can be brought into indicators for assessing climate finance.

Monsoon season in Tamil Nadu, Chennai, India
by Ganesh Partheeban

CHAPTER EIGHT

Discussion

According to the literature review, there are four overarching factors that contribute to the successful delivery of climate finance for mitigation and adaptation and that support policy development:

i. the structure of climate finance;

ii. host country conditions;

iii. the capacity of implementing entities;

iv. the strength of the cooperation.

The case studies developed by the SNAPFI partners provide empirical evidence of many of these factors (as shown in Table 8), which we highlight with selected examples below.[37]

Note that the fact that a factor is not tallied in the table does not mean that that particular factor is not relevant to the case study(ies); it simply means that it was not mentioned. Factors marked with an (*) were identified in the case studies as additional factors contributing to the success of climate finance and policy development.

37 We have repeated extracts from the case studies to provide examples of how the factors were mentioned in the case studies. The discussion does not replace the deeper descriptions and ideas found in each case study.

TABLE 8

Factors and conditions that support the successful delivery of climate finance and policy development, as identified in the case studies

	Brazil	China	Kenya	India	Indonesia	South Africa	Total
Structure of climate finance							
Key role of technical assistance	x	x	x	x	x	x	6
The right types of financing for the right purposes			x	x	x	x	4
Processes and tools for selecting projects to be financed				x		x	2
Leveraging of private capital				x			1
Leveraging of international capital*				x		x	2
Hiring respected service providers*	x	x					2
Use of local resources*	x						1
Pilot projects with first movers*		x				x	2
Host country conditions							
Integrating climate change into national plans & budgets	x	x	x	x	x	x	6
Accountability systems							0
Engagement with civil society, local government, and the private sector		x	x	x	x	x	5
Trading partners							0
Political, legal and economic environment*		x	x	x			3
International environment*	x	x					2

	Brazil	China	Kenya	India	Indonesia	South Africa	Total
The capacity of implementing entities							
The capacity of implementing entities				x		x	2
High-level support for the cooperation project*	x		x		x	x	4
Strength of the cooperation							
Coordination among government entities	x			x	x	x	4
Coordination among donors	x				x		2
Coordination between government and donors							
Alignment between the donor and the government							
Common objectives	x			x	x	x	4
Agreement on a framework for reviewing & monitoring impact							0
Coordination between the government and donors							
Framework for coordination	x						1
Linking of aid to development planning & budgeting							0
Communication of intended aid flows in a timely manner							0
Multi-year horizon	x			x	x	x	4
Prior working experience*	x					x	2
Engagement with permanent staff*	x					x	2

* New research propositions

Source:the authors, based on Vivid Economics and the case studies developed by the SNAPFI partners

8.1 The structure of climate finance

The first supporting factor is the structure of climate finance, which refers to the type of climate finance provided and the process for selecting projects.

8.1.1 The key role of technical assistance

The international partners provided technical assistance in all six case studies analysed, providing capacity building for stakeholders of the recipient country, supporting the development of climate policies and regulations, seeking to change misconceptions about climate finance, lobbying to amend regulations that were not conducive to green finance and building technical capacity to access finance.

To *address knowledge gaps*, the international partner in **Brazil** facilitated the delivery of a sustainability course for the national partner's staff, bringing in professionals from the academic, financial and NGO sectors, and customising it for the needs of the staff. In **Kenya**, the Kenya Bankers Association (KBA), in partnership with FSD Africa and the FMO, has launched an e-module on green bonds to educate potential issuers, investors and financial intermediaries on how green bonds work and what benefits they might bring. In **India**, the government of Maharashtra and the World Bank have developed an institutional architecture to assist farmers in adopting climate-resilient technologies.

Contributing to the *development of climate-related policies and regulations*, the Global Green Growth Institute (GGGI) produces policy recommendations for the Government of **Indonesia** on renewable energy and energy efficiency, which are then used as background studies for the country's national plan. In **Kenya**, the Kenya Bankers Association (KBA), in conjunction with the Nairobi Securities Exchange, FSD Africa, FMO and the Climate Bonds Initiative (CBI), have developed a Green Bond Issuer's Guide, which the Capital Markets Authority (CMA) later used to produce a Policy Guidance Note on Green Bonds, outlining green bond requirements.

To *change misconceptions about green finance*, the Climate Policy Initiative (CPI) and the Climate Bonds Initiative (CBI) have produced research and empirical evidence, partly in cooperation with organisations in **China**, in order to reduce the perception that there is a trade-off between green investments and financial performance.

To *change regulations* that hinder climate finance, the organisations involved in the Green Bonds Programme in **Kenya** have set up an Advisory Committee that lobbied for green bond investors to be exempted from withholding taxes, eventually causing the Finance Act to be amended to include this exemption.

To *build technical capacity to access finance*, in **South Africa**, the GIZ implemented the Climate Support Programme, which is part of the International Climate Initiative (IKI), that gave technical support for the implementation of trainings within the framework of the Local Government Climate Change Support Programme (LGSP). The trainings at municipal level in 65 municipalities from 17 districts on mitigation and adaptation as well as climate financing assisted municipalities in conceptualising and costing climate change projects and developing proposals ready for external funding. Also, the South African National Biodiversity Institute (SANBI) received funding support to set up as a national implementing entity (NIE), and has used their experience to provide technical assistance to other African entities trying to accredit to the Adaptation Fund (AF).

Overall, these different technical assistance initiatives, largely focused on capacity building, have contributed to create an enabling environment for the development and implementation of climate policies, and for the channelling of finance toward climate-related goals.

8.1.2 The right types of financing for the right purposes

Although the majority of the case studies have focused on the provision of technical assistance, other climate instruments have been employed by the international partners in the cooperation projects analysed.

For example, in **South Africa**, the Government of Flanders is providing grant funding for building institututional capacity at the South African National Biodiversity Institute (SANBI), allowing it to double the number of staff dedicated to working on climate finance for adaptation and to build technical capacity through a 5-year mentor process. Also, SANBI has direct access to the Adaptation Fund due to its role as an accredited national entity. The 'direct access' modality and provision of full cost grant gave SANBI greater agency over how the money is spent as well as to innovate in its own approach to small grant funding, piloting 'enhanced direct access' for beneficiaries in highly vulnerable communities.

In **Indonesia**, the Asian Development Bank conducts policy-based lending as part of the Sustainable and Inclusive Energy Programme (SIEP), which produces formal regulations on renewable energy and energy efficiency, generally in ministerial regulations and, on occasion, in presidential regulations.

In **India**, the Investment Project Financing (IPF) provided by the World Bank has enabled both the construction of physical infrastructure and the improvement of human and institutional capacity in Uttarakhand.

Additionally, although it was not the objective of the case studies to discuss which types of climate finance were more appropriate for which purposes and regions, some authors have discussed how the classifications of developing countries helps to attract different types of international climate finance and what the implications of this are for these countries.

For instance, in **Kenya**, a lower-middle-income country, local project developers have greater access to grants or concessional loans from multilateral development banks and international donors, particularly for the energy sector. Hence, it is more advantageous for Kenyan energy companies to obtain international finance, at favourable conditions, than issue green bonds to finance their operations, resulting in a crowding-out of private finance and a barrier to the development of a green bond market.

In contrast, as **Indonesia** is part of the G20 and one of the world's 15 largest economies, obtaining co-financing from international financial institutions is more complex, particularly grants, since the country is no longer a priority in development finance.

These two examples highlight the need for international donors to also assess whether international finance is contributing to leverage private finance and to create a more permanent, self-sustaining source of funding for low-carbon sectors.

8.1.3 Processes and tools for selecting projects to be financed

This factor, which seems more applicable to investment finance, was found in the **Indian** case study. Financial intervention needs in Uttarakhand were identified via a Joint Rapid Damage Needs Assessment conducted by the Global Facility for Disaster Reduction and Recovery, the World Bank and the Asian Development Bank (ADB) after the 2013 flooding disaster that hit the region. In Maharashtra, the Village Climate Resilient Committees selects beneficiaries for individual benefit activities, and thus they rely on the participation of local communities.

In **South Africa**, the Local Government Climate Change Support Programme aimed to build climate resilience by undertaking hazard assessments (of current climate hazards) and risk and vulnerability assessments (of the sectors impacted by the hazards), identifying emissions sources and developing climate change response plans for all district and some local municipalities in the country. The assessments are a significance tool for adaptation provided for in the South African NDC, which commits to develop a vulnerability assessment and adaptation needs framework. Establishing the process (& tools) for selecting projects was an important area of learning in the pilot project for enhanced direct access, and is a theme in the National Business Initiative - South African National Biodiversity Institute (NBI-SANBI) partnership process for public-private partnership projects.

8.1.4 Leveraging of private capital

Climate change adaptation is generally less funded than mitigation activities. On this point, in the state of Maharashtra, in **India**, climate finance, in conjunction with other government initiatives, seeks to attract private-sector investments and commercial financing through the furnishing of financial guarantees and the provision of seed capital investments, thus attempting to leverage private capital for further adaptation efforts.

Additional factors related to the structure of climate finance were raised in the case studies as contributing to delivery of climate finance and policy development. We identify and discuss them below.

8.1.5 Leveraging of international capital*

In addition to leveraging private capital, some governments also seek to leverage additional sources of international finance to further the impacts of their endeavours, especially for adaptation projects and cooperation. For instance, in **India**, the state government of Maharashtra is trying to leverage its own resources, as well as those provided by the World Bank, with complementary funding from the Green Climate Fund (GCF) in order to scale up adaptation efforts for rain-fed agriculture.

A similar ambition is found in **South Africa**, where the National Business Initiative (NBI) has partnered with the South African National Biodiversity Institute (SANBI) to identify specific projects funded by the private sector that can be aggregated or upscaled, and to provide support to companies in writing proposals to build a a national pipeline of biodiversity and ecosystem-based adaptation projects seeking funding from the GCF.

8.1.6 Hiring respected service providers*

In two case studies, hiring reputable service providers to deliver cooperation projects was found to contribute to the successful delivery of capacity building. For instance, in **Brazil**, the international partner hired highly regarded consultants and institutions from the academic, financial and NGO sectors in order to provide the national partner with tailor-made international expertise. In **China**, the technical assistance providers mentioned that they brought the expertise of a well-established green bond verifier to the training sessions on green bonds so as to share international best practice experiences.

8.1.7 Use of local resources*

In **Brazil**, the international partner observed that employing local consultants contributes to implementation of the project because of their specific knowledge of the local environment.

8.1.8 Pilot projects with first movers*

In **China**, the international partners interviewed for the case study indicated that involving corporate leaders with the potential to become first movers is helpful to promote transformation. They mentioned that the Industrial and Commercial Bank of China and the M'aanshan Rural Commercial Bank received technical assistance to issue certified green bonds so as to then use the proceeds to finance and refinance low-carbon assets.

In **South Africa**, the National Business Initiative - South African National Biodiversity Institute (NBI-SANBI) partnership created a community of practice for companies to share information about existing private sector adaptation projects for upscaling, especially projects that yield returns on investment. Private sector actors whose projects are upscaled will potentially become first movers in developing bankable adaptation projects.

8.2 Host country conditions

The second contributing factor found in the literature review was host country conditions. This refers to the political, economic, and social factors that determine how well climate initiatives are adopted.

8.2.1 Integrating climate change into national plans & budgets

All six case studies mentioned having climate change embedded into national plans, although one of them (Indonesia) noted that environmental concerns are included only in national plans, and not at the sectoral or regional levels.

In **Kenya**, the government has developed and implemented a variety of policies aimed at increasing climate resilience and promoting a shift to a low-carbon development path. For example, the Green Economy Strategy and Implementation Plan identifies a number of strategies aimed at accelerating a transition towards a low-carbon pathway, while the National Climate Change Action Plan sets out adaptation and mitigation actions for the 2018-2022 period.

India has a National Action Plan on Climate Change, as well as national and state-level plans for disaster management and climate resilient agriculture. While there are overarching national missions and policies for guidance, implementation falls to the respective states.

Indonesia has an NDC and has committed to reduce emissions by 29% unconditionally and by 41% with international support. Through the Sustainable Green Growth Programme (SGGP) support, green growth objectives and practices have been mainstreamed into national economic development plans including provincial and district plans, but the implementation of green growth principles, concepts, and methodologies is still constrained by limited knowledge in the public, private, and financial sectors. The SGGP also supports compiling studies related to renewable energy and energy efficiency in order to prepare the 2020-2024 National Medium-Term Development Plan (RPJMN).

In **China**, the People's Bank of China (PBOC) released a Notice on Green Financial Bonds in 2015, outlining green labelling requirements and defining eligible projects in the Green Bond Endorsed Project Catalogue.

More recently, the PBOC, the China Securities and Regulatory Commission (CSRC) and the National Development and Reform Commission (NDRC) have put forward a revision of the Green Bond Endorsed Project Catalogue so as to align national green bond regulations and green credit guidelines with international green bond standards. In 2020, the government of China announced its intention to achieve carbon neutrality by 2060.

In **South Africa**, the National Development Plan (NDP) provides a single document guiding the country's development, and the draft National Climate Change Bill mandates implementation of assessments as part of processes identifying climate change needs and as a foundation for response plans. The Department of Planning, Monitoring and Evaluation (DPME) translates objectives in the NDP (and in the Bill, assuming that it will successfully be drafted into law) into performance targets for national departments, and the national Medium-Term Strategic Framework (MTSF) in turn translates these into key performance indicators with allocated budget, and identifies lead and implementing actors. The MTSF (2019-2024) targets five sector plans to reduce vulnerability to climate change risk (environment, health, rural development, settlements and sanitation, and provincial and local government); and mandates audit of the maintenance of municipal infrastructure resilience and readiness for climate change disasters (DPME, 2019). The MTSF provides the process to increasingly mainstream climate objectives.

8.2.2 Accountability systems

None of the case studies mentioned tracking climate-related expenditures, possibly because most adopt technical assistance as the main climate instrument rather than investment finance.

8.2.3 Engagement with civil society, local government, and the private sector

Engagement with different stakeholders may improve project implementation, particularly at the local level. Evidence in this regard is found in the **Indian** state of Maharashtra, where management of the Maharashtra Climate Resilient Agriculture Project (PoCRA) is based on a three-tier governance structure for implementation, from the state level (Department of Agriculture) to district project implementation units and village-level committees. In particular, the Village Climate Resilient Committee ensures the participation of local communities in different stages of the project, including the social audit of project activities.

Similarly, adaptation initiatives in **South Africa** also involved civil society organisations, which were consulted via the Adaptation Network, a multistakeholder network partially supported by the Government of Flanders. With regard to the private sector, as previously mentioned, the National Business Initiative (NBI) has been working with the South African National Biodiversity Institute (SANBI) to promote workshops to build awareness about climate science, adaptation and finance.

Regarding involvement of local governments, in **Indonesia**, provincial government agencies participate on the steering committee of the Sustainable Green Growth, Climate and Environment Programme, led by the Global Green Growth Institute (GGGI). Also, the state-owned energy distribution company PLN contributed to renewable energy policy implementation by providing financial support for geothermal power station projects.

Finally, a successful instance of private sector participation can be found in **Kenya**, where the strong actions of the Kenya Bankers Association (KBA), collaborating with various partners and bringing relevant decision-makers on board, was a crucial enabler of the Green Bonds Programme.

8.2.4 Trading partners

None of the case studies mentioned this factor, as none analysed trade policies.

In addition to integrating climate change into national plans and stakeholder engagement, other factors related to host country conditions were mentioned in the case studies as significant in terms of supporting climate finance and policy development, as discussed below.

8.2.5 Political, legal and economic environment*

Although not directly related to climate issues, many case studies mentioned the negative impact that adverse political, regulatory and economic conditions in recipient countries can have on the delivery of cooperation projects and climate finance.

For example, the Green Bond Programme was launched in **Kenya** the same year (2017) as presidential and parliamentary elections, a period which is often characterised by political and economic uncertainty. The political turmoil was intensified when the Supreme Court annulled election results, leading to a second election in the same year. Doubts about the regulatory and policy direction and fear of post-election violence were found to have negatively affected the start of the Green Bond Programme.

In **China**, the economic slowdown due to the covid-19 pandemic caused some banks to lower the stringency of their environmental due diligence procedures and to grant loans to carbon-intensive companies, based on the belief that this would boost economic growth.

As for regulatory constraints, the **Chinese** government had encouraged state-owned enterprises (SOEs) to reduce their debt levels, limiting their ability to issue green bonds. More recently, though, the government announced that debt levels would be maintained, allowing companies to take on new debt when existing debt expires. This move has facilitated the issuance of green bonds by SOEs.

The development of a green bond market was also limited in **Kenya**, where interest rates were capped at 4% above the Central Bank lending rate (at 9% p.a. in August 2018). As a result, potential green bond issuers were not allowed to remunerate investors with the premium that they required to make the investment attractive. In 2019, Parliament removed this cap after lobbying from the Kenyan Bankers Association (KBA) and after the International Monetary Fund (IMF) made it a precondition when renewing its credit facility.

8.2.6 International environment*

In contrast to the domestic enabling factors above, which were found to negatively affect the implementation of cooperation projects and climate finance, demands from the global environment were found to be positive influences.

For example, in **China**, the development of a green bond market has been positively influenced by strong interest from international investors seeking green investment opportunities in China. This international interest was probably one of the main drivers motivating the Chinese regulators — People's Bank of China (PBOC), the National Development and Reform Commission (NDRC) and the Securities and Regulatory Commission (CSRC) — to work together to revise the Green Bond Endorsed Project Catalogue, providing a list of eligible green activities aligned with international green bond guidelines.

Likewise, in **Brazil**, the project benefited from the fact that sustainable finance has gained momentum ("a hot topic") and that international institutional investors have been engaging with corporations and public actors more frequently on ESG issues.

8.3 The capacity of implementing entities

The third contributing factor is the capacity of implementing entities, which refers to the strength of national and sub-national institutions, as well as institutional transparency and ability.

8.3.1 The capacity of implementing entities

The case studies analysed did not explore the capacities of the implementing entities in depth, but a few examples were found.

In **South Africa**, the National Biodiversity Institute (SANBI) is well positioned to implement adaptation projects given its role as the National Implementing Entity (NIE) and National Accredited Entity lead for adaptation in the country, accredited by the Adaptation Fund (in 2011) and the Green Climate Fund (in 2016).

It is also worth noting that, among other shorter-term objectives, the projects in **India** were conceived with the clear goal of improving and strengthening the weak governance and institutional architecture of state stakeholders in the long term, for the sectors and regions involved. In this sense, a lack of capacity has been acknowledged since the inception of the projects.

8.3.2 High-level support for the cooperation project*

Four case studies highlighted the importance of having high-level support from the recipient governments when implementing cooperation projects. For example, in **Brazil**, the interest of the national partner's top management in sustainability has conferred political support for the project. In **Kenya**, the Green Bond Programme was endorsed and received critical support from the National Treasury, Capital Markets Authority and the Central Bank of Kenya. There is strong engagement from the national government in **Indonesia** to implement the project from the Global Green Growth Institute (GGGI) at provincial, district and project levels. In **South Africa**, the South African National Biodiversity Institute (SANBI) has its National Adaptation Funds Advisory Body (NAFAB) steering committee that includes government (Department of Forestry, Fisheries and the Environment, National Planning Commission and Treasury) and civil society representation and covers both their Adaptation Fund and Green Climate Fund work.

8.4 Strength of the cooperation

The fourth factor that contributes to successful delivery of climate finance and policy development is the strength of cooperation, namely internal and external coordination between development partners and recipient governments.

8.4.1 Internal coordination

8.4.1.1 Coordination among government entities

Instances of coordination among ministries, departments or regional levels were found in some of the cooperation projects studied.

In **India**, the larger and broader scale of the Uttarakhand Disaster Recovery Project (UDRP) led to Project Implementation Units (PIUs) being established for the different components of the project under specific governmental departments, such as the Public Works Department. Similarly, autonomous organisations under the state government, such as the Uttarakhand Space Application Centre, were chosen for conducting capacity building activities.

In **Indonesia**, the Sustainable Green Growth, Climate and Environment programme has a steering committee, chaired by the Ministry of National Development Planning, and comprised of representatives of the Ministry of Energy and Mineral Resources, the Ministry of the Environment and Forestry, the Ministry of Finance, the Indonesian Investment Coordinating Board and provincial government agencies, providing strategic guidance to the programme.

Across tiers of multi-level governance, in **South Africa**, the involvement of other provincial and municipal departments was achieved through the training initiatives promoted by the Department of Forestry, Fisheries and the Environment. Sectoral departments and State-owned enterprises have been identified for training in future.

8.4.1.2 Coordination among donors

In terms of coordination among donors, the international partner in **Brazil** mapped existing local initiatives in sustainability — including those initiatives funded by other international partners — before the project was designed in order to avoid duplication of efforts and maximise the use of limited resources. In contrast, in **Indonesia**, the case study highlighted the need to map projects that are financed by international donors, given that many projects have the same goals and objectives and this results in inefficient use of resources.

8.4.2 External alignment

8.4.2.1 Alignment between the donor and the government

Common objectives

The experiences of **India** and **Indonesia**, even though targeted at different sectors and stakeholders, showcase instances in which cooperation was developed with domestic needs as a priority. For example, in the Indian state of Maharashtra, assistance efforts focused on the agricultural sector, given its high economic importance in the region. In **Indonesia**, the Global Green Growth Institute (GGGI) was flexible enough to allow the Indonesian government to select sectors other than the initial focus of the international donor (the Government of Norway, which was financing the GGGI), which was the forestry sector.

In **South Africa**, the funds accessed, such as the Adaptation Fund, the GIZ and the Government of Flanders, were already aligned with the objective of targeting high levels of vulnerability. The activities supported by the Adaptation Fund and the GIZ were bases on the risk and vulnerability assessments. The Government of Flanders funding strategy includes within the context of its theory of change recognition that empowering the most vulnerable groups is important for inclusive development.

In **Brazil**, the project was designed to meet the expectations of both the recipient country government and the donor, developing tailor-made solutions based on the needs of the national partner.

Agreement on a framework for reviewing & monitoring impact

None of the case studies mentioned the practice of reviewing and monitoring impact.

8.4.2.2 Coordination between the government and donors

Framework for coordination

The case study from **Brazil** mentioned that having a comprehensive project plan, developed in cooperation with the national partner, detailing all activities, responsibilities for execution and deadlines, has helped to ensure the commitment of the national partner to implementation and to embed the project in the bureaucracy of the institution.

Linking of aid to development planning & budgeting

None of the case studies mentioned this factor, possibly because most adopt technical assistance as a climate instrument rather than investment finance.

Communication of intended aid flows in a timely manner

None of the case studies mentioned this factor, possibly because most adopt technical assistance as a climate instrument rather than investment finance.

Multi-year horizon

Cooperation projects focusing on technical assistance (or having a capacity building component) do seem to occur over longer periods. For example, in **Brazil**, the international partner's team is expected to work on the ground for several years in order to build a relationship of trust with the national government. Likewise, in **Indonesia**, the Asian Development Bank and the Global Green Growth Institute have also been working with the national government since 2013 when Phase I of both projects started.

A multi-year horizon is also found in **India**, where both projects analysed take a long-term approach to improving the coping capacity of the target areas and sectors: in Uttarakhand, the project was approved in 2013 and, after provision of additional funding in 2019, is scheduled to end in 2022; in Maharashtra, cooperation started in 2018 and shall last for over six years, with an expected end date of 30 June 2024.

A similar pattern exists in **South Africa**, where the efforts to build capacity to access and absorb climate finance are multiple-year initiatives. Indeed, stakeholders advocate the importance of this, calling for 'stitching together' funded projects where possible to retain momentum and enable upscaling, and to support institutions to retain technical capacity. Funders and recipients seem to agree that holistic and systematic change takes time.

Two additional factors were identified in the case studies that contribute to the quality of the cooperation between international partners and national governments:

Prior working experience*

Prior collaboration experience between international partners and national governments was found in two case studies to contribute to the quality of the cooperation. In **Brazil**, it was mentioned that prior experiences of collaboration between the international partner and the national partner had contributed to project implementation, as the international partner was already familiar with the national partner's structure, processes, procedures and staff.

Likewise, in **South Africa**, cooperation agency GIZ and the Government of Flanders have track records of providing support, i.e. the Adaptation Fund accreditation process and SANBI's accreditation with the Green Climate Fund.

Engagement with permanent staff*

Seeking to ensure the continuity of the cooperation project and maintain project independence from presidential mandates, the international partner in **Brazil** favours engaging with, and providing training to, the permanent staff of the national partner rather than professionals that are appointed by the administration in office, who are likely to remain for shorter periods of time. In **South Africa**, the Government of Flanders funding means that the South African National Biodiversity Institute (SANBI) can employ more permanent staff with time for implementation, not just for working on project funding.

CHAPTER EIGHT

Conclusion

This year's international study sought to analyse and investigate the enabling role of International Climate Finance in climate policy development and implementation. To address the research questions, a comprehensive literature review has identified the climate finance instruments employed in cooperation projects, and the factors and conditions that contribute to a successful implementation of climate instruments and of international cooperation. Six case studies have analysed specific cases of cooperation between international partners and national governments in emerging markets aiming to develop and implement climate policies on financial sector reform (Brazil, China and Kenya), adaptation (India and South Africa), and renewable energy and energy efficiency (Indonesia).

The case studies have provided empirical evidence for many of the factors identified in the literature review. In all case studies, international partners provided technical assistance, an instrument that appears to contribute to creating an enabling environment for climate policies by providing capacity building, supporting the creation of climate regulations, changing misconceptions about climate finance, lobbying to amend regulations that curb green bonds, and building technical capacity to access finance.

In addition to the role of technical assistance, other factors cited with frequency in the case studies were: the right type of climate instrument for the right purpose; integrating climate change into national plans & budgets; engagement with civil society, local government and the private sector; and alignment between donor and government objectives. On this point, the literature has found no agreement on whether international funding should match national priorities or whether international donors should try to influence the political will of national governments, and further studies could explore the avenues through which ICF influences national policies, as well as the desirability of such influence. In any event, the case studies suggest that common objectives must be defined in order to ensure successful project implementation.

Additionally, the case studies have identified new factors that contribute to climate policy implementation. With regard to host country conditions, many of the case studies have highlighted that adverse economic, political and legal conditions can be detrimental to the implementation of cooperation projects and climate policies, e.g. causing economic and political uncertainty in periods of presidential elections, or hindering the development of a green bond market due to specific regulations.

This study makes a number of academic and practical contributions.

Academically, this study helps to fill a gap in the literature on how international partners contribute to climate policy processes in emerging markets. The literature review itself offers valuable contributions by systematising previous studies on the factors and conditions that contribute to the success of climate finance instruments and of international cooperation projects. In addition, the case studies provide empirical support for the literature review and raise new research propositions. Further, two case studies analyse climate adaptation, which is less explored in the literature and has historically received less financing from ICF.

We expect that the findings from this study will be of particular interest for practitioners in the climate finance donor community because it highlights issues that are considered critical when developing cooperation projects in partnership with emerging market governments.

As with all empirical research, this study is not without limitations. Given that only six case studies were conducted, generalisability is limited. Even though the case studies have provided empirical evidence of the factors identified in the literature review, they have not tested these factors. Therefore, it would be advisable to conduct additional empirical work in emerging markets to investigate the factors raised by the literature review and the case studies. It would also be interesting to investigate cases involving other types of climate policies and climate finance instruments, including instances in which ICF leverages private finance.

Secondly, some of the SNAPFI partners who have developed the case studies had difficulty in interviewing stakeholders associated with the cooperation projects under study and/or obtaining formal authorisation from the interviewees for the research findings to be publicly disclosed. This was possibly a reflection of the sensitive nature of the research topic, involving cooperation dynamics between sovereign nations, that has brought additional challenges for this study.

Thirdly, given that the case studies analysed are fairly recent or still ongoing, we are currently unable to gauge whether the policies and projects enacted were successful in addressing broader climate change challenges. For instance, the mere establishment of a green bond market does not imply that additional resources will be devoted to mitigation and adaptation activities if these simply replace conventional finance instruments. In this sense, future studies could revisit the case studies presented here in order to analyse the long-term successes (or failures) of the policies adopted.

FInally, given that the literature review has started mapping the causal interplay between climate finance and policy, there are opportunities for further empirical work with international partners and recipient governments on the theory of change of climate finance instruments.

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APPENDIX 1:
Outline of the country case studies

Prior to the development of the case studies, the following outline was suggested to the country partners. Table 9, then, briefly summarises how each topic was discussed in each case.

Approximately 8-10 pages per case study

This outline is largely based on Vivid's (2020) report "Transformative Climate Finance: a Framework to enhance international Climate Flows for Transformative Climate Action" (link).

[We suggested that the country partners strive to collect information about the topics below (if available) in order to ensure more comparability between case studies.]

1. Description of the case study:
    a. Public policy under study
        i. Description of the public policy, including type of public policy (i.e., financial sectoral reform[38], fiscal policy[39], sector policies[40], trade policy[41], carbon pricing policy[42], adaptation policy)
        ii. Level of public policy adoption (i.e. existence of a law, decree, draft bill or other formal document enacting or introducing the policy) and level of implementation (e.g. recently enacted, under discussion by the legislature);
    b. Actors involved and respective roles in the case study
        i. National government (federal or subnational)
        ii. International donor(s)
        iii. Private sector actors
        iv. Others

38 **Financial sector reform:** financial sector regulations that catalyse green investment, e.g. regulations for green bonds, mandatory climate risk disclosure (Vivid, 2020, p. 2).

39 **Fiscal policy:** setting taxes and adjusting spending priorities to support climate action, e.g. fees on high-emitting vehicles, reducing or eliminating fossil fuel subsidies, reduced taxation for electric and hybrid cars, carbon tax, green procurement policy (Vivid, 2020, p. 2).

40 **Sector policies:** regulatory standards or information provision policies, e.g. energy efficiency standards, building codes; biofuels or biomass use targets for transport, information policies (Vivid, 2020, p. 2).

41 **Trade policy:** regulations, agreements and institutions that impact imports and exports; policies that create the environment in which all importing and exporting businesses operate, e.g. lower tariff and non-tariff barriers for low-carbon goods and services (Vivid, 2020, p. 77).

42 **Carbon pricing policy:** development of a carbon tax or a carbon market.

c. Period of the partnership between the national government and international donor(s) (date; finalised or ongoing)

d. Social dimensions (e.g. elements in the public policy supporting a just transition to the most affected populations; likely negative social impacts if the public policy is not implemented; negative social impacts caused by the implementation of the public policy) (examples below)

    i. The distribution of income and wealth;

    ii. Employment, both in quantitative and in qualitative terms;

    iii. Asset valuation;

    iv. Gender and intergenerational relationships;

    v. Urban and rural living;

    vi. Work and business culture;

    vii. Consumption patterns.

[For instance, for adaptation, examples include increased costs for resilient infrastructure reducing fiscal space for social programmes, building codes reducing affordability of housing and even resettlements in coastal or flooding areas that cannot be protected at reasonable cost. Furthermore, a tendency to focus adaptation action on the protection of tangible, high-value assets could introduce adverse effects on income and wealth distribution, including between urban and rural areas, leading to substantial social challenges (Vivid, 2020, p. 134).]

2. Climate finance instrument

    a. Type of climate finance instrument employed (or that could be employed) by international donor(s) to support public policy development:

        i. Investment finance[43]

        ii. Results-based financing[44]

        iii. Policy-based financing[45]

        iv. Trade finance[46]

43 **Investment finance:** the provision of public finance in the form of loans, equity, grants or guarantees (Vivid, 2020, p. 22).

44 **Results-based financing:** "the provision of funds to a recipient is linked to the achievement and independent verification of a pre-agreed set of results from an investment or policy. This includes prizes and competitions and payments for investment and policy outcomes" (Vivid, 2020, p. 22).

45 **Policy-based financing:** "the provision of public finance conditional on the borrower fulfilling their policy commitments" (Vivid, 2020, p. 22).

46 **Trade finance:** The provision of finance to bridge the gap in time between import payment and export receipt of payment, mitigating risk on the part of both the buyer and the seller by providing credit, payment guarantees and/or insurance for transactions. This typically takes the form of credit for either buyers or sellers between companies, or a bank intermediated guarantee" (Vivid, 2020, p. 22).

v. Technical assistance[47]

b. Factors and conditions which have contributed (or could contribute) to the success of the instrument adopted;

c. Is/was there co-financing by the private sector?

i. If yes, which finance instruments were used by the private sector?

3. Barriers being tackled by the cooperation[48]

a. Financial sector reform (examples below):

i. Public finance and capital constraints;

ii. Limited institutional and technical capacity;

iii. Perceived conflict with development;

b. Fiscal policy (examples below):

i. Concerns regarding reducing international competitiveness and distributional consequences;

ii. Capital constraints.

c. Sector policies (examples below):

i. Information gaps;

ii. Limited resources and institutional capacity to enforce regulations;

iii. Concerns about reducing international competitiveness.

d. Trade policy (examples below):

i. Tariff revenue reduction;

ii. Insufficient trade infrastructure;

iii. Technical and political challenges for policy design.

e. Innovation (examples below):

i. Limited resources;

ii. Uncertain payoffs;

iii. Limited capacity to develop a broader innovation ecosystem.

f. Carbon markets (examples below):

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47 **Technical assistance:** "the provision of finance in the form of grants or non-financial assistance provided by specialists, to finance or provide support in the form of information sharing, expertise, skills training, knowledge/best practice sharing or other consultation services", e.g. supporting the design of a carbon tax or furnishing training to improve regulator capacity to implement a climate policy (Vivid, 2020, p. 22).

48 More than one barrier may be addressed by the policy.

i. Concerns about reducing international competitiveness and distributional consequences;

ii. Uncertainty regarding carbon prices;

iii. Limited capacity and knowledge.

g. Adaptation policy (examples below):

i. Information gaps;

ii. Public finance and capital constraints;

iii. Concerns regarding reducing distributional consequences;

iv. Uncertain payoffs;

v. Perceived conflict with development.

4. Quality of the cooperation

a. Factors and conditions which have contributed (or could contribute) to the success of the cooperation between the national government and international donor(s).

5. Final considerations and suggestions for next steps

TABLE 9

Outline of the countries' case studies (summary)

Country	Type of climate policy	Public policy	Level of adoption	National partners involved	International partners involved	Period/ status of the partnership	Social dimensions	Climate finance instrument	Co-financing from the private sector	Barriers tackled
Brazil	Financial sector reform	Confidential	Published. Implementation in progress	Anonymous national partner	Anonymous international partner	Ongoing	Not discussed	Technical assistance	No	Limited institutional and technical capacity
China	Financial sector reform	Policies related to the green bond market	Launched, frequently updated and revised	Financial sector stakeholders (bond issuers, underwriters and certifiers)	Anonymous technical assistance providers	Since 2015 (ongoing)	Not discussed	Technical assistance	No	Limited institutional and technical capacity; Perceived conflict with economic viability; Lack of awareness
Kenya	Financial sector reform	Green Bonds Programme Kenya	Launched	Kenya Bankers Association, Nairobi Stock Exchange, the Capital Markets Authority, Central Bank of Kenya	Dutch development bank FMO, FSD Africa, Climate Bonds Initiative, International Finance Corporation (IFC), WWF Kenya	2017-2021 (first phase)	Not discussed	Technical assistance	No	Limited institutional and technical capacity
India	Adaptation policy	Climate adaptation in Agriculture sector (Maharashtra); Resilience building in Disaster Management (Uttarakhand)	In progress	Uttarakhand: National Disaster Management Authority (NDMA), local level implementation; Maharashtra: Department of Agriculture, Government of Maharashtra	The World Bank	Uttarakhand: 2013-2022 Maharashtra: 2018-2024	Distribution of income and wealth; Urban and rural living; Gender relationships	Investment finance and technical assistance	Yes (intended, in Maharashtra)	Information gaps; Limited resources and institutional capacity

Country	Type of climate policy	Public policy	Level of adoption	National partners involved	International partners involved	Period/ status of the partnership	Social dimensions	Climate finance instrument	Co-financing from the private sector	Barriers tackled
Indonesia	Sectoral policy	Policies related to renewable energy and energy efficiency	Policy-papers published, regulations enacted	Ministry of National Development Planning, Ministry of Energy and Mineral Resources, the Ministry of the Environment and Forestry, the Ministry of Finance, the Indonesian Investment Coordinating Board and provincial government agencies	Asian Development Bank, Government of Norway (financing the Global Green Growth Institute)	Since 2013, some phases and subprogrammes finalised, others ongoing (until 2025).	Urban and rural living; Gender relationships	Policy-based financing and technical assistance	No	Public finance and capital constraints; Limited institutional and technical capacity
South Africa	Adaptation policy	Measures to create an enabling environment to fund adaptation	In progress	Department of Forestry, Fisheries and the Environment (DFFE), South African National Biodiversity Institute (SANBI)	GIZ, Green Climate Fund (GCF), Government of Flanders	Various, starting in 2014 and continuing until 2025	Distribution of income and wealth	Investment finance and technical assistance	No	Information gaps; Limited resources and institutional capacity

Source: The authors, based on the case studies developed by the SNAPFI partners.

APPENDIX 2:
The stages of the public policy process

In order to better understand how public policies can assist in providing greater alignment between finance flows and climate objectives, it is worth providing a brief exploration of the public policy process and its stages. Put differently, understanding the policy process is a precondition for exploring how different actors might influence public policies (and their outcomes) (Krebs, 2013).

First, public policies (as well as corporate ones) may be understood as "action plans" adopted by a group of individuals as the result of their interactions, social activities and dialogue or, more directly, as the activity "through which people make, preserve and amend the rules under which they live" (Heywood, 2007, p. 4).

Policy analysis, as a distinct, applied, social science, dates back to Lasswell (1956), who suggested a model to analyse the stages of the public policy process as a succession of logical steps that starts with the collection of data ("intelligence" stage) and ends with the success or failure of the proposed measures ("appraisal" stage) (Jann & Wegrich, 2007). Similarly, other authors have proposed different typologies for the stages within the public policy process (as exemplified in Table 10).

TABLE 10

Examples of typologies for the stages within the public policy process

Stage	Laswell (1956)	Jenkins (1978)	Hogwood & Gunn (1984)	Heywood (2007)
1	Intelligence	Initiation	Deciding to decide	Initiation
2	Promotion	Information	Deciding how to decide	Formulation
3	Prescription	Consideration	Issue definition	Implementation
4	Invocation	Decision	Forecasting	Evaluation
5	Application	Implementation	Setting objectives and priorities	--
6	Termination	Evaluation	Option analysis	--
7	Appraisal	Termination	Policy implementation, monitoring and control	--
8	--	--	Evaluation and review	--
9	--	--	Maintenance, succession and termination	--

Source: FGVces (2019)

However, public policy processes do not occur in this orderly, linear fashion (Hill, 2012). Moreover, new policies tend to develop within a setting composed of several existing policies, which oftentimes represent obstacles for the proposal and implementation of a new intervention, leaving little room for policy innovation (Hogwood & Peters, 1982).
Still, identification of separate stages is a useful tool for conducting policy analysis and, as a consequence, it has become a convention to divide the public policy process into a few general stages, following in chronological order:

i. agenda-setting;
ii. policy formulation and decision making;
iii. implementation; and
iv. evaluation (sometimes followed by termination).

This framing allows the analyst to assess the cumulative contributions of different actors, forces and institutions with regards to the outcome of the policy processes. (Jann & Wegrich, 2007).
Here, the focus is on the first stages, until the implementation of a policy, as briefly described below.
If the policy process were a journey, the first stage (agenda-setting) would represent the decision regarding where to go; the following stage (policy formulation) would correspond to the decision regarding how to get there; and, finally, the implementation stage would characterize undertaking the journey itself (Hill, 2012).

Agenda-setting

This first stage encompasses the processes and reasons why an issue receives more or less attention from both the public and the government, thus becoming recognised as a problem worthy of public policies (Pralle, 2009). At least three agendas can be identified, as described in Table 11.

TABLE 11

Public, government and decision agenda

Public agenda	Government agenda	Decision agenda
Issues of greater importance for citizens (voters)	Issues discussed within government institutions (e.g. legislative bodies, regulatory agencies)	Narrower set of issues over which government members are about to make a decision

Source: Adapted from Pralle (2009)

Studies on agenda-setting tend to be more concerned with the government (or institutional) agenda, although the processes that govern problem recognition and issue selection within this agenda are also connected to the ways in which social problems become prominent and are perceived to be on the public agenda (as well as in the media). These processes are inherently political and no single actor exerts control of the government agenda (Jann & Wegrich, 2007).

Examples of questions to be answered at this stage are:

- What is perceived as a problem worthy of a public policy?
- How does a problem become a priority on the government agenda? When?
- Why do other problems not receive the same attention and become excluded from the agenda? (Jann & Wegrich, 2007)

One of the most influential models that attempts to answer these questions is the Multiple Streams Framework, proposed by Kingdon in 1984, which suggests that issues may become prominent on the governmental agenda, and windows of opportunity for policy changes may open, as a result of the convergence of three streams (problem, policy and political):

- **Problem stream:** where issues become defined as problems, due to the evolution of certain indicators (e.g. consumer prices; mortality rates); discrete events (such as crises and disasters); and monitoring and feedback from existing policies and programmes.
- **Policy stream:** where policy proposals "float", are changed, revised and (re)combined until a small set emerges for in-depth, serious consideration by policy-makers;
- **Political stream:** where the balance between organised political forces, the turnover of government personnel (in the executive or legislative branches) and changes in the "national mood" include (or exclude) certain potential agenda items (Kingdon, 1995).

This model stresses the (relative) absence of a consistent process to explain why certain public problems emerge and gain prominence on the government agenda. It also reinforces the notion that problems are socially constructed. Opportunities for agenda setting open and close as the needs of politicians and the attention of the media and the public changes from issue to issue (Hill, 2012).

Policy formulation and decision making[49]

This stage of the policy process involves specification of the alternatives for addressing a problem that has been identified and become a priority on the agenda. In other words, policy formulation encompasses definition of the objectives and deliberation on different courses of action that could be transformed into government programmes, if and when formalized (Jann & Wegrich, 2007). Thus, generally, one can say that policy formulation includes:

- Precise definition of policy objectives;
- Operational elements, including the designated instruments (see Box 4), that will be employed to render the policy effective;
- Specification of the authorities who will be responsible for implementing the policy, as well as the resources that will be granted to those authorities (to allow them to fulfil their responsibilities); and
- The rules and procedural elements that will be used in implementation of the policy (Hill, 2012).

This detailed policy formulation step, for instance marked by the selection of the most appropriate instrument to achieve a certain goal, stands in opposition to a "symbolic" policy that merely seeks to convince voters to behave in a certain way (Hill, 2012).

Solutions (alternatives) and problems are in continuous flux, creating a degree of complexity that gives rise to metaphors such as "garbage cans", "primeval policy soups", and "organised anarchies". These metaphors refer to the notion that solutions "float" in search of a problem. Once a set of alternatives becomes attached to a problem, one may be selected based on criteria such as adequacy; efficiency; effectiveness; equity; responsiveness; and appropriateness (Dunn, 2013).
However, decision-making does not rely solely on the analysis of the proposed solutions, with information collection and processing following a given set of criteria, but also entails the resolution of conflicts between different actors (public and private). Formal decisions are preceded by informal processes of negotiated policy formulation within policy networks. These networks are composed, for example, of ministerial departments, interest groups, elected members of legislatures and their associates (Jann & Wegrich, 2007). In this context, think tanks and international organisations may foster the exchange and transfer of policy ideas and solutions (see Box 5).
In this sense, the formal institutions of the government system move into the centre of the policy process when it comes to the final adoption of a given solution, once a feasible set of alternatives emerges after sufficiently satisfying specific criteria and parameters as well as gathering enough political support from the different actors engaged in the informal bargaining processes within policy networks (Jann & Wegrich, 2007).

49 Oftentimes it is difficult to separate the formulation of a policy and the formal decision to adopt it. Hence, it is conventional to treat these as substages of a single stage of the policy process (Jann & Wegrich, 2007).

BOX 4

Instrument selection

The decision regarding which instrument to use lies at the core of policy-making. Instruments can vary from strictly voluntary, requiring little governmental involvement, to highly compulsory, such as the direct provision of a good or service by the state (Hill, 2012). The choice between a given instrument may depend on factors such as: necessity and availability of resources; need for precise targets; political risks; and constraints on state activity (Linder & Peters, 1991).

The last two factors highlight that instrument selection is also based on ideological considerations, for instance regarding the existing (and prevailing) views in a society concerning the role of the state and the manner in which it should govern and exert its powers. In this sense, the selection of instruments is embedded in a broader discussion (and history) on national (or sectoral) policy styles (Hill, 2012).

BOX 5

Policy transfer and convergence

Policy formulators may seek to learn how other countries responded to a specific problem, and understand how a given policy may be transferred from one location to another, when facing an issue that other jurisdictions may have previously faced (or are currently facing) (Rose, 1991). A major benefit associated with this learning process is the possibility of accelerating and reducing the costs of development and implementation of a policy by "borrowing" successful institutions and approaches (Mamadouh, De Jong, & Lalenis, 2002). Generally, policies that are simpler, impose fewer negative externalities, and have strong theoretical support tend to be easier to transfer between countries (Rose, 1991).

On this point, several international organizations explicitly seek to offer policy prescriptions (such as UN agencies, the World Bank, and the OECD) (Hill, 2012). With regard to the ways through which such transfers occur and the convergence of policies between different countries, Holzinger & Knill (2005) list several mechanisms ranging from the imposition of a policy (at one extreme), some moderate options such as various forms of transnational communication, including international policy promotion and the associated pressure put on countries, to the other extreme in which independent problem-solving activities in each country may result in similar responses.

Implementation

At this stage, the institutions responsible, usually from the public sector, enforce and execute the policy that was selected and adopted in the previous stages. The mere decision on and formal approval of a policy does not necessarily mean that it will achieve its intended outcomes, since political and administrative action by bureaucrats "on the ground" may not rigorously follow the aims and goals of policy makers, changing, distorting, delaying or even blocking the execution of the policy (Jann & Wegrich, 2007).

From a top-down perspective, assuming a clear distinction between policy stages, implementation is concerned with the actions focused on employing the means and achieving the objectives set out in the previous stages (notably the formulation stage) (Hill, 2012; Van Meter & Van Horn, 1975). Policies, however, are oftentimes complex phenomena without clear and precise goals, and may also represent symbolic actions by politicians who formulate them (and want to be seen by the public at this stage), but have no intention of actually implementing them (Hill, 2012).

From a bottom-up perspective, and recognizing that actors responsible for implementation must often make choices between how (or if) to simultaneously enact several interacting and conflicting policies and programmes, implementation can be seen as a "continuous process of interaction" involving actors who are difficult to control within a context that suffers interference from the "outside world" (external to the policy in question), the "changeable" characteristic of the policies themselves, and the varying degrees of discretion and autonomy granted to the implementing agencies and bureaucracies (Hill, 2012).
With regard to developing countries, more specifically, policy implementation failures are often due to political-institutional, financial and technical aspects:

- **Political and institutional:** the political system, formal institutions of the state and even civil society do not function properly nor are fully articulated. For instance, territorial divisions and distribution of authority are more likely to have occurred in recent years in developing countries;
- **Financial:** fewer financial resources are available domestically and need to be distributed among many (competing) areas. Hence, many developing countries rely on foreign aid or loans from multilateral agencies;
- **Technical:** lack of human resources and expertise within the implementing agencies/bodies, as well as a high degree of centralisation of competencies during policy formulation, with an absence of articulation between different levels and organisations within government structures (Oliveira, 2006).

Finally, implementation processes are influenced by different, complex, multilevel and multifaceted factors that may contribute to policy failure, such as: i) overly optimistic expectations (or underestimation of the time, resources and risks); ii) implementation in dispersed governance (lack of consistency between formulation at the national level and local implementation); iii) inadequate collaborative policy-making (lack of joint deliberation); and iv) the vagaries of the political cycle (dissipation of interest from politicians as time advances) (Hudson, Hunter, & Peckham, 2019).