Compensatory climate governance in Indian federalism

April 2021

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WORKING PAPER

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ACKNOWLEDGEMENTS

This working paper is part of a multi-country analysis of federalism in climate governance, led by Sébastien Jodoin and Joana Setzer (editors). This project is supported by the Forum of Federations and the Government of Quebec. We thank them for this opportunity. This working paper was shaped by an author workshop in Montreal in 2019 and comments from the editors. We also thank Louise Tillin for bringing clarity to important elements at an early stage.

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Suggested Citation: Pillai, A.V. and Dubash, N. K. 2021. *Compensatory climate governance in Indian federalism*. New Delhi: Centre for Policy Research.

Introduction

The skilful navigation of tensions across scales of government tensions has long been central to the craft of governing India. The country is large, both in geographic size and population, contains a cultural multitude, and is comprised of sub-national units that have experienced radically different economic histories. The demands on the Indian state are varied. The intellectual history and practice of Indian federalism has consequently moved back and forth over a spectrum of central dominance and state autonomy. This oscillation typifies the historical development of important emissions sources like the electricity sector (Kale, 2014). The federation began life with a strong, coordinating centre sustained by ruling party alignment in the centre and states (Tillin, 2019). Centrifugal forces occasioned by the assertion of regional identities then tugged at its seams, casting a long shadow on areas of climate governance like agriculture and electricity (Dubash & Rajan, 2001). At the turn of the century, economic liberalization heralded the birth of competition between states (Sáez, 2002). We have now returned to a period of central dominance (Aiyar & Tillin, 2020).

It is on this precarious and ever-shifting federal terrain that a modern edifice of climate governance must be built. Where, then, is the firm ground? Are there enduring characteristics of centre-state relations that let us arrive at a relatively stable description of Indian climate governance? In this chapter, we arrive at a synthetic account of the constant forces shaping climate governance in India's federal architecture, building on descriptions of environmental federalism (Balveer Arora & Srivastava, 2019; Chakrabarti & Srivastava, 2015; Gupta, 2014; Roy & Golmei, 2018) and state actions in climate policy (Dubash & Jogesh, 2014; Jörgensen et al., 2015; Kaur & Singh, 2019; Kumar, 2018).

We argue that the highly asymmetric nature of Indian federalism -- a federal government holds the reins of state finances and constitutes the bulk of planning and bureaucratic capacity -- makes compensatory relations between centre and states inescapable in climate governance. Emergent practices have involved the use of institutional channels of fiscal transfer and federally mandated planning processes to help catalyse climate activity across India's states. States have taken fragments of the national agenda and adapted them to local political contexts that are hitherto innocent of 'climate' politics phrased as such. They play the role of marrying broader mitigation and adaptation concerns to local development. In the process, they contribute to the compensatory dynamic by creating a stream of policy ideas that then come to define the national response through channels of federal diffusion.

Derthick (2010) argued that federalism in environmental policy could best be described as two levels of government counteracting each other's weaknesses, a method of 'compensatory federalism'. Her illustrations of this phenomenon were rooted in the environmental churn of the United States, but the idea has broader salience. She spoke of a federal government that played the role of equalizer, turning its attention to the effects of policy or inaction that spills over boundaries and, "above all," striving to "bolster the weak and the wanting" and so limit differences in state performance (p. 61).

Yet, she argued, the federal government can fail because it is arrogant, unrealistic in its rule setting and complacent in issuing one-size-fits-all policy. States compensate for this by interpreting these alien constructs for local politics. Despite operating within the norms and targets handed down to them, states engaged in political experimentation that made them laboratories. This she found to be true despite environmental governance having experienced a process of rapid centralization since the 1970s, a phenomenon unsurpassed except in the area of civil rights.

The logic of compensation is perhaps inevitable in Indian climate governance. The general argument that devolution of planning to lower levels of government yields desirable efficiency (Hayek, 1939), is particularly true of several aspects of climate governance where unpredictable local effects and varying needs are the context for decision-making. Indeed, the principle of 'subsidiarity' has featured prominently in European environmental and climate governance debates (Jordan, 2000; Schreurs & Tiberghien, 2007). In India, this logic must operate within historical circumstances that have yielded an empowered federal government that influences the shape of state policy in nearly all spheres of governance.

This chapter begins with an overview of India's understanding of climate change by briefly showcasing emissions trends, adaptation challenges, and multilateral activity. The second section describes India's top-heavy federal architecture and environmental governance processes. The third section discusses the compensatory nature of climate governance necessitated by that federal skew. The conclusion dwells on the inherent vulnerabilities of this form of climate governance and what a new phase in Indian federalism could mean for India's response to climate change.

Climate change and India

India's importance in tackling climate change is rooted in it its size and growth. It is a country of 1.2 billion people with weak development indicators (Conceição, 2019) but one that has grown rapidly in recent decades as it pushes to join the ranks of middle-income countries. Its per capita income, adjusted for purchasing parity, grew 162 percent in the two decades since 2000 (World Bank, 2020).[1] Emissions have grown concomitantly, slightly more than doubling between 1994 and 2018 (Government of India, 2018, pp. 59, 81). In 2018, it was the fourth largest emitter (Global Carbon Project, 2019). At the same time, its per capita emissions are a third of the global average, placing equity concerns at the centre of its assessment of mitigation responsibilities (Dubash et al., 2018).

India has long held a diplomatic stance that seeks to avoid the developmental constraints implicit in international mitigation targets. The use of per capita metrics to underscore equity concerns around decarbonization are an early and consistently prominent feature of Indian climate politics (Dubash et al., 2018). Its position has been central to the evolution and practice of the principle of 'common but differentiated responsibility' (Sengupta, 2019), which places the onus of emissions reductions on developed countries that, India argues, caused global warming through excessive per capita emissions as they grew (C. Dasgupta, 2019). Despite helping construct a stable diplomatic scaffolding for its interests, India has been responsive to the shifting tides of global climate politics. It made its first numerical emissions pledge at the Copenhagen Conference of Parties in 2009, followed by an expanded and relatively more ambitious pledge at Paris (Dubash et al., 2018). It has also increased engagement in the broader regime complex for global climate governance, with active participation in multilateral forums for HFC and aviation regulation (Ghosh, 2019) among others. India has also begun creating climate platforms to burnish its international legitimacy, most notably by anchoring the creation of the International Solar Alliance (Neslen, 2015) and the Coalition for Disaster Resilient Infrastructure in recent years (Press Information Bureau (Govt. of India), 2019). Such activity sits atop a long history of engagement in in multilateral forums from the UN Conference on the Human Environment to the Convention on Biological Diversity; as we mention later, participation in these agreements allowed for the expansion of federal influence in environmental governance (Gupta, 2014).

[1] 2017 constant international dollars.

On the domestic front, India does not have legislation that explicitly carries climate nomenclature at either federal or state level. Instead, the institutional structure is comprised of a thicket of multi-sectoral climate plans and relevant legislation that predate the rise of climate change in the governance discourse of the late 2000s. Such laws include the Electricity Act (2003), which creates a legal basis for the nation-wide promotion of renewables, an energy conservation law (2001), and legislation on forests, water, air, biodiversity, and the like. The current governance approach is thus contingent on the creative interpretation and deployment of a variety of sectoral institutions and frameworks.

This architecture must address climate vulnerabilities that operate along two axes, one geographic and the other economic. On the one hand, India's geographic diversity entails multiple threats, from an increase in severe cyclonic storms along a long coast to the retreat of Himalayan glaciers that water the densely populated Indo-Gangetic Plain (Krishnan et al., 2020). Such diversity calls for a multiplicity of governance responses and emphasises the role of state and local governments. On the other hand, Indian states experience vastly different economic conditions and governance capacity constraints, which will impact their ability to deal with drawn-out systemic deterioration. Such deterioration is implied by an increased propensity for droughts and a decrease in summer monsoonal rainfall (Krishnan et al., 2020). India's federal structure, particularly states' ability to respond and the centre's capacity to even out capacity differences, attains salience in this context.

Federalism with a strong central bias

India's federation was forged at a moment of political upheaval, with the partition of the country at independence in 1947 presenting a foundational threat. Pre-independence plans of establishing a decentralized federation with substantial autonomy for its Hindu and Muslim constituent units evaporated as the British left and animosities with a newly created Pakistan grew. In response, the "Constituent Assembly rapidly moved to adopt a centralised federal model in which residuary powers would lie with the Union government" (Tillin, 2019, p. 21). This was in keeping with emerging trends in federalism in the wake of the Second World War, when large federations began building empowered central governments capable of delivering welfare in pensions, insurance, and healthcare. In India, the inclination in the first decade after independence was for a central government that sought to influence provincial policy through central planning (Tillin, 2019).
The Sarkaria Commission Report (Sarkaria et al., 1988), a prominent reform effort to address irritants in federal relations, described what resulted as "a *sui generis* system of two-tier polity in which the predominant strength of the Union is blended with the essence of co-operative federalism." Several features of the Constitution, they thought, "appear to have been deliberately designed to institutionalise the concept of co-operation" (1.3.28) rather than full-fledged state autonomy. Other commentators have famously described the structure as "quasi-federal" (Wheare, 1964, p. 28).

Environmental governance is set against this backdrop of centralization. The original Constitution did not recognize the environment as a distinct area of governance, but related sections, subsequent amendments and patterns in central legislation have since lent the federal government a dominant role. Article 253 of the Constitution importantly allows the centre to legislate on the subject matter of international treaties, regardless of whether it is exclusively under state jurisdiction (Gupta, 2014). This provision has been particularly important in the development of Indian environmental law and has paved way for landmark central legislation including the Environment Protection Act 1986 (Chakrabarti, 2015). The Act gives sweeping powers to the central government, allowing it to "take all such measures as it deems necessary" to protect the environment

and, in language that has a flavour of the landmark US Supreme Court ruling *Mass. vs EPA*,[2] gives it power to lay down "standards for emission or discharge of environmental pollutants from various sources whatsoever" (though 'environmental pollutants' has not been interpreted to include carbon by any court) (Environment (Protection) Act, 1986).

The division of powers in the Constitution gives the centre a direct hand in several realms of climate governance such as mines and petroleum; industry; and interstate waters. The centre also enjoys residual powers that allow it to legislate in areas not explicitly listed in the Constitution. The 42nd amendment to the Constitution, brought during a period of unprecedented centralization and a suspension of democratic rights, placed forests and wild life in the concurrent list of the Constitution (Chakrabarti, 2015), which allows both levels of government to legislate but the centre to prevail in a conflict. The legacy of an environmentalist Prime Minister in Indira Gandhi (Ramesh, 2017) underpins the centre's ability to dictate the use of forest lands, and consequently influence related areas of agriculture and water governance. The politically effervescent areas of agriculture and water governance are Constitutionally the preserve of state governments but are constantly shaped by numerous national schemes (Ministry of Finance (Govt. of India), 2020) and centrally designed 'model legislations' offered to states. Electricity, which constitutes over two-fifths of India's emissions (Government of India, 2018) is similarly in the concurrent list, with the centre historically defining a framework within which states operate (Electricity Act, 2003; Electricity (Supply) Act, 1948).

The fiscal power of the centre accentuates its structural dominance. States are responsible for implementation, but major sources of tax revenue are allocated to the federal government. This imbalance has led to the evolution of corrective institutional channels such as the Finance Commission, which decides on tax devolution and various conditional grants, and the Planning Commission, which until 2014 assigned funds to state development plans (Aiyar & Kapur, 2019). States are deeply dependent on central transfers through such mechanisms. The prominence of conditional transfers in this mechanism further restricts state autonomy because they prescribe policy in nearly all governance areas (Parikh & Weingast, 1997; Rao & Singh, 2004). Tillin (2019) captures the extent of central dominance (Table 1) by showing that, on average, states raise only 45% of their revenue from sources under their jurisdiction. An important feature of Table 1 is the wide disparity in states' fiscal autonomy.

State	Own Tax Revenue %	Share of Central Taxes %	Grants from Centre %
Nagaland	5	32	59
Mizoram	6	38	51
Arunachal Pradesh	6	71	18
Manipur	6	41	51
Meghalaya	13	44	35
Sikkim	14	45	31
Tripura	15	41	42
Jammu and Kashmir	19	23	49
Bihar	22	56	19
Assam	25	41	26
Himachal Pradesh	27	17	50
Jharkhand	28	41	20
Odisha	31	38	20
Uttar Pradesh	33	43	13
Chhattisgarh	35	35	19
Madhya Pradesh	36	37	19
West Bengal	39	38	21
Rajasthan	41	31	18
Uttarakhand	44	26	25
Goa	45	24	3
ALL STATES	*45*	*30*	*17*
Andhra Pradesh	45	27	24
Kerala	56	20	11
Punjab	58	20	10
Telangana	58	18	12
Gujarat	59	17	12
Tamil Nadu	61	17	14
Karnataka	62	22	12
Haryana	65	13	11
Maharashtra	67	16	11

Figure 1. *State dependence on central transfers in 2016-17 (table from Tillin 2019, p. 72)*

[2] Massachusetts vs. Environmental Protection Agency (2007) is an important ruling by the US Supreme Court that gave the federal government powers to regulate greenhouse gas emissions. The court found the Clean Air Act to have a "capacious" definition of the term 'air pollutant' that allowed greenhouse gas emissions to be included as one, thus placing it within the federal government's jurisdiction. The Indian EP Act 1986 defines "environmental pollutant" as "any solid, liquid or gaseous substance present in such concentration as may be, or tend to be, injurious to environment" and defines the "environment" as "water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property".

This asymmetrical federal layout in legal and fiscal realms emphasises the importance of institutional forums in reaching an agreement on the pace, depth, and cost of climate governance. Climate-specific interactions are channelled through the National Steering Committee on Climate Change (the NSCCC), a body composed of several senior central bureaucrats and four to five chief bureaucrats from the states. The body is less a platform for deliberation than one designed to monitor state actions by ensuring "uniformity and coherence" in the approaches of state climate plans, provide guidance on individual projects and approve financial allocations for these projects (Ministry of Environment, Forests and Climate Change, 2017). Alongside the NSCCC sits an assemblage of non-climate forums that could play a role in climate governance, such as an annual meeting of energy ministers (Ministry of Power (Govt. of India), 2018); a forum of electricity regulators (Forum of Regulators, 2005); and a currently inactive Inter-state Council that could play a role in several areas including the vexing question of governing interstate river disputes (Chokkakula, 2019).

The institutional inheritance of a centralized federal structure does not eliminate states from climate governance. They play an indispensable role in administering policy and are crucial players in the local political economies of climate change. The Sarkaria Commission's assessment of a system premised on cooperation is particularly true for climate governance, as we detail in the next section.

Compensatory climate governance

A powerful federal government that holds the reigns of expenditure also establishes the ideational framework within which climate governance is understood and enacted in Indian states. Derthick (2010) pointed out that such arrangements do not fully defeat the idea of federalism; states straitjacketed by restrictive normative frameworks exercise creativity because everything they do must pass the political test (p. 69). Indian states translate frameworks and institutional practices into actions implementable in their political contexts, and thus determine the frontiers of climate action in the Indian state. They create an assortment of ideas that occasionally then become the subject of federally anchored diffusion. In this section, we show that this compensatory process is visible across both mitigation and adaptation-related policies and across several Indian states. We begin with the central government's contributions to this process and end with a survey of state actions.

Federal financing for state action

The federal structure described in the previous section leaves the unfurling of climate action partially contingent on the creation of financial channels. These are necessary both for investments in resilience infrastructure and the incentives and capacities for an energy transition. Over the last decade, federal fiscal mechanisms have begun to evolve shades of climate responsiveness though these are undeniably subtle tones on a broader canvas. They include the incorporation of vulnerabilities into tax devolution formulae by the Finance Commission, the adaptation of some large centrally sponsored schemes to climate goals, instruments for project-specific central support, and the deployment of central state-owned enterprises to underwrite the renewable transition.

The Finance Commission is constituted every five years by the President to determine the extent of tax devolution. This is done through a formula that attempts to address regional imbalances in development. Traditionally, Commissions have assigned importance to attributes such as population, per capita income, infrastructure development, and fiscal discipline among other factors. The two Finance Commissions constituted since 2013 have moved to weave ecological and climatic concerns into their decision framework.

The 14th Commission took a landmark step in incorporating the state's forest cover as a variable in deciding the quantum of devolution, giving it a 7.5 percent weightage among four other criteria. An interim report from the 15th Commission has increased the weight to 10 percent (XIV Finance Commission, 2013; XV Finance Commission, 2019). The Commissions argue that states qualify for compensation because they bear a large opportunity cost in maintaining forests. The second report notes that this move is in line with India's Nationally Determined Contribution (NDC) to the UNFCCC, which pledges an increase in forest cover (Government of India, 2015), representing a minor link between international processes and India's fiscal structure.

The 15th Commission also pushes in a progressive direction on disaster risk management, the subject of a separate chapter in recent reports, arguing forcefully for a move from the currently dominant disaster *response* paradigm to one based on mitigation. To give effect to this, they establish substantial fiscal transfers based on state capacity and vulnerability to weather risks while also making the case for special initiatives for fires, coastal erosion, urban flooding, landslides, and droughts. Though the central government decides the ultimate quantum of transfers, these developments reflect the growing importance of climate change in India's fiscal federalism. The President's Terms of Reference place climate change in the top-tier of national concerns, asking the 15th Commission to consider the demands of the central government "particularly on account of defence, internal security, infrastructure, railways, climate change (…) and other committed expenditure" (XV Finance Commission, 2019, p. 68). The interim report of the 15th Commission hints at organic demand, noting that state and central governments "argued that issues relating to environment and climate change need to be given greater impetus" during consultations (XV Finance Commission, 2019, p. 4).

This evolution in India's fiscal architecture comes alongside deepening federal involvement in schemes and policies that have climate-salient outcomes. Many of these are interventions in areas under state jurisdiction. Of the 33 climate actions undertaken by the central government, just over a third (12) fall under the categories of transport, agriculture, water, health, and education that are the states' domain. Two interventions fall in the concurrent list (electricity and forestry) while the rest are either under federal jurisdiction or are schemes with multiple components under different jurisdictions (Government of India, 2018).

This is in keeping with a long-standing tradition of central involvement in state subjects through centrally sponsored schemes and state plans (Parikh & Weingast, 1997). For the period of India's 11th Year Plan (2007-11), Centrally Sponsored Schemes (CSS) accounted for 40 percent of central transfers to the states (Aiyar & Tillin, 2020), putting it in a league similar to devolution and grants from the Finance Commission. In 2014-15, there were "66 CSSs (…) financing all the major social policy programmes of the time" (Aiyar & Kapur, 2019, p. 192). CSSs will thus almost inevitably play a role in stimulating future climate action in the states but suffers from unidirectionality; there are no institutional mechanisms that allow states to contribute to design decisions (Tillin, 2019).

Beyond these major channels of fiscal federalism, the centre supports state climate finance in smaller and subtler ways. First, the NSCCC, the designated body for federal interactions on climate projects, gives the states have more discretion in identifying climate projects than the forums presented above but for smaller sums.[3] States present plans to the NSCCC, composed mainly of senior central government bureaucrats, and are then offered assistance, approval and funding (Parliamentary Committee on Estimates, 2018). Minutes of NSCCC meetings obtained through Right to Information requests reveal displeasure within the NSCCC from senior

[3] Funds for NSCCC approved projects are sourced from the National Adaptation Fund for Climate Change implemented through a bank under central government jurisdiction, the National Bank for Agriculture and Rural Development. The size of the fund from 2015-17 was INR 350 crore (approximately USD 47m at 2020 rates) (Parliamentary Committee on Estimates, 2018).

environment ministry officials, who criticized project proposal quality and lamented the slow utilization of funds (Ministry of Environment, Forests and Climate Change, 2017).

Second, the central government plays an important backroom role in facilitating the spread of renewable energy capacity across states. It does so in three ways: creating assured demand; establishing financial guarantees; and handling auctions for large volumes of capacity across the country. In the first instance, the central government deploys its power trading entities as a buffer by having them sign separate bilateral contracts with mostly private-sector generators and state-owned distribution utilities to insulate generators from precarious utility finances. They are the listed buyers for about half of all solar capacity auctioned in India (Bridge to India, 2020)]. The central government also tries to assure investors by lending its creditworthiness to utility contracts through a novel payment security mechanism (CEEW Centre for Energy Finance, 2019). Finally, our analysis of solar capacity auctions since 2010 shows that central enterprises have been responsible for conducting auctions for over 40 GW of solar capacity -- about twice as much as state agencies. They have thus come to play a crucial role in pushing the renewable agenda nationally.[4] The central backstop has been a consistent feature of solar development; it was crucial at the inception when state-owned enterprises facilitated the blending of inexpensive thermal power with solar power to bring down prices (Dubash & Joseph, 2016).

Central capacity fillip

Federal support also comes in the form of ideas and human resources. It pushed state governments to think about their climate actions systematically through monitored planning efforts. It has also played a role in establishing policy frameworks in important areas of mitigation, resulting overall in an uneven deepening of state government intervention involvement in climate matters. It indirectly works to fill bureaucratic capacity deficits in the states by facilitating the involvement of consultants and specialist organizations.

State climate planning processes did not develop organically. It was instead mandated by the central government during a period of heightened and foundational climate activity at the federal level. The creation of a National Action Plan on Climate Change in the run up to the Copenhagen Summit in 2009 forced the environment ministry to consider ways of seeding climate change in governance practice at the state level,[5] [6] resulting in State Action Plans on Climate Change (SAPCCs) in 32 states and federal territories by 2018 (Parliamentary Committee on Estimates, 2018). Though the process has had arguably limited effects, with some observers criticizing them for "falling woefully short of dealing with the climate-related challenges India is facing" (Kumar, 2018, p. 36), the process widened the field of climate governance in the Indian state.

One of the main issues with the planning exercise was the smothering effect of the National Action Plan, an important illustration of the pitfalls of compensatory climate governance. The SAPCCs were found to replicate the NAPCC and directions from the central government, likely because few states embarked on rigorous investigations of their vulnerabilities (Jogesh & Dubash, 2015; Kumar, 2018). Additionally, central influence constrained the planning exercise by forcing states to prioritize adaptation over mitigation actions to guard

[4] Data for this analysis was sourced from Bridge to India's repository of solar capacity auction results since 2010. Available at: https://india-re-navigator.com/utility/tender-tracker.

[5] Rashmi, R. R. Former Special Secretary, Indian Ministry of Environment Forests and Climate Change. (05 November 2019). Personal interview.

[6] Ramesh, J. Former environment minister. (04 May 2020). Personal interview.

against actions or voices that undercut India's negotiation position in international forums (Jogesh & Dubash, 2015).

A second reminder of the drawbacks of compensatory governance is an architecture that on balance relies on a single unit, the federal government, to fund actions across governments. State governments were not given a discrete line of central funding for the SAPCCs. They were instead expected to meet expenses through their approved 12th Plan outlays for discretionary expenditure and several smaller pools of central finance (Ministry of Environment, Forests & Climate Change (Govt. of India), 2014). The absence of a large capital infusion seems to have diminished the states' enthusiasm for the process (Kumar, 2018). While the State Action Plans do receive funding consideration on a project-by-project basis through the NSCCC mechanism, this is of small quantum, has high transaction costs and is subjected to a central approval process, and might thus limit state autonomy.

There centre reportedly also advised states to dovetail their actions with central schemes like the massive national rural employment program (Kumar, 2018). There were early indications that some states actively experimented with this approach and considered combining it with external donor funding (Jogesh & Dubash, 2015). This fiscal tension in climate federalism is compounded by an alleged perception in Delhi that states were hoping to execute a money-grab to finance other developmental initiatives, in "greed and not specific need", through the SAPCCs (Kumar, 2018, p. 24). The emergence of a separate channel of climate funds seems unlikely in the fiscal precarity induced by Covid-19.

The federal government has also tried to play a similarly catalytic role in the mitigation arena. It has established the clear expectation of a speedy transition to renewables by setting ambitious national targets and urging state regulators to rapidly force a shift in distribution utility purchase decisions. This approach has, however, revealed institutional tensions. States regulators have notified purchase obligations well below suggested trajectories in most states, and financially distressed distribution utilities have remained largely uncompliant (Vembadi et al., 2018). The centre has, in response, suggested an amendment to the framework Electricity Act 2003 that allows the centre to mandate rather than suggest purchase obligation trajectories on the states while increasing penalties for non-compliance. The centre's agenda-setting role extends to other important areas as well. In the electric vehicle space, it established a subsidy scheme for the manufacture of electric vehicles (Ministry of Heavy Industries & Public Enterprises (Govt. of India), 2018) and has signalled at ambitious national targets (Bhanvi Arora, 2018), thus contributing to recent policy activity in several states (Niti Aayog and Rocky Mountain Institute, 2019). The centre was also the first mover in the energy efficiency space, establishing national institutions and paving the way for the creation of a decentralized network of Energy Service Companies though the efficacy of this model is questioned (Harrison & Kostka, 2018).

The second function the federal government fulfils is to compensate for deficiencies in state-level bureaucratic capacity. This attains significance in a context where state bureaucracies are uniformly led by India's elite national administrative service, have similar structures of recruitment, pay and promotion but nonetheless exhibit remarkably different capacities to implement public policies (Mangala, 2015). The challenge is particularly acute in the amorphous area of climate policy, an intricate mix of creating of new institutions and policies while delicately reforming old ones to address new information. A longstanding technical advisor to state governments on climate matters notes that state governments have failed to spend monies channelled through the NSCCC largely because they are unable to conceptualize and execute large climate projects.[7]

[7] Chaturvedi, A. Director – Climate Change, GIZ India. (28 January 2020). Personal interview.

Signalling from the central government could also play a role in mobilizing state bureaucrats. These signals are sent though the progressive layering of climate linkages into national schemes, the Prime Minister's rhetorical elevation of the subject, and the announcement high-profile targets that are mostly contingent on state actions. The structure of Indian state bureaucracies, led by junior Indian Administrative Service (IAS) officers eager to make the leap to Delhi, incentivizes "allegiance to the bureaucratic hierarchy at the centre" and pushes the IAS cream to prioritize central schemes in their interaction with subordinate state bureaucrats (Aiyar & Kapur, 2019, p. 210). This indirect transmission mechanism could become an important, if indispensable, part of mainstreaming climate change in state governance if CSSs become the preferred vehicle for climate policymaking.

The centre's agenda setting role cannot, however, compensate for a glaring lack of capacity at lower levels. Dasgupta and Kapur (A. Dasgupta & Kapur, 2017) surveyed India's Block Development Offices, an important village-level unit of governance, to find 42 percent of posts vacant. They argue that thinness in local capacity results in 'bureaucratic overload' that forces rural development officials to multitask and perform badly in program implementation. The localized nature of the climate challenge will likely increase and amplify the capacity deficits faced by precariously poised local bureaucrats.

To address these challenges, the central government occasionally funnels expertise to the states. For example, the central government convened technical advisors such as UNDP, the UK's Department for International Development and Germany's GIZ after the SAPCCs were announced, asking these organizations to assist states in plan development.[8] [9] [10] These organizations employed consultants and civil society organizations in what amounted to a short-term fix to the capacity constraint (Dubash & Jogesh, 2014). This is not a one-off, with state governments receiving assistance for ongoing revisions as well.[11] This part of a broader trend, across central and state governments of filling lacunae in climate capacities with external consultants, in areas ranging from the electricity sector to electric vehicles (Niti Aayog and Rocky Mountain Institute, 2019).[12]

Taken together, the federal contribution to the compensatory dynamic is catalytic. This catalysis occurs through the gradual layering of climate-linkages into state financial flows; the stimulation of planning activity that might have otherwise happened unevenly or with great delay; the creation of soft bureaucratic incentives; and by funnelling technical capacity to the states at key moments. While important, this is not a sufficient condition for a working compensatory relationship. In the next section, we turn to how states respond to these federal moves.

Translation in the states

States are forced to serve as the crucial final link in delivery and at the front line of politics. In the compensatory dynamic, this involves elevating the profile of climate-salient developmental activities by making a strong political case for them. In this section, we show that this is a contingent process through broad brushstroke examples. This translation process sometimes leads to policy innovations that diffuse vertically to become the standard for national action, giving some credence to the idea of Indian states as laboratories in climate policymaking.

[8] Chaturvedi, A. *op. cit.*

[9] Mitra, S. Senior Climate and Environment Advisor. (05 February 2020). Personal Interview.

[10] Soni, P. Chief - Climate Change, Resilience and Energy. (23 January 2020). Personal Interview.

[11] Chaturvedi, A. *op. cit.*

[12] Pradhan. G. Former Chairman, Central Electricity Regulatory Commission. (09 January 2020). Personal Interview.

This translation exercise is important because state politicians operate in a milieu innocent of 'climate' politics. Demands for emissions reduction or an understanding that more frequent natural disasters are the product of a changing climate do not animate elections or the political discourse. Climate change found mention in the election manifestos of major national parties for the first time in the general election of 2019 but played a negligible role. In the ruling party's manifesto, it comprised 116 words of 18,327 (0.6 percent) and was confined to a section on infrastructure. The subject was given only slightly more attention in the principal opposition party's manifesto, occupying 4.6 percent across multiple sections (Dolsak & Prakash, 2019). Parliament has seen little substantive discussion on the issue over the last decade, in further indication that it does not command electoral space (Dubash, 2019). For policy outcomes salient to climate change to emerge, governance must find a rhetorical form appropriate to the political landscape.

Evidence suggests that states have managed this political task well enough to build a cumulative body of policy that represents an advancement in Indian climate action. Alongside the 32 adaptation-focused climate action plans mandated by the federal government, states have established 15 solar policies, 10 energy conservation building codes and seven electric vehicle policies, apart from several LED-village lighting campaigns, energy efficiency programs and afforestation initiatives (Kaur & Singh, 2019). State policy profiles vary, but leaders exhibit a common inclination towards energy efficiency schemes, which is possibly a reflection of high energy prices.

North India's air pollution problem is illustrative of how such policies can emerge from local political concerns. Air pollution has evolved into a complex federal environmental issue because it affects a large swathe of the country's north, including the national capital, and is partially caused by the winter burning of paddy stubble in the predominantly agricultural states of Punjab and Haryana (Jalan & Dholakia, 2019; Sharma & Dikshit, 2016). After elevating the issue's profile in campaigning for Delhi's 2020 elections (Sharan, 2019), its Chief Minister unveiled an electric vehicle policy whose stated primary objective is bringing down pollution (Government of Delhi, 2020). The policy contained generous consumer subsidies for Delhi's large urban population and is mostly funded by an "Air Ambience Fund" built on longstanding diesel taxes (Government of Delhi, 2020). The Chief Minister's remarks at the launch also positioned the policy as a salve to economic damage caused by Covid-19 lockdowns and laid claim to Delhi's global leadership on the issue, highlighting the importance of appealing frames in establishing ambitious policy.

In nearby Punjab, the government positioned its response to stubble burning as climate salient as early as 2015 by making a successful proposal to the NSCCC for a technology development program for the "gainful utilisation" of paddy straw (Ministry of Environment, Forests and Climate Change, 2017), among a slew of other incentive-based measures (Chaba, 2020; Harish & Ghosh, 2020) that refrain from exacting costs on the crucial farmer vote bloc. Speaking at a recent national forum, a senior government official from Punjab described these actions as part of a "climate smart" agricultural strategy (Shekar, 2020). The air pollution crisis has thus created space for at least two policies that reduce emissions, each tailored to important domestic constituencies.

Some state leaders have been explicit in foregrounding climate concerns at crucial political junctures. The worst floods in Kerala since 1924, which affected a sixth of the state's population in 2018, led the Communist government to release a sprawling plan to "build back better" using climate first-principles (Government of Kerala, 2020). The plan proposes a major overhaul of infrastructure, institutional coordination, and policies across most areas of governance in service of a "new Kerala" (Government of Kerala, 2020, p. 11). The political moment at which this plan emerged gives it a different tenor than previous attempts at climate planning; it came in response to one of the worst disasters in the state's history and at a crucial time in a first time Chief

Minister's tenure (Padmanabhan, 2018). The Chief Minister of Bihar, an agricultural state that has experienced frequent and deeply damaging flooding over many centuries, has also made the unprecedented move of highlighting climate change in campaigning for the state's 2020 elections. This involved a widely covered four-day tour of the state that highlighted new policy measures in water management and agriculture apart from participation in a climate roundtable hosted by the UN Secretary General, which is unusual for Indian Chief Ministers (Mishra, 2019; Press Trust of India, 2020).

These examples are meant to illustrate the important entrepreneurial work involved in making political space for climate policy in Indian states. This applies to urban states (Kerala and Delhi) and rural ones (Punjab and Bihar). Such actions are important in the compensatory dynamic because they give local form to the central support.

Such efforts occasionally result in policy innovations that animate the wider country's understanding of climate governance. An emblematic recent example is a scheme for solar-powered agricultural pumps in the southern state of Maharashtra. Its ambitions of connecting many of its farms to large solar plants could relieve distribution utilities of the burden of supplying subsidised electricity for irrigation (Maharashtra State Electricity Distribution Company Limited, 2019). The idea has been eagerly embraced by the central government through a national program that subsidizes the installation of 10 GW of decentralized solar plants for agriculture and 2.7 million farm-level agricultural pumps, of which some are meant to sell power back to the grid (Ministry of New and Renewable Energy (Govt. of India), 2019).

The reasons for Maharashtra's leadership lie in the political economy of its energy development. It has historically lacked sufficient capacity to meet the demands of its rapidly growing base of small and medium industries in the 1990s, prompting it to implement pioneering wind energy policy (Chaudhary et al., 2014). Maharashtra also established the first clean energy fund in the country (2006), investing in infrastructure and renewable projects through a small tax on commercial and industrial electricity consumers. This was a precursor to the National Clean Energy Fund, which has imposed progressively higher taxes on Indian coal since 2010 (Chitnis et al., 2017).

Maharashtra also led the way in establishing regulatory precedents that have since become central to India's ongoing renewable energy transition. In the precarious months after the restructuring of the Indian electricity sector in 2003, Chaudhary et al. (2014, p. 19) credit the state electricity regulator for putting out a "seminal" tariff order and study on feed-in-tariffs that was later adopted by the national electricity regulator. The Maharashtra regulator also established the first Renewable Purchase Standard in the country, an idea subsequently picked up in the National Electricity Policy (2005) and today the primary instrument for setting the pace of the renewables transition.

Some states are experimenting with new institutional arrangements for climate governance, which could constitute an important frontier in experimentation. Climate-specific organizations have emerged in Gujarat and Odisha, for example. Both are supposed to serve coordination functions by linking horizontally with other departments and vertically with the central government (Government of Gujarat, 2018; Government of Odisha, n.d.). The Rebuild Kerala Development Program, mentioned earlier, is coordinated by a Secretariat (Government of Kerala, 2020) that might indirectly assume climate functions because of the nature of the plan. It is, however, premature to conclude whether these models are worthy of diffusion given the absence of credible institutional evaluations or publicly available detail of their activities.

The two functions listed here, political translation and ideation to set new federal standards, are not exclusively the role of the states. The central government has a role in manufacturing the political space for policies too, particularly in the context of central sector schemes (CSS) being deployed to burnish the popularity of the current ruling party (Aiyar & Tillin, 2020). But state-specific crises (like floods in Kerala) or needs (the power deficit in Maharashtra) bring responsibility to the door of the Chief Minister and other state elites, giving them an important role in building and legitimizing policy.

Conclusion

Indian federalism is an unambiguously important element in the country's response to climate change. This is because of the presumption of a stable compensatory dynamic between the federal government and the states in any version of an effective response. This institutional configuration arises from a historical skew in power and resources to the federal government, deliberately crafted in the tumult after Indian independence and just as the global conversation on federalism became more accepting of central dominance in economic and social policy. Since climate governance is nearly all encompassing in the scope of actions it demands, the centre must allocate financial and intellectual resources to stimulate and occasionally supplement action in nearly every area of state jurisdiction. Yet the nature of this top-down force in the compensatory dynamic is deeply conditioned by the central government's foreign policy. It has worked assiduously to prevent the constriction of its developmental space due to pressures from climate negotiations.

The ideas that underlie the federal government's approach to climate change, of necessarily seeking co-benefits to mitigation action and adhering to the principle of common but differentiated responsibilities, filter through to the states in this compensatory dynamic and thus establish the normative boundaries for appropriate climate action. This was particularly evident when the SAPCCs were first conceived and instructions passed down to the states; state governments moulded their actions to a national template and refrained from emphasising mitigation actions. Within this framework, however, we have showed that state governments are willing to experiment with the rhetoric of climate change at crucial political junctures and have organically developed policies that have climate co-benefits. While our assertion of shifting interests at the state level may not be equally applicable to all 29 states, we show that there is enough experimentation to conclude that we are witnessing the gradual fulfilment of the bottom-up function in the compensatory dynamic. The Indian example therefore aligns with Derthick's description of 'compensatory federalism', perhaps unexpectedly given the vast differences in their federalism structures and economies.

The configuration undoubtedly presents risks. The first of these is a failure of adequate fiscal devolution from the centre. States have vocally complained that they have not been receiving their fair share in recent years as economic growth has slowed. A second threat arises from the possibility of a central government that fails to mainstream climate in its programs and fiscal transfers. The centre's normative and fiscal power also places an upper limit on the depth and pace of state policy. Cumulatively, this configuration could have a chilling effect on state action and rob the multi-level governance system of its presumptive stability.

The risks are no less vexing with the states. The large variation in state capacity will become more evident as climate impacts grow more severe and frequent and calls for drastic mitigation grow louder. Climate change threatens to the make the long-established equalizing role of the federal government more complex by exacerbating regional inequities. The second state-side threat comes from the absence of a disciplining force from below; climate change's low political salience threatens to result in a patchwork of disconnected and possibly discordant climate-relevant initiatives. This would forestall the institutional development necessary

for states to become reliable engines for new climate policy that efficiently convert central resources into local initiatives over a broad time horizon.

This analysis of Indian climate governance does not fully capture the pivotal current moment in Indian federalism. For the first time since the decades after Independence, a single party dominates state and national capitals. The party system has historically been an important forum for centre-state dialogue. How this changes the conversation in areas of climate governance, and whether it will result in the exclusion of opposition-ruled states is unclear. This is an important avenue for future enquiry. There have also been recent attempts to centralize agenda-setting and policy prescription in several key areas of climate governance, most notably the electricity sector. The changing landscape of Indian federalism will thus have long-term impacts on the conception and practice of climate governance.

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