

The Institutionalisation of Climate Policy in India:

Designing a Development-Focused, Co-Benefits
Based Approach

Working Paper

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ABSTRACT

While there is growing attention to climate policy, effective coordination, design and implementation of policy require attention to institutional design for climate governance. This paper examines the case of India, organized around three periods: pre-2007; 2007–2009 and 2010–mid-2014, providing institutional charts for each. Several key themes emerge. First, the formation of climate institutions have frequently been driven by international negotiations, even while filtered through domestic context. Second, once established, institutions tend not to be stable or long-lasting. Third, while various efforts at knowledge generation have been attempted, they do not add up to a mechanism for sustained and consistent strategic thinking on climate change. Fourth, coordination across government has been uneven and episodic, reaching a high point with a specialised envoy in the Prime Minister’s Office. Fifth, the overall capacity within government, in terms of specialised skills and sheer numbers of personnel remains limited. Sixth, capacity shortfalls are exacerbated by closed structures of governance that only partially draw on external expertise. Seventh, institutional structures are not explicitly designed to enable India’s stated objective of climate policy in the context of development, which implies specific attention to co-benefits and mainstreaming.

ACRONYMS

BASIC	Brazil, South Africa, India, China - grouped in the context of Climate Change negotiations
BEE	Bureau of Energy Efficiency
CCAP	Climate Change Action Programme
CCFU	Climate Change Finance Unit
CCU	Climate Change Unit/Division
CDM	Clean Development Mechanism
CII	Confederation of Indian Industry
COP	Conference of Parties
DST	Department of Science and Technology
ECCC	Executive Committee on Climate Change
EMPRI	Environmental Management and Policy Research Institute
GCF	Green Climate Fund
GHG	Greenhouse Gas
ICFRE	Indian Council of Forestry Research and Education
INCCA	Indian Network for Climate Change Assessment
IPCC	Intergovernmental Panel on Climate Change
JNNSM	Jawaharlal Nehru National Solar Mission
LCEG	Low Carbon Expert Group
MEA	Ministry of External Affairs
MNRE	Ministry of New and Renewable Energy
MoEF	Ministry of Environment and Forests
NABARD	National Bank for Agriculture and Rural Development
NAPCC	National Action Plan on Climate Change
NMEEE	National Mission for Enhanced Energy Efficiency
NMGI	National Mission for a Green India
NMSA	National Mission for Sustainable Agriculture
NMSH	National Mission on Sustainable Habitat
NMSHE	National Mission for Sustaining the Himalayan Ecosystem
NMSKCC	National Mission on Strategic Knowledge for Climate Change
NTPC	National Thermal Power Corporation
NWM	National Water Mission
PMCCC	Prime Minister's Council on Climate Change
SAPCC	State Action Plan on Climate Change
UNFCCC	United Nations Framework Convention on Climate Change

1. INTRODUCTION

In recent years, there has been a considerable increase in the prevalence of climate legislation and non-binding climate strategy (Dubash et al. 2013). Worldwide, this amounted to an increase from 45% of emissions under climate legislation or strategies in 2007 to 67% in 2012, with the greatest increase in the Asia region, largely driven by changes in China and India. But to what extent does this proliferation of legislation and strategy lead to meaningful action?

One possible answer is that overarching legislation, policies and strategies are unlikely to be translated into action unless there is a clear institutional transmission mechanism. The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) briefly surveys the linkage between institutional arrangements and the probability of effective climate action in its chapter on national policies and institutions, and makes clear this is a surprisingly thin literature (Somanathan et. al. 2014). The problem is particularly challenging in the context of developing countries, where climate policy is less often organized explicitly around climate instruments such as a tax or cap and trade system, and more often around sectoral measures. Designing institutional arrangements for diffuse sectoral measures are arguably more (or at least differently) complex because they require inserting climate objectives into already crowded multi-objective agendas of growth, social change and local environmental improvement.

This paper attempts an analysis of the evolution of India's climate institutions, both to contribute to the Indian climate policy debate and to contribute to the literature on institutional design for climate policy using the case of India. As Section 3 makes clear, India is simultaneously a poor country with a high development burden and low per capita emissions and, in absolute terms, one of the top five emitters globally. India has formulated a development-focused, co-benefits based approach to mitigation, and also stressed adaptation as a priority, within a larger objective of re-directing its approach to development. The development-focused formulation is one that resonates with many developing countries. But it is also one that introduces institutional complexities. Consequently, India is a useful case study for institutionalization of climate policy.

After briefly discussing the literature that informs analysis of institutions in Section 2 and the context for Indian climate policy in Section 3, the body of the paper focuses on three phases of institutionalization of climate policy in India in Sections 4, 5, and 6. These phases are demarcated by what we see as natural inflection points in the institutional architecture of Indian climate governance. The pre-2007 period (Section 4) is one of minimal institutionalization, during a period when India was focused on treating climate change as a diplomatic problem with few developmental implications. Section 5 focuses on 2007-2009, a period of hectic climate activity in the build up to Copenhagen, when the idea of co-benefits as the bed-rock of India's climate policy was concretised. Finally, Section 6 summarises developments in 2010 - mid-2014, when there was a slow-down in momentum and a dissipation of mechanisms of coordination.

For each period, we examine the global and national context for policy and strategy formulation, the corresponding institutional structure that emerged during the period, and the institutional roles that shaped governance, loosely organized around the categories of strategy formulation and knowledge creation, coordination, and implementation. For each period we develop an institutional chart, to map out the changing institutional configurations over time (Figures 1 to 3). These Figures are illustrative rather than comprehensive. In particular, the charts do not include linkages with broader structures in the government, such as accountability institutions like the Comptroller and Auditor General, or judicial bodies such as the National Green Tribunal. Similarly, for Missions

under the National Action Plan on Climate Change, we focus on the nodal agency while, in reality, often several agencies are involved. Despite these limitations, the charts provide a useful institutional snapshot as a device to reflect on the processes of institutionalizing climate governance.

Methodologically, we draw on official documents that are publicly available, media accounts and interviews with key participants in climate policy-making in India. We have also accessed minutes of internal meetings using India's right to information provision, to supplement our analysis.

The time period for this analysis extends to mid-2014. With a new government in place as of that date, these institutional structures may be revised. If so, an understanding of past processes of institutionalization may be a useful input to this process. We conclude with the lessons of the past decade of climate governance and suggestions for the future.

2. WHY A FOCUS ON INSTITUTIONALIZATION?

Much of the literature on domestic climate policy seeks to understand the conditions under which climate policy emerges. Key explanatory factors, including structural factors such as the nature of the political system (systems of proportional representation versus first past-the-post) and the federal context, domestic political factors such as developmental levels, compliance costs of particular policies such as cap and trade systems, the existence of co-benefits, the overarching 'type' of state – liberal, market, corporatist or developmental and also the ideational context in which the policy is embedded (for example, perception of equity in the climate negotiations), can all influence existence and forms of climate policy. (Lachapelle and Paterson 2013; Harrison and Sundstrom 2010; Held et al. 2013). This attention to policy misses a crucial link. Policies often require the simultaneous creation of institutions to be implemented, or are born out of existing institutional contexts. The picture of climate policy-making is incomplete without an understanding of how climate institutions emerge and develop.

Institutions are understood here as “the formal or informal procedures, routines, norms and conventions embedded in the organizational structure of the polity or political economy” (Hall and Taylor 1996). This definition allows us to examine both practices as well as the organizational form within which they are contained. Institutions constrain and regularise behaviour (Scott 2014), often by creating the incentives for economic decision-making, notably by reducing transaction and information costs and market uncertainty (North 1991). In a more sociological vein, institutions influence behaviour by shaping individual cognition and normative orientations (Powell and DiMaggio 1991), by providing codes of appropriate behaviour (March and Olson 2005) and by altering rational agents' preferences (Shepsle 1989). Institutions can also serve as focal points to mobilise stakeholders, thereby affecting political configurations (Dai 2007).

Attention to institutions in the specific context of India's contemporary climate policy is important for two reasons. First, the scale and scope of the climate problem requires policy change that cuts across a number of existing policy arenas. Thus mitigation policy is closely related to fuel, electricity, and land use policies. Adaptation issues cut across a number of sectors as well. Policy-making aimed at maximizing co-benefits makes the task of interweaving incentives across policy communities and existing structures even more complex. Second, and closely related, most

countries do not start with an institutional blank slate when it comes to climate change or the sectors with which close coordination is required. Lock-in effects to institutional patterns, limits on capacity and governance styles that are often nationally specific, shape and constrain institutional form. Building a climate change institutional architecture is, therefore, a complex and often country specific task. The approach here is strongly informed by the perspective that design of institutional arrangements addressing a policy problem is closely associated with the nature of the problem itself (Underdal 2002; Mitchell 2006) and with the specific governance functions central to remedying the problem (Young 2008).

While past endowments do shape future institutions, within these endowments there is also scope for explicit designing or 're(formation) of institutions in ways that will enhance the prospects for achieving outcomes that are socially desirable or avoiding outcomes that are harmful' (Young 2008). Such designing impacts the manner and extent to which institutional functions are performed and institutional roles are fulfilled (Meadowcroft 2009), and subsequently influences the choice and implementation of policy (Somanathan et al. 2014). The literature suggests several elements salient to this question of institutional design.

First, Meadowcroft (2009) posits that an important first step in building an institutional framework to address the climate issue is the establishment of leadership capacity. This could be achieved by constituting an administrative lead agency or appointing a senior government minister to formulate a nation's climate strategy. The lead agency would have to be designed for the specific purpose of addressing the climate problem. Somanathan et al. (2014) caution against the dangers of building nascent climate institutions on pre-existing non-climate institutions. This could potentially induce 'lock-in' and make climate policy vulnerable to earlier ways of understanding the climate problem. The lead agency would also have to be equipped with appropriate authority to implement its mandate, allocated sufficient resources, as well as enjoy support from the top political leadership (Meadowcroft 2009; Dixit et al. 2012; Clapp et al. 2010). Its location would have to ensure that the climate issue remains an important developmental issue and is not overwhelmed by sectoral policy orientations (Meadowcroft 2009). For instance, the location of the lead climate agency within a junior department like the environment department might diminish perception of issue significance and could also lead to turf battles. Similarly, linking the lead agency to another governmental department would ensure integration with a sectoral issue area but may increase the risk of climate policy being captured by other sectoral concerns.

A second consideration is institutional continuity (North 1993; Pierson 2000). Frequent reconfigurations of institutional arrangements may result in a loss of successful practices and institutional memory. However, with regard to continuity, a balance would have to be struck as prolonged existence of institutions or even personnel could increase vulnerability to institutional path dependence.

Third, the nature of the climate problem suggests the need for institutionalizing in a manner that draws attention to sectoral interconnections. In other words, institutional design should help integrate climate policy into development planning for other issue areas (Meadowcroft 2009; Kok and De Coninck 2007; Dixit et al. 2012). One approach might be to establish actors responsible for climate change in relevant departments. This could potentially lead to climate proofing of sectoral and regional plans and policies. In addition, institutions would have to be designed to encourage interactions between scientists and policymakers (Somanathan et al. 2014; Meadowcroft 2009; Dixit et al. 2012) to ensure that policy is based on rigorous scientific assessments of national circumstances.

Finally, designing institutions that facilitate interactions between relevant stakeholders and policymakers would help grant legitimacy to decision making processes (Meadowcroft 2009; Dixit et al. 2012; Clapp et al. 2010). This

design principle becomes particularly critical in an issue area like climate change where there is likely to be disagreement among stakeholders on solutions to a policy problem or where there is a lack of uniformity in stakeholder access to the decision making process. Institutional design of stakeholder involvement, by affecting the degree and form of public engagement with climate policy, could also affect the extent to which institutions can shape and alter public norms and interests.

A common theme across the literature is that the scale and scope of the climate problem, and as a result the number of sectors involved, the levels of governments, and the variety of actors, warrants robust co-ordination mechanisms during the policymaking process (Meadowcroft 2009; Dixit et al. 2012; Clapp et al. 2010). Co-ordination can be achieved by setting up institutional entities mandated with co-ordination activities or by institutionalizing co-ordination processes across scales of action. These mechanisms can help resolve any conflict of interests between entities and also contribute to policy coherence.

While there is a very limited literature detailing and analysing existing models of climate governance, a few existing case studies provide an indication of the diversity of approaches and the extent to which these have been shaped by past institutional endowments. China, perhaps the exemplar of a centralised architecture, is organized around a National Leading Committee on Climate Change (NLCCC), headed by the Chinese Premier. The NLCCC co-ordinates the activities of the twenty-seven government agencies addressing climate change. By housing the NLCCC within the extremely powerful apex decision making body, the National Development and Reform Commission (NDRC), China has ensured that climate change is treated as an important and highly sensitive political and economic issue (Held et al. 2011). Mainstreaming of climate policy in China has occurred through the creation of leading groups and task forces in local governments (Qi et al. 2008). In the 2007 Energy Conservation Law, local governments were made responsible for implementing their share of national energy targets and officials' performance evaluations were made dependent on their success in target implementation (Held et al. 2011).

By contrast, the United Kingdom has built an analysis and information based regulatory model. At its core is a Climate Change Committee, independent of the executive, mandated with co-ordinating activities of the various government departments addressing climate change. The committee engages in a variety of tasks including analysing departmental plans, monitoring progress with carbon budgets and also reporting to Parliament and the public on governmental activities in climate change (Meadowcroft 2009). In addition, the UK has created a new Department of Energy and Climate Change (DECC) in October 2008 by merging the energy division from the Department of Business Enterprise and Regulatory reform (BERR) and the climate change division from the Department for the Environment and Rural Affairs (DEFRA), signalling an integrative intent.

These are but two, quite different approaches to climate institutionalization that provide an indication of the range of possible approaches. So far, there is little or no work seeking to understand whether and how India has institutionalised its climate policy. Instead, past research on Indian climate policy has tended to focus on understanding the evolution of policies (Dubash 2013; Atteridge 2010; Michaelowa and Michaelowa 2012; Atteridge et al. 2012; Thaker and Leiserowitz 2014). There has been little effort to go beyond policy to study the governance systems or institutional structures in which these policies are embedded.¹ This paper will attempt to fill this gap.

¹ A partial exception is Jakobsen's (1998) analysis, which focuses on the political process of decision making on India's foreign policy on climate change.

3. CONTEXT FOR INDIAN CLIMATE POLICY

Climate policy-making in India is a complex business because India straddles several divides in climate politics. India is simultaneously a large and growing economy with absolute annual greenhouse gas emissions that are in the top five globally (although far behind the top two) and a country with vast numbers of poor people, which leads to extremely low per capita emissions. India is also among the most vulnerable countries to climate impacts. Here we briefly discuss the contours of this multi-faceted context before dealing with its implications for domestic and international climate politics.

An assessment of India's contribution to the climate problem varies considerably and depends on how it is measured. In 2011, India emitted 2486 million tonnes of CO₂ (excluding land-use change and forestry), making it the fourth largest emitter in the world, behind the United States, China and the European Union (World Resources Institute 2014). However, annual emissions are a very partial measure because they do not count for historical emissions or contribution to the stock of emissions, which in scientific terms, is the most robust metric, or adjust for population size. Examining the former, India's contribution to global cumulative emissions stands at a relatively low 3%, compared to 27% by the United States and around 70% by Annex I countries as a whole (World Resources Institute 2014). On the latter, India's per capita emissions in 2011 were 2.0tCO₂/person, less than a third of the world average of 6.3tCO₂/person, around one fourth of China's per-capita emissions and one tenth of that of the United States (World Resources Institute 2014). At the same time, critics have pointed out that India's low per capita emissions are driven by a large majority of people living in poverty, and that it is also important to look at emissions across income classes (Ananthapadmanabhan et al. 2007; Chakravarty and Ramana 2011).

Despite these low levels of emissions in cumulative and per capita terms, global attention has often focused on India because of likely future emissions. Electricity generation is the biggest contributor to Indian GHG emissions, amounting to 48% of total emissions in 2007 (INCCA 2010). Manufacturing in the industrial sector (iron, steel and cement production) and the transport sector contributed to 27% and 9% of total emissions respectively. With a rapidly growing population, energy-intensive economic development, rising demand for electricity from increasing incomes, emissions are only set to rise. An Integrated Energy Policy approved by the government in 2008, has estimated that India's primary energy supply will need to increase by 4 to 5 times, and its electricity generation capacity by 6 to 7 times of its 2003-04 levels, to deliver a growth rate of 8 to 9 percent through to the year 2031-32 (cited in Planning Commission 2014, p.11). India's Expert Group on Low Carbon Strategies for Inclusive Growth projects two scenarios with per capita CO₂ emissions increasing to between 2.6 and 3.6 tonnes per capita in 2030 (Planning Commission 2014). The salience of these projections, and the likely costs of layering mitigation objectives on top of development objectives, are likely to be strongly affected by the extent to which 'co-benefits' or complementarities across development and climate policies, are prevalent. This is a theme that has received greater discussion in recent times, notably in the final report of the Expert Group on Low Carbon Strategies for Inclusive Growth (Planning Commission 2014) and the 12th Five year plan (Planning Commission 2013).

India is also, however, highly vulnerable to the impacts of climate change, a realisation that is increasingly reflected in domestic policy. Various studies have pointed to projected variations in rainfall and a projected increase in the frequency and intensity of extreme events like cyclones, droughts, floods. These climatic variations can have huge adverse impacts on agricultural yields, livestock, and water resources with significant implications for food security, human health, biodiversity and infrastructure investments (INCCA 2010). With a large population dependent on agriculture and other climate-sensitive sectors like forests, these climatic variations can also potentially impact rural livelihoods and human development.

This mitigation and adaptation context strongly shapes India's international and domestic climate positions. Internationally, India has sought to carve out space for domestic development policy, and insulate it from international pressures to mitigate, using arguments around equity and the UNFCCC principle of common but differentiated responsibility and respective capabilities. This view is supported by arguments signalling India's low levels of responsibility (based on low per capita and historical emissions) and low levels of capacity. Increasingly, India has also stressed the need for attention to adaptation. At home, attention to climate policy is slowly growing, but with an emphasis on mainstreaming climate change into development decisions, with particular attention to co-benefits. In particular, the co-benefits narrative has received a great deal of attention following its articulation in India's National Action Plan on Climate Change. This formulation carries implications for how climate policy is to be institutionalised, since it argues for a complex institutional response that enables climate policy to be interwoven into existing policy making constructs and institutions.

4. PRE-2007:

CLIMATE CHANGE AS A DIPLOMATIC PROBLEM – LIMITED INSTITUTIONALIZATION

4.1 Context

For most of the preceding two and half decades, the narrative construction of the climate problem in India has been as a diplomatic rather than a developmental problem. Based on this construction, climate change is a problem of allocating a global commons – the earth's ability to absorb greenhouse gases. This, in turn, has led to a near exclusive emphasis on preparing diplomatically for negotiation, since the outcome of international climate negotiations results in allocation, implicitly or explicitly, of the global commons, with substantial implications for equity in climate governance outcomes (Agarwal and Narain 1991; Dubash 2013; Jakobsen 1998). Consequently, developing and buttressing legal and conceptual devices to ensure allocations that are in India's interests – understood as ensuring that mitigation efforts did not limit India's options for energy policy and hence for growth – has become the first priority. India played a leading role in articulating the concept of "differentiated responsibility," a key legal concept through which Indian negotiators sought to ensure that primary responsibility for mitigation rested with developed countries (Sengupta 2011; Dasgupta 2011). Notably, there was a broad consensus across academics, NGOs and government officials on this narrative and its implications (Dubash 2013). Indeed, some environmental NGOs and research institutes played a substantial role in informing early climate negotiating positions.

The insulation of domestic politics from global climate politics was breached only partially through engagement with the Clean Development Mechanism (CDM). While there was initial concern – consistent with the narrative described above – that CDM was a Trojan horse designed to get developing countries to do the work of developed countries, this changed over time as Indian businesses saw opportunity in the new mechanism (Sengupta 2011; Das 2011). Taking advantage of the CDM opportunity – which India did quite spectacularly in the early years, accounting for 53% of all projects in 2005 (Pulver 2011) – required a domestic mechanism for Indian businesses to interface with global CDM processes. While there was considerable domestic policy formulation and implementation in related areas – energy efficiency, electricity reform, and building codes – there was no explicit effort to link these to climate change. For example, India's Integrated Energy Policy of 2006 includes less than two pages on climate change and argue the conventional wisdom at the time that climate change should not, in any

way, inform India's energy policy, but at most, that linkages between domestic policies and their climate implications should be recognized (Planning Commission 2006, 135-136).

4.2 Institutional Structure

Corresponding to the context described above, the internal institutional structure for climate change before 2007 was relatively skeletal (See Figure 1). With little domestic policy to contend with, climate policy was synonymous with foreign policy on climate change. This was handled in collaboration between the Ministry of External Affairs (MEA) and the Ministry of Environment and Forests (MoEF) by a small number of experienced officials. (Although the name of the latter ministry has been changed to Ministry of Environment, Forests and Climate Change in 2014, in this paper we use the older name, since that was the name in use during the period covered in this paper). According to Jakobsen (1998), during this period, formulation of negotiating positions involved little engagement with or oversight by Parliament, the Cabinet or the Prime Minister's Office. Sectoral line ministries provided information and input on technical matters and general support during discussions before international meetings on specific issues, such as Ministry of Power on improving coal efficiency or Department of Science and Technology on inputs to the Intergovernmental Panel on Climate Change.² There were links between the two key ministries and a few research organizations in the early years of the climate negotiations, but these were informal and unstructured.

As required by the UNFCCC and its Kyoto Protocol, in 2003, India established a National Clean Development Mechanism Authority within the MoEF, which played the role of evaluating and approving CDM projects. Indian industry associations, and notably the Confederation of Indian Industry (CII), played a substantial role providing an interface between the MoEF and individual companies and sectors, managing details of greenhouse gas inventories, reporting and other requirements of the CDM process (Das 2011).

4.3 Institutional Roles

The skeletal institutional structure of Indian climate governance prior to 2007 mapped to the functions required of it. Climate policy was, in essence, a foreign policy issue, with the key objective of limiting any downside exposure to Indian domestic and particularly, energy policy. Consequently, there were limited requirements for coordination, other than between the Ministries of External Affairs and Environment and Forests, and this coordination was facilitated by a limited number of individuals and a long-standing working relationship between key individuals. Policy formulation in this period was characterised by limited and unstructured stakeholder interaction and a complete lack of coordination with sectoral ministries. Planning, implementation and advice-giving were simply not salient to the climate governance requirements at the time.

² Personal Communication with Surya Sethi, January 7, 2015.

5. 2007-2009:

'CO-BENEFITS' AS A DOORWAY TO DOMESTIC CLIMATE POLICY – NATIONAL PLANS AND EMBRYONIC COORDINATION

5.1 Context

The year 2007 was somewhat of an inflection point for global climate debates, sparking a corresponding reaction in national climate politics and policy in India. In December 2007, a framework for negotiations was agreed upon at the Conference of Parties (COP) held at Bali, initiating discussions over whether the future form and architecture of the climate regime rested in a unitary framework or differentiated responsibility that continued through 2012 (Rajamani 2012). While developing countries continued to press developed countries to renew and enhance commitments under the Kyoto Protocol, large developing countries also came under considerable pressure to articulate the conditions under which and the forms in which they would undertake mitigation actions (Dubash 2009; Rajamani 2012a). In addition, climate change became a regular agenda item at meetings of the G8+5 and G20, particularly in the build up to the Copenhagen COP of 2009 (G20 Information Centre 2011).

In this context, India also formed a negotiating alliance with other large emerging economies, notably Brazil, China and South Africa (BASIC). While there are several differences between these countries, and in some ways, India is an outlier in terms of level of economic growth and emissions per capita, the intent was to form a joint bulwark against pressure by the developed world. However, the BASIC alliance also had the effect of exposing India to national climate policy debates in these other countries; the BASIC group created some permeability in what had been a relatively sealed national policy discourse. This permeability was significant, since national policy debates were quite advanced in other countries: for example, South Africa had embarked on an ambitious “long term mitigation scenarios” project (Raubenheimer 2007), Brazil had an active debate on its forest law (Hochstetler and Viola 2012), and China had a plethora of modelling studies on future emissions (CEACER 2009).

These international shifts, and notably the Copenhagen COP, also led to greater domestic attention to the subject, although it would be over-stating matters to say it led to a major shift in public opinion (Rastogi 2011; Atteridge et al. 2012). There were, for example, focused debates in Parliament around Copenhagen, media articles increased in number (although predominantly focused on the negotiations), environmental debates in India provided some indications of more serious engagement with climate concerns although local concerns remained dominant, and business associations developed focused platforms on climate change (Dubash 2013; Prabhu 2011; Jogesh 2011; Lele 2011; Das 2011).

Likely as a result of both greater international pressure and subtle shifts in domestic attention (although exact attribution and weightage of these factors in a causal way is challenging), the period from 2007 to 2010 also saw changes in the formulation of India's international climate position and, more substantially, the emergence of a domestic climate policy process. Internationally, former Prime Minister Manmohan Singh announced at a G8+5 meeting at Heilegendamm that India's per capita emissions would never exceed the average emissions of the developed world (Ministry of External Affairs 2007). This statement was consistent with India's long-held view that any agreement should be articulated in per capita terms, but represented a change in that it introduced the notion of limits. However, it was unclear if this statement was based on any detailed projections of India's future emissions and likely future emissions of developed countries, or larger strategic vision.

At the domestic level, an array of policy-making was underway, starting in the first half of 2007, leading to the release of the National Action Plan on Climate Change (NAPCC) in mid-2008. The NAPCC was organized around eight ‘missions’ ranging from solar power development to energy efficiency promotion, a water mission and a special mission for the Himalayan states. The missions vary in scope and focus, with the solar mission particularly focused on a target of 20,000 MW of solar power by 2022, and the water mission, far more sprawling in its reach. The challenge of the NAPCC, if taken seriously, is nothing less than integrating climate change into mainstream development thinking.

The NAPCC was released in June 2008, shortly before the G8 Meeting at Tōyako, Japan, suggesting that, at least in part, the audience for the NAPCC was international. Notably, in its form and structure, it showed considerable similarity to the Chinese plan, which had been released a year earlier. While undertaken initially due to global negotiation pressures, the institutional spaces thus opened were significant, especially when they allowed linkages between climate change and domestic concerns, for example energy security. The mission development process also, over time, drew other ministries into the process of linking their work to climate change issues.³ The NAPCC consequently led to a range of institutional changes, more in some missions and less in others, that were material to India’s efforts to mainstream climate change.

The appointment of Jairam Ramesh as the Minister for Environment and Forests in mid-2009 represented a significant change in domestic context, with implications for both domestic and international climate policy. Mr. Ramesh set his sights initially on domestic policy, and in particular on building a science knowledge infrastructure for India.⁴ However, over time, he was drawn deeper into processes for formulating India’s international position, in a manner that placed him increasingly in conflict with long-standing climate negotiators in India (Varadarajan 2010; Dasgupta 2014).

By his own account, Mr. Ramesh sought to position India as a forward looking player in climate negotiations, calling for a “yes, but” approach emphasizing the conditions for agreement (Ramesh 2010) and also suggesting a shift to a “per capita plus” approach (Sarkar 2009). This approach was intended to signal continuation of the per capita basis for determining international cooperation on climate change, even while seeking to internalise climate considerations in India’s development approach – the ‘plus’.⁵ This approach was related to another formulation in favour of “equitable access to sustainable development” that focused on the developmental outcomes India sought, rather than equitable access to atmospheric space, which could be interpreted as a narrower focus on emissions alone.

This narrative re-formulation ran against a strong current in Indian climate politics, held by senior negotiators as well as influential civil society groups: that domestic climate policy and international climate policy needed to be kept separate, and that any domestic climate policy in India should be de-linked or minimally linked to the international process (Agarwal and Narain 1991; Narain 2008; Dasgupta 2014; Letter from 17 civil society organisations to the Prime Minister of India 2009). By contrast, the new leadership at MoEF sought to “drive the domestic agenda and use that agenda for building a leadership position internationally.”⁶ These were fundamentally different approaches. For example, Mr. Ramesh sought to pursue domestic climate legislation prior to Copenhagen as a means of building a strong base for international policy, but this effort floundered in the face of opposition. Indeed, this conflict spilled into the open immediately prior to Copenhagen, with the media reporting

³ Personal Communication with Surya Sethi, January 7, 2015; Personal Communication with Shyam Saran, January 7, 2015.

⁴ Interview with Jairam Ramesh, October 16, 2014.

⁵ Ibid.

⁶ Ibid.

that two negotiators sought explicit assurances from the Minister on India's position before they would agree to join the negotiating team (The Times of India 2009).

Nonetheless, in the build up to Copenhagen, and in the face of concrete pledges by BASIC allies, the pressure was intense to place on the table an articulation of India's domestic actions. In mid-2009, India offered a pledge to reduce emissions intensity of its economy by 20-25% from 2005 levels by 2020 (Lok Sabha 2009; Sengupta 2011; Dasgupta and Sethi 2009). This pledge was stimulated by international pressure in the lead up to Copenhagen, but its specific form and content was, by authoritative accounts, an instance of horizontal diffusion from the example of other countries, particularly China.⁷

Internal political differences on Indian climate politics are salient to questions of institutionalizing climate policy. If domestic climate policy is intended as a robust effort at mainstreaming climate change into domestic policy, it is likely to be accompanied by efforts to institutionalise change. If, instead, it is a minimalist effort at signalling credibility, then it is likely to remain institutionally weak. As the discussion below suggests, the outcome is a mix of these two and a reflection of the failure to completely settle this debate.

5.2 Institutional Structure

The period from 2007 to 2009 was one of institutional fecundity as Figure 2 shows, particularly in comparison to the pre-2007 period illustrated in Figure 1. This period saw the establishment of a High Level advisory group on climate issues - the Prime Minister's Council on Climate Change (PMCCC), a special office for climate change in the Prime Minister's Office, structures to enable the explicit engagement of various scientific bodies with the issue of climate change and increasing engagement of line ministries with climate change. Here, we elaborate on the formation of each of these bodies and turn to their functioning in practice in the next section.

The formation of the Prime Minister's Council on Climate Change (hereafter referred to as "PM's Council" or "the Council") in mid-2007 likely was stimulated, at least in part, by a perception that India needed to be better prepared to react to global pressures to address climate change. During this period, climate change came up regularly at the annual G8/G20 meetings, and India had just announced its offer at the G8 summit at Heilegendamm to limit its per capita emissions to the average of industrialised country per capita emissions. However, there was no mechanism in place to credibly devise an approach toward this end. Notably, China had released its domestic climate plan just days before the 2007 G8+6 meeting, which was reported in the Indian media as an important element in China's relative success, as compared to India, at deflecting international pressure (Sethi 2007).

Formally, the Council was charged with evolving a coordinated response to climate change, overseeing the formulation of action plans, and monitoring key policy decisions (Government of India 2007). Its key function was to formulate a national strategy, which was later released as the National Action Plan on Climate Change (NAPCC). The Council was chaired by the Prime Minister and composed of 26 members including Ministers of various departments and eminent non-governmental and retired governmental experts. After its inception, the Council was relatively active only in its early years during the formation of the NAPCC. Subsequently, it has met a total of eight times, only to consider and approve the Mission documents of the eight subsidiary missions (See Appendix I). The Council was subsequently re-constituted with a new membership in November 2014 (Press Information Bureau 2014).

⁷ Ibid.

In early 2008, a specialised office of the Prime Minister's Special Envoy on Climate Change (hereafter referred to as the "Special Envoy") was established within the Prime Minister's Office. Staffed by a senior and seasoned diplomat, Amb. Shyam Saran, who had been both Foreign Secretary and the lead negotiator on Indo-US civil nuclear issues, this office considerably heightened the capacity within the Prime Minister's Office to engage in climate policy. The Special Envoy's office engaged in both domestic and international climate policy, and notably played a substantial role in bringing the unwieldy process of drafting an NAPCC to conclusion. Specifically, the detailed report prepared by three members of the Council was tightened into a much shorter summary report, with the detailed report shifted to a technical appendix. The office also played a significant coordinating role, helping draft the various Missions, with leadership for a few of them, as described later, and coordinated across the Ministry of External Affairs and the Ministry of Environment and Forests as well as other relevant ministries in preparation of international negotiating positions.

As with the Council, however, the Special Envoy had no dedicated staff, but rather was able to draw on the broader personnel of the Prime Minister's Office and on *ad hoc* assistance from external researchers and other experts. With the addition of the office of the Special Envoy, the locus of control over international policy on climate change became somewhat uncertain. MoEF and the MEA continued to play a role, but the Special Envoy's office also played a coordinating and steering function. Indeed, whether and to what extent the Special Envoy should control international climate policy ultimately became an issue for contention with the MoEF, and ultimately was the cause for dismantling the office in 2010, after two short years (Varadarajan 2010; Deshpande and Sethi 2010).

With Mr. Ramesh's appointment, the MoEF also developed explicit mechanisms to draw in existing scientific bodies to engage with the climate agenda. In particular, the Indian Network on Climate Change Assessment (INCCA) was envisioned as "an Indian IPCC," a network of 127 institutions to examine impacts of climate change on Indian forests, agriculture and so on, conduct greenhouse gas inventories and provide a mechanism for coordinating existing, hitherto disconnected research.⁸ INCCA has produced a report which provides an assessment of impacts of climate change in 2030s on four key sectors of the Indian economy, namely Agriculture, Water, Natural Ecosystems & Biodiversity and Health, in four climate sensitive regions of India, the Himalayan region, the Western Ghats, the Coastal Area and the North-East Region (INCCA 2010). A similar review report, synthesizing the results of five existing modelling studies (Climate Modelling Forum 2009) was released at the end of 2009 by the Climate Modelling Forum, a group consisting of research institutions, launched by the MoEF in 2006. A second approach to deepening engagement of scientific bodies was to focus on tightening policy connections between specific organizations, such as the Indian Space Research Organization, to harness its satellite technology for various monitoring purposes, and the Indian Council of Forestry Research and Education (ICFRE) to make use of its detailed forest work. Arguably the biggest institutional challenge was operationalising the NAPCC. With the establishment of the eight separate Missions under the NAPCC, each of the various nodal ministries for the Missions had to develop climate specific expertise and assign staff to manage the mission (See Figure 2).

In sum, compared to 2007, by 2009, there were considerably richer and thicker institutional strata in the Government of India, addressing climate change. However, this observation needs to be qualified in at least three ways. First, the sheer numbers of personnel involved remained relatively small, with climate change being added on to existing responsibilities in many cases. Despite the addition of an advisory Council and a Special Envoy, no dedicated staff capacity was added at the Prime Minister's Office. Second, and related, technical capacity and skills were inducted in an *ad hoc* manner through informal contacts with researchers and through formulation of working groups. Finally, there were no structured and ongoing mechanisms for consultation with broader interests or

⁸ Ibid.

stakeholders, such as farmers groups, industry groups or others. The thickening of climate governance that occurred between 2007 and 2009 was, with the exception of INCCA and the Climate Modelling Forum, internal to the government and did not create systematic mechanisms for broader engagement.

5.3 Institutional Roles

During 2007-2009, Indian climate policy, particularly national policy, was in its early stages. Hence the key requirement was for strategic planning and policy formulation. How was this role managed, and how effectively?

The Prime Minister's Council on Climate Change was the initial mechanism through which broad strategic formulation was intended to occur. And indeed, the various members did provide thoughts, many of which informed the final NAPCC. For example, an emphasis on "no regrets" measures, a sectoral focus on renewable energy, energy efficiency, water, agriculture and transport were all mentioned in the initial meeting, and found substantial emphasis in the Plan (Prime Minister's Office 2009; PMCCC 2008).

However, on balance, the manner in which the Council was used provided little scope either for detailed analytical input or for considered deliberation. With regard to the first, there were no focused studies commissioned to inform the Plan preparation process, although Council members had access to prior work undertaken by their various organizations. With regard to deliberation, the Plan was finalised over the course of three sittings of the Council from 13th July 2007 to 2nd June 2008 (Prime Minister's Office 2009). Minutes of the second and third meetings provide few details of the discussion. And while there were many voices represented on the Council, there was no mechanism to enable broader deliberation, consultation or provision of a comment period for the wider community of academics and stakeholders.

Given that the Council was established with no mechanisms to enable focused new analysis, only moderate internal deliberation and no external consultation, the content of the document was strongly shaped by the primary authors, a three member group from within the Council, composed of the Principal Scientific Advisor, former Secretary, MoEF and the Director General of The Energy and Resources Institute. However, in the final analysis, the office of the Special Envoy played a significant role, since the final concise draft, which abstracted from technical details and focused on larger messages, was prepared in the Prime Minister's Office (Down to Earth 2008).⁹

Although its substantive and analytic role was limited, the Council played an important role with regard to signalling the importance of the issue, representing interests and winning agreement on the specific measures. The establishment of the Council under the aegis of the Prime Minister's Office increased the perceived importance of the climate issue and helped translate what was once a foreign policy issue to a national development priority. Junior ministries could no longer afford to ignore climate implications of their own sectoral initiatives or refuse to adopt climate-relevant policy.¹⁰

The presence of key Ministers, such as Ministers of Agriculture and Power ensured buy in from other power centres within the government, and the presence of external members from the media, industry and civil society organizations helped win agreement and ownership from broader sections of society.¹¹ This agreement and buy in

⁹ Interview with Shyam Saran, March 21, 2014

¹⁰ Interview with Ajay Mathur, May 7, 2014

¹¹ Ibid.

enabled by stakeholder involvement, was not trivial; it helped make sure that any substantive content in the Plan reasonably accommodated and balanced a wide range of interests. This effect was not uniform; some missions remained late starters, and early movers were often driven by individual initiative. On balance, the contribution of the Council was as a representative body, and to a much smaller extent, as a substantive body with regard to strategy and content.

Arguably the most important use to which that representation role was put was to buy broad political agreement on the NAPCC through the idea of co-benefits – described in the NAPCC as “measures that promote our development objectives while also yielding co-benefits for addressing climate change effectively” (PMCCC 2008). The political importance of this idea is hard to overstate. It allows India, while holding on to the political roots of its equity based positions, to start factoring climate change, and particularly mitigation policy, into national policy making. Through the device of co-benefits, national actions, including on mitigation, could be rendered politically consistent with the conceptual edifice of India’s climate negotiation stance.

The other major institutional change during this period, the office of the PM’s Special Envoy, took on a major strategic and substantive role. In this role it brought some unique attributes. The Special Envoy was able to exercise the authority of the Prime Minister’s Office to convene other ministerial colleagues at a high level, and through a method of intensive coordination, to identify and find ways around roadblocks, if necessary by “knocking heads together.”¹²

This intervention and problem solving was often achieved through networking and ensuring appropriate political intervention. Some examples make clear that the Special Envoy’s office was more often focused with the hard work of negotiating a complex political and bureaucratic landscape than with high level strategic thinking. In formulating the National Solar Mission, for example, a key sticking point was figuring out where the finance would come from for a subsidy for new solar power, to be provided through an innovative reverse auction mechanism.¹³ Providing additional budgetary support was out of the question. The creative answer arrived at was to blend solar power with low cost thermal power available with the National Thermal Power Corporation (NTPC) as reserve power for states, to bring down the average cost of power supplied through this mechanism. However, doing so required agreement by NTPC as well as buy-in from the Finance Minister. This agreement was won by the PM’s Special Envoy through personal visits and leg-work, backed by the authority of the PM’s Office.

In another example, agreement on the Himalayan Mission required personal visits by the Special Envoy to the various states, to ascertain interests and needs, and seed important themes regarding collective action across states.¹⁴ Once these were won, these themes would then form the basis of a special meeting with Chief Ministers of Himalayan states convened by the Prime Minister, to provide a broad political umbrella for the agreement. The office of the PM’s Special Envoy, therefore, performed an important role in strategic planning, but one that was informed less by high level idea setting and more the exercise of the practical political art of the possible. This role operated at the intersection of strategic thinking and political coordination.

The Special Envoy’s office also played a supporting role to other Ministries.¹⁵ For example, in formulating the National Mission of Enhanced Energy Efficiency, the Ministry of Power, operating through the Bureau of Energy

¹² Interview with Shyam Saran, March 21, 2014

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Interview with Ajay Mathur, May 7, 2014

Efficiency, sought the Prime Minister's Office's help in ensuring finance for energy efficiency, following which the PM's office contacted public sector banks encouraging support for the Mission.

In all, over the course of 2009, four Missions were approved by the Council, of which the Special Envoy had a substantial role in three: the National Solar Mission, the National Mission on Enhanced Energy Efficiency and the National Himalayan Mission. Due to pressures of time and lack of resources, the Special Envoy was relatively less focused on the remaining missions,¹⁶ and this lack of high level focus may indeed be one reason for their slower pace.

In addition to driving the momentum on the Missions of the NAPCC, the Special Envoy also raised the level of coordination on India's international policy on climate change, convening regular meetings across the Ministry of External Affairs, MoEF and other relevant ministries, and also calling in external experts, to formulate India's international position and prepare country submissions on items in the negotiating agenda. A notable example was a position paper on technology innovation centres.¹⁷ While this coordination had always existed at an informal level, the process was made more regular and consistent during the tenure of the office.¹⁸ However, it was precisely this coordination role on international policy that ultimately was challenged by the Minister for Environment and Forests, and led to the dissolution of the Special Envoy's office.

This period also witnessed preliminary engagement of the nodal ministries of missions with climate change, although activity was centred around the formulation of Mission documents. The exact processes for mission formulation varied across ministries. In most ministries, this task was assigned to existing personnel, although, as detailed above, some missions also saw the involvement of the Special Envoy's Office. In the case of the Green India Mission, an Indian Forests Services officer in the MoEF was enlisted to prepare the Mission document. The extent and manner of stakeholder interactions during mission formulation has varied across missions. The MoEF, for example, held five public regional consultations in Mysore, Dehradun, Nagpur, Jaipur and Guwahati, each of which was attended by around 5000 people, making the Green India Mission's consultative processes the widest among all missions.

The period 2007 to 2009 was largely a process of strategic planning and establishment of processes. This was facilitated by the establishment of two key institutional spaces, the Prime Minister's Council on Climate Change and the Prime Minister's Special Envoy. The association of both with the PM's office signalled a certain weightiness, and enabled a high level of convening power. The Office of the Special Envoy, in particular, became highly influential as a shaper of decisions, operating to build political agreement and craft compromises. Notably, neither institute served as a forum for strategic planning and neither led to a marked and institutionalised increase in research capacity and analysis. The Council, which was certainly composed of people well suited to this task, was hampered in doing so by its limited process, which offered no scope for focused deliberation and met relatively infrequently, and the Special Envoy's office by its lack of resources and dedicated staffing. Neither institution facilitated a broader public engagement or consultation on the subject of climate change and its linkages to development concerns.

¹⁶ Interview with Shyam Saran, March 21, 2014

¹⁷ Personal Communication with Shyam Saran, January 7, 2015.

¹⁸ Interview with Surya Sethi, April 28, 2014

6. 2010 – MID-2014: DIMINISHED MOMENTUM, DIMINISHED COORDINATION

6.1 Context

Following the Copenhagen COP in 2009, in India, as elsewhere in the world, the political momentum on climate change slowed. The forcing moment of Copenhagen, when Indian action would be in the spotlight, had passed. There was far less pressure to formulate or declare sweeping new measures or policies. But, by the same token, in this post-Copenhagen period, India, like other countries, had to give body, substance and form to what were often hasty pre-Copenhagen declarations and statements. Notably, India had to develop some sort of approach to fulfilling its Copenhagen emissions intensity pledge, and credibly begin implementing the NAPCC.

One of the concrete outcomes of the Cancun COP was a commitment by developed countries to mobilise \$100 billion a year by 2020 to support developing country activities on climate change (UNFCCC 2010). Climate finance, covering both discussions about amount and deciding how it would be used, was therefore promised to be a growth area for negotiations, and was a key element of India's negotiating strategy and an area for future focus.

At the domestic level, the biggest change in context was the consolidation of power and authority by Mr. Jairam Ramesh, the Minister for Environment and Forests, who had taken over the Ministry just six months before the Copenhagen COP, but played a substantial role in Copenhagen (Ramesh 2014). He had also acquired visibility and profile at home, through a high visibility approach complemented by rare parliamentary debates on climate change before and after Copenhagen (Lok Sabha Debates 2009; Prabhu 2011). This assertion of authority came at the cost of the Special Envoy's office (Varadarajan 2010; Deshpande and Sethi 2010). As we discuss further below, this inter-institutional tension led to the closure of the Office of the Special Envoy in March 2010 with implications for coordination of climate policy across the government.

After the closing of the Special Envoy's office, the period during Mr. Ramesh's tenure until July 2011 saw a flurry of new initiatives. Significant among these was an effort to develop State Action Plans on Climate Change (SAPCC) in each of India's states to complement the NAPCC. The motivation was both, to achieve coherence across states, but also to recognize that some subjects of focus in the NAPCC are constitutionally subjects over which states have jurisdiction (Dubash and Jogesh 2014). This considerably expanded the scope of the mainstreaming effort, the majority of which occurred in the post-Copenhagen period from 2010 onwards. Following Mr. Ramesh's departure from the MoEF in mid-2011, few additional domestic initiatives on climate change were apparent through the first half of 2014, with little evidence of institutional change and development in climate policy-making.

6.2 Institutional Structure

Institutional structures for climate governance have only changed incrementally after 2010. Most prominently, the office of the Prime Minister's Special Envoy was disbanded, shifting the centre of gravity back to the Ministry of Environment and Forests. Consistent with this change, there was also a diffusion of institutional roles to other parts of the government, with new functions for the Planning Commission and the Ministry of Finance (See Figure 3). An important addition is a new Executive Committee on Climate Change (ECCC) at the bureaucratic level to coordinate diverse actions. There was also deeper institutionalization of missions within the nodal ministries. Another

significant change is the establishment of institutional nodes at the state level to take forward State Action Plans. Below, we discuss each in turn, before examining their roles.

In the context of preparation for India's 12th Five Year Plan and the need to devise an approach to meeting India's Copenhagen Pledge, the Planning Commission was also indirectly drafted into climate policy planning, through the establishment of an 'Expert Group on Low Carbon Strategies for Inclusive Growth' (hereafter referred to as the "Low Carbon Expert Group, "Expert Group" or "LCEG"). As with the Council, the group was composed of 20 members which included governmental and non-governmental experts. However, by contrast with the Council, this group was intended to be explicitly technical and craft integrative policy strategies. While convened by the Planning Commission, it was jointly constituted by the Ministry of Environment and Forests, but over time, the MoEF became progressively disengaged with and even critical of the work of the group (Sethi 2012). Moreover, while it had formal representation from at least some other ministries, it operated in parallel with and separated from various sectoral working groups drafting the 12th Plan. Thus, there were separate groups on power planning and environmental planning, the functioning of which were not coordinated with the Expert Group.

Another central government organization that was more explicitly drawn into climate discussions was the Ministry of Finance, which created a "Climate Change Finance Unit" (CCFU). Since its creation, this unit has focused heavily on the international climate finance context, notably on representing India at discussions on establishment of the Green Climate Fund and in producing a chapter on climate and sustainable development in the annual Economic Survey.¹⁹ There is a parallel set of tasks, however, required to increase India's domestic capacity to develop projects and absorb climate finance. These tasks are built around the MoEF and the National Bank for Agriculture and Rural Development (NABARD).

At the overarching cross-ministerial level, a level of oversight over mission implementation was added with the establishment of a new Executive Committee on Climate Change (ECCC) (hereafter referred to as the "Committee of Secretaries") in 2013. This committee was mandated with assisting the PM's council, coordinating responses to climate change throughout the government and monitoring the implementation of the missions (Press Information Bureau 2013). Notably, this is entirely an executive committee, consisting of Secretaries of various ministries.

This period also saw the establishment of Mission Directorates, tasked with implementing the various missions, within nodal ministries. Each directorate is composed of a Mission Director with administrative and financial powers, backed by other officers, experts and consultants. Each mission also has a steering group, with inter-ministerial representation, to overlook implementation. Consequently, simply the act of creating missions led to a substantial expansion of personnel in the official machinery charged with addressing climate change, although this likely occurred through re-deployment of existing personnel rather than through induction of individuals with dedicated skills.

During this period, an entirely complementary level of institutions was created at the state level. In many cases, climate change was added to the brief of existing institutions. For example, in Karnataka, the Environmental Management and Policy Research Institute (EMPRI) of the state government served as the nodal agency for preparation of the state's climate plan. In other cases, such as Odisha, a Climate Change Action Plan Cell was created within the Forest and Environment Department. However, based on a limited sample of states, relatively little institutional capacity had been created, and all the states relied heavily on donor agencies and consultants to prepare state plans (Dubash and Jogesh 2014).

¹⁹ Interview with Dipak Dasgupta, March 20, 2014.

Although institutional structures have proliferated, capacity levels remain numerically very low, given the scale and scope of the task. Because many officials have multiple roles, an exact estimate of staff strength in ministries and departments is challenging. However, based on organizational charts and staff lists on official websites, Table 1 lays out existing staff in various central government ministries, and at various levels, dedicated to climate change in 2014. For example, in the core nodal agency of MoEF, full time employees focused on climate change in the Climate Change Unit are a section officer, three scientists, a director and a joint secretary (the latter also handling the Montreal Protocol), adding to six full time staff. Across missions, the staff strength is similarly low, with the Bureau of Energy Efficiency a partial exception. In practice, these personnel strengths are complemented by additional consultants and other temporary staffing, which is harder to document. It is unclear whether these additional personnel provide the continuity of engagement and the additional specialised capacity necessary. While there is no a priori basis to assess what an optimal staff strength might be, the range of domestic and international implementation, coordination and negotiation functions that have to be performed would appear to be challenging to accomplish with existing levels of staff.

Table 1: Personnel capacity in the Climate Change Unit (MoEF) and Nodal Ministries for Missions

		ADMINISTRATIVE LEVELS IN MINISTRIES ¹			
		Special Secretary/ Additional Secretary/ Joint Secretary/ Scientist (G)	Director/ Deputy Secretary/ Scientist (D,E,F)	Under Secretary/ Scientist C	Section Officer/Desk Officer
MINISTRY OF ENVIRONMENT AND FORESTS	Climate Change Unit/Division ⁱⁱ	1	3	1	1
MINISTRY OF ENVIRONMENT AND FORESTS	Green India Mission ⁱⁱⁱ	2	1	1	Not available
MINISTRY OF NEW AND RENEWABLE ENERGY	National Solar Mission ^{iv}	2	2	Not available	Not available
MINISTRY OF POWER	National Mission On Enhanced Energy Efficiency ^v	3	8	0	0
MINISTRY OF SCIENCE AND TECHNOLOGY	National Mission On Strategic Knowledge For Climate Change ^{vi}	1	2	Not available	Not available
MINISTRY OF SCIENCE AND TECHNOLOGY	National Mission for Sustaining the Himalayan Ecosystem ^{vii}	1	2	Not available	Not available
MINISTRY OF WATER RESOURCES	National Water Mission ^{vi}	3	2	1	Not available
MINISTRY OF URBAN DEVELOPMENT	National Mission on Sustainable Habitat ^{ix}	Not available	Not available	Not available	Not available

MINISTRY OF AGRICULTURE	National Mission for Sustainable Agriculture ^x	Not available	Not available	Not available	Not available
<p>I The politico-administrative structure in Ministries is divided into seven levels comprising Minister/MOS; Secretary; Special Secretary/ Additional Secretary/ Joint Secretary/ Scientist(G); Director/ Deputy Secretary/ Scientist(D,E,F); Under Secretary/Scientist C; Section Officer/ Desk Officer and Assistant/Upper and Lower Division Clerk (Second Administrative Reforms Commission 2009; Ministry of Environment and Forests 2010a). For the purpose of comparing capacity among nodal ministries implementing missions, we focus on four of the above levels (as detailed in the table above). We exclude the levels of Minister/MOS and Secretary, since Ministers and Secretaries of all Ministries oversee a wide range of issues under the jurisdiction of their Ministry. We also exclude the level of Assistant/Upper and Lower Division Clerk.</p> <p>ⁱⁱ Information regarding personnel in the Climate Change Unit of the MoEF has been gathered from the Ministry's response to an RTI enquiry, dated 24.7.14 (Ministry of Environment and Forests 2014a). This information reflects the bureaucratic shuffle that followed the formation of the new government. In addition to these officers, an Additional Secretary to the Government of India has responsibility over climate change activities as a portion of his work allocation (Ministry of Environment and Forests 2014).</p> <p>ⁱⁱⁱ Information regarding staffing in the GIM Directorate has been gathered from the Ministry's official website (www.moef.nic.in) (Accessed on April 21, 2015).</p> <p>^{iv} Information regarding staffing in the JNNSM Directorate has been gathered from the Ministry's official website (www.mnre.gov.in) (Accessed on May 3, 2014). There is no staffing information available on the Ministry website on the number of personnel, at the level of Under Secretary and Section Officer, managing this mission.</p> <p>^v Information regarding staffing in the NMEEE Directorate has been gathered from personal communication, dated May 15, 2015, with Mr. Ashok Kumar in the Bureau of Energy Efficiency, Ministry of Power.</p> <p>^{vi} Information regarding staffing in the NMSKCC Directorate has been gathered from the official website of the Department of Science and Technology (www.dst.gov.in) (Accessed on May 3, 2014). There is no staffing information available on the website on the number of personnel, at the level of Under Secretary and Section Officer, managing this mission.</p> <p>^{vii} Information regarding staffing in the NMSHE Directorate has been gathered from the official website of the Department of Science and Technology (www.dst.gov.in) (Accessed on May 3, 2014). There is no staffing information available on the website on the number of personnel, at the level of Under Secretary and Section Officer, managing this mission.</p> <p>^{viii} Information regarding staffing in the NWM Directorate has been gathered from personal communication, dated February 27, 2015, with Dr. M. Satyanarayana, Advisor (Coordination and Monitoring) in the National Water Mission Directorate.</p> <p>^{ix} There is no staffing information available on the Ministry website on staffing in the NMSH Directorate. The Mission document has stated that the Mission Directorate will draw on the services of Joint Secretary (UD) and Director, Urban Transport in the Ministry (Ministry of Urban Development 2010).</p> <p>^x There is no staffing information available on the Ministry website on staffing in the NMSA Directorate.</p>					

Source: Authors' compilation based on government websites and documents and personal communication with government officials

6.3 Institutional Roles

While generating knowledge and conducting strategic planning was the focus of the pre-Copenhagen period, policy formulation, implementation and coordination functions grew after 2009. Nonetheless, strategic planning continued to be an important task, but one on which little activity was witnessed. The Prime Minister's Council, other than approving four missions early in this period, did not meet after February 2011 (Prime Minister's Office 2014). The slow pace at which the Council has performed its functions has meant that climate policy has not developed through an iterative process. Little effort has been made to adjust and revise the NAPCC to reflect the findings of numerous subsequent scientific assessments or empirical evidence from mission formulation and implementation.

A related issue is that the knowledge and analytical basis for strategic planning remained thin. The formation of a Low Carbon Expert Group (LCEG) at the Planning Commission in early 2010 promised a more systematic approach to harnessing technical input and working it into a larger strategic framework. The group was composed of a mix of academics and researchers and representatives of ministries at the functional rather than the political level, as had been the case with the PM's Council. However, the model for technical input again tended to be *ad hoc* with

individual members expected to rely on the resources of their home institutions. Little dedicated or focused new or strategic research was carried out under the auspices of the Expert Group.²⁰ Instead, it tended to re-package existing research. Moreover, the Expert Group report took over four years to be produced, well beyond its mandated time period of nine months, and was, as a result, relatively limited in influencing policy formulation during this period.

The setting up of the Low-Carbon Expert Group, the INCCA and the Climate Modelling Forum represented concerted efforts by the government to build a knowledge infrastructure around climate change that could inform future climate policy. The significance of these institutions was that they created platforms that could mobilise stakeholders engaged in scientific research or where existing stakeholders could unite to collaborate and build new research work. However, despite making substantial contributions to the knowledge base, these initiatives did not lead to a lasting institutional framework for knowledge generation. The initial visibility and activity of INCCA and the Climate Modelling Forum have not been sustained over time, with no reports being released beyond the initial analyses. The LCEG was unable to generate new research despite a three year time overrun.

In 2013, discussions were initiated for creation of an overarching National Institute for Climate Change Studies and Action. News reports indicate that the new institute will have four broad roles: scientific assessment; economic and legal analysis; policy-making, monitoring, capacity-building and training; and database management (Business Standard 2014; The Economic Times 2013). The institute will be placed under MoEF, but with representation on its governing body by other ministries and independent experts (Sethi 2013). Such an institution, if well developed, certainly has the potential to increase overall capacity, but much depends on details of implementation. In particular, the ability of the institute to serve as a broader hub to stimulate independent analysis and deliberation, versus being an in-house think-tank, will be critical.

Strategic thinking on climate change at the state level, prompted by the central government, has led to a wide array of state reports. While a useful starting point, a recent survey of a sample of these reports finds that they have systematic weaknesses as strategic documents (Dubash and Jogesh 2014). These include: a focus on generating long and unprioritised lists of possible implementation actions, without a corresponding strategy or vision; a failure to build adequate capacity to ensure deepened state engagement over time and a consequent reliance on donors and consultants; an inability to foster integrative thinking and break out of departmental silos; a weak basis in the science of climate impacts; limited attention to the energy sector, likely because of strategic concerns regarding implications of doing so for climate negotiations; lack of analytical framework through which to mainstream development and climate mitigation and adaptation; with few exceptions, relatively closed and non-participatory processes. However, the plans have led to a conversation at the state level, and in some cases to deepened engagement by key bureaucrats in the state.

The ability to coordinate climate policy across multiple institutions and governance levels has become far more complex following the closure of the Special Envoy's office. However, it is also the case that many more institutions at multiple levels are involved in the post 2010 period and the challenge is simply bigger. The Prime Minister's Council on Climate Change has played a minimal role in coordination, particularly since it has not met after 2011.

Perhaps the most substantial coordination role is around implementation of the NAPCC, although there has been a notable lack of assigning formal responsibility for this role. While the Special Envoy's office was *de facto* playing this role during its existence, the MoEF has subsequently picked up this task. As Minister, Mr. Ramesh apparently took

²⁰ One of the authors of this paper, Navroz K. Dubash, was initially appointed as a member of the Expert Group. Some of these observations are based on personal experience. He resigned from the group in August 2013.

on this coordination at a personal level, making direct calls to Secretaries of other Ministries,²¹ but there was no explicit and institutionalised mechanism for coordination. The ability of the MoEF to play this role was also hampered by considerations of inter-ministerial competition. While the PM's Special Envoy was able to call on the authority of the Prime Minister's Office to sort out differences, the MoEF is unable to play this role.²² From the MoEF perspective, they were "very careful to allow the individual ministries not to get the impression that MoEF was becoming the single tsar."²³

More recently, the creation of a Committee of Secretaries promises to enhance the coordination role, because it will be composed of the highest ranking bureaucrats in each Ministry, who are therefore well placed to address any issues and bring a deep knowledge of the system. A committee of Secretaries is also an empowered committee which renders it the authority to demand that decisions taken by it are followed by line ministries. However, this approach provides no solution to the possible problem of inter-Ministerial competition.

Engagement with climate finance also suffers from coordination failures (Jha 2014). While the climate change finance unit at the Ministry of Finance has provided a node for position setting on climate negotiations, interface with projects remains in the hands of MoEF. And, critically, other than the designation of NABARD and a couple of other bodies as implementing agencies, there is no institutional mechanism through which projects can be identified and developed for climate financing. For example, there is no intermediary body that enables the long list of projects emerging from state plans to be developed into bankable climate finance projects. Even more important, there is no mechanism for strategic consideration of various projects and programmes to enhance the chances that individual projects aggregate to the 'directional shift' that is called for in the NAPCC.

Diplomatic policy regarding India's negotiating position, following the focusing moment of Copenhagen, has reverted back to a relatively unstructured process involving the Ministry of External Affairs and the Ministry of Environment and Forests, with occasional input from external advisers, notably retired bureaucrats.

On the domestic policy front, since 2010, implementation of some missions has been initiated, with the pace of implementation varying across missions. Although a detailed mission by mission analysis is beyond the scope of this paper, a quick review of government documents reveals some differences in the approaches taken by missions. First, the primary task of different missions varies by the nature of the mission. For example, for some missions, creation of a new policy environment is the primary objective, as with the National Solar Mission efforts to encourage investment in solar energy (Ministry of New and Renewable Energy 2009) and the National Mission for Enhanced Energy Efficiency (NMEEE) efforts to create a trading mechanism for energy efficiency credits (Ministry of Power 2009). The Bureau of Energy Efficiency, the nodal agency for NMEEE, also has a regulatory function under the Mission, setting energy efficiency standards.

Second, the degree of stakeholder engagement in design and implementation varies across the missions. The Green India Mission has perhaps gone the farthest toward engaging the public and multiple levels of government, establishing state level steering committees, and integrating implementation with the existing framework of forest institutions at district and village scales (Ministry of Environment and Forests 2010). While this integration is desirable, the implementation challenge will be to ensure that the Green India Mission is not entirely subsumed by the existing structure and its incentives, but results in a change consistent with the larger purpose of the Mission.

²¹ Interview with Jairam Ramesh, October 16, 2014.

²² Interview with Ajay Mathur, May 7, 2014.

²³ Interview with Jairam Ramesh, October 16, 2014.

Third, monitoring arrangements also differ by mission, in part by whether the topic of the mission operates under central government control or rests with the states. In some cases, such as the Solar Mission, monitoring is conducted by an Executive Committee, chaired by the Secretary to the MNRE (Ministry of New and Renewable Energy 2009). The Green India Mission includes a provision for remote sensing and third party monitoring (Ministry of Environment and Forests 2010). The Himalayan Ecosystem Mission includes monitoring by an inter-ministerial committee (Department of Science and Technology 2010). Again, the effectiveness of these monitoring arrangements will require detailed follow up analysis.

Institutional influence of line ministries has taken many forms and has depended on the nature of the mission. For instance, in the case of the Solar Mission, the MNRE, by facilitating the removal of barriers to development and deployment of solar technology, has modified the 'incentive structures for economic decision making' and has broken, to a small but important extent, the path dependence on certain forms of energy. Through the NMEEE, the Bureau of Energy Efficiency has set rules and defined standards that will guide, both industry and consumer behaviour. The influence wielded by ministries has been determined to a large extent by the strength of their Mission documents. Where mission documents have failed to set clear objectives or are lacking in direction and scope, impact has been limited.

The period after 2009 witnessed a thickening of institutional structure, notably in the Planning Commission and the Ministry of Finance, but these were short-lived and truncated efforts. Potentially more lasting was the embedding of climate institutions in line ministries and states, although questions remain about the capacity and cogency of these efforts. Most problematic, coordinating institutions atrophied, leaving no institutional spaces through which climate policy could be monitored, coordinated, and driven. The result risks a seemingly directionless and scattered effort at climate policy making.

7. CONCLUSION

Over the period covered by this paper, from 2007 to mid-2014, there has been a steady and growing institutionalization of climate governance in India. This institutionalization reflects the growing proliferation of policy instruments and objectives of climate policy. However, this institutionalization is very much a work in progress. Toward strengthening this structure, we conclude with several observations.

First, the context for formation of climate governance institutions, and indeed policies, has been one, frequently driven by international climate developments. For example, the formation of the Prime Minister's Council and its subsequent leadership of the NAPCC, appears to have been driven by the high level G8 process. Significantly, emulating the lead of other large developing countries, notably China, has also been an important component of Indian decision making, as in the form and timing of India's Copenhagen pledge.

At the same time, the form of India's reaction is not shaped by international pressures, but rather filtered through domestic political considerations. Thus, while the NAPCC was a reaction to global pressures, its direction, around co-benefits, is based on an understanding of domestic climate politics, in particular the emphasis on development objectives. However, this filtering process has often been *ad hoc*, undertaken under time pressure, and with inadequate reflection on both policy and its institutional crystallization. This reactive mode has filtered down to states, with states rather hastily setting up structures in response to a central diktat to produce plans. A more

deliberate construction of an institutional structure, keeping in mind the distinct challenges of mainstreaming, linking climate and development agendas by operationalising co-benefits, and operating across scales may lead to more useful institution building.

Second, institutions, once established, have tended not to be stable or long-lasting. The primary example of this is the Office of the Special Envoy in the Prime Minister's Office, which served as a coordination node during its existence, but which left a vacuum after it was dismantled. Creation of institutions appears to be ad hoc, and reactive rather than systematic. As one implication of this instability, climate policy making is heavily individually driven. Around 2008-09, the Prime Minister's Special Envoy played a strong role in shaping climate policy. After his departure, the incumbent Minister for Environment and Forests was instrumental in shaping climate policy. However, this approach can lead to both inconsistency across time, and a vacuum when no strong and interested leader emerges. For example, after Mr. Ramesh was shifted out of the MoEF in 2010, subsequent Ministers did not demonstrate appreciable interest in or engagement with climate policy. After the disbanding of the office of the Prime Minister's Special Envoy, there was a noticeable absence of coordination and strategic reflection across ministries and departments.

Third, with regard to knowledge generation and strategic thinking, there have been various different efforts to enhance this function, ranging from creation of the Advisory Council, informal consultations by the Special Envoy, creation of an expert group at the Planning Commission, and commissioning of occasional studies. All of these have added somewhat to the strategic heft of India's climate policy. However, collectively, they do not add up to a sustained and consistent mechanism for strategic thinking: the Prime Minister's Advisory Council, once the NAPCC was done, did not play an active strategic role; the Special Envoy's office had access to very limited analytical capability; and the low carbon expert group was an *ad hoc* effort that fell short of its mandate and did not lead to creation of mechanisms for ongoing knowledge generation that cumulate over time. Particularly in a context where climate policy needs to bridge domestic sectoral policy and global negotiation pressures, a sustained, strategic and analytically founded basis for strategy formation is not a nicety but rather a necessity.

Fourth, coordination across various parts of the government has ebbed and flowed with different institutional configurations, sometimes formally structured and sometimes informal. Arguably, the most explicit coordination, both of domestic and international policy, existed when the Prime Minister's Office included a Special Envoy on Climate Change. The ability to leverage the authority of the Prime Minister's Office to convene, resolve disputes and overcome hurdles was likely instrumental in generating forward momentum on several policies around Copenhagen. After 2010, coordination occurs in an ad hoc manner, through special committees in the case of mission, through bilateral consultation between MEA and MOEF on international negotiations and so on. But there is no overarching structure that encompasses strategic thinking, monitoring and allows for course correction.

Fifth, the overall capacity within the government with which to build a robust set of climate governance institutions remains limited. There are two aspects to this capacity shortfall. First, the specialised nature of climate change policy, which requires understanding links with several other areas of policy making, such as trade, energy, urbanization, agriculture and so on brings with it considerable knowledge requirements. The mechanisms do not exist at the moment to quickly mobilise this knowledge and bring it to bear on policy questions. One approach might be to supplement the general civil service approach of relying on highly competent generalists with a cadre of specialists, who bring both specialised knowledge and institutional memory over time. Another might be to develop the capacity of a few civil service personnel in the climate arena, which has been the *de facto* approach in the past. The second consideration is simply one of numbers: the nodal agency for climate change, MoEF, only has a handful of staff working on this issue, with a few more scattered through other ministries and departments, as

Table 1 summarises. It is a considerable challenge for such small numbers to keep up with the proliferation of international climate discussions, ranging from the UNFCCC to the Intergovernmental Panel on Climate Change to the Green Climate Fund, as well as manage the NAPCC and its missions, the various state plans, and a slew of bilateral climate engagements. Finding a sustainable and consistent way to bring better and more capacity to bear on the problem is a necessary prerequisite for effective climate institutions in India.

Sixth, the capacity shortfalls are exacerbated by almost entirely closed structures of climate governance that, so far, have provided few structured opportunities for public input and consultation. This is in contrast to some other emerging economies notably South Africa and Brazil that have put in place public deliberation processes (Raubenheimer and Younge 2011; Hochstetler and Viola 2012; Viola and Franchini 2012). So far in India, the NAPCC was a largely closed process, the low carbon expert group had no consultations, the Missions have been uneven in the extent of their consultative processes (with a couple of notable exceptions such as the Green India Mission), and the state plans have been heavily bureaucratically driven processes (based on an admittedly small sample of five states). Significantly, the policy formulation and institution building process has not, by and large, enabled or informed a large public discourse; instead, climate change has been treated as a technical design challenge rather than one, as the NAPCC proudly but perhaps somewhat hollowly proclaims, of bringing about a shift in development trajectories.

Finally, there has been little effort to think through an appropriate institutional form designed to suit India's stated approach to climate policy, which is focused on climate policy in a development-focused context, which concretely implies pursuing co-benefits in the mitigation area and mainstreaming climate adaptation considerations into development planning. Instead, the approach seems to be creation of multiple institutional openings in a rather scatter shot manner, often in hasty reaction to international circumstances. This approach is not without gain; it often creates opportunities for enterprising bureaucrats who are committed to bringing about change, or space for new voices, such as solar entrepreneurs. But it is far less deliberate than the approach other countries have chosen. For example, China's creation of a powerful central institutional capacity suits its top down centralised target setting and monitoring policy model (Held et al. 2011). The UK's analysis and public-report generating Climate Change Committee is explicitly designed to take forward its information-regulation based approach. Arguably, India's more multivalent approach has the merit of flexibility and facilitating experimentation. However, given the scale and scope of bringing about a directional shift, a more deliberate process of institutional design, while maintaining some of the benefits of flexibility, may also be warranted.

What are the necessary attributes of climate institutions that are well-suited to advancing co-benefits and promoting mainstreaming of climate objectives? While a detailed institutional design is beyond the scope of this paper, the contours of an approach can be drawn from the discussion here. At a conceptual level, this approach requires a facilitative rather than implementing approach that provokes informed engagement with climate considerations by existing authorities, promoting, over time, internalisation of these concerns; they should complement rather than replace existing implementing bodies. A robust analytical capacity – to track the burgeoning climate literature, develop and adapt conceptual tools (such as on co-benefits), and serve as a repository for consistent data collection – is an indispensable function. Given the capacity shortfalls in the government, the ability to draw in academics, civil society representatives and others with expertise to complement governmental capacity would be very helpful. In architectural terms, having institutional structures at multiple levels – centre, states, and cities – would reflect the increasingly multilevel governance nature of climate policy responses. Finally, lessons of the past suggest that a complementary high-level strategy group that can serve a coordinating role and an accountability function for other climate institutions is necessary.

While the details, such as the institutional homes for these roles, require a great deal more consideration, the last decade of climate policy-making suggests that an *ad hoc* and reactive approach to institutionalizing India's climate response has its limits. A more deliberate approach, and one that is tailored to India's policy approach to climate change, will provide long term payback.

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FIGURES

Figure 1: Institutions in Climate Change governance: Pre-2007

Source: Authors' representation based on interviews

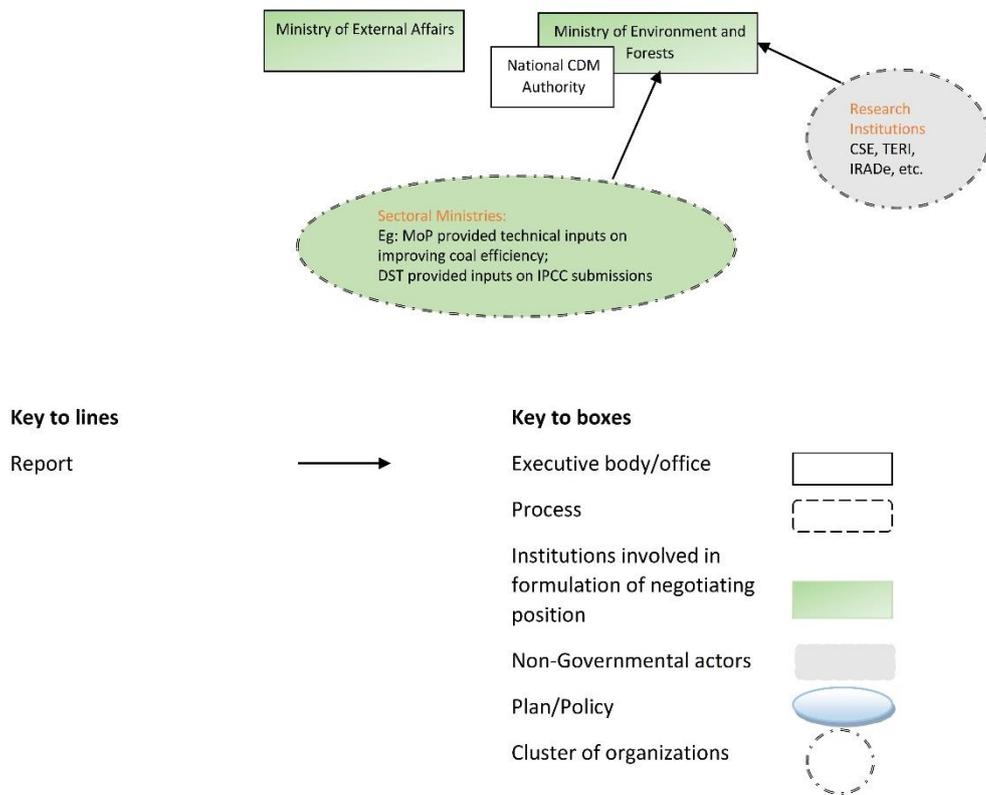
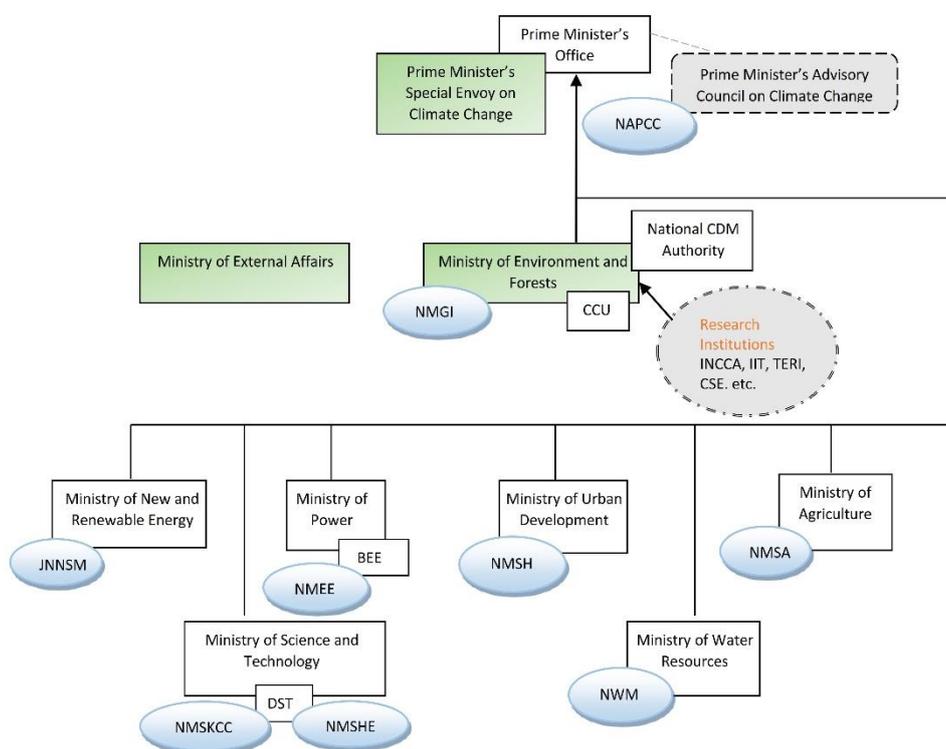


Figure 2: Institutions in Climate Change governance: 2007-09

Source: Authors' representation based on interviews



Key to lines

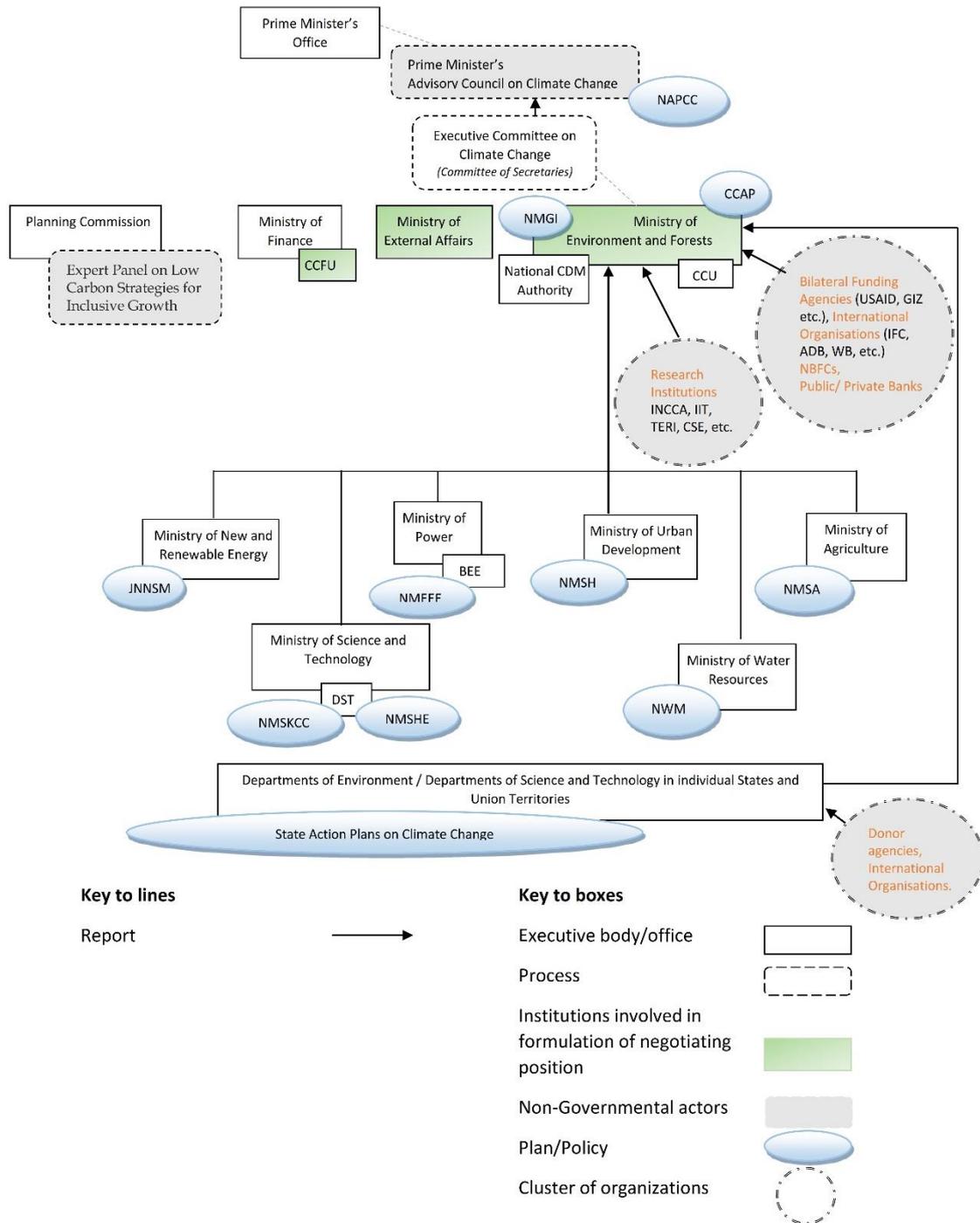
Report →

Key to boxes

- Executive body/office
- Process
- Institutions involved in formulation of negotiating position
- Non-Governmental actors
- Plan/Policy
- Cluster of organizations

Figure 3: Institutions in Climate Change governance: 2010 - mid-2014

Source: Authors' representation based on interviews



APPENDIX

Appendix I: Timeline of Policy Developments and Institutional Arrangements

1992		Countries (including India) join the United Nations Framework Convention on Climate Change (UNFCCC)
1993		India ratifies the UNFCCC
1994		The UNFCCC enters into force
1997		Countries adopt the Kyoto Protocol at COP 3 in Kyoto, Japan
2002		India ratifies the Kyoto Protocol India hosts COP-8
2004	16 April	Ministry of Environment and Forests (MoEF) notifies constitution of the National Clean Development Mechanism Authority
2005		Kyoto Protocol enters into force
2007	May	Prime Minister's Office (PMO) takes charge over the MoEF after the resignation of Minister, A. Raja
	June	At the G8+5 summit in Heiligendamm, Prime Minister Manmohan Singh pledges that India's per capita emissions would never exceed that of the developed world
	June	Prime Minister's Council on Climate Change (PMCCC) established First meeting of the PMCCC
	13 July	
	December	Countries adopt the Bali Action Plan at COP 13 in Bali, Indonesia
2008	January	Prime Minister's Special Envoy on Climate Change (PMSE) appointed
	June	National Action Plan on Climate Change (NAPCC) released
	July	G8 Summit held in Japan Parliamentary Forum on Global Warming and Climate Change set up
2009	June	Jairam Ramesh appointed Minister for Environment and Forests
	July	India signs MEF leaders' declaration that warming wouldn't exceed 2C and that MEF leaders would work towards a global goal to cut emissions

	August	Prime Minister Manmohan Singh urges states to draft State Action Plans on Climate Change (SAPCCs)
	24 August	National Solar Mission (NSM) approved by the PMCCC National Mission for Enhanced Energy Efficiency (NMEEE) approved by the PMCCC
	13 October	National Mission on Strategic Knowledge for Climate Change (NMSKCC) approved by the PMCCC
	14 October	Ministry of Environment and Forests launches Indian Network on Climate Change Assessment (INCCA)
	26 October	National Mission for Sustaining the Himalayan Ecosystem (NMSHE) approved by the PMCCC
	19 November	NSM approved by Cabinet
	December	Countries take note of the Copenhagen Accord at COP 15 in Copenhagen, Denmark
2010	January	Expert Panel on Low Carbon Strategies for Inclusive Growth constituted
	11 January	National Solar Mission (NSM) launched
	March	Prime Minister's Special Envoy on Climate Change resigns
	28 May	National Water Mission (NWM) approved by the PMCCC
	18 June	National Mission on Sustainable Habitat (NMSH) approved by the PMCCC
	24 June	National Mission for Enhanced Energy Efficiency (NMEEE) approved by Cabinet
	23 September	National Mission for Sustainable Agriculture (NMSA) approved by the PMCCC
	November	First report of INCCA titled 'India's Greenhouse Gas Emissions 2007' released
	December	Countries arrive at the Cancun Agreements at COP 16 in Cancun, Mexico The Cancun Agreements establish the Green Climate Fund
2011	22 February	Green India Mission (GIM) approved by the PMCCC
	6 April	National Water Mission (NWM) approved by Cabinet
	May	Interim report of the Expert Panel on Low Carbon Strategies submitted
	July	Jairam Ramesh resigns as Minister for Environment and Forests
	September	The Climate Change Finance Unit is constituted within Ministry of Finance (MoF)
	December	Parties to the UNFCCC launch a new process 'Ad-Hoc Working Group on the Durban Platform for Enhanced Action (ADP)' to negotiate a new climate agreement that will come into effect and be implemented from 2020.

2012	December	Countries adopt the “Doha Amendment to the Kyoto Protocol” at COP 18 in Doha, Qatar
2013	January December	Executive Council on Climate Change is constituted Cabinet grants approval for central sector scheme ‘Climate Change Action Programme’ (CCAP) under 12 th Five year plan
2014	20 February 28 February November	Green India Mission (GIM) approved by Cabinet National Mission for Sustaining the Himalayan Ecosystem (NMSHE) approved by Cabinet Newly elected Government under Prime Minister Narendra Modi reconstitutes Prime Minister’s Council on Climate Change

Source: Authors’ compilation