

# Airing Differences? Reading the Political Narrative on Air Quality Management in India

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## Summary

Air pollution exposure is a year-round, nation-wide public health crisis in India. This paper presents a careful reading of nearly eleven hours of discussions on air pollution that took place in the upper and lower Houses of Parliament in November 2019. The discussions provide unique insight into the emerging political narrative around air quality governance in India. The parliamentarians constructed an overly peak-oriented and Delhi-centric view of the problem. Contrary to the long-held scepticism of the environment ministry, parliamentarians across political parties cited global evidence on the adverse health impacts of air pollution exposure, especially on children. In addition, they drew on themes like intergenerational responsibility, equity, and Indian cultural heritage while signaling the need to act with urgency.

As the discussions were dominated by crop residue burning, the Delhi government received significant criticism for blaming farmers, and parliamentarians across the board expressed solidarity with farmers as they proposed various alternative interventions to penalties. Legislators highlighted a variety of institutional, legal, and financial opportunities to strengthen Indian air quality governance, but demonstrated relatively limited engagement with the nuances of sectoral mitigation measures. Reflecting on an issue of growing political salience in India, this paper also offers insight into significant developments and gaps in the political discourse on air pollution in the two years since these discussions, and into the present day.

## 1. Introduction

During the 2019 Winter Session of Parliament, both Houses discussed air pollution at length, accounting for almost eleven hours of discussions. These happened in the backdrop of an extended period of hazardous air quality in the National Capital Region (NCR) ([PTI 2019](#)). This paper presents a careful reading of these unprecedented discussions on air quality in the Parliament, which reflected the growing acknowledgment of this crisis among the political class. As representatives from different parts of the country and across political parties stood up to define the problem, hold government actors and polluters responsible, and present solutions, these speeches give us unique insight into the emergent narrative on air pollution in India. The narratives that elected representatives construct are especially revealing since “politicians do not passively translate evidence into appropriate action, but instead, [...] shape an issue to fit with their ideology, the views and opinions of voters and other actors” ([Willis 2018](#)).

Air pollution exposure is a pan-India, year-round public health crisis estimated to cause the deaths of more than 1.2 million Indians every year ([Health Effects Institute 2019](#)). A growing body of global and national evidence suggests that air pollution exposure has adverse impacts on cardiovascular, respiratory, and cognitive health, and reduces the life expectancy of an Indian child by at least 1.5 years ([India State-Level Disease Burden Initiative Air Pollution Collaborators 2019](#); [Apte et al. 2018](#)). There are several major sources of air pollution in India: power plants and industries; transportation emissions; biomass burning (including household solid fuels and crop residue burning); municipal solid waste burning; and road and construction dust ([Guttikunda et al. 2014](#); [GBD MAPS Working Group 2018](#); [Guttikunda et al. 2019](#)). These sources operate on different geographical scales, span several economic sectors, and involve numerous political and administrative jurisdictions.

Since the nineties, policy efforts to address air pollution have often been at the behest of the judiciary, with

the executive being reactive at best. Judicial directions led to some far-reaching changes in Delhi, including the mandatory conversion of vehicles to Compressed Natural Gas, specially tasked authorities, and the forced relocation of hazardous industries outside Delhi ([Bell and Narain 2005](#); [Jackson and Rosencranz 2003](#)). However, many of these directions have been criticised for their “middle class bias” ([Veron 2006](#)) and “bourgeois environmentalism” ([Baviskar 2011](#)), especially given the peculiarities of the Public Interest Litigation route ([Bhushan 2004](#); [Bhuwania 2018](#)). On the other hand, air pollution action plans driven by the executive – especially the National Clean Air Programme (NCAP) – have so far been laundry lists of measures, with arbitrary, aspirational timelines and negligible prioritisation ([Harish, Ghosh and Dubash 2019](#)).

India’s legislature has not played a prominent role in air quality management thus far. Three laws that are now more than three decades old provide the legislative underpinnings of air quality governance: the Water (Prevention and Control of Pollution) Act, 1974; the Air (Prevention and Control of Pollution) Act, 1981 (“the Air Act”); and the Environment (Protection) Act, 1986. These have seen few changes since; the Air Act has been amended only once in 1987 ([Ghosh 2015:7](#)). Despite clauses in the Air Act placing significant limits on regulation that have been recognised for decades, no effort has been made to amend these ([Abraham and Rosencranz 1986](#); [Ghosh 2015](#)). Individual legislators can do little to amend legislation in the Indian Parliament. The MPs’ substantive role in law-making has been in decline for decades, as evidenced by bills being passed with little scrutiny or debate ([Madhavan 2017](#)). Only 14 private members’ bills have translated to legislation in total, and the last such instance was in 1970 ([Singh 2015](#)).

Air quality seems to have become politically salient in recent years, at least in Delhi. For instance, the Delhi government took out page-long ads in October 2019 claiming that Delhi’s pollution levels had significantly reduced ([Times of India 2019](#); [Ghosh and Harish 2019](#)).

That month, the Delhi government also released the “*parali pradushan* action plan” (action plan for pollution from crop residue burning) – a series of emergency measures for when air pollution levels were expected to spike in November ([Kejriwal 2019](#)). Effectively, the Delhi government’s plan and subsequent statements by the Chief Minister pinpointed the burning of agricultural crop residue as the principal reason for Delhi’s poor air quality levels ([PTI 2019](#); [India Today 2019](#)). During the 2020 Delhi assembly elections, all three major political parties featured air pollution in their manifestoes. Unsurprisingly, increased political salience has also manifested in the form of blame games among state governments in the region, and between the state and union governments. While these can be frustrating for advocacy groups worried about the slow pace of progress, far from developing “a complete mistrust of politics and a longing for authoritarian environmentalism” they must engage with “how political decision-making operates in the Indian democratic system” ([Negi 2019](#)).

As the “premier institution of representative democracy in India” ([Kapur and Mehta 2006](#)), the Parliament has a key role to play in mainstreaming air quality objectives in our governance discourse. In this paper, we closely examine the discussions that took place in the Lok Sabha and Rajya Sabha on the air pollution crisis in India in November 2019. Through a careful reading of the transcripts, we highlight themes and ideas that emerged in these discussions. We outline the methods used in Section 2. In the next three sections, we analyse the speeches’ content against the following salient questions. How do the MPs describe the scale of the problem (Section 3)? Which sources do they present as the principal contributors (Section 4)? Which policy efforts do they endorse or criticise, and what do they see as important opportunities or gaps in policy making (Section 5)? Conversely, we also outline what was left unexpressed: the blind spots in the existing political narrative on air quality. Section 6 discusses how these blind spots may influence decision-making around air quality policies. Section 7 outlines significant developments in the political narrative on air quality in the two years following these discussions. Section 8 concludes with a brief reflection on why a more engaged political discourse is essential.

## 2. Methods

Our analysis is based on the official transcripts of discussions in the Lok Sabha on November 19, 21 and 22, 2019<sup>1</sup> and in the Rajya Sabha on November 21, 2019.<sup>2</sup> Appendix 1 lists the names of the parliamentarians who delivered speeches, their party affiliations and the duration of their speeches. In the Lok Sabha, a discussion titled ‘air pollution and climate change’ took place under Rule 193—a rule enabling Members of Parliament (MPs) to raise a ‘short duration discussion’ on ‘a matter of urgent public importance’.<sup>3</sup> In the Rajya Sabha, a discussion was prompted by three ‘calling attention’ motions, and was presented to MPs as a discussion on the ‘situation arising out of the dangerous levels of air pollution in the country, particularly in Delhi’ ([PIB 2019](#); [Government of India 2019](#)).

In the Lok Sabha, remarks by each of the 44 MPs were followed by a response from the Minister for Environment, Forest and Climate Change. In the Rajya Sabha, the House followed a ‘calling attention’ procedure, the Minister asked to speak first, followed by 28 MPs called by the Chair; the discussion ended with the Minister responding to the concerns raised. Of the 72 MPs across the two Houses, 25 belonged to the ruling National Democratic Alliance at the time, with 18 from the Bharatiya Janata Party (BJP) that leads the coalition. 10 MPs belonged to the Indian National Congress, the largest opposition party.

In both Houses, speeches lasted between 3-20 minutes, and in most instances the speeches were delivered in English, Hindi, or a mixture of both. There was one speech made in Kannada, one in Punjabi, and one in Urdu – these speeches were translated to Hindi or English in the official transcripts. Most speeches<sup>4</sup> lasted less than five minutes.

There is a small but growing literature analysing political speeches. Methods used typically involve assessing the frequency of specific keywords or phrases, analysing the usage of particular expressions, or interpreting text from the speeches in the context of political developments or other qualitative categories ([Willis 2017](#); [Milizia 2014](#); [Schonhardt-Bailey 2005](#); [Sharififar and Rahimi 2015](#); [Finlayson and Martin 2008](#)).

As the discussion in the Parliament unfolded in multiple languages, and in the context of specific time limits, the quantitative methods applied in the literature did not lend themselves well to our analysis. Instead, we opted to follow a more qualitative approach in studying the content of these speeches.

We collected direct quotes from every speech and analyse them along three themes. First, we look at how MPs framed the scale and nature of the crisis, and who it impacts. Second, we take stock of the different sources that they present as the chief culprits, and of the solutions that they offer. Finally, we examine the extent to which the legislators held the executive – at the union and state levels – accountable for air quality mitigation measures. We also outline the recommendations made by the parliamentarians to strengthen air quality governance in India. The endnotes to this paper extensively document longer quotes from these speeches which make for engaging and insightful reading.

### 3. Framing the Air Pollution Crisis

Parliamentary discussions on air quality levels signaled for the first time that legislators were willing to frame air pollution as an emergent public health crisis – at least in the National Capital Region (NCR). With wicked problems like air pollution, framing matters greatly since “the way a problem is defined is very closely tied to the type of solution that is proposed” (Head 2019). How did MPs discuss the scope of the air pollution crisis in India? What did they frame as the technical and ethical aspects of the problem, and what did they highlight as its regional and temporal characteristics? We address these questions by exploring three recurring themes in the parliamentary narrative on air pollution.

#### *An NCR-centric and episodic view of a year-round, nation-wide challenge*

Air pollution exposure is by no means restricted to cities or winters; in fact, more than 76% of Indians live in areas exceeding the national ambient air quality standards (India State-Level Disease Burden Initiative Air Pollution Collaborators 2019). In both Houses, however, the discussions on air pollution were wholly limited

to urban areas, and to peak pollution levels in the NCR during the winter. This was perhaps to be expected in the Rajya Sabha, where the title of the discussion singled out ‘dangerous’ levels of air pollution in the capital; however, even in the Lok Sabha, the more broadly defined discussion on ‘air pollution and climate change’ remained firmly rooted in Delhi, and centred around smog episodes during the winter.

To describe the poor air quality levels, most MPs preferred to refer to the Air Quality Index (AQI).<sup>5</sup> Only six of the 72 MPs<sup>6</sup> referred to Indian or WHO annual standards for PM<sub>2.5</sub> or PM<sub>10</sub> concentrations to provide evidence for poor air quality levels. This seems to reflect a broader trend where the AQI, a useful but inconsistently calculated metric introduced in India in 2015 (Harish and Pant 2019), has replaced air quality standards as the basis for describing pollution in popular discourse.

At the outset, some MPs made short-lived references to air pollution as a global problem that was especially prevalent in Indian cities. Manish Tewari opened the discussion in the Lok Sabha by declaring that air pollution was relevant ‘not just in India, but in the whole world’. Jagdambika Pal added that, ‘7 million people have died due to poor air quality worldwide’.<sup>7</sup> Nearly every MP proceeded to bemoan the sheer number of Indian cities on the World Health Organization’s (WHO) database of the world’s most polluted cities (World Health Organization n.d.). As they discussed the extent of the crisis further, however, MPs inevitably narrowed the scope of the conversation.

To justify their focus on episodic pollution in the NCR, MPs pointed to various factors: the centrality and political significance of the capital city, the visibility of air pollution in the NCR, and what they perceived as a damaging confluence of polluting sources in the NCR: vehicles, power plants, construction dust. Most MPs were firm advocates of focusing on the capital city, noting that, ‘all the important institutions and governance heads are located in Delhi’ (Manish Tewari).<sup>8</sup> A handful of MPs also opined that Delhi was the city most plagued by air pollution in India. Delhi was referred to as the ‘worst-affected’ (Gautam Gambhir), ‘the most polluted city’ (Parvesh Sahib Singh Verma), and ‘the number one polluted capital in the world’ (Pratap Singh Bajwa). Finally, MPs highlighted the apparent convergence of

several sources of pollution: Midhun Reddy said that air pollution was ‘particularly complicated’ in Delhi ‘because of the huge number of automobiles, and also due to stubble burning’; KRRK Raju pointed to ‘the power plants surrounding Delhi – especially coal based power plants’ that had insufficient emissions control mechanisms.<sup>9</sup>

There were a few notable exceptions to this restricted framing of the crisis. Kakoli Ghosh Dastidar and Rahul Ramesh Shewale described the smog-conducive topography of the Indo-Gangetic region in the winter.<sup>10</sup> Sanjay Singh, Vandana Chavan, and Ravi Prakash Verma read out long lists of cities and states with high AQI levels to indicate that air pollution was a problem across many urban areas. Hanuman Beniwal protested that MPs were ‘only talking about Delhi, when this problem is affecting not only Delhi, but many cities in the country and their people’. Making a similar point, Kaushalendra Kumar further argued that it was wrong to ‘point only to the Delhi government’. Surender Singh, Shashi Tharoor, Adhir Ranjan Chowdhury, and Parvesh Sahib Singh Verma warned against framing air pollution in an episodic manner, with Chowdhury lamenting the lack of ‘long-term perspective’ on air quality management.<sup>11,12</sup> Sumathy, Vandana Chavan, Bhola Singh, and Tiruchi Siva each drew attention to air pollution in their constituencies and states.<sup>13</sup> Despite these repeated efforts to widen the scope of the discussion, however, the conversation inevitably circled back to the NCR.

In his remarks, the Environment Minister, Prakash Javadekar, said that air pollution in Delhi ‘gets aggravated during winter months’. The Minister also claimed that air pollution in Delhi had improved between 2016 to 2019, and that the problem was not new and ‘began twenty years ago’.<sup>14</sup> To frame the crisis in the NCR, he read out from a report that ‘meteorology plays a dominant role in air pollution’.<sup>15</sup> In addition, he claimed that there were ‘geographical, geophysical reasons in every city’ for pollution, and that air pollution was ‘not a matter of blaming one another’, but one that requires ‘hardcore science’.<sup>16</sup>

The framing of air pollution as NCR-centric and episodic undermines India’s long-term policy efforts to tackle air pollution in several important ways.<sup>17</sup> First, it mischaracterises the everyday nature of the crisis, and in the process, neglects rural areas that are also exposed to high levels of pollution. Second, it normalises objectively

high levels of pollution during the rest of the year by focusing on the alarming and dystopian episodes in the winter alone; framing it in terms of annual averages instead would reflect long-term exposure better. Third, it results in episodic sources such as crop residue burning receiving disproportionate attention, thereby sidelining important year-round contributors. Finally, the smog-centric framing tends to engender knee-jerk, unscientific solutions (such as smog towers) which distract attention away from the sustained and long-term measures needed to cut emissions at the source.

### ***Consensus on adverse health and economic impacts***

In both Houses, the speeches reflected a political consensus on the public health implications of the air pollution crisis. So far, the Ministry of Environment, Forest and Climate Change (MoEFCC) has consistently downplayed the findings of international health reports on air pollution in India, and objected to the mortality and morbidity estimates, citing limited indigenous data or research ([Nandi 2019](#)). Even the NCAP document claims that international studies establishing linkages between air pollution and mortality in India have used ‘extrapolation techniques’ which ‘may not be realistic’, and calls for further investigation and analysis (NCAP 2019: 51). During the parliamentary discussions, however, representatives across party lines extensively cited international publications to support their claims that air pollution was a public health crisis.

Engaging extensively with international evidence on the subject, MPs argued that air pollution was a leading risk factor for mortality in India, a growing contributor to premature deaths in the country, and a leading cause of cancer, as well as serious chronic respiratory and cardiovascular conditions.<sup>18</sup> Air pollution, MPs said, caused more than a million deaths in India per year. In 2017, ‘12 lakh people died due to air pollution’ (Badruddin Ajmal), which amounted to ‘10% of all deaths from that year’ (Anupriya Patel).<sup>19</sup>

Parliamentarians were particularly troubled by the health impacts of air pollution exposure in children.<sup>20</sup> There were numerous references to an evidently impactful Global Burden of Disease (2017) report indicating that air pollution was responsible for the

death of an Indian child every three minutes.<sup>21</sup> A.M. Ariff joined several other MPs in observing that ‘over 100,000 children below the age of five’ had died due to air pollution exposure in India – an estimate from a prominent [WHO report](#) released in 2016. In addition to mortality estimates, many MPs brought forward evidence of early and irreparable damage to respiratory and cardiovascular health in children.<sup>22</sup> Adhir Ranjan Chowdhury found it ‘appalling’ that ‘90 per cent of children were exposed to PM 2.5 levels that are above WHO guidelines, damaging their health throughout their lives’. They often spoke passionately about the impact that air pollution would have on pregnant women, and on the health of unborn children in India, likening air pollution to smoking.<sup>23</sup> Across both Houses, ample evidence was provided that air pollution threatened the health and well-being of current and future generations.

According to a WHO Report, air pollution kills about six lakh children. [...] Air Pollution Reports of 2016 and onwards say that every day, 93 per cent of the children under 15 years of age breathe toxic air which is full of air pollutants.  
—L. Hanumanthaiah

A few MPs also raised the adverse economic impacts of air pollution exposure in India. Pinaki Mishra argued that India’s economic output ‘could actually go down by as much as two per cent’ due to air pollution, and that poor air quality was ‘costing us almost \$10.6 billion a year’.<sup>24</sup> Kunwar Danish Ali, Jagdambika Pal and Shashi Tharoor cited a [report](#) by the World Bank demonstrating that air pollution was reducing India’s GDP by 8.5% per year. In referencing these estimates, MPs argued that air pollution was imposing high healthcare costs too early on in the country’s development pathway. Ravi Prakash Verma agreed, adding: ‘our economic actions are being curbed, our development is being affected, and it will not be sustained if we don’t address these problems’.<sup>25</sup> In his remarks to both houses, the Environment Minister made no references to any adverse impacts on health or India’s economic output.

Finally, MPs implied that the air pollution crisis was tarnishing India’s international reputation. Manoj Kumar Jha warned that ‘embassies and MNCs are talking about shifting’ while Shashi Tharoor referred to a reporter with the New York Times who ‘wrote a famous

– or perhaps, to many of us – a notorious article in the year 2015 in which he explained why he was leaving his post prematurely’.<sup>26</sup> Kakoli Ghosh Dastidar found it ‘unnerving’ when ‘a foreign premier ... on her visit to our nation, our India, about which we are so proud, made an adverse comment’.<sup>27</sup> Pratap Singh Bajwa said that air pollution was a ‘shameful thing for Indians,’ arguing that ‘on one hand, we are saying that we are emerging as an economic power. But if we cannot keep our capital, our cities clean, what else will we do next?’<sup>28</sup>

### ***Grounding the air pollution crisis in ethical and moral terms***

MPs also brought forward a range of different ethical and moral arguments in favour of immediate action. In presenting these arguments, they allocated responsibility differently, raising issues of class and equity. Parliamentarians also made arguments based on intergenerational responsibility, and invoked the country’s cultural heritage around environmental conservation.

Some MPs argued that the Indian government was ethically, and legally, obliged to address the air pollution crisis because it presented a universal, shared threat. There were many references to air pollution as a health crisis that affected every individual in the country equally, ‘irrespective of caste, creed, age and religion’ (Gautam Gambhir).<sup>29</sup> Certain MPs even employed rights-based language to call for action; there were references to the ‘basic rights of citizens’ (R.K. Sinha), the ‘right to life enshrined in the Constitution’ (Adhir Ranjan Chowdhury) and the government’s duty to ensure the ‘right to breathe clean air in India’ (Kakoli Ghosh Dastidar). Satyapal Singh cited Articles 48A and 51A(g) of the Indian Constitution, which provide the State and its citizens with the duty to ‘protect and improve the environment’.

MPs also argued that India’s poor appeared to bear the brunt of the crisis, and urged the government to ‘take responsibility for the burden that is being placed on them’ (Amar Singh). Here, they emphasised the need to infuse equity-based considerations into the framing of the crisis. Ram Mohan Naidu Kinjarapu lamented that ‘[an] economic divide is creeping in’ where ‘a hard-working labourer cannot even have access to fresh air’

even though '(s)he is not even responsible for creating any kind of pollution'. The rich, he said, 'are able to buy oxygen chambers and air purifiers. [...] But what about poor people of this country?' Proponents of this equity-based lens were also quick to jump to the defence of Indian farmers, who they claimed were being scapegoated for the crisis, despite being 'debt-ridden' (Kumari Selja) and under significant time and technology constraints. Anupriya Patel noted that the discourse around crop residue burning had 'attacked farmers and created injustice'. Amar Singh argued that the union government had a duty to step in and provide alternatives to small and marginal farmers, since they were 'the most distressed'.<sup>30</sup> Bhagwant Mann added that 'the smoke' from crop residue burning in Punjab 'reaches the lungs of their [farmers'] children first'. Another economically disadvantaged community that was seen as 'forgotten' in the midst of the air pollution crisis were firecracker manufacturers in Sivakasi, Tamil Nadu. Meenakshi Lekhi noted that, 'Sivakasi has lost a great deal of employment, whereas pollution in Delhi remains the same as it was before the firecrackers, and after the ban has been imposed.' MPs from the Tamil Nadu, including Sumathy, brought attention to the economic hardship of this community as well.<sup>31</sup>

Parliamentarians relied heavily on pathos as they invoked arguments of intergenerational responsibility, suggesting that air pollution was a 'crime against our children' (Shashi Tharoor), and that a failure to act urgently and 'save the future of the country' (Dileshwar Kamait) would amount to 'stealing the future from our kids' (Gautam Gambhir). These claims were strengthened by previous references to the disproportionate health impacts on children, and supported by emotional reflections on how children's experiences of their daily lives – in school and on the playground – were being deeply changed by air pollution.

As they opened and closed their remarks, MPs often chose to read out excerpts from texts such as the Vedas and the Upanishads. In doing so, they argued that India's cultural heritage was deeply embedded in ideas of environmental protection, and that the air pollution crisis represented an unfortunate departure from those ideas.<sup>32</sup> For instance, Jagdambika Pal argued that

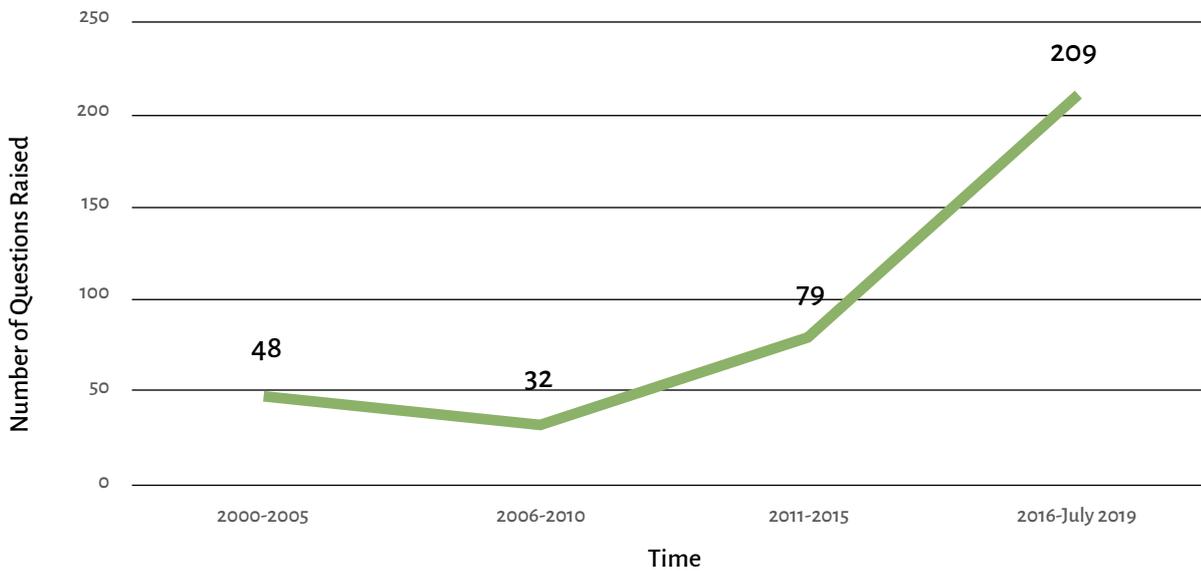
environmental protection was a 'duty', citing a Sanskrit epithet (which is also MoEFCC's motto) that translates to 'nature protects if it is protected'.<sup>33</sup> The Environment Minister echoed these sentiments in his opening remarks to the Lok Sabha, asserting that 'Indian lifestyles and customs' inherently rejected notions of human supremacy over nature, and that Indian culture was built on the recognition that everything – 'fruits, animals, trees, water, the earth' – all of these were 'part of our lives, and one with our lives'.

#### 4. Source-Specific Policies and Mitigation Measures

There are several major sources of air pollution in India: power plants and industries; vehicular emissions; biomass burning (including household solid fuels and agricultural residue burning); municipal solid waste burning; and road and construction dust. Traditionally, air pollution control under the Air Act has been primarily focused on point sources — industries and power plants. In the nineties, vehicular emissions began to get greater attention. Stubble burning has dominated the public imagination over the last decade. Each of these categories of sources fall under the jurisdiction of different agencies, and require different mitigation strategies.

Questions formally raised by MPs over the last two decades make for instructive analysis on the popular discourse on sources. Raising questions in the Parliament is one route to demand information from the executive. There is some evidence that MPs' interest in doing so regarding air pollution has been growing in the recent past. In the Lok Sabha, MPs have raised at least 368 questions on air pollution in India from 2000-2019,<sup>34</sup> with more than 200 of these raised in 2016 or later (Figure 1a) reflecting a sharp increase in engagement in recent years. As for the sources of pollution referred to in these questions (Figure 1b): while industries, power plants and vehicles were the main sources targeted before 2016, crop residue burning has emerged as the most common source of interest in recent years (although vehicles and industries continue to receive some attention).

**Figure 1:** Questions raised in the Lok Sabha on air pollution (2000-2019)



**Figure 2:** Sources of air pollution mentioned in Lok Sabha questions (2000 - 2019)

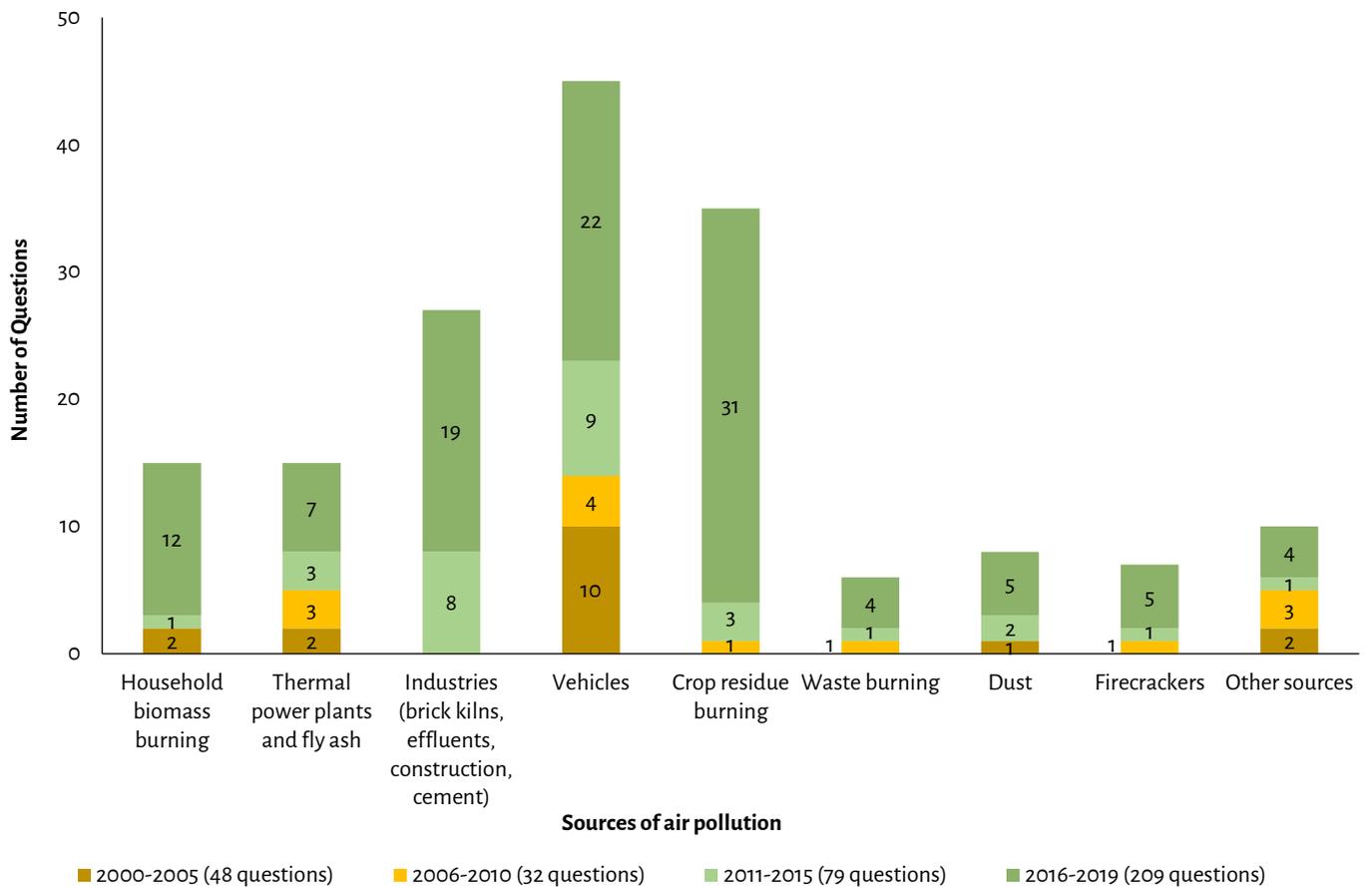


Figure 1: (a) Questions raised in the Lok Sabha related to air pollution (2000 – 2019); (b) Sources of air pollution mentioned in Lok Sabha questions (2000 – 2019)

In both Houses, the Environment Minister outlined four main sources: industries, vehicles, dust, and biomass burning.<sup>35</sup> Overall, MPs did acknowledge that air pollution was a multi-source problem, and discussed mitigation measures to address several of these sources. Yet, they disproportionately focused on two policy approaches: incentivising alternatives to crop residue burning, and tree planting initiatives. That these two areas garnered the most interest is indicative not only of their political salience in the air pollution debate, but also of the limited extent to which MPs were willing to engage with the complexities of air quality management across several economic sectors. We examine the dialogue that unfolded around these two mitigation measures in detail below. We also summarise the discussions of the other sources and their mitigation measures in both Houses.

### ***Alternatives and financial incentives to prevent crop residue burning***

Crop residue burning was the most frequently mentioned source of air pollution, and was always followed by the unanimous refrain that farmers in Punjab, Haryana and Uttar Pradesh should not be 'vilified' for it (Pinaki Mishra).<sup>36</sup> The scientific evidence suggests that crop residue burning is an important episodic source, playing a significant role in the extended spike in pollution levels for a few weeks between late-October to mid-November ([Chowdhury et al. 2019](#)). Contributions could range from 7-78% ([Cusworth et al. 2018](#)) of Delhi's pollution on a day-to-day basis during this period, depending on factors like the number of fires in the region, conditions for long-range transport, and local meteorological conditions. Similarly, Beig et al. (2020) estimated that the relative contribution varied from 1% to 58% in October - November 2018 depending on similar conditions. However, across even the four winter months (November- February), stubble burning may contribute only 4% of Delhi's PM<sub>2.5</sub> levels ([ARAI- TERI 2018](#)), highlighting the need to act on the other large sources.

As they discussed policy measures to address crop residue burning, MPs made it abundantly clear that farmers enjoyed across-the-board political support. The very first speaker in the Lok Sabha discussion on

November 19 emphasised the need to 'stand with India's farmers' to find a solution to crop residue burning, and nearly every speaker after him reiterated this position. These statements were implicitly, and in many instances, explicitly directed at the Delhi Chief Minister, Arvind Kejriwal, who at this point had repeatedly released statements characterising crop residue burning as the most prevalent and important source of air pollution in Delhi. Prevailing media discourse ([Bhatnagar 2019](#); [Ellis-Peterson 2019](#)) and legal directions ([PTI 2019](#); [Gupta 2019](#)) at the time were also highly focused on crop residue burning, and emphasised the need to enforce a complete ban on the practice. Several MPs objected outright to the 'criminalisation' of farmers in India (Kumari Selja) and said that farmers were 'dealing with FIRs' when in reality they deserved 'support, new technology, and machines' (Surender Singh).<sup>37</sup>

While expressing their disapproval of the Delhi government blaming farmers, several MPs selectively cited source apportionment results to argue that crop residue burning was not an important contributor to air pollution. If the Delhi Chief Minister projected crop residue burning as the primary culprit, MPs took the opposite extreme position when they claimed, for example, that crop residue burning only contributed '4%' and was 'not a major issue' (Banda Prakash), or that 'no such study has yet come to prove that the farmers of Haryana, Punjab and western India are guilty' (Manoj Kumar Jha).<sup>38</sup>

Parliamentarians discussed solutions to crop residue burning at length. They brought up various technological interventions – seeders, combines, and balers – and in situ crop residue management techniques which had been subsidised by the Centre earlier. Balvinder Singh Bhundar asked the government to provide Super Seeders to local municipal organisations and 'give them the maximum subsidy'.<sup>39</sup> However, the most common suggestions were to purchase the crop residue and find alternative uses and markets for the straw. Hanuman Beniwal and Manoj Tiwari were among several other MPs that advocated for a state or central programme to buy crop residue from farmers.<sup>40</sup> MPs proposed recycling crop residue by converting it to animal fodder, using it to produce manure, or using it as raw material in paper, biomass and drug manufacturing processes.<sup>41</sup>

The Punjab Preservation of Subsoil Water Act, 2009 – which was passed to conserve groundwater – was identified as an obstacle for crop residue management.<sup>42</sup> Gautam Gambhir said that the need of the hour was to incentivise farmers to ‘move the sowing and harvest seasons so that they do not coincide with the advent of winter’. In sum, the conversation around crop residue burning indicated wide recognition that a technology fix, in isolation, was insufficient. Other proposals suggested linking the prevention of crop residue burning to financial incentives, technology provisions, and to labour availability through Mahatma Gandhi National Rural Employment Guarantee Act.<sup>43</sup>

Importantly, there was broad consensus that the long-term solution was to rearrange cropping patterns and create markets and financial incentives for farmers to grow alternative crops. This raised a discussion about Minimum Support Prices, with Bhagwant Mann claiming these were ‘only given to those crops that produce straw’. Some MPs from Punjab suggested that the solution was to ‘announce 100% procurement so that nobody burns crop residue’ (Amar Singh). Surender Singh advocated for ‘crop planning at the district level’ to encourage crop diversification.<sup>44</sup> Pinaki Mishra implied that subsidies for alternative crops would encourage farmers to shift, noting that it was ‘a matter of simple economics’.<sup>45</sup> Sunita Duggal also suggested avoiding specific paddy varieties.<sup>46</sup> Parliamentarians noted that any viable solution required farmer awareness and cooperation to succeed.<sup>47</sup>

‘Our farmers can sow maize, pearl millet, sunflower, oilseeds and pulses. However, there is no marketing facility for these crops. Where will the farmers sell these crops? Who will purchase these crops? In the markets there are no MSPs. MSPs are given to those crops that produce straw. [...] Madam, the farmers of Punjab should be given another option. Punjabi farmers don’t want to burn straw – the smoke reaches the lungs of their children first. [...] So do provide us better MSP for non-straw-producing crops’  
— Bhagwant Mann

### *Planting initiatives and urban forests*

The extent to which plantation initiatives and urban forests dominated the parliamentary discussions in 2019 was not proportionate to their role in tackling unsafe air quality levels in the country (Nemitz et al. 2020; Eisenman et al. 2019). In India, making progress on air pollution will require concerted policy efforts to address – in parallel – emissions from at least five sources in India: household solid fuels, power plants and industries, transportation, construction and road dust, and crop residue burning. Without significant progress being made across each of these sectors, it is unclear how plantation initiatives could substantially mitigate these emissions, which are at the root of the country’s air pollution crisis.

Despite this fact, a significant number of MPs listed planting initiatives and urban forests as important air pollution mitigation measures. Some parliamentarians endorsed the union government’s efforts in this regard, while others talked about state or local initiatives in their constituencies. For example, MPs from Bihar repeatedly lauded the Jal Jeevan Hariyali Abhiyan in their state, and MPs from Telangana, Tamil Nadu, and Maharashtra shared scalable urban forest initiatives. Supriya Sule also posed a question to the Environment Minister on the allocation of Compensatory Afforestation Fund Management and Planning Authority funds in states.<sup>48</sup> Several MPs invoked traditional verses and practices to emphasise the need to protect and plant trees in India. In response to these interventions in the Lok Sabha, Minister Prakash Javadekar welcomed the MPs’ recognition of the importance of tree plantation, and announced the government’s intention to plant more trees, while claiming that India was one of two countries in the world wherein green cover had increased over the last five years.<sup>49</sup>

### Other sources and mitigation measures

The introduction and expansion of the metro in Delhi and other cities, and India's leapfrog to BSVI were widely hailed as successful pollution control measures.<sup>50</sup> However, MPs were very concerned about rising rates of private vehicle use. Referring specifically to the NCR, they said that the number of vehicles in Delhi had risen from 40 lakh vehicles in 2004 to '1 crore 10 lakh vehicles in 2019' (Parvesh Sahib Singh Verma). 'Ubers and Olas' had 'added around 65 per cent further burden to our roads' (Pinaki Mishra), and air pollution in the NCR could, in fact, be attributed to 'the growing number of vehicles' (Hanuman Beniwal) and 'smoke from the cars' (Nihal Chand Chauhan).<sup>51</sup> Sanjay Jaiswal and R.K Singh joined other MPs in observing the shortage of buses in Delhi and the lack of high-quality public transport in cities in general.<sup>52</sup>

'Here in Delhi and in surrounding areas, Ubers and Olas have added around 65 per cent further burden to our roads. [...] So, instead of blaming farmers, we should blame ourselves that we no longer want to travel by metro or buses. Everybody wants to travel in Ola and Uber and quickly reach their destinations.'

— Pinaki Mishra

Parliamentarians also considered policies promoting electric vehicles as promising actions for India's pollution control agenda. Raveendranath Kumar said that, 'steps should be taken to increase the number of EVs across the country,' highlighting the high 'cost of those vehicles, limited number of service facilities and spare parts'. Mohammed Basheer added that the government could ramp up the manufacturing of EVs, and 'set a goal' to ensure that '25% of private vehicles' could be 'electrically powered by 2023'.<sup>53</sup> Rahul Ramesh Shewale noted that addressing transportation emissions could require 'a mix of public transport investments, behavioural change in transport patterns, and new transport technologies such as electric vehicles'. There was a passing reference to developing a vehicle scrappage policy to take old, polluting vehicles off the road.<sup>54</sup>

Some MPs touched upon mitigation measures addressing emissions from industries and coal-fired thermal power plants. However, there were

huge differences in their proposed solutions. Parliamentarians proposed to convert existing thermal power plants to 'gas-based plants,' (Surender Singh), 'impose a cap on coal' (Pratima Mondal) and 'move towards renewable energy,' (KRRK Raju) to ensure that '40% of energy produced should be renewable energy' (Kakoli Das Dastidar).<sup>55</sup> Simultaneously, an equal number of MPs suggested relocating industries outside the NCR, which Rahul Ramesh Shewale criticised as a measure that 'encourages emissions leakage'.<sup>56</sup> Only one MP – Syed Nasir Hussain – brought up the 'laxity in implementing' the emissions standards for coal-fired thermal power plants.<sup>57</sup> There was also pushback on what was perceived to be an over reliance on shutting down industries as an emergency response:

'In Haryana, you are putting locks on all the industries saying that they're polluted. So what do you do all year? What does the NGT do? Why don't they pay attention to that? Anyway there's so much *note bandi* due to GST and now there's *tala bandi*.'

— Kumari Selja

Surender Singh, Parvesh Sahib Singh Verma, Sanjay Jaiswal, Satyapal Singh, K.J Alphons, and Ashok Bajpai discussed the burning of household solid fuels in the context of the Pradhan Mantri Ujjwala Yojana (PMUY), which they praised as a successful measure to counter rural air pollution exposure among women.<sup>58</sup> However, beyond this talking point, MPs provided no suggestions as to how LPG usage across the country could be improved, how to capitalise on the success of PMUY, or what the next steps of the scheme should be going forward.

Only a handful of MPs discussed solutions to dust and waste management. The dialogue on these sources was sparse; Kakoli Das Dastidar and Meenakshi Lekhi emphasized the need to cover active construction sites in the NCR. Beyond that, MPs were content to urge the government to enforce 'very strict laws' (Sumathy) and 'vehemently implement' (Banda Prakash) existing construction rules and norms.<sup>59</sup> They provided no specific insight into how to enforce the rules, or why the rules were not being followed already. Similarly, in the context of preventing solid waste burning in cities, Gautam Gambhir and Sumathy mentioned the Ghazipur

and Bhalswa landfills, but did not outline solutions.<sup>60</sup> Overall, MPs discussed three solutions: creating residue-derived fuel to convert solid waste, scaling up waste-to-energy plants, and developing an e-waste policy.<sup>61</sup>

Alarmingly, smog towers surfaced in the discussion multiple times, and were considered viable pollution control measures by several MPs, including Shashi Tharoor, Parvesh Sahib Singh Verma, Manoj Tiwari, Gautam Gambhir, and Sanjay Jaiswal. In a couple of instances, smog towers were explicitly presented as near-term solutions for pollution hotspots. This is problematic, since smog towers have no scientific basis as a pollution control measure, and distract attention away from tackling emissions at the source (Guttikunda and Jawahar 2020; Harish 2020a). MPs also showed interest in exploring the benefits of experimental technology, including the inducement of artificial rain during peak pollution episodes.<sup>62</sup> Even the Environment Minister saw fit to reference ‘ambient air purification’.<sup>63</sup>

## 5. Holding the Executive Accountable

Unsurprisingly, MPs from the Bharatiya Janata Party (BJP) and their allies strongly endorsed policy measures initiated by the union government. They praised the outcomes of the PMUY, efforts to ramp up solar and renewable energy use and roll out more electric vehicles, the completion of peripheral expressways, flyovers and roads in the NCR, and lauded the impending (at the time) transition from Bharat Stage IV to Bharat Stage VI in 2020.<sup>64</sup> There was little criticism of the MoEFCC or any other union ministries, from BJP MPs as well as those from other parties. In addition to measures led by the union government, MPs highlighted successful state-led plantation initiatives and innovative solid waste management efforts in their states as important steps towards cleaner air. However, over the course of the discussions, MPs also held the executive accountable by highlighting various legal, institutional, and financial decision-making gaps in Indian air quality governance (see Table 1).

**Table 1:** Gaps in air quality governance identified by MPs in Lok Sabha and Rajya Sabha

Types of gaps	Gaps in air quality governance
<b>Insufficient legal enforcement of mitigation measures</b>	<ul style="list-style-type: none"> <li>• Insufficiently stringent laws (Sumathy, Tewari, Tharoor), especially for the implementation of the National Clean Air Programme (NCAP) (Shewale, Tharoor)</li> <li>• Dilution of environmental laws to enable increased ‘ease of doing business’ (Premachandran, Hussain)</li> <li>• Dilution of the powers of the National Green Tribunal (NGT) (Premachandran)</li> </ul>
<b>Inadequate policies and institutions</b>	<ul style="list-style-type: none"> <li>• Need for a new national/sub-national action plan or policy (Kinjarapu, Tharoor, Pandey, Shewale)</li> <li>• Inadequate enforcement of existing policies (Dastidar, Premachandran, Pal, Patnaik, Basheer, Hussain, Haque, Tewari, Verma, Ali), particularly construction norms (Verma, Ali, Dastidar) and emissions norms for thermal power plants (Hussain)</li> <li>• Lack of specific and time-bound goals/targets (Patnaik)</li> <li>• Prioritisation of emergency/temporary measures over long-term solutions (Gambhir, Sumathy, Hussain)</li> <li>• Gaps in the NCAP: limited geographical extent (Chowdhury, Hussain); unambitious targets at the outset (Chowdhury); non-existent action plan to meet targets (Patel)</li> <li>• Ineffective or staff-deficient Pollution Control Boards (Basheer, Ali, Patnaik, Rao)</li> <li>• Punjab Preservation of Subsoil Water Act, 2009 unintentionally incentivises crop residue burning (Jaiswal)</li> <li>• Outdated and sub-optimal policies and processes on air quality monitoring (Sumathy)</li> </ul>
<b>Financial and technological gaps</b>	<ul style="list-style-type: none"> <li>• Unclear estimates of funds/technology needed for mitigation measures (Sinha)</li> <li>• Insufficient funds allocated towards pollution control from the Union Budget (Sule)</li> <li>• Insufficient funds allocated for sprinkler machines, clean transportation technology in Delhi (Tiwari, Verma, Jaiswal)</li> <li>• Disproportionate amount spent on advertising instead of mitigation measures (Sule, Lekhi, Verma, Alphons, Tiwari).</li> <li>• Insufficient funds allocated to the NCAP (Tewari) and to the NCR for NCAP implementation (Prakash)</li> </ul>

Types of gaps	Gaps in air quality governance
	<ul style="list-style-type: none"> <li>• Lack of monitoring and goal-setting in the use of CAMPA funds (Sule), clean energy cess (Mohanty), and ambient air fund (Jaiswal)</li> <li>• Lack of financial/technological investments to avoid crop residue burning (V. Singh, Bhundar, Mohanty, Tiwari, A. Singh)</li> <li>• Failure to catalyse widespread use of affordable electric vehicles (Ali, Verma, Patnaik)</li> </ul>
<b>Unconstructive or non-existent political dialogue</b>	<ul style="list-style-type: none"> <li>• Tendency to favour 'ease of doing business' over environmental goals (Premachandran, Singh, Chowdhury, Hussain)</li> <li>• Lack of interstate and bipartisan political dialogue to resolve crop residue burning (Gambhir, Verma)</li> <li>• Inadequate public consultation on air pollution mitigation measures (Tharoor)</li> </ul>
<b>Lack of public awareness</b>	<ul style="list-style-type: none"> <li>• Lack of awareness amongst farmers about crop residue burning (Dastidar, Patnaik)</li> <li>• Lack of public awareness campaigns and participation in mitigation measures (Mondal, Prasad Rao, Chavan, Basheer, Patel, Mohanty, Bajpai)</li> </ul>

In particular, MPs criticised the response of the Delhi government, and identified several ways to strengthen the NCAP, and air quality governance in general. We discuss these two themes in detail below, and analyse the comments made by the Environment Minister in response to these suggestions.

### Criticism of the Delhi government

As mentioned earlier, parliamentarians across the board strongly protested what they perceived as the vilification of farmers by the Delhi Chief Minister, Arvind Kejriwal. Criticism of the Delhi government may have been a response to attempts by the Delhi Chief Minister to claim credit for improvements in air quality, while pinning blame on neighbouring states for the winter smog episodes. MPs, particularly BJP representatives from Delhi, alleged that the government was not doing enough to address the other sources of the winter smog. They argued that air pollution was a 'state subject' (Manoj Tiwari), and that '75% of all pollution in Delhi is caused by those departments, those activities which are directly under the purview of the Delhi government' (K.J. Alphans). Parvesh Sahib Singh Verma said:

'Have you talked about the largest source, vehicles? Have you talked about industrial causes? Sitting in the capital city and blaming problems on villagers is not correct. Widening the gap between urban and rural dwellers should not be accepted. Delhi's Chief Minister blames pollution on Punjab, Haryana, and the Prime Minister, and doesn't take responsibility for his own functions' — Parvesh Sahib Singh Verma

There were also pointed rebukes, on government funds being utilised for advertisements instead of being deployed for mitigation.<sup>65</sup> Parvesh Sahib Singh Verma claimed that Delhi's advertisement budget was Rs. 600 crores, with Rs. 70 crores for advertising the odd-even programme alone. 'They are using the sweat and tears of the poor for advertisements in Delhi,' he declared.

In terms of mitigation actions, the Delhi government was also criticised for its slow progress in increasing the bus fleet, for not utilising funds collected through the environment compensation cess, and for not coordinating with MLAs in neighbouring states from its own Aam Aadmi Party (AAP) to arrive at a solution to crop residue burning.<sup>66</sup> MPs also said that the Delhi government's response to air pollution was restricted to temporary, reactive 'gimmicks' (Gautam Gambhir) like the odd-even programme, and the suspension of construction activities as part of the Graded Response Action Plan, instead of longer-term, sustained efforts.<sup>67</sup>

The political tenor of these discussions may have been influenced by the impending Delhi Legislative Assembly Elections where the BJP was expected to be the principal challenger to the AAP. The elections were held in February 2020, with the AAP returning to power.

### Suggestions on improving Indian air quality governance

During the parliamentary discussions, MPs acknowledged the intent of the National Clean Air Programme (NCAP), but expressed doubt in its ability to coordinate air quality mitigation efforts. Anupriya Patel

appreciated the NCAP's targets but pressed the Minister for a more 'specific action plan to meet these targets'. Some MPs voiced the opinion that the NCAP was not nearly ambitious enough, with Adhir Ranjan Chowdhury arguing that it 'excludes nearly half of the cities of India that flout air pollution norms' and Syed Nasir Hussain agreeing that '50 per cent of the cities which have pollution have not been mentioned'. They were likely referring to a report by Greenpeace India (2019) that shows that the number of polluted cities in India is 'more than double the original 102 non-attainment cities initially identified by the MoEFCC'.

Others argued that the NCAP needs to be legally enforceable to succeed. Rahul Ramesh Shewale described the NCAP as a 'five-year programme that lacks any form of legal mandate to ensure proper ground-level implementation'. Similarly, Shashi Tharoor acknowledged that the NCAP had 'no legal measures incorporated within it to ensure accountability or penalise non-implementation, which will limit the effectiveness of the Plan,' and went on to recommend the establishment of a National Clean Air Act with 'the force of law'. This call to strengthen the Air Act, or establish a stringent law, was echoed by Manish Tewari, Sumathy, and Ram Mohan Naidu Kinjarapu.<sup>68</sup> Notably, on December 6, 2019, R.K Sinha introduced a private member bill entitled the '[The Right to Breathe Clean Air Bill, 2019](#)' which urged the legislature to recognize the right to clean air in India. ([Government of India, 2019](#)) In addition to strengthening the law, MPs highlighted the need to ensure the proper functioning of State Pollution Control Boards (SPCBs): advocating for SPCBs to be 'revamped' (Mohammed Basheer), discussing their 'deficiency in staff' (Amar Patnaik), and asking for periodic and detailed reports from SPCBs to the Centre (Balli Durga Prasad Rao).<sup>69</sup>

Parliamentarians in both Houses also signaled the need to budget effectively for air quality mitigation efforts. Manish Tewari said that NCAP was 'an excellent step' but voiced concern that the budget was 'only 300 crores,' which he deemed insufficient. Supriya Sule asked the House how much public expenditure had been committed to pollution control efforts in the last six months. RK Sinha also reflected on how 'worrying' it was that spending on pollution control measures was falling short, despite the scale of the problem.<sup>70</sup> MPs such as Anubhav Mohanty also emphasised the need for

instruments beyond traditional command and control such as incentives to tackle stubble burning.

Many MPs argued that laws, standards and norms were already in place to ensure clean air, and that the problem was a lack of implementation and enforcement. They insisted that the government needed to 'monitor what is actually happening at the ground level' (Dastidar) and that 'legislations and guidelines are there, but unfortunately implementation is very poor' (Basheer). Amar Patnaik suggested that the 'intent' to improve air quality levels was 'always there,' but that there were barriers on 'the implementation front'.<sup>71</sup> MPs reinforced this narrative as they urged governments to comply with existing norms for dust management in construction sites, and highlighted the importance of implementing the emissions standards for coal-fired thermal power plants.<sup>72</sup>

Parliamentarians also emphasised that India's air pollution control efforts required greater coordination and leadership. MPs suggested a Swachh Hawa (Clean Air) mission, integrating the Air Act with a national health policy addressing air pollution, establishing village-level committees on air pollution similar to the Swachh Bharat committees, and even creating a new national environment policy, with the involvement of several union ministers.<sup>73</sup> Other MPs stressed the need for better and more inclusive political dialogue to spur action. Here they recommended various platforms for discussion: a meeting of all the Chief Ministers; a statutory commission on air pollution, similar to the estimates or public undertakings commissions; and a potential Joint Parliamentary Committee to monitor implementation.<sup>74</sup> Finally, several MPs – including Pinaki Mishra, Ghulam Nabi Azad, and Amar Singh – highlighted the need for leadership from the Prime Minister's Office, and called for a Task Force led by the Prime Minister to coordinate efforts to address air pollution across the country.<sup>75</sup>

To strengthen air quality governance, MPs suggested drawing on lessons from pollution mitigation efforts in other countries. There were references to 'the China route' (Pinaki Mishra), the 'Chinese example' (Lavu Sri Krishna Devarayulu), and Beijing's 'systematic and intensive measures for air pollution control' (Manish Tewari).<sup>76</sup> MPs also drew attention to the positive outcomes of air quality management in Japan and the United States.

International experience was cited to demonstrate many things: that significant improvements were possible to achieve,<sup>77</sup> the need to tackle industrial and power plant emissions more seriously,<sup>78</sup> restricting the number of vehicles,<sup>79</sup> taking hard decisions that may have short term costs<sup>80</sup> and incentivising cleaner personal transport or fuel choices.<sup>81</sup> The speakers recognised both that '(e)very country adopts its own formula, its own mechanism to handle their country' (Adhir Ranjan Chowdhury), and that 'we should explore what others have done... [and] do not have to reinvent the wheel' (Shashi Tharoor).

### Responses from the Environment Minister

In his reply to the Rajya Sabha, the Environment Minister, Prakash Javadekar, argued that action on air pollution needed to be 'above party politics' and that India would benefit from a 'common minimum agenda for all parties'. However, he did not shy away from politicking as he singled out committees and initiatives under the union government (as opposed to the Delhi government) to address pollution in the NCR. In both Houses, he claimed that the Delhi government was only 'taking credit' for central government-led efforts to mitigate air pollution, and that court intervention had been required to ensure that the Delhi government contributed its fair share of funds to mitigation measures.<sup>82</sup> Measures led by the Centre

included a 'High Level Task Force constituted under the chairmanship of the Principal Secretary to the Prime Minister,' the notification of the Comprehensive Action Plan, and 'regular review meetings' with 'all concerned union government ministries and state governments'.<sup>83</sup>

Javadekar repeatedly highlighted instances in which the union government had made significant financial investments in cities under the NCAP. However, he did not elaborate on the impacts of investments, or the outcomes achieved through city-specific funds. In fact, the only instance in which financial investments were linked with clear outcomes was in the discussion on crop burning, where he said that union government had invested 'crores' of rupees 'from machines to farmer incentives and subsidies,' resulting in an overall '15-41% reduction in burning events'.<sup>84</sup>

In both Houses, the Environment Minister provided a source-by-source summary of the union government's efforts to address air pollution (outlined in Table 2). While discussing these sources, the Minister made a passing reference to the need for sustained, long-term action on air pollution, noting that, 'Beijing had reduced its pollution over 15 years' and therefore India would 'take 15 years also'. He also cautioned against silver bullet solutions, warning the Rajya Sabha: 'nobody has a magic wand'.

**Table 2:** Air pollution mitigation measures listed by the union Environment Minister in his remarks to the two Houses

<b>Emission source</b>	<b>Government-led mitigation measures to address air pollution</b>
<b>Household biomass burning</b>	<ul style="list-style-type: none"> <li>• LEDs distributed to prevent burning of polluting fuels for lighting</li> <li>• PMUY for LPG-based energy access</li> </ul>
<b>Power plants and industries</b>	<ul style="list-style-type: none"> <li>• Enhanced emissions norms for power plants and industries</li> <li>• Installation of online continuous monitoring system for polluting industries</li> <li>• Revision of emission standards of SOx and NOx for boilers</li> <li>• Closure of Badarpur Thermal Power Station in Delhi</li> <li>• Ban imposed on pet coke and furnace oil</li> <li>• Shifting industries to PNG and LPG</li> <li>• Brick kilns converted to zig zag technology</li> <li>• Emissions trading scheme in Gujarat, star-rating project in Jharkhand</li> </ul>
<b>Vehicular emissions</b>	<ul style="list-style-type: none"> <li>• Migration to BSVI standards</li> <li>• Waterways and expansion of the metro for public transport</li> <li>• Introduction of cleaner fuels (CNG, ethanol blending in petrol)</li> <li>• Eastern and western peripheral expressways to bypass trucks transiting through the NCR</li> <li>• Subsidies and relaxation of permit requirements to promote electric vehicles</li> <li>• Sanctioning of new buses for Delhi and the Delhi Metro Rail Corporation</li> <li>• Encouragement of e-rickshaws</li> </ul>

Emission source	Government-led mitigation measures to address air pollution
Crop residue burning	<ul style="list-style-type: none"> <li>• Central Sector Scheme on ‘Promotion of Agricultural Mechanization for in-situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi’ for the period from 2018-19 to 2019-20; Rs.1,150.80 crores sanctioned and 50,000 machines given</li> <li>• Hydraulically reversible MP plough, paddy straw chopper, mulcher, rotary slasher, zero till seed drill and rotavators provided to farmers at 50 per cent subsidy, and to custom hiring centres at 80 per cent subsidy</li> </ul>
Waste burning	<ul style="list-style-type: none"> <li>• Notification of waste management rules on solid waste, plastic waste, e-waste, bio-medical waste, construction &amp; demolition waste and hazardous waste</li> <li>• Ban on burning of biomass and garbage</li> <li>• Operational waste-to-energy plants and waste compost plants in Delhi</li> <li>• Bioremediation and bio-mining of landfill sites in Ghazipur</li> </ul>
Road and construction dust	<ul style="list-style-type: none"> <li>• Sprinkling of dust suppression chemicals, especially for mining sites</li> <li>• Notification issued on dust mitigation measures for construction and demolition activities and waste</li> <li>• Operational C&amp;D waste processing plants in Delhi</li> <li>• Increase in mechanised road sweeping machines</li> <li>• Mechanical dust sweepers in cities</li> </ul>

The Minister spent significant speaking time extolling the virtues of urban forest initiatives. He argued passionately for a *jan andolan* (people’s movement) around plantation efforts, and discussed successful agroforestry and horticulture efforts in states.<sup>85</sup> Far from correcting the misconception that plantation initiatives have a significant impact on air pollution mitigation, he declared that ‘everyone was of one mind’ on the need to plant trees to combat pollution.<sup>86</sup>

## 6. Gaps in the Discourse

The discussions in Parliament seemed reflective of the larger discourse on the air pollution crisis in the country. Delhi’s winter smog remained by far the focus of the speeches, despite some MPs stressing the nationwide and year-round nature of the crisis. Similarly, crop residue burning dominated the discussion. Arguably, this source is the most salient manifestation of the crisis: air quality levels are severe enough to be seen and smelt, images of fields set on fire abound in the media, and the correlation between the increase in farm fires and the pollution levels are apparent. This did mean, however, that other sources, and other regions did not receive proportionate attention. For example, there was little discussion on air pollution in rural areas, and the gaps in India’s monitoring network, even though more than 76% of Indians live in areas exceeding the national ambient air quality standards ([India State-Level](#)

[Disease Burden Initiative Air Pollution Collaborators 2019](#)). Point sources like industries and power plants were largely ignored, and even if these – or other sources – were discussed, the recommendations lacked specificity. For example, while PMUY was lauded by many MPs for increasing household access to LPG, the discussions did not delve further into building on the inroads it made, and reducing the use of solid fuels.

There were also a few significant departures from the stances normally adopted by the executive and the judiciary. The absolute solidarity that MPs expressed with Indian farmers was in sharp contrast to the directions from the Supreme Court and NGT banning stubble burning and penalising noncompliant farmers. Although the MPs’ criticism was primarily targeted at the Delhi Chief Minister, they were in effect also disagreeing with the judiciary’s stance. Similarly, the consensus on the health impacts of air pollution – and the use of international research in providing evidence for these health linkages – differed markedly from the position traditionally taken by the MoEFCC.<sup>87</sup>

Finally, since the Lok Sabha discussion was titled ‘air pollution and climate change,’ more than a third of all MPs made substantial comments about climate change, highlighting the risks of irregular rainfall patterns, coastal flooding and sea-level rise, and the disruption of Indian agricultural patterns, with implications for the economy.<sup>88</sup> MPs also argued that government

had a larger mandate to combat climate change, and a responsibility to meet its goals under the 2015 Paris Agreement.<sup>89</sup> They urged the government to leverage synergies between India's climate and development goals, and criticised the government for inadequately funding climate policies and programmes.<sup>90</sup> However, as with air pollution, the policy suggestions that MPs offered – strengthening the National Action Plan for Climate Change (NAPCC), developing carbon sinks, and focusing on economy-wide climate and energy policies – often lacked specificity, signaling an inability to meaningfully engage with the climate policy landscape.<sup>91</sup>

Some MPs implied that India's poor air quality levels and the climate crisis had their roots in a common problem: chronic inattention to worsening environmental quality indicators. Unfortunately, as MPs attempted to elaborate, many often conflated these two issues, and referred to them interchangeably. In his comments to the Lok Sabha, the Environment Minister seemed to anticipate this confusion, emphasising that the two issues were 'different, and understanding that is very important because these two issues are very important'. The difference, he said, was in the permanent nature of climate change and the 'temporary' nature of pollutant dispersal. With air pollution and climate change sharing many common sources, and individual pollutants interacting with each other in the atmosphere in complex ways, India will need to develop an integrated strategy to mitigate both, while prioritising health outcomes in the near term ([Tibrewal and Venkatraman 2021](#)).

## 7. Significant Developments Since

In the two years that followed these discussions, there have been some encouraging signs of initiative and engagement from the political class. All three major political parties contesting the Delhi assembly elections featured air pollution mitigation measures prominently in their manifestoes ([Upadhyay 2019](#)). There was also progress on some of the issues raised by

the Parliamentarians, such as increased resources, and tackling air pollution in a "mission mode". The Union Finance Minister accepted the recommendations of the interim report of the 15th Finance Commission, and announced in the budget speech that grants would be allocated to cities that were taking measures to ensure cleaner air ([Finance Commission India 2019](#); [Ministry of Finance 2020](#)). Despite the fiscal challenges created in the aftermath of the COVID-19 pandemic, these grants were persisted with by the government ([Finance Commission India 2020](#)). During his Independence Day address in 2020, Prime Minister Narendra Modi announced a new mission on air quality ([Government of India 2020](#)); however, as of September 2021, there has been no further formal announcement.

With lockdowns introduced to curtail the spread of COVID-19 resulting in a complete suspension of vehicular movement and economic activities, air quality levels improved significantly throughout the country ([Guttikunda 2020](#); [Roychowdhury and Somvanshi 2020](#)). These changes manifested in visibly bluer skies, and some widely circulated images, like the one of the Dhauladhar mountain range from Jalandhar not witnessed for a generation. While these visuals of clean air raised expectations of increased public demand for air pollution control measures, there were also counter-narratives advanced by Javadekar himself that clean air required all economic activity to be suspended ([Nandi 2020](#)).

Smog towers, championed by prominent MPs, also found support in the Supreme Court, with an order dated January 13, 2020 directing the central and Delhi governments to install two large smog towers in Delhi on a pilot basis ([Supreme Court of India 2020](#)). Despite lacking any scientific merit ([Guttikunda and Jawahar 2020](#)), smog towers have become an expensive distraction, and are problematic even as pilot projects ([Harish 2020b](#)). Increased political salience may make options like smog towers especially attractive, given that they are highly visible manifestations of action on air pollution, appear plausible to the public as an intervention, and do not antagonise any interest groups ([Harish 2020a](#)).

In response to the Supreme Court setting up a committee with a retired judge to monitor the farm fires (PTI 2020), an ordinance was promulgated by the Union Government in October 2020 setting up a new Commission on Air Quality Management (CAQM) in Delhi and the NCR (Ministry of Law and Justice 2020). This also replaces the Environment Pollution (Prevention and Control) Authority (EPCA) and may help institutional and regional coordination, in addition to clearly establishing accountability with this Commission, given the overriding powers vested in it. The Ordinance also raised questions on centre-state dynamics, and whether air pollution becomes an instrument for the Union government to “punish” states governed by opposition parties (Del Bello 2020). As a damning indictment of the diminishing role of the Parliament in lawmaking, the Ordinance lapsed with no bill tabled to replace it, and was repromulgated in March 2021 with some modifications after the Budget session ended. A bill to replace the second Ordinance was tabled and passed, with minimal discussion, in the two houses of Parliament in August 2021 (Ministry of Law and Justice 2021).

Stubble burning further opened up, or exposed at any rate, important axes of contestation: between farmers and the State, across states (and especially between Punjab and Delhi), between the union and state governments, and between the executive and judiciary. Farm fires in Punjab reportedly increased by 44% in 2020 as compared to 2019 as per the CPCB (PTI 2020). Newspaper reports (Chaba 2020) claimed that the increase in farm fires were part of the larger protests against recently passed farm laws—likely opening up a new dimension to the policy discourse on this source. In the midst of the farmer protests, where the ‘criminalisation’ of stubble burning became an explicit sticking point, the union government conceded to the demand (ANI 2020) and subsequently, amended the contentious clauses to remove the threat of criminal prosecution while repromulgating the ordinance. However, this second ordinance and eventually, the law passed by Parliament backed the use environmental compensation—effectively, a fine—as an instrument to respond to farmers burning stubble (Harish et al. 2021).

MPs across political lines indicated that air pollution needed to be addressed as a nonpartisan, apolitical

issue. MPs repeatedly stated that it was time to leave “petty politics aside” (Midhun Reddy) and avoid political “blame games” (Pinaki Mishra) that they framed as roadblocks to effective mitigation measures. (These statements were typically followed by partisan comments, however.) As evidenced by the stubble burning discourse, far from making the issue apolitical, increased political salience will likely bring contested claims to the foreground—a necessary first step. Addressing air pollution will require going further and resolving these in transparent, consultative ways.

## 8. Concluding Remarks

The air pollution debates seemed to represent a significant change in the salience of the issue nationally, given how “policy agendas are rhetorically focused on the ‘problems’ that leaders and stakeholders believe are worthy of attention and debate” (Head 2019). Balancing interests, identifying actions to prioritise, allocating resources, and empowering regulators all involve political choices. Political feasibility influences both the likelihood of implementing policies successfully, and how these policies get sequenced (Peng et al. 2021). Even investments in foundational knowledge resources such as air quality monitoring, and stronger health data systems are political choices, as “ambiguity [...] offers a place to hide” (Spears 2019). Arguably, the stubborn stance by the Environment Ministry to dismiss global health evidence has been enabled by these hitherto persistent gaps in government support for indigenous research on health impacts.

Scientific evidence on air pollution’s impacts, sources and scale will have to pass through a political and bureaucratic lens to translate to policy actions. This is rarely straightforward. As has been evident with stubble burning, “rather than resolving political debate, science often becomes ammunition in partisan squabbling, mobilized selectively by contending sides to bolster their positions” (Sarewitz 2000). Assessments of relative contributions of different sources, and where they are located can be especially prone to such selective interpretation. Indeed, even when scientists are given influential roles in the policy process, it is possible “that science is utilised for its political rather than for its intellectual value” to legitimise policy positions (Ezrahi 1980). Air quality management can be usefully thought

of as a post-normal science, where “facts are uncertain, values in dispute, stakes high, and decisions urgent” (Funtowicz and Ravetz 1993). In this context, where there is both “technical incommensurability” (due to scientific uncertainties) and “social incommensurability” (with contested values), “scientists cannot provide any useful input without interacting with the rest of society and the rest of the society cannot perform any sound decision making without interacting with the scientists” (Munda 2004). Creating more inclusive and accessible fora for deliberations, while developing and reviewing city and state action plans under the NCAP for example, would be crucial to bridge science and politics constructively.

Bemoaning the state of the Parliament and other major Indian institutions, Mehta (2015) notes: “the challenges of development that we face, from urbanisation to the environment, technology to education, require

institutions to mediate complex forms of knowledge and elicit widespread social acceptance. The biggest question mark over India is the ability of its institutions to do just that”. With the air quality crisis, while these discussions in November 2019 were a promising sign, it remains to be seen whether the Parliament can truly play this role. The disruptions on society, state finances, and policy priorities wrought by the COVID-19 pandemic and the response to it have also impacted the nascent discourse on air quality in India. Focusing government efforts on the environmental and public health crises that face us today urgently needs political representatives that are more engaged, better informed, and more willing to make tough choices.

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## Appendix 1: Members of Parliament that delivered speeches on air pollution in November 2019

Lok Sabha: 'Rule 193 – Air Pollution and Climate Change' on November 19, November 21, and November 22, 2019 (Duration: 7h49mins)

Date	Member of Parliament	Party Affiliation (as of Nov 2019)	State/Constituency	Duration* (minutes)
19/11	Kakoli Ghosh Dastidar	All India Trinamool Congress	West Bengal/Barasat	12
	Gautam Gambhir	Bharatiya Janata Party (BJP)	Delhi/East Delhi	3
	Pinaki Mishra	Biju Janata Dal (BJD)	Odisha/Puri	13
	Sumathy (Thamizhachi Thangapandian)	Dravida Munnetra Kazhagam (DMK)	Tamil Nadu/Chennai South	15
	Midhun Reddy	YSR Congress Party	Andhra Pradesh/Rajampet	8
	Arvind Sawant	Shiv Sena	Maharashtra/Mumbai (South)	14
	A.M. Ariff	Communist Party of India (Marxist)	Kerala/Alappuzha	4
	Raveendranath Kumar	All India Anna Dravida Munnetra Kazhagam (AIADMK)	Tamil Nadu/Theni	4
	Manish Tewari	Indian National Congress (INC)	Punjab/Anandpur Sahib	20
	Manoj Tiwari	BJP	Delhi/North East Delhi	3
19/11 and 21/11	Sanjay Jaiswal	BJP	Bihar/Paschim Champaran	21
21/11	Bhagwant Mann	Aam Aadmi Party (AAP)	Punjab/Sangrur	9
	Hanuman Beniwal	Rastriya Loktantrik Party	Rajasthan/Nagaur	7
	Satyapal Singh	BJP	Uttar Pradesh/Baghpat	13
	Kanumuru Raghu Rama Krishna Raju	YSR Congress Party	Andhra Pradesh/Narsapuram	6
	Anubhav Mohanty	BJD	Odisha/Kendrapa	6
	Meenakshi Lekhi	BJP	Delhi/New Delhi	15
	Ram Mohan Naidu Kinjarapu	Telugu Desam Party	Andhra Pradesh/Srikakulam	10
	Rahul Ramesh Shewale	Shiv Sena	Maharashtra/Mumbai (South Central)	4
	Lavu Sri Krishna Devarayulu	YSR Congress Party	Andhra Pradesh/Narsaraopet	6
	Subhas Sarkar	BJP	West Bengal/Bankura	2
	Girish Chandra	BSP	Uttar Pradesh/Nagina	3
	N. K. Premachandran	Revolutionary Socialist Party	Kerala/Kollam	10
	Shashi Tharoor	INC	Kerala/Thiruvananthapuram	14
Supriya Sule	Nationalist Congress Party	Maharashtra/Baramati	6	

Date	Member of Parliament	Party Affiliation (as of Nov 2019)	State/Constituency	Duration* (minutes)
	Mohammed Basheer	Indian Union Muslim League	Kerala/Ponnani	8
	Anupriya Patel	Apna Dal	Uttar Pradesh/Mirzapur	10
	Kaushalendra Kumar	Janata Dal (United)	Bihar/Nalanda	7
	Shri Rajiv Pratap Rudy	BJP	Bihar/Saran	20
	Sunita Duggal	BJP	Haryana/Sirsa	11
	Ritesh Pandey	BSP	Uttar Pradesh/Ambedkar Nagar	5
	Badruddin Ajmal	All India United Democratic Front	West Bengal/Jayanagar	5
21/11	Pratima Mondal	All India Trinamool Congress	Bihar/Begusarai	5
	Balli Durga Prasad Rao	YSR Congress Party	Andhra Pradesh/Tirupati	5
	Nihal Chand Chauhan	BJP	Rajasthan/Ganganagar	7
	Jagdambika Pal	BJP	Uttar Pradesh/Domariyaganj	7
	Adhir Ranjan Chowdhury	INC	West Bengal/Baharampur	16

\* Durations have been calculated based on the recorded videos of the speeches, which are available in the public domain.

### Rajya Sabha: 'Situation arising out of the dangerous levels of air pollution in the country, particularly in Delhi' on November 21, 2019 (Duration: 2hrs58mins)

Member of Parliament	Party Affiliation (As of Nov 2019)	State	Duration (minutes)
Kumari Selja	INC	Haryana	6
Vijay Goel	BJP	Rajasthan	12
Manoj Kumar Jha	Rashtriya Janata Dal	Bihar	5
Kahkashan Parveen	Janata Dal (United)	Bihar	3
Sanjay Singh	AAP	Delhi	4
Veer Singh	BSP	Uttar Pradesh	3
Pratap Singh Bajwa	INC	Punjab	5
Vandana Chavan	NCP	Maharashtra	4
Vijila Satyananth	AIADMK	Tamil Nadu	4
Banda Prakash	TRS	Telegana	5
Sardar Balvinder Singh Bhundar	Shiromani Akali Dal	Punjab	4
Ravi Prakash Verma	SP	Uttar Pradesh	5
Nadimul Haque	All India Trinamool Congress	West Bengal	5
Tiruchi Siva	DMK	Tamil Nadu	5
Amar Patnaik	BJD	Odisha	5
A. Navneethkrishnan	AIADMK	Tamil Nadu	5
L. Hanumanthiah	INC	Karnataka	5

Member of Parliament	Party Affiliation (As of Nov 2019)	State	Duration (minutes)
KJ Alphons	BJP	Rajasthan	5
Jaya Bachchan	SP	Uttar Pradesh	3
Sushil Kumar Gupta	AAP	Delhi	5
Syed Nasir Hussain	INC	Karnataka	5
Ghulam Nabi Azad	INC	Jammu and Kashmir	5
Surender Singh	BJP	Uttar Pradesh	7
Vaiko (Vaiyapuri Gopalsamy)	Marumalarchi Dravida Munnetra Kazhagam (MDMK)	Tamil Nadu	6
Mohd. Ali Khan	INC	Andhra Pradesh	4
Satyanarayan Jatiya	BJP	Madhya Pradesh	4
Ashok Bajpai	BJP	Uttar Pradesh	3
R.K. Sinha	BJP	Bihar	5

## Endnotes

- <sup>1</sup> These transcripts are available on the official website of the Lok Sabha. The discussion on November 19, 2019 is accessible at <http://164.100.47.194/Loksabha/Debates/Result17.aspx?dbsl=1804>. The discussion on November 21, 2019 is accessible at <http://164.100.47.194/Loksabha/Debates/Result17.aspx?dbsl=2604>. The discussion on November 22, 2019 is accessible at <http://164.100.47.194/Loksabha/Debates/Result17.aspx?dbsl=3044>.
- <sup>2</sup> The transcript is available on the official website of the Rajya Sabha at <http://164.100.47.7/newdebate/250/21112019/14.00pmT015.00pm.pdf>
- <sup>3</sup> Rule 193 enables MPs to give notice to raise a 'short duration discussion.' Under this rule, "any member desirous of raising discussion on a matter of urgent public importance may give notice in writing to the Secretary-General specifying clearly and precisely the matter to be raised; Provided that the notice shall be accompanied by an explanatory note stating reasons for raising discussion on the matter in question; Provided further that the notice shall be supported by the signatures of at least two other members." (Lok Sabha Secretariat 2019).
- <sup>4</sup> For the analysis in this paper, we translated the Hindi speeches to English ourselves, and did not use the services of a professional translator.
- <sup>5</sup> "I would like to share a report which was published in newspapers on 3rd November, especially in Delhi, the PM<sub>2.5</sub> for a 24-hour period was 625 micrograms. This is 24 times more than the World Health Organisation permitted levels, which is very, very high." (Midhun Reddy); "All of a sudden, on the night of 27th and the morning of 28th, the air quality took an alarming dip in Delhi and the surrounding areas." (Pinaki Mishra); "After a great smog of Delhi in 2017, the air pollution has spread far beyond acceptable levels in the last two years." (Sumathy); "Over the last few days, in Delhi, we had bitter experience." (Mohammed Basheer) "In Delhi/NCR, the pollution problem has gotten considerably worse over the years. In winter, when PM increases, the air becomes poisonous." (Anupriya Patel); "The Air Quality Index in Delhi indicates that the PM 2.5 concentration to be more than 500 micrograms per cubic metre during the month of November which is an alarming sign." (Sumathy). "On the 3rd of November, 2019, Delhi experienced a three-year record high level of pollution. According to the System of Air Quality and Weather Forecasting and Research (SAFAR), the overall Air Quality Index (AQI) reached 708. Safe parameters are 0-50 and Delhi was at 708.." (Pratap Singh Bajwa)
- <sup>6</sup> Kakoli Ghosh Dastidar, Sumathy, Midhun Reddy, Rahul Ramesh Shewale, Pratap Singh Bajwa, and K. J Alphon mentioned national or international safe levels of pollutants.
- <sup>7</sup> "This is not just related to India, but related to the whole world." (Manish Tewari); "This isn't the situation of just this country, this is happening all over the world because of poor air quality; 7 million people died due to poor air quality, according to the WHO." (Jagdambika Pal); "Though it is a global phenomenon we have to respond to the danger that is ensuing us." (Tiruchi Siva); "I don't believe that this is an India-specific problem. Today, the whole world is impacted by air pollution. I remember that our Prime Minister was in dialogue with other countries about air pollution." (Mohd. Ali Khan).
- <sup>8</sup> All the important institutions and governance heads are located in Delhi, and each year this time of year, the air is so polluted and smoggy that people are breathing poisonous gas instead of air. Why is the same hazardous air seen at the time every year?" (Manish Tewari).; "Sir, whenever it comes to air pollution, Delhi comes up because it's the capital of our country. If it comes to the capitals of the whole world, then Delhi definitely comes up." (Surender Singh); "Delhi has been made an international issue." (Meenakshi Lekhi).
- <sup>9</sup> "Delhi is our capital and it is worst affected. It is a fact that cannot be ignored." (Gautam Gambhir); "WHO says that Delhi is the most polluted city." (Parvesh Sahib Singh Verma); "See, it is the report of international bodies that out of the capitals of the world today, Delhi is the number one polluted capital of the world." (Pratap Singh Bajwa). "It is particularly complicated in Delhi because of the huge number of automobiles and also due to stubble burning. They have automobiles more than Mumbai, Chennai, and Kolkata put together." (Midhun Reddy); "Our Parliament is in the most polluted city in the world." (Kunwar Danish Ali).; "The main reason for the environmental problems in Delhi is because of North Westerly winds settling almost in Delhi and the power plants surrounding Delhi, especially coal based power plants, not having the perfect FGD." (Kanumuru Raghu Rama Krishna Raju); "Sir, whenever it comes to air pollution, Delhi comes up because it's the capital of our country. If it comes to the capitals of the whole world, then Delhi definitely comes up." (Surender Singh)
- <sup>10</sup> "Whether it is Delhi or whether it is the Indo-Gangetic Plain, it houses 40 per cent of the Indian population, that is 55 crore people live in the Indo-Gangetic Plain of India. Due to the topography and geography of this place, there is an air locking area and the air keeps moving." (Kakoli Ghosh Dastidar); "The study also found that the Indo-Gangetic plain, covering parts of states such as Punjab, Haryana, Uttar Pradesh, Bihar, and West Bengal, has the highest population exposure to significant PM 2.5 concentrations." (Rahul Ramesh Shewale); "I see that this problem is everywhere and especially in the four months of September, October, November and December, because it has a unique meteorological effect where pollutants in our environment are not able to disperse in the air. In such a situation, when the wind stops moving, the impact is much greater." (Ashok Bajpai).
- <sup>11</sup> "Many people are only talking about Delhi, when this problem is affecting not only Delhi, but many cities in the country and their people. Delhi is one of the most polluted cities in the world. But Delhi, Kolkata and many other cities are also affected by pollution." (Hanuman Beniwal); "It's not just in Delhi. Pollution is across several cities. We cannot point only to the Delhi government." (Kaushalendra Kumar); "Air quality in Delhi has gone above the danger level. It is really a matter of great concern. But it is not confined to Delhi alone. Since Delhi is the capital of our nation, the furore has been created. But silently across the nation each and every second our future generations have been falling prey to pollution." (Adhir Ranjan Chowdhury); "The first thing is that there is not only pollution in Delhi, but the whole of India is struggling with the problem of pollution." (Balvinder

Singh Bhundar); “I don't know why we are constantly blaming Delhi. Delhi is definitely the Capital of India and all the attention is on Delhi. But if we see what Bajwaji said just now, India is home to 14 most polluted cities in the world.” (Vandana Chavan).

<sup>12</sup> “But stubble burning occurs only for 40-50 days; so what's polluting the air for the rest of the time?... Out of the 365 days in the year, Delhi has severe air quality for 200 days.” (Parvesh Sahib Singh Verma); “It is always in the few weeks before and after Diwali and in fact, just after Diwali, is when the debate also peaks as does the AQI, the focus on urban centres is very often reduced to Delhi-Punjab debate and honestly, that misses the larger point... This is a national crisis. It is a perennial issue, not just in November. It is a pan-India problem that we must solve together.” (Shashi Tharoor); “We do not have any long-term perspective. Today's reeling topic is air pollution because Delhi has been affected, number of cities have been affected. So, it becomes a reeling topic nowadays. But after a few weeks, everybody will forget as to what has taken place in Delhi and other areas.” (Adhir Ranjan Chowdhury); “When the cold starts, before that when the level of pollution increases, then there are two particular things discussed—deepawali crackers and stubble burning. We talk about these, which happen in 20 days. For the rest of the days after that, there is no discussion about the remaining 340 days and the pollution that we experience.” (Surender Singh)

<sup>13</sup> “According to the Air Quality Index of Central Pollution Control Board, the ozone and the nitrogen dioxide particles are increasing in Manali and Chennai as well in recent times. This is a matter of personal concern to me. On 17th November in Velachery in my South-Chennai constituency in Tamil Nadu, the nitrogen dioxide was the permanent pollutant throughout the day. It remained prominent as well as permanent pollutant throughout the day and the PM 2.5 levels were around 46 to 67 micrograms per cubic metre. In the Alandur Depot in Tamil Nadu, it remained more than 110 micrograms per cubic metre throughout the day.” (Sumathy); “In the area called Hinjawadi is the large Rajiv Gandhi Infotech Park. I just checked the pollution today, it is 427 there which is severe. There is nothing burning. Yes, there is a lot of traffic, but there is no factory anywhere around, still it is absolutely in the severe pollution range. I think we really need to put our minds that it is not just one thing in isolation which is deteriorating the entire air.” (Vandana Chavan); “Bulensehar is close to NCR 70km away, and is a part of it. The amount of pollution in Delhi is the same as in my area.” (Bhola Singh); “It is not only here, but in Tamil Nadu also we have started to feel. [...] All the States are suffering. NCR being the capital, it is emphasized here.” (Tiruchi Siva); “Sir, Mumbai city's air is the most toxic in Maharashtra state. The rampant amount of unplanned construction supported by the rapid rise in vehicular emissions has resulted in Mumbai's air quality hitting toxic levels, with high concentrations of major air pollutants like sulfur dioxide, carbon monoxide, oxides of nitrogen etc. Out of 72 air quality stations in Maharashtra, only four have reported the Respirable Suspended Particulate Matter (RSPM) to be within the safety limits.” (Rahul Ramesh Shewale).

<sup>14</sup> “As per Continuous Ambient Air Quality Monitoring Stations data, there is general improvement in the air quality of Delhi in the last three years. The number of ‘Good’, ‘Satisfactory’, and ‘Moderate’ days, which were 106 in 2016, have improved to 152 in 2017 and 159 in 2018. I am happy to tell that out of 324 days of

this year, 175 days are in this category. And, the number of ‘bad’ air days has reduced to 206, as compared to 213 in 2017, and 246 in 2016; and, this year, to 190 days, out of 324 days. So, this is very important.” (Prakash Javadekar). “But as I say, despite everything, still, there is problem because it had started twenty years ago. It became severe every year, and I appeal to everybody to give their cooperation. We need cooperation of everybody and also suggestions from this House.” (Prakash Javadekar).

<sup>15</sup> “Why is it that in one place in the country—in the Indo-Gangetic plain—that pollution is so high? Wind speed is low, and air stagnates, and pollution increases. Meteorology plays a dominant role in Delhi's air quality.” (Prakash Javadekar)

<sup>16</sup> “So we should know that just like pollution occurs due to industries and vehicles—human-made reasons—construction, demolition and waste management—in the same way, there are also geographical, geophysical reasons in every city that cause pollution, which we need to understand from a scientific point of view. This is a fact to understand. This is not a matter of blaming one another; this is hardcore science. That's why, in different cities we see 40, 35 and 350 also. Why is there so much gap? Every place has a geospecificity.” (Prakash Javadekar)

<sup>17</sup> Santosh Harish's article, ‘Confronting everyday sources of air pollution’ in the Hindustan Times discusses this point further, and can be accessed here: <https://www.hindustantimes.com/analysis/confronting-everyday-sources-of-pollution-across-the-country/story-tXXS7tRrNRzKfjB4WF1aj.html>

<sup>18</sup> “The Lancet Planetary Health journal says that air pollution is the second highest risk factor for death.” (Anupriya Patel); “In India, studies have revealed that the third highest cause of deaths due to health risk is air pollution.” (Midhun Reddy); “It is the fifth largest killer in India.” (Sumathy). “Gangaram hospital says lung cancer incidence has increased by 10 times. [...] More than 10,000 people have died of breath-related diseases.” (Vijay Goel).; “According to the WHO, India has the world's highest death rate from chronic respiratory diseases and asthma.” (Sumathy); “Sir, in India, air pollution is responsible for 30 per cent premature deaths, cancer and mental diseases, and, Sir, it shortens the average life expectancy of Indians by four years.” (Kumari Selja); “The 2017 Report of the Centre of Science and Environment says that premature deaths due to air pollution have increased.” (L. Hanumanthaiah).

<sup>19</sup> “1,95,000 deaths occurred in 2017 which comes around 535 deaths per day.” (Jagdambika Pal); “12 lakh people died due to air pollution.” (Badruddin Ajmal); “In 2017, 10% of all deaths from that year were caused by pollution.” (Anupriya Patel); “Sir, last year, 12.4 lakh people in this country died because of pollution, out of which a very large percentage is of children.” (K.J. Alphonso); “In the country, out of the deaths during the year, 12.5% or about 12.5 lakh deaths recorded in 2017, are only due to air pollution!” (Ravi Prakash Verma); “It is estimated that in 2016, over nine lakh deaths were caused due to air pollution in India.” (A.M. Ariff); Studies by Health Effects Institute revealed that almost 1.2 million deaths in India in 2017 were due to air pollution.” (Midhun Reddy); “According to one study, Delhi citizens would live on an average of extra nine years, if Delhi met WHO air quality standards.” (Sumathy); “The air pollution in India is killing 1.5 million people every year. This is the fifth largest killer in India. According to WHO, India has the highest death rate

- of chronic respiratory diseases and asthma.” (Banda Prakash); “Sir, air pollution claimed five lakh lives in India in 2016, as per a report. The most appalling fact is that 90 per cent of children are exposed to PM 2.5 levels that are above WHO guidelines, damaging their health throughout their lives.” (Adhir Ranjan Chowdhury); “In 2017, there was a report of the State of Global Air...It revealed that since 1990, the number of ozone-related deaths in India has risen by 150%.” (Shashi Tharoor)
- <sup>20</sup> “Over 100,000 children below the age of five die due to bad air in the country.” (A.M. Ariff); “According to a WHO Report, air pollution kills about six lakh children. Not only that, many children die due to lower respiratory infections caused by air pollution. Air Pollution Reports of 2016 and onwards say that every day, 93 per cent of the children under 15 years of age breathe toxic air which is full of air pollutants.” (L. Hanumanthaiah); “WHO reports, air pollution kills about six lakh children under the age of 15 every year.” (Kumari Selja)
- <sup>21</sup> This statistic was cited by several MPs, including Vaiko, Vandana Chavan, Jagdambika Pal, Kunwar Danish Ali, and Gautam Gambhir.
- <sup>22</sup> “So, a study was conducted by the Kolkata-based Chittaranjan National Cancer Institute. They found that the key indicators of respiratory health and lung function are markedly worse among the school children in Delhi, between four and seventeen years of age than their counterparts elsewhere. In fact, the figures are twice to four times as bad for children in Delhi than in other places. According to the Cancer Institute, these are not reversible.” (Shashi Tharoor); “In Delhi, poor quality of air irreversibly damages the lungs of 2.2 million or 50 per cent of all children.” (Sumathy).
- <sup>23</sup> Surender Singh, Ghulam Nabi Azad, Vijay Goel, and Jaya Bachchan all expressed concern about pregnant mothers and unborn children. “The air quality index of 999, Sir, is equivalent to smoking 45 to 50 cigarettes a day.” (Sumathy); “Air pollution has been recognised as the world’s largest single environmental health risk, and the average PM 2.5 in our air is equal to smoking 7 cigarettes. This means that we have come to a point where instead of feeding bottles, infants are made to smoke a pack of cigarettes through natural breathing process.” (Pratima Mondal); “Today, breathing is equivalent to 25 cigarettes.” (Vijay Goel).
- <sup>24</sup> “Mr. Speaker, sir, our economic output could actually go down by as much as two per cent because of pollution reasons [...] If sustainable development is going to be the way forward, then, we all have to work together to understand that this pollution is, actually, costing us almost \$10.6 billion a year. Can you imagine, Rs. 70,000 crore is what India is losing every year on account of pollution? This is a moderate study report.” (Pinaki Mishra).
- <sup>25</sup> “At this stage, where we are fighting recession, and at this particular time where we are targeting a five trillion economy, we do not need to spend and we do need to drain our coffers for mitigating the problems we have created.” (Midhun Reddy); “Our economic actions are being curbed, our development is being affected, and it will not be sustained if we don’t address these problems.” (Ravi Prakash Verma)
- <sup>26</sup> “Embassies and MNCs are talking about shifting.” (Manoj Kumar Jha). “The New York Times former India correspondent, Gardiner Harris wrote a famous or perhaps, to many of us a notorious article in the year 2015 in which he explained why he was leaving his post prematurely.” (Shashi Tharoor).
- <sup>27</sup> “It was quite unnerving – I have the records here – when a foreign premier, I do not want to name her here – on her visit to our nation, our India, about which we are so proud, made an adverse comment.” (Kakoli Ghosh Dastidar). This remark presumably alluded to German Chancellor Angela Merkel’s negative statements on air pollution during her two-day visit to India in November.
- <sup>28</sup> “This is the most shameful thing for Indians. On one hand, we are saying that we are emerging as an economic power. But if we cannot keep our capital, our cities clean, what else will we do next?” (Pratap Singh Bajwa).
- <sup>29</sup> Ghulam Nabi Azad extended this argument to imply that every Indian citizen was also equally responsible for air pollution in the country, and therefore ‘it is not fair that we blame each other, and each other’s government. Every man does it, every government does it, the people do it.’
- <sup>30</sup> “They are the most distressed in the economy, these small and marginal farmers. 70-80% of farmers are in distress, where will the machines come from? The central government should take responsibility for the burden that is being placed on them, because the Punjab government is certainly in no position to take responsibility.” (Amar Singh)
- <sup>31</sup> “I understand that vehicle emissions, wood-burning fires, fires on agricultural land, exhaust from diesel generators, dust from construction sites, burning garbage and illegal industrial activities in Delhi are the main factors, but blaming the voiceless firework manufacturers alone is not very fair. I come from Tamil Nadu and my village is next to Sivakasi, which thrives mainly on the firework industry and just to blame the firework manufacturers is not very fair, just as we cannot be blaming the burning of the agricultural wastage. (Sumathy)
- <sup>32</sup> “We all come from [...] a country of Vedas, Upanishads, Ramayana, Mahabharata which is actually based on nature-based religion. Our religion itself is nature-based because when I look at the hymns of Rig Veda, 1066 hymns are there which are all about nature. You look at Yajur Veda and Atharva Veda. They are all about earth and how I am a son of the earth. Bhoomi sukta says that earth is vishambarā, that is all bearing. Earth is vasuda - all propitiating and earth is mother earth which is life to everyone. That is my religion. So, Vedic to Indic civilization is all about nature. That is my culture. If I look at my own country, I see that in the past 15-20 years, we have wasted our country.” (Meenakshi Lekhi); “Importantly, this (our duty) dates back to the Rig Vedas, which says Prakruti Rakshati Rakshitaha – meaning ‘nature protects if it is protected.’ [...] The Rig Vedas also say, as a matter of fact, is [...] that we must look at every entity of nature with the eyes of a friend and a sympathizer. Mata Bhumi Putroham Prithivyah – Earth is my mother and I am her son.” (Jagdambika Pal)
- <sup>33</sup> “Environmental consciousness is present across the world and it has been a very primary concern for the last 40 to 50 years, but if you consider India, it is there in our DNA and we in the Indian culture have respected environment. Even if you look at our traditions, our culture and everything, it comes with a basic

- connection with the nature. So, we are proudly associated with the nature, but somewhere in the last 30-odd years, in terms of achieving growth, in terms of achieving development, and in terms of copying the western world, we have somehow missed the link with nature and we have not been on the right path.” (Ram Mohan Naidu Kinjarapu)
- <sup>34</sup> As per Lok Sabha records, between 2000-2019 there were 368 questions that contained the term ‘air pollution’ in the full text of the question. Selecting for the term ‘air pollution’ excludes questions that may contain other terms related to air pollution – such as ‘vehicular pollution’ or ‘air quality management.’ Therefore, there are at least 368 questions related to air pollution, but there may be more that this analysis does not include.
- <sup>35</sup> ‘In the country there are four main sources of pollution: industries, vehicles, biomass burning, and dust pollution. There are many other smaller sources, but these are the main ones. In every city, the nature of pollution is different. That’s why every city, every place needs to have its own work.’ (Prakash Javadekar)
- <sup>36</sup> “I completely agree with Mr. Tewari here when he says that the farmers, like the farmers of Punjab, the farmers of UP and the farmers of Haryana have been vilified completely and needlessly.” (Pinaki Mishra)
- <sup>37</sup> “These days, we blame farmers in Punjab and Haryana. They are criminalised. There are cases registered on those who burn stubble.” (Kumari Selja); “Farmers are having to deal with FIRs now. Instead we should give them support and new technology, and machines.” (Surender Singh).
- <sup>38</sup> “Our statistics reveal, and even while answering in Lok Sabha, hon. Minister also gave the reasons for minimum levels and maximum levels of air pollution in summers and winters. Out of that, almost 76 per cent is from industries, dust and transport. Only 4 per cent is from the crop burning but people always say that crop burning is a major issue. It is not at all a major issue.” (Banda Prakash).
- <sup>39</sup> “If the farmer brings it, 10-20 lakhs, how will they bring this amount for 15 days? Give the machinery to the society. Take a village, take the village’s society, supply machinery to them, and give them the maximum subsidy, and the Super Seeder, because other machinery fails. Second, the combiner that goes with it needs 7 balers, it is a must. These two things should be there so that wherever work happens, it happens completely, and then problems don’t arise.” (Balvinder Singh Bhundar); “So, ideally, the Government should give a special subsidy or maintain a Budget to supply the cutting machines to the farmers.” (Ram Mohan Naidu Kinjarapu).
- <sup>40</sup> “If stubble is a problem, why doesn’t the state government make a programme to buy it? Farmers don’t burn straw because they want to. In Delhi, the pollution advertisements had a budget of 200 crores, and we could have bought NCR’s straw in 50 crores, which our Delhi government did not do.” (Manoj Tiwari); “Buy straw from farmers and use it to make electricity.” (Hanuman Beniwal)
- <sup>41</sup> “In our State, as my friend stated, we used to cut the very root of the stubble and then we used the thatched houses to store it. Then, it was used as fodder for the cows and buffaloes.” (Vaiko); “Many members have expressed the fact that there is a shortage of fodder for animal feed in the country. For this you should talk to the Chief Minister of the state and prepare a plan. Using subsidies and railway transport, you must send the paddy straw as animal feed to farmers who need it. This helps farmers and avoids pollution.” (Mohd. Ali Khan); “There is a lot of scarcity of fodder in various parts of the country. You have to make use of this stubble to produce fodder and manure for the farmers.” (Balli Durga Prasad Rao). “Similarly, to persuade farmers to wean away from the age-old practice of stubble burning, a cost has to be borne by the Government in the form of direct cash incentive or incentivising them to use the stubble to generate additional incomes. For example, the noted agricultural scientist Swaminathanji – I was just going through one of his articles yesterday – has suggested development of bio-parks and conversion of stubble to very rich manure.” (Anubhav Mohanty). “The Government should take strong steps and initiate a stubble collection programme by providing small incentive to attract farmers. This can easily be re-used by several methods like making paper, packing material, biomass pellet and even biomass power plants can be set up. It is a gift of nature which has so many re-usable properties.” (Pratima Mondal). “Last time, I read in a Maharashtra newspaper that some of the pharmaceutical companies are purchasing back the agricultural waste from farmers for using it in manufacturing of drugs.” (Banda Prakash)
- <sup>42</sup> “Punjab has a policy that says that you can’t plant wheat until a certain time – this also contributes to the problem.” (Sanjay Jaiswal)
- <sup>43</sup> “From Haryana’s side I want to say, don’t blame things on farmers. Give them technology and incentives of Rs. 2500 to 3000. Join it with MGNREGA so that we can cut the stubble.” (Kumari Selja); “If farmers are given a new technology linked with MGNREGA, then the lack of fodder in the country can be removed from this straw. You bring it to every village. Provide that machine in every village, in every village panchayat. Mantriji, you should connect it with MGNREGA.” (Surender Singh).
- <sup>44</sup> “Merely penalizing farmers for burning their crops will not be enough. We have to start exploring innovative ways like moving the sowing and harvest seasons so that they do not coincide with the advent of winter. For this, we would also have to provide the farmers with incentives to grow other crops.” (Gautam Gambhir); “One thing – and you can work with the agriculture ministry on this – is crop planning at the district level. You can do this together with our Agriculture Ministers. I have been a member of Agriculture Committee, there all our scientists have said the same thing that wheat is no longer viable. You have to go back to oilseed farming and this is only possible when you give the farmer incentives.” (Surender Singh).
- <sup>45</sup> “Our farmers can sow maize, pearl millet, sunflower, oilseeds and pulses. However, there is no marketing facility for these crops. Where will the farmers sell these crops? Who will purchase these crops? In the markets there are no MSPs. MSPs are given to those crops that produce straw. [...] Madam, the farmers of Punjab should be given another option. Punjabi farmers don’t want to burn straw – the smoke reaches the lungs of their children first. [...] So do provide us better MSP for non-straw-producing crops.” (Bhagwant Mann); “Give alternative crops to the farmers of Punjab, Haryana, and UP, and announce 100% procurement

- so that nobody burns crop residue” (Amar Singh); “It is a matter of fact, but from the Central kitty, you can easily give the subsidy to the farmers to cultivate alternate crops like maize, pulses etc. I heard Diya Kumari Ji’s speech earlier for a raise in the support price for pulses. You do that, the farmers will shift. It is a matter of simple economics for the farmers. The farmers will go where they can make their two ends meet.” (Pinaki Mishra).
- <sup>46</sup> “Let’s also replace PUSA-44, which creates the most straw, and bring in alternatives.” (Sunita Duggal)
- <sup>47</sup> “Paddy is also grown in rest of the country. Why is (stubble burning) not there? It is simply because of agricultural practice. In places like Odisha, they cut entire plant right from the root and use that stubble either in thatched houses or give it to cattle. Here, they don’t follow that practice; they have never followed it. In that case, to change that practice, it requires a lot of education, legal coercion only goes so far to give them economic incentive.” (Amar Patnaik)
- <sup>48</sup> “I would just like to ask the hon. Minister about the status of the CAMPA fund. The amount of Rs. 30,000 crore is given to the States for plantations. In our own State, the Government which is incumbent right now, has told us that it has planted millions of trees. So, how is the Government of India monitoring this exceptional amount of money?” (Supriya Sule)
- <sup>49</sup> “There are only two countries in the world whose green cover has increased in the last five years. India’s green cover has increased by more than 13,000 square kilometers. This is a very good thing for us. Green cover has also increased in China and has increased in our country, as both of us have suffered due to pollution in today’s date.” (Prakash Javadekar)
- <sup>50</sup> “We don’t need to tell anyone how much pollution has been stopped due to the metro.” (Sanjay Jaiswal); “I commend the government and the Minister, Shri Prakash Javadekar, for moving from BSIV to BSVI; for the 10,000 crores given to e-vehicles; for the national fuel policy for ethanol; the metro projects; Shri Nitin Gadkari’s inland waterways projects; the Ujjwala Yojana, and our emissions trading scheme in Gujarat.” (Sanjay Jaiswal)
- <sup>51</sup> “Here in Delhi and in surrounding areas, Ubers and Olas have added around 65 per cent further burden to our roads. Therefore, nobody is looking at the kind of influx of cars that have moved into the NCR region all of a sudden which is creating this massive pollution in the last 5-6 years. So, instead of blaming farmers, we should blame ourselves that we no longer want to travel by metro or buses. Everybody wants to travel in Ola and Uber and quickly reach their destinations.” (Pinaki Mishra); “The growing number of vehicles is mounting cause of air pollution.” (Hanuman Beniwal); “In Delhi it’s become like this, wherever you go in the street there are 5-10 cars on the road. In one family, if there are four people, there are four cars on the road. The smoke from the cars is making the environment polluted. We need to work on this.” (Nihal Chand Chauhan).
- <sup>52</sup> “In 2004, there were 40 lakh vehicles in Delhi; today in 2019, we have 1 crore 10 lakh vehicles. Why did this number increase by 70 lakh vehicles? [...] The Delhi government did not keep its promises on buying buses, which resulted in the citizens buying two-wheelers.” (Parvesh Sahib Singh Verma); “The Delhi government in February said that in 8 months they would bring 3000 buses and 1000 e-buses. Today, what happened? Delhi knows and the world knows.” (Sanjay Jaiswal). “We can electrify vehicles, make solar vehicles, run them with CNG and PNG – all this is fine. But we should improve public transport.” (R.K. Sinha)
- <sup>53</sup> “The Government has already announced various incentive schemes to increase the usage of electric vehicles. However, the average usage of electric vehicles is very less because of the cost of those vehicles, limited number of service facilities, spare parts etc. Therefore, steps should be taken to increase the number of electric vehicles across the country.” (Raveendranath Kumar); “I humbly submit that an expeditious action should be taken to manufacture electrical vehicles in a rapid manner. We must set a goal to make 25 per cent of private vehicles to be electrically powered by 2023, or so.” (Mohammed Basheer).
- <sup>54</sup> “We are talking about cars. Do we have a vehicle scrappage policy? Old cars are causing pollution.” (Arvind Sawant)
- <sup>55</sup> “Honorable Minister, I would like to bring to your notice that a new thermal power plant is going to come in the NCR. I request you - before coming close to shutting it down, make it a gas plant, because the plant in Khurja will only increase pollution.” (Surender Singh). “The Government has to impose a cap on use of coal instead of digging new coalmines. The existing ones should be capped and renewable energy sources must be worked upon.” (Pratima Mondal). “The hon. Prime Minister is giving a lot of impetus to renewable energy, especially the solar and wind. Since we have the national grid, we should move more towards the renewable energy.” (Kanumuru Raghu Rama Krishna Raju); “What about the commitment of moving towards renewable energy? Forty per cent of the renewable energy produced should be electricity.” (Kakoli Ghosh Dastidar).
- <sup>56</sup> “I had some role to play in introducing CNG in Delhi. When I was Commissioner of Delhi Development Authority, I was Chairman of the Committee for Large Polluting Industries from Delhi; and based on our report, all the large polluting industries were shifted out from Delhi. I think, as Greta says, this is a time for action, not for Committees.” (K.J Alphans); “Regarding the thermal power stations, an hon. Member has already stated that the operation of thermal power stations surrounding Delhi have to be relocated.” (N.K Premachandran); “So, ideally, we should look at the solution where power can be transmitted from a distance. Now, we also have the National Grid. We should dismantle the plants, as much as possible, in and around Delhi or within the 100 kilometres of radius, and move them away. [...] We cannot avoid coal-based plants but we should move them far away from the habitations, especially from Delhi.” (Kanumuru Raghu Rama Krishna Raju); “My fifth suggestion is that those big factories which have come in the middle of the city should be moved elsewhere. Delhi is the heart of our country, the factories which were planted in Delhi fifty years ago, hundred years ago, are now populated and they are polluting the climate.” [Veer Singh]. “City boundary-based regulation only encourages emissions leakage such as relocation of industries to the outskirts. India has to develop regulatory institutions that operate at the level of the regional ‘airshed.’” (Rahul Ramesh Shewale).
- <sup>57</sup> “There is laxity in implementing the emission standards. This has not been followed and there is laxity in it. Guidelines for climate change were given in 2015, which said that TPPs must reduce the emissions. Two years later, the compliance deadline was again increased to five years. If seen, yet 10 coal-based power units near Delhi are unlikely to meet the schedule. Out of 267 units, which

- are supposed to comply by December 2019, 224 are yet to install fuel gas desulfurization units.” (Syed Nasir Hussain). This was also an example for how air pollution and climate change were conflated.
- <sup>58</sup> “The PM Ujjwala Yojana gave 8 crore women gas connections and LED bulbs, saving electricity.” (Satyapal Singh); “Earlier, women were dying due to smoke exposure. The honorable Prime Minister of this country and our environment minister have started the Ujjwala scheme to free them from smoke, which I have to congratulate them for.” (Surender Singh).
- <sup>59</sup> “Why can the construction work not be done under cover? When buildings are being made, they should be covered.” (Kakoli Ghosh Dastidar); “The major contributor for the air pollution is the construction sites, and the Government instead of making policies on the shadow-level or the cosmetic-level should make very strict laws thereby insisting compulsory covering of sheets around the construction areas and burning of debris should be banned inside the cities. One other way can be by introducing pre-fabrication and modular construction techniques, which is cheaper, and cost and time effective also.” (Sumathy); “Are we covering sites or implementing guidelines? No.” (Meenakshi Lekhi); “Another one is road dust also. This is a very, very important cause. They should see to it as to how the road dust can be controlled. It is also suggested that the Construction and Demolition Waste Rules, 2016 should be implemented. We have to implement it very vehemently.” (Banda Prakash)
- <sup>60</sup> “When I talk about the change on the ground, I would like to highlight the biggest source of pollution in my constituency which is the Ghazipur landfill.” (Gautam Gambhir).
- <sup>61</sup> “When I was a Mayor, I went to her city to see what was going on. Solid waste management is the pioneering and best solution that they have implemented. They take the solid waste to the place where they segregate it, palletize it and decompose it. They are not burning it anywhere. From it, there is a residue derived fuel which would give us carbon credits. It can be used in daily vehicular traffic. That is a very good thing that Pune has taken up.” (Vijila Satyananth). The plans of setting up new waste-to-energy plants and to enhance the processing capacity of existing plants should also be materialized.” (Banda Prakash). “There is no e-waste policy in India. We haven’t thought of battery waste, and lithium batteries are hazardous for health.” (Arvind Sawant)
- <sup>62</sup> “I request the Delhi government to spend 70-80 crores not on ads, but on WAYU towers in hotspots to clean the air. For the past 15 years, cloud-seeding tech has been very normal as seen in the Beijing Olympics. Until a permanent solution emerges we should consider cloud-seeding to induce rain.” (Sanjay Jaiswal); “Sir, I would like to make an appeal, through you, to establish a state-of-art scientific lab to produce artificial rain in the beginning of winter season to wash away and reduce particulate matter and other pollutants in the atmosphere.” (Sumathy)
- <sup>63</sup> “Then, there are technical interventions. Pilot projects were deployed in Delhi for evaluation of air pollution mitigation technologies. Ambient air purification through Wind Augmentation and Purification Units (WAYUs) for pollution abatement at traffic intersections like at ITO and other intersections was done. Pariyayatra filtration units on 30 buses were also evaluated.” (Prakash Javadekar)
- <sup>64</sup> “I am very thankful to PM Narendra Modi. [...] When he was CM of Gujarat, the solar energy projects he took initiatives for are historic. [...] I commend the government for moving from BSIV to BSVI. I also commend the 10,000 crores given to e-vehicles, the national fuel policy for ethanol, the metro projects, Shri Nitin Gadkari’s inland waterways in rivers, the Prime Minister Ujjwala Yojana, and the Surat emissions trading scheme in Gujarat.” (Sanjay Jaiswal)
- <sup>65</sup> “I remember that there was an advertisement in Delhi, a hoarding that said that whenever you saw C&D waste, you can take a picture and send it to us and we will deal with it. That didn’t happen, and no work has happened. But advertising money has come up.” (Meenakshi Lekhi); “Instead of wasting money on doing full-page ads in newspapers, if we put all this money in social sector, especially healthcare, I think it would be a great contribution.” (Supriya Sule); “If paddy straw is a problem, why doesn’t the state government make a programme (yojana) to buy it? Farmers don’t burn paddy straw because they want to. In Delhi, the pollution advertisements had a budget of crores, and we could have bought NCR’s straw in 50 crores – which our Delhi government did not do.” (Manoj Tiwari)
- <sup>66</sup> “Delhi hasn’t bought one bus in the past ten years, so vehicles have increased rapidly. [...] The Supreme Court said that there were only 5000 buses when Delhi needed 15,000 buses. So shouldn’t we buy 10,000 buses? [...] The Chief Minister didn’t plan properly. He ordered 2000 private buses and only 1000 came because he didn’t plan properly to begin with.” (Parvesh Sahib Singh Verma). “The Delhi Chief Minister keeps saying that stubble burning happens in Punjab, where 19 out of 24 MLAs are AAP. Why can’t he talk to members of his own party to create coordination? [...] The Delhi CM hasn’t thought of discussing stubble burning with the government of Punjab, or with the Prime Minister? (Parvesh Sahib Singh Verma); “The Delhi government in February said that in 8 months they would bring 3000 buses and 1000 e-buses. Today, what happened Delhi knows and the world knows. We were supposed to finish diesel vehicles in 10 years, we don’t know what happened to that. A 1500 crore ambient air fund was made 15 years before this, and we don’t know what today’s government has done with that money. Metro-4 is being stopped on purpose. We don’t need to tell anyone how much pollution has been stopped due to the metro. There are boasts that they will create e-vehicle stations all over Delhi, but it looks like all of Delhi is 2-3 stations around Connaught Place.” (Sanjay Jaiswal)
- <sup>67</sup> “The State can no longer get away with these gimmicks like odd-even, shutting construction sites, etc. What have they to do so that they do not reach this situation? We need long-term sustainable solutions.” (Gautam Gambhir).
- <sup>68</sup> “I would like to bring to the attention of this august House the seriousness of the issue and would like to persuade the Union Government as well as the State Government to take proper measures and introduce stringent laws concerning the climate changes as well as the air pollution.” (Sumathy)
- <sup>69</sup> “What is the role of the State Pollution Control Boards? In every State, there is a Pollution Control Board. What are their duties and responsibilities? Are they periodically sending their reports to the Centre or to the States? What is the monitoring mechanism with regard to the same? That can be examined in an appropriate manner. Then only, things will be controlled.” (Balli Durga Prasad Rao)

<sup>70</sup> “Honorable Minister has given a very good statement, but in that statement it is very worrying that we are not able to spend the money we are releasing. It says that we are buying so many machines or spray guns, but we are not being told how much equipment we need. The number being mentioned in a city like Delhi is probably not enough for a locality.” (R.K Sinha)

<sup>71</sup> “Only notification will not help. We will have to monitor what is actually happening at the ground level. Monitoring and implementation are imperative.” (Kakoli Ghosh Dastidar); “All these legislations and guidelines are there but unfortunately their implementation is very poor. [...] We have a number of laws but they are not working properly.” (Mohammed Basheer); “Whether it is the central government, the state government or all the agencies or the municipal corporations, the answer is in applying the rules today.” (Jagdambika Pal); “Sir, in the several reports that the CAG has taken out on air pollution from time to time we have seen that the intent is always there. The intent to improve pollution levels is always there, but there have been tremendous amount of latches on the implementation front.” (Amar Patnaik).

<sup>72</sup> “There is laxity in implementing the emission standards. [...] Guidelines for climate change (sic) were given in 2015, which said that TPPs must reduce the emissions. Two years later, the compliance deadline was again increased to five years. Now we see that 10 coal-based power units near Delhi are still unlikely to meet the schedule. Out of 267 units, which are supposed to comply by December 2019, 224 are yet to install fuel gas desulfurization (FGD) units.” (Syed Nasir Hussain)

<sup>73</sup> “Hon. Minister is here. It is laudable that we have the Swachh Bharat Mission. Can we launch Swachh Hawa Mission? Shall we give it a thought?” (Kakoli Ghosh Dastidar); “What we need today is not just the Swachh Bharat Mission but also a Swachh Hawa Mission to combat pollution.” (Nadimal Haque). “Since Dr. Harsh Vardhan is here, I would like to bring to his notice that the Health Report of 2015 said that the Air Act of 1986 needs to be integrated in the Health Policy. So, when you are expanding such a big Health Policy, if we can integrate this Act into it, I think it will really make a big change. We can put all our minds together and give you a lot of recommendations. But I think this Air Act has to be integrated with the Health Policy. A lot of countries like Brazil, New Zealand, Canada and Philippines are doing much better than us. They have an integrated plan with health and pollution.” (Supriya Sule). “Like Swachh Bharat Committees, we must go in for Paryavaran Parivartan Committees. If some impetus is given to that, and if we have these Committees at village level, a lot of problems can be sorted out at that level and they themselves could come up with good ideas.” (Kanumuru Raghurama Krishna Raju). “I would, therefore, urge the Minister to have a National Environment Policy. We have solutions. Let us have those solutions implemented by drafting the National Environment Policy. Just the Minister for Environment cannot bring solutions. We should bring in Health Minister, Jal Shakti Minister and Transport Minister together.” (Lavu Sri Krishna Devarayalu)

<sup>74</sup> “My only suggestion is that we go to the solution. This can be resolved when you request the Honorable Prime Minister to call a meeting of all the Chief Ministers on behalf of this House. What will happen with the calling of MPs, we will just do a speech. I could also suggest that you meet the leaders, but in

the leaders’ meeting, as we speak here, we will also speak there and the talk will be over. Jo karne wale hain, woh kendriya sarkar. Include Lieutenant Governors, Chief Ministers and Deputy Chief Ministers from all over the country, wherever they are. If we have a one-day discussion, and decisions will be made, we can tell everyone what will happen after 6 months, who did what and in that they prepare an agenda that the central government will do this, and the state government will do this.” (Chulam Nabi Azad); “I do not want to take much time to say that the suggestion given by our Leader of Opposition has been called to call the conference of the chief ministers. Along with this, before calling the CM meeting, organise a meeting with municipalities and institutes and get them to develop a plan and help the Centre implement it.” (Mohammed Ali Khan). “There must be a statutory commission to focus on air pollution and climate change and related issues. Each session of parliament, we should spend one day reviewing the work and progress of this commission.” (Manish Tewari). “I want to warn that for this, the Honorable Minister should take initiative and create at least a Joint Parliamentary Committee, which can sit down and discuss all these issues, and monitor the agencies involved, and stay away from useless politicisation.” (Ravi Prakash Verma).

<sup>75</sup> “We must have a task force under the Prime Minister on climate change and air pollution.” (Amar Singh); “I requested him [Prime Minister] that he has to take this issue of curbing pollution, eradicating pollution in his hands because without leadership from him, without his coordination, without him being able to show the trail blazing path that he is capable of, I do not think there is going to be a solution.” (Pinaki Mishra)

<sup>76</sup> “If Beijing’s air can be cleaned, do we have resource constraints? ... 1998 air pollution in Beijing was dominated by coal combustion and motor vehicles. Major pollutants exceeded national limits. Over the next 15 years Beijing implemented a series of measures focused on energy, infrastructure, optimisation, coal-fired pollution control, vehicle emission controls and by 2013, levels of air pollutants had fallen and some pollutants like Carbon Monoxide and Sulphur Di-oxide met national standards. In 2013, Beijing adopted a more systematic and intensive measures for air pollution control.” (Manish Tewari) “Do we go the China route?.. China has taken some extraordinary steps in cleaning up its air and that is why it has succeeded.” (Pinaki Mishra) “A lot of Members yesterday quoted the Chinese example. A lot of Members have quoted how Beijing has come down on pollution. Let me quote the experience that I had. I have made a lot of visits to a place called Guangzhou in China.” (Lavu Sri Krishna Devarayalu) “Of course, India is not China. We are a democracy where the smallest voice matters and where the means are as important as the ends. So, we cannot have any compulsions or methods that the Chinese used. But we can certainly see what worked there that we can borrow here.” (Shashi Tharoor)

<sup>77</sup> The US passed the Clean Air Act in 1970, and across the country, their success is visible. The Clean Air Act. increases lifespan by more than 15 years. GDP addition of \$22tn caused by investment in environment. [Rajiv Pratap Rudy] “In London in 1952, smog was so much that 4000 people died in one week, 8000 in other weeks, and mostly of respiratory problems and asphyxiation. For 4 days, people couldn’t see the sun. In 1956, Parliament passed a law outlawing coal-burning and incentivised pollution control measures and 1952-56 ke baad this didn’t happen again.” (Adhir Ranjan Chowdhury)

- <sup>78</sup> “(China) has prohibited new coal fired power plants in the polluted regions of the country, particularly close to cities. Its existing plants have been told to reduce emissions and coal has been banned. They have been told to substitute it by natural gas.” (Pinaki Mishra) “By the end of 2017, fine particulate pollution PM 2.5 fell by 35 per cent and by 25 per cent in the surrounding Beijing, Teenzine and Hebei region. Most of this reduction came from measures to control coal-fired boilers, providing cleaner domestic fuels and industrial restructuring.” (Manish Tewari)
- <sup>79</sup> “In large number of cities, the number of cars has been restricted very strictly.” (Pinaki Mishra) “In 1960s Japan had huge smog. Vehicles were creating a lot of smog. Let me tell you, Sir, it is the first country in the world which has started BS-III or BS-IV mark, which we are seeing right now. They were ready to burden their economy and start BS-III and BS-IV marking and they made innovations because of that. Right now, if you see cars like Honda, Toyota, they are much more fuel efficient.” (Lavu Sri Krishna Devarayulu)
- <sup>80</sup> “Now, further what has China done? China, in fact last year, completely banned winter heating there and there is severest winter where there is sub-zero temperature. They have banned it in homes. There is no coal fired heating at home. People had to suffer but they are willing to suffer for the sake of their environment. They have cut down their coal foundries. They have cut down their iron ore and steel manufacturing. They are happy to import from India. The Indian exporters are, actually, now, benefitting because of this boom because they are big importers. They are cleaning their air while we are fouling our air. Therefore, you have to take some interim steps and these interim steps also involve some loss of profit, some privation for our entrepreneurs but it has to be done and we have to bite the bullet.” (Pinaki Mishra) “(Guangzhou) is an industrial town which exports a lot of stuff to many countries across the world. Once they figured out that a lot of pollution is happening because of the industries, they were ready to let go of those industries. They were clear that they did not want any of those industries which was polluting the country. They were ready to let go of their economy and their employment also. Most of the industries were moved to Vietnam and other countries. They were ready to act on it. That is exactly what we have to do. We need to act on it. We have all the solutions but somehow, we are not ready to act.” (Lavu Sri Krishna Devarayulu)
- <sup>81</sup> In Paris, Netherlands, Germany, Copenhagen -- in Copenhagen, the number of cycles outstrips the population. Can we not do this? In Germany, if you don't have a car you get subsidised to build a house as a financial incentive. There are different strategies we can try. [Adhir Ranjan Chowdhury]
- <sup>82</sup> “The eastern and western peripheral expressways were done by us. For that, the money that the state government was supposed to give was not given, and there the Court had to give an order for the government to contribute, and the road was completed.” (Lok Sabha); ‘I don't want to engage in politics. But for the eastern and western peripheral expressways, all the states had to contribute funds. One state did not contribute, and the court had to give an order to ensure compliance. The same thing happened with metro development. The court had to intervene. [...] Everyone must work together.’ (Rajya Sabha) (Prakash Javadekar); ‘There's a problem here of taking credit. There is this saying: kaam kere koi, topi pehne koi (someone does the work, someone else wears the hat). This is also happening, that we do the work and someone else advertises it. But I don't want to do into this matter, because it is a small one.’ (Prakash Javadekar).
- <sup>83</sup> ‘A High Level Task Force was constituted under the Chairmanship of the Principal Secretary to the Prime Minister for management of air pollution in Delhi and NCR in November, 2017. The High Level Task Force closely monitors implementation of measures related to management of air pollution in Delhi and NCR. Further, regular review meetings have been held with all concerned Central Government Ministries and State Governments under my Chairmanship. I have conducted meetings and Dr. Harsh Vardhanji conducted earlier meetings as well as Secretary, EF&CC to ensure that various measures for prevention, control and abatement of air pollution in Delhi NCR are taken in a coordinated and effective manner. [...] Comprehensive Air Plan for Delhi NCR has been developed identifying timelines and implementing agencies for actions delineated. The Central Government has notified a Graded Response Action Plan for Delhi and NCR for different levels of pollution. The nature, scope and rigor of measures to be taken is linked to levels of pollution, namely, severe+ or emergency, severe, very poor, moderate to poor and moderate, after due consideration by authorities concerned. The actions are to be implemented in the entire NCR throughout the year. (Prakash Javadekar)
- <sup>84</sup> “What have we done for stubble burning? Over the past 2 years, we have given Rs 11,000 crores to this, from machines to farmer incentives and subsidies. We have given these machines at 50% subsidy to cooperative societies.’ (Prakash Javadekar).; ‘With the efforts of the Government, overall, about 15 to 41 per cent reduction in burning events were observed in 2018 as compared to that in 2017 and 2016 respectively. During 2019-20 season, the total burning events recorded in the three States are 19.2 per cent less than in 2018 till 18th November. Uttar Pradesh has recorded 36.8 per cent reduction, Haryana recorded 25.1 per cent reduction and Punjab recorded 16.8 per cent reduction respectively in the current season than in 2018. This is not switch on or switch off job. So, it takes time. But we are progressing.’ (Prakash Javadekar).
- <sup>85</sup> ‘CAMPA is a state fund. 15 years after the Supreme Court decision to block it, states didn't get it. We reversed the decision, resulting in a 47000 crore infusion’ (Prakash Javadekar). ‘Carbon sink is very important – we have initiated a new urban forest plan to build new lungs in every city.’ (Prakash Javadekar). ‘in Maharashtra, since 1992 a successful agroforestry and horticulture programme has been running.’ (Prakash Javadekar).
- <sup>86</sup> ‘On the main issue of creating a city-specific plan, everyone was of the same opinion: plant trees. [...] Let's talk about cities, because there is more pollution in cities. In cities, there is a need to create urban forests.’ (Prakash Javadekar)
- <sup>87</sup> For instance, within a week of these discussions, in response to a question raised by MP Dipsinh Shankarsinh Rathod in the Lok Sabha on whether air pollution affects children, the Minister of State in the MoEFCC stated the following. “Many studies have been published, from time to time, reporting model-based estimates of effects of environmental pollution, including those on health of children. These estimates are, however, based on models, simulations and extrapolations. There are no conclusive data available in the country to establish direct correlation of death/ disease exclusively due to pollution. Health effects

of pollution are synergistic manifestation of factors which include food habits, occupational habits, socio-economic status, medical history, immunity, heredity, etc., of the individuals." The full answer given on 29 November 2019 can be found here : <http://164.100.24.220/loksabhaquestions/annex/172/AU1957.pdf>

<sup>88</sup> "Monsoon rains don't happen on time, and it comes dry or takes too long." (Ritesh Pandey); "Because of change in the climatic conditions, we are losing periodical monsoons. [...] The monsoon, starting from Andaman and entering in different parts of India, has also changed its direction due to unstable climatic changes, unpredictable rains and floods [...]." (Balli Durga Prasad Rao); "The entire country is suffering from climate change. We are facing historic floods and rains." (Kaushalendra Kumar); "India is especially very vulnerable to climate change because we have a huge coastline. Even small rise in the levels of the sea will affect us drastically. We have seen what happened earlier in Kerala; we have seen what happened in Chennai; and we have seen what happened in Mumbai." (Midhun Reddy); "The recent environment studies reveal that many districts of Kerala including Alappuzha, which is my constituency and Ernakulam will sink in sea within 25 years. Due to global warming, the sea level of Arabian Sea will increase up to two metres. We have to anticipate the terrible situation and find out a solution for the same at the earliest." (A.M Ariff); "Because of the melting of the icebergs, the sea levels are rising up. [...] So, we have to think now because all the major coastal areas would be submerged in the oceans." (Vijila Satyanath); "A US-based study that has been widely reported in the media over the past two weeks has projected that parts of Mumbai, Surat, Chennai and Kolkata would go under water by 2050 or be ravaged by recurring floods. Global sea levels have risen by eleven centimetres to sixteen centimetres, and under the best circumstances, they would further rise by another one-and-a-half metres." (Rahul Ramesh Shewale). "According to the Report of our Parliamentary Standing Committee on Agriculture, the Committee has predicted that four to nine per cent of our agricultural economy would be affected by climate change. If this is the case, almost 1.5 per cent of our GDP would be affected. These things should be avoided. We have 60 per cent of our population thriving on agriculture and it is very important for us to move forward as a country." (Midhun Reddy); "Additionally, the farm sector has been ravaged by untimely rainfalls, which is also the effect of climate change, resulting in the drowning of hundreds of villages and death of thousands of farmers. We can no longer afford to not take a strong stand against climate change." (Rahul Ramesh Shewale); "Climate change will impact farmers the most." (Ritesh Pandey)

<sup>89</sup> "It [Paris Agreement] has been endorsed unequivocally by our

Prime Minister and our Government, cutting across Party lines. It was done by the UPA, and now been redoubled by the NDA. It is a matter of salutation to our Government that we have adhered to the Paris Accord." (Pinaki Mishra); "In accordance with the Paris Agreement, we have a commitment. That is the main thing which I would like to point out." (Mohammed Basheer); "The main question which I would like to ask the Government is this. Is India, through the national legislation as well as the national platform of action, able to honour the commitments which we have made in the Paris Agreement so that carbon emission could be reduced to the international level or to the standard which has already been agreed upon by the Paris Agreement?" (N.K Premachandran)

<sup>90</sup> "If poverty alleviation is done properly, it will take care of climate change also." (Kakoli Das Dastidar); "Climate change has not been mentioned in any of the Union Budgets till now." (Syed Nasir Hussain).

<sup>91</sup> "Eight National Missions were framed by the Council on Climate Change. Unfortunately, the Council could not achieve the desired goals. I would urge the Government that these measures should be taken in a time-bound manner for achieving these goals." (A.M Ariff). "I would like to say that we in Odisha, under the guidance of our Chief Minister, have been exploring the possibility of having carbon sinks within cities by having Miyawaki forest. These forests are being promoted by the UN Environment Programme. These are supported by them. They act not only as sequestration carbon emissions but also decrease the temperature inside forest by about 5 degrees and by around 2.5 degrees and these are supported by the environment programme." (Amar Patnaik). "In 2016, the Government of India had come out with a draft national wind, solar, hybrid energy policy with the aim of facilitating functioning of 10,000 MW of hybrid, wind, solar plants by 2022. What the status of that is, we do not know! In 2016 again, Government of India had decided to install 175 GW of solar power capacity building by 2020. What about the status of that? Are we serious when we are thinking of climate change?" (Kakoli Das Dastidar); "It is true that India is a developing country, and we have pressing energy requirements for which we need coal. However, we need alternatives to counter the use of coal and reduce our carbon emissions." (Rahul Ramesh Shewale); "We need a climate-smart economy. For the convenience of the hon. Minister, a climate-smart economy is an extremely profitable economy. It is an economy that will create more jobs and leave us greener and better." (Adhir Ranjan Chowdhury)

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