

# AN ANALYSIS OF THE MADHYA PRADESH STATE ACTION PLAN ON CLIMATE CHANGE

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## Introduction

Madhya Pradesh (MP) was one of the first states to begin work on a State Action Plan on Climate Change (SAPCC) in 2009.<sup>1</sup> The state had the advantage of a dedicated Climate Change Cell driving the process as well as senior bureaucrats who facilitated the formation of the cell and ensured donor engagement on the project. There was some focus on bringing new ideas in process design: This included multiple formal structures to formulate the plan, as well as 23 workshops to garner extensive external and departmental participation. 13 of these were organised in different agro-climatic zones across districts – a first on that scale for any state.<sup>2</sup>

In terms of a framework, MP's climate plan focuses predominantly on vulnerability and adaptation. Mitigation-related activities such as a state Greenhouse Gas (GHG) inventory have been kept out of the purview of the document. Its scope therefore is limited. A combination of time-constraints, capacity issues in accessing climate science, and the challenges of processing diverse inputs from consultations led to a disconnect between final recommendations and both

the district level information generated, as well as climate projections.

MP's climate plan leans towards broad sustainable development outcomes, but not always from the climate lens. Understandably, climate development planning is in its infancy in the country and no framework exists for generating or prioritising actions from a climate perspective.<sup>3</sup> Despite these constraints, MP is developing a framework to 'nudge' other line-departments to mainstream climate change in their sectoral plans.<sup>4</sup> The MP climate plan has been endorsed by the central government's National Steering Committee (<http://envfor.nic.in/ccd-sapcc>).

These themes are further explored in the following sections:

- I. Context for the formulation of MP's climate plan: Drivers and framework
- II. The MP climate plan process
- III. Content and sectoral analysis
- IV. Implementing MP's climate plan: Mechanisms and finance

## About Madhya Pradesh

Madhya Pradesh is a land-locked state in the heart of India. Known for its national reserves and sanctuaries, it is a bio-diverse region that straddles 11 agro-climatic zones. Geographically a third of MP comprises of forests. Ten important rivers including the Narmada crisscross its terrain.<sup>5</sup> It is the sixth largest state in population terms and 72 per cent of its people live in rural areas. According to the Council for Social Development, Madhya Pradesh along with Bihar, Jharkhand, Uttar Pradesh, and Odisha fare poorly on most social indicators such as gender ratios, health care, education, employment, and poverty alleviation.<sup>6</sup> MP's Gross State Domestic Product is 3.6% of the country's Gross Domestic Product. While agriculture and allied services form the primary sector and employ the largest section of the working population, growth in this sector has been stagnant.<sup>7</sup>

However, MP seems to have fared better in recent years. The economy grew by 10% in its 11th five-year plan, buoyed by growth in the agriculture as well as industrial sectors.<sup>8</sup>

In terms of its environmental history, MP is predominantly remembered for protests against the Narmada valley project as well the aftermath of the Bhopal gas tragedy.<sup>9</sup> Reports also highlight wide scale deforestation and tribal displacement in the state as a result of coalmine operations, some of which were funded by multi-lateral agencies.<sup>10</sup> A position paper by the Finance Ministry indicates that MP was among the top six states receiving external aid in 2005-2006. The aforesaid context is pertinent to the narrative on the formulation of the State Action Plan on Climate Change in MP, and multiple donor engagement in the state.

“ When we started, there was a clear directive from state government, Steering Committee, and Chief Secretary, to focus on vulnerability and adaptation.”

- Official,  
Government of MP

## I. Context for the formulation of MP's climate plan

While the idea of a sub-national climate plan was originally mooted by the central government, a number of local factors influenced its formulation across states.<sup>11</sup> This section examines the drivers that influenced the formulation and framework of the MP climate plan and the approach taken in framing the draft through a climate lens.

### Drivers for MP's climate plan

During the drafting of the SAPCC, the Environmental Planning and Coordination Organisation (EPCO), which is a semi-autonomous organisation under the Housing and Environment Department, forged partnerships with different bilateral and multilateral agencies to work on climate change. The MP SAPCC therefore, is one link in a chain of different climate change related activities that the state has been engaged in with different partners.<sup>12</sup>

Some of the initiatives undertaken in 2009 include:

1. MoEF (Ministry of Environment and Forests)-GIZ Project on Climate Change Adaptation in Rural Areas of India. (*The*

*Vulnerability Assessment study was a component of the MOEF-GIZ project*)<sup>13</sup>

2. Indo-UK Project on Vulnerability & Adaptation Assessment for MP.

3. GoMP (Government of MP)-UNDP Project on Strengthening MP Climate Change Cell. (*The formulation of the SAPCC was one of the project outcomes*)

4. Study on 'Marginal Abatement Cost Curves' by Shakti Foundation (*ongoing*). (*Includes a GHG inventory for the state*)

As the list indicates, MP's climate plan was an outcome of a United Nations Development Program (UNDP) project on strengthening MP's Climate Change Cell in 2009. This partnership was facilitated by senior bureaucrats who had past networks with international agencies and were keen to formulate a climate action plan for the state.<sup>14</sup> A state official noted that during regional consultations, senior officers in the Housing and Environment Department personally, "called individual districts, spoke to divisional commissioners... so that they owned the process."<sup>15</sup> Literature on sub national climate action takes note of such "savvy policy entrepreneurs"<sup>16</sup> who are often key triggers for local governments

to undertake climate planning. In MP's case, the officials' knowledge of India's position in international negotiations, and particularly concerns of equity, informed the overarching approach of the plan, which predominantly concentrates on vulnerability and adaptation.<sup>17</sup> As one official noted, "When we started, there was a clear directive from state government, Steering Committee, and Chief Secretary, to focus on vulnerability and adaptation."<sup>18</sup>

The plan's focus on vulnerability and adaptation was also reinforced by EPCO's concerns about MP's agro-climatic profile. The MP climate plan uses secondary data to establish that rainfall across districts has been gradually decreasing over the last 41 years along with a rise in extreme precipitation.<sup>19</sup> It also notes that growth in agriculture, which is a fourth of the state's Gross State Domestic Product and employs 43 per cent of MP's population has been "almost static."<sup>20</sup> Water and agricultural vulnerability are therefore the officially stated drivers for the SAPCC. Officials were also keen to project the state as forward thinking on environmental issues.

The central government also played a role in shaping the approach of the MP plan. While the Common Framework Document from the Centre to states includes the preparation of a GHG inventory, interviews with state officials suggest that Centre later asked states to focus primarily on adaptation measures.<sup>21</sup> As a result, parallel efforts such as a GHG inventory report as well as a Marginal Abatement Cost (MAC) curve – initiatives that potentially feed into a low carbon plan – have been commissioned by EPCO, but are not part of the latest available (April 2012) iteration of the SAPCC document. The scope of the MP climate plan, therefore, is limited, and it is not the anchor for all climate engagement in the state.

### Framing and context

A climate plan's conceptual framework determines how climate concerns are brought to bear, and therefore how a plan can be differentiated from other state development planning. In the absence of a domestic frame of reference to formulate a climate plan, SAPCCs – more by default than design – are framed as sustainable development documents. While the plans therefore provide an important platform to mainstream environmental concerns in

development planning, they do not seem to address concerns of long-term climate resilience. The following section examines the use of climate science in the MP climate plan and the relative balance of adaptation and mitigation actions.

### *The extent of climate science used in the MP climate plan*

MP faced challenges in accessing climate data and forecasts relevant to the state. As it did not feature in existing work on sectoral and regional analyses by the Indian Network of Climate Change Assessment (INCCA), there was little ready research the Climate Change Cell could use.<sup>22</sup> As a result, the nodal agency took on an independent consultant later in the draft plan process to gather this information and collate it into a chapter.<sup>23</sup>

The MP climate plan, therefore, includes a chapter on observed climate trends and projected climate change that was added after the initial draft was completed. It lists observed temperature and precipitation changes in the state between 1971 and 2005, based on data obtained by the India Meteorological Department (IMD). In addition, it gives temperature and rainfall projections for the 2030s and 2080s based on datasets by the Indian Institute of Tropical Meteorology. Given that climate relevant data was generated late, there is little indication of observed or projected findings informing sectoral impacts, or even final plan recommendations.<sup>24</sup>

The link between available climate science and actual recommendations is somewhat tenuous. The MP climate plan is framed more as an exercise in setting development targets based on the belief that climatic and agro-climatic changes will exacerbate existing developmental concerns. An official in the state observed, "SAPCCs [are] not climate change plans but good development plans. States were thrown into the process without capacities to understand the process or the product."<sup>25</sup>

### *The relative balance of mitigation and adaptation actions*

An official roughly estimated the proportion of adaptation and mitigation in the MP climate plan as 90 per cent adaptation and

10 per cent mitigation.<sup>26</sup> While this is less an actual break-up and more an estimate, the document is noticeably tilted towards development outcomes.<sup>27</sup> The following, for instance, are some recommended activities across sectors:

- "Lakes/wetlands conservation in forest areas as outlined in GIM 2010."<sup>28</sup>
- "Development of Water Resources Information System."<sup>29</sup>
- "Enhance coverage of information on agriculture practices to farmers through agriculture extension including through cell phones."<sup>30</sup>

All these examples are part of existing sectoral plans in the state, likely included in the draft because they offer climate adaptation as a direct or indirect co-benefit.<sup>31</sup>

Mitigation activities, while present, are smaller in number and scope. This is evident both in the selection of sectoral recommendations in place, as well as the views of state officials who participated in the draft plan process.<sup>32</sup> For instance, one official stated that MP would only engage in mitigation activities if it offered a "win-win situation" for the state's development agenda.<sup>33</sup>

In short, the plan's focus on vulnerability and adaptation is driven by three factors: Well-networked senior bureaucrats who brought their insights on climate action to the plan; state concerns of stagnancy in growth and therefore vulnerability in agriculture and allied sectors; and mixed signals by the Centre on the role of mitigation in SAPCCs.<sup>34</sup> Because the MP climate plan is one of many climate-related projects that the state has been engaged in, it is not an anchor for all climate work in the state. The approach of the draft is more akin to a sustainable development plan. This is borne out by two factors: Departmental constraints in accessing relevant climate science data in a timely fashion; and the overarching focus on adaptation, which translates into a broad reworking of the state's development agenda in plan recommendations.

“SAPCCs are not climate change plans but good development plans. States were thrown into the process without capacities to understand the process or the product.”

- Official, Government of MP

## II. The MP climate plan process

The process followed in drafting a state plan – the steps taken, information accessed, institutional mechanisms at play, as well as the extent to which different stakeholders are involved – significantly shapes final outcomes. This section provides a timeline of events that shaped the MP climate plan, a snapshot of the process followed, and an elaboration of the following aspects of MP’s draft plan process:

- The presence of formal structures to oversee MP’s draft plan;
- Departmental and inter-departmental involvement;
- Role of donor agencies and consultants;
- Extent of external participation and outcomes;
- The SAPCC process as an opportunity to communicate climate change in the region.

### *The presence of formal structures to oversee the draft plan process*

The steering committee is a common institutional structure in all of the SAPCCs examined – formed to ensure that senior representatives of relevant departments oversee the draft plan process, in addition to earning the buy-in of the Chief Secretary who leads the group.<sup>35</sup> The MP process however, was unusual in also setting up a Project Management Unit and a Project Implementation Committee.<sup>36</sup> The Project Management Unit was led by the executive director of EPCO and included a team of junior associates who took care of the day-to-day progress of the action plan such as coordinating meetings, conducting secondary research, attending workshops, and preparing notes and reports based on available inputs. The Project Implementation Committee was led by the Principal Secretary of the

Environment and Housing department and met quarterly. According to state officials, the Project Implementation Committee was meant to supervise the implementation of the GoMP-UNDP project on strengthening the MP Climate Change Cell and not the SAPCC per se.<sup>37</sup>

Based on the aforesaid allocation of responsibilities, it appears the Climate Change Cell took on the role of the Project Management Unit and drove most of the process outcomes. In the later stages, the draft SAPCC was forwarded to departments as well as a group of experts for comments. While this kind of structural organisation – with multiple formal structures encompassing both external and departmental inputs – was meant to create a participatory approach, the bulk of the work was essentially carried out by the Climate Change Cell.

### *Departmental and inter-departmental involvement*

In terms of structural divisions, the MP process was also marked by the absence of sector driven working groups (prevalent in the Odisha and Sikkim draft plan processes). Individuals in departments were involved through their participation in 12 theme-based and sector-based workshops. These were conducted in Bhopal between April 2010 and May 2011 (Table 1).

Of the ten sector-based focus areas adopted by MP, three sectors – industry, rural development, and health – are unique to MP and outside the ambit of the sectors addressed in the National Missions.<sup>38</sup> According to officials, EPCO first contacted line departments and asked them to nominate nodal officers. **The Climate Change Cell prepared approach papers for each of the sector-based workshops, which were then given in advance to the**

nominated officers. The papers were based on IPCC data as well as literature drawn from papers by the Department for Environment, Food and Rural Affairs (DEFRA), a UK government department. Selected officials were then expected to collect inputs from their respective departments in preparation for the forthcoming workshop. The objective of these workshops was three-fold:

- Examine current policies and plans in place in that sector;
- Understand future development plans;
- Discuss departmental preparedness with respect to perceived climatic change.<sup>39</sup>

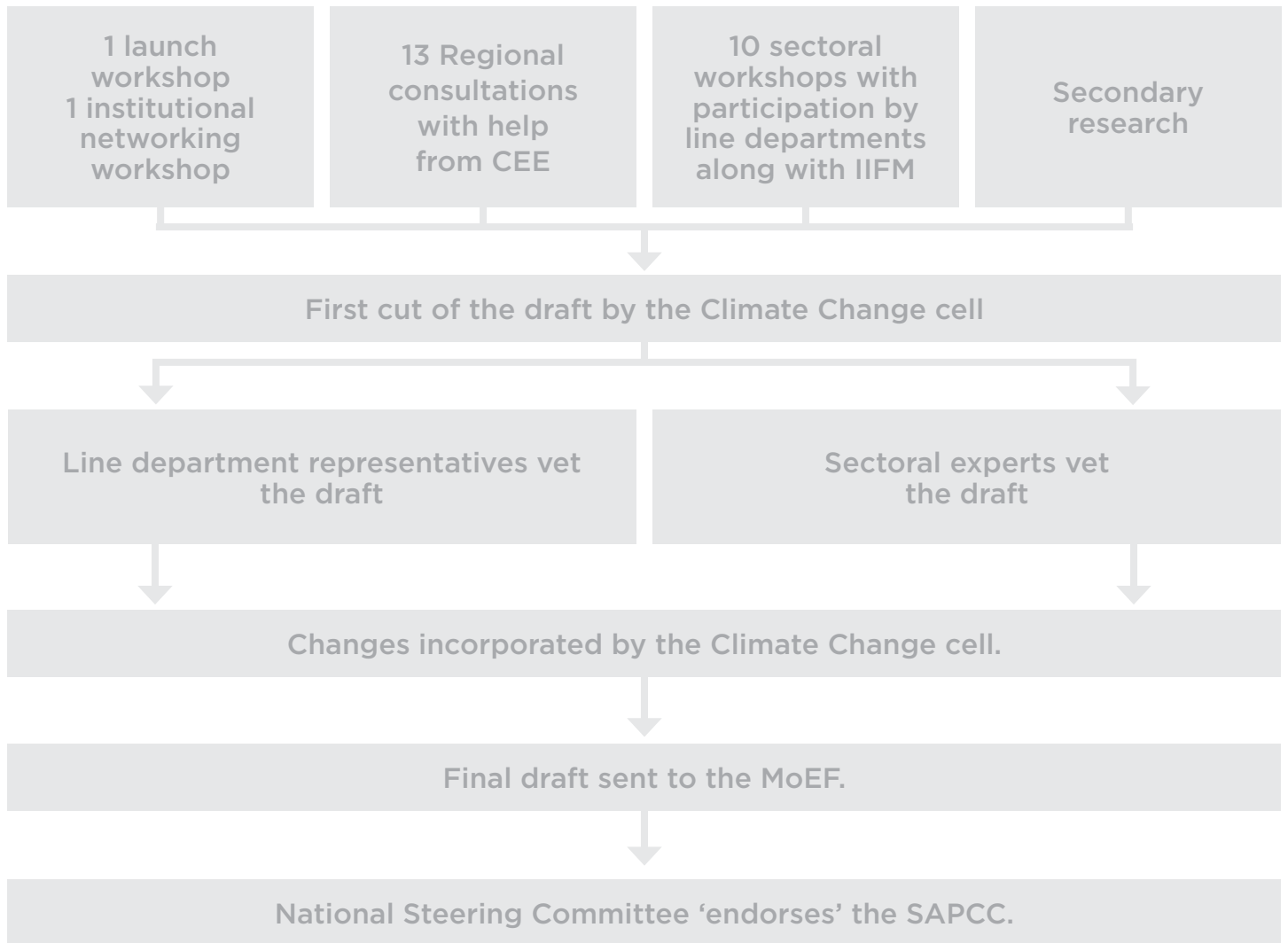
These workshops were typically chaired by senior officials at EPCO as well as the Housing and Environment Department, in addition to secretary level officers from respective sectors.<sup>40</sup> The full composition of each working group however, is not provided in the draft plan. While officials have stated that sectoral experts (often retired line-department officers and academic experts) were present in these meetings, it is unclear if, and to what extent these workshops facilitated cross-departmental deliberations. Moreover, the process was designed such that the Climate Change Cell was directly responsible for collecting and collating inputs during workshops, as well as writing the first cut of the draft (Figure 1). Departments were then asked to offer comments and feedback on related sectoral chapters. Therefore, their involvement in dictating the sectoral agenda, generating secondary research, as well as framing the content in each chapter was substantially limited. This may have constrained departmental ownership and engagement in the plan and potentially impacted implementation and mainstreaming efforts, because the responsibility to enact policies finally lies with the line-department.

## TABLE 1: TIMELINE FOR MP'S SAPCC

2009	Government of MP (GoMP) appoints EPCO as the nodal agency for addressing climate change in the state. Establishes a Climate Change Cell in EPCO
18 Aug 2009	Prime Minister urges all states to draft SAPCCs
Dec 2009	MP project with UNDP on strengthening the Climate Change Cell
Jan 2010	GoMP project with GIZ on Climate Change Adaptation in Rural Areas
26-27 Apr 2010	The MP SAPCC launch Workshop
Jun-Oct 2010	4 sectoral workshops - 1) Forest & Biodiversity 2) Animal husbandry & Livestock 3) Water resources 4) Commerce, industry & employment
7 Jul 2010	Networking workshop in Bhopal
19 Aug 2010	MoEF's National Consultation workshop
Jan 2011	4 sectoral workshops - 1) Energy 2) New & Renewable energy 3) Agriculture 4) Urban development & Transport
Apr-May 2011	2 sectoral workshops - 1) Health 2) Panchayat & Rural development
Feb-Mar 2011	13 Agro climatic zone-wise workshops
Feb 2012	Completed draft given to National Steering Committee for approval.
April 2012	Final Draft placed on EPCO website
July 2012	MP SAPCC 'endorsed' by National Steering Committee

## FIGURE 1: THE MP SAPCC PROCESS

Climate change cell at EPCO tasked with preparation of SAPCC



Source: MP climate plan, and interviews with state officials.

This concern is compounded by the hierarchical institutional structure typically found in states, where smaller nodal agencies find it problematic to influence more politically influential departments.<sup>41</sup>

### *Role of donor agents and consultants*

As stated in the previous section, one of the key drivers in MP's draft plan process was the presence of well-networked, climate-knowledgeable bureaucrats. They lent their knowledge and capacity to the draft plan process, shaping the overall direction of the plan. But while EPCO sought minimal assistance from UNDP - its donor partner - in drafting the climate plan, the agency relied on technical assistance from some external consultants.

The Indian Institute of Forest Management (IIFM) was initially brought in to participate in all the workshops and help the cell prepare the first cut of the draft plan. However, some of their work, such as a policy-gap analysis to mainstream climate concerns

in the state, was not used.<sup>42</sup> IIFM's exact contribution to the final draft, therefore, is unclear.<sup>43</sup> GIZ - which was working with MP on a project on Climate Change Adaptation in Rural Areas - commissioned Integrated Natural Resource Management (INRM), a research and development firm set up by the Indian Institute of Technology, Delhi, to develop the vulnerability assessment study. In addition, an Ahmedabad based NGO, Centre for Environment Education (CEE) was commissioned to organise the regional consultations. Finally, EPCO sought an independent consultant to work on the climate projections chapter and also re-draft the final report.<sup>44</sup>

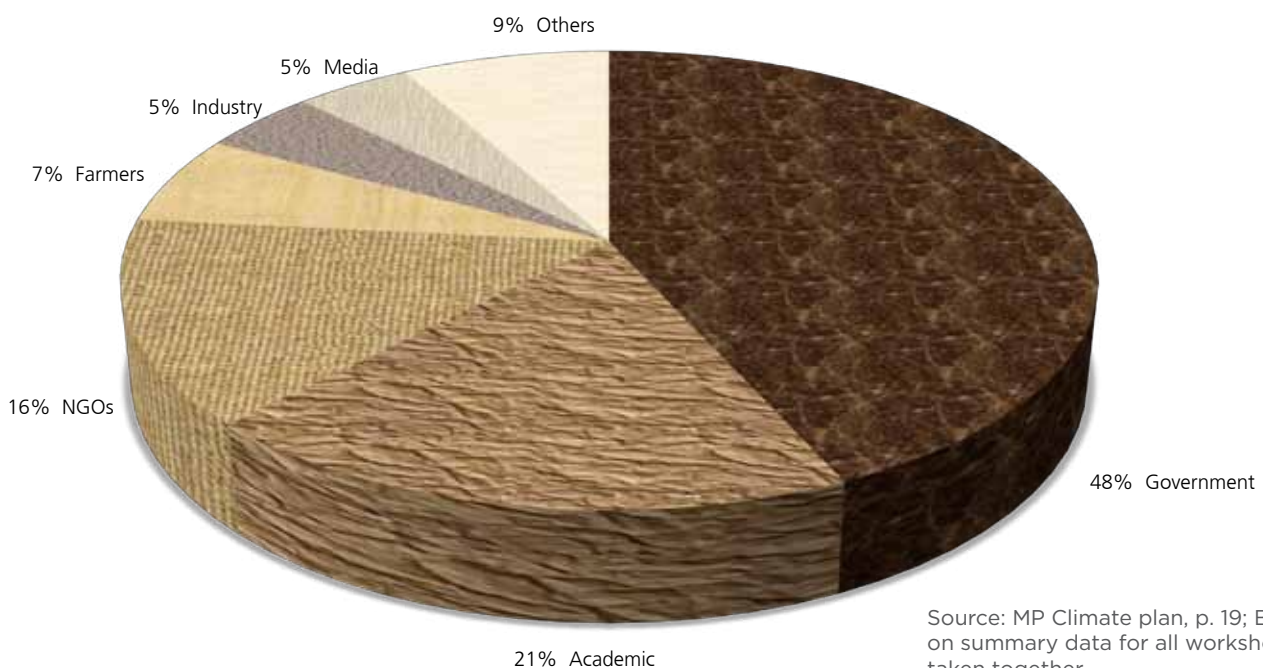
It is evident through interviews and document reviews that EPCO wanted to lay emphasis on in-house ownership.<sup>45</sup> The agency however, lacked capacity in certain areas, necessitating the need for assistance from consultants on tasks such as generating climate forecasts, conducting a vulnerability assessment study, and collating and reorganising the final document.

### *Extent of external participation and outcomes*

As highlighted earlier, one of the distinguishing features of the MP draft plan process is the organisation of regional workshops in 11 agro-climatic zones spanning 13 district head quarters. The rationale was to widen public participation and also address climate concerns spatially. The SAPCC document in its introduction mentions MP's "vibrant three-tier Panchayati Raj system" and the provision for encouraging ideas at the district level that could translate into policy interventions or pilot projects.<sup>46</sup> The process of having district level workshops for the SAPCC was quite likely an extension of this institutional design and practice.

The workshops attracted a substantial turnout; the draft indicates 40 to 110 participants in each workshop.<sup>47</sup> However, close to half of the attendees were state government officials, including officers from the district and Gram Panchayats, with academics forming the next biggest group (Figure 2).

**FIGURE 2: Stakeholders Across MP's 13 Regional Workshops**



Source: MP Climate plan, p. 19; Based on summary data for all workshops taken together.

While the overall turnout seems to indicate a diverse mix of stakeholders, some external participants were concerned that the representation of stakeholders in specific consultations was not always balanced. For instance the consultation in Ujjain was held in the premises of the local university and consisted largely of academics, with actors such as farmer groups enjoying little representation.<sup>48</sup> This is however an understandable outcome as emerging literature on people's perceptions on climate change in India indicates that while a large percentage of Indians are aware of long-term environmental shifts, many may not link it specifically to climate change.<sup>49</sup> The workshops, therefore, were much less likely to be 'crowd-pullers,' even among those expected to be directly impacted.

CEE, which was commissioned to organise the regional workshops along with EPCO developed a booklet in Hindi on climate change. (The contents of the booklet are discussed in the next sub-section). Each workshop typically began with speeches by senior district and Panchayati Raj officials, followed by a presentation on climate change by a CEE representative focusing on sectors or agro-climatic issues relevant to that district. Participants were then asked to offer their comments and inputs.<sup>50</sup> As one stakeholder recounts, "In Sagar people talked about experiencing increasing heat, change in rainfall patterns, increased incidence of mosquitoes...we looked at knowledge of local people."<sup>51</sup> In districts with a larger turnout, the participants were divided into sub-groups based on their sectoral affiliations and asked to submit a list of possible actions to address projected climate concerns. This regional exercise, according to officials, was then incorporated into the larger SAPCC process (Figure 1).

An exercise involving 40 to 100 participants in each of the regional workshops likely yielded large quantities of disparate data. So how was this information compiled and processed? State officials admit this was a significant challenge. The Project Management Unit (PMU) at EPCO collated the information into a separate report, which is divided into agro-climatic zone-wise (ACZ) chapters outlining key concern areas and sectoral recommendations for each zone.<sup>52</sup>

It is however difficult to tease out inputs gathered from the workshops or the

workshop report in the final SAPCC draft. For example, in the regional workshop report, the chapter on the agro-climatic region of Jabua Hills includes specific recommendations in the forestry sector on increasing "livelihood related plantations" of mango, jackfruit, and ber trees, or planting "fast growing species like Subabul, Prosopis in forest peripheries for fuel wood consumption to reduce pressure on forests."<sup>53</sup> Recommendations of such specificity do not appear in the forests chapter or the final strategies chapter of the MP climate plan. For example the section on reducing fuel-wood consumption in the SAPCC document only details initiatives for increasing use of renewables among forest communities, not the promotion of fast-growing species as suggested in the regional workshop report.<sup>54</sup> It is therefore unclear how the information was utilised in the final recommendations. As a result, it is also difficult to comment on the utility of such a large-scale regional exercise. Officials however, argue that the MP climate plan was meant to offer broad strategies rather than district specific recommendations since it is a state level plan.

It appears that regional inputs (divided sectorally in the workshop report) were not shared with sectoral experts or concerned line-departments first, who were perhaps in a better position to assess the information and offer suggestions on how it could be incorporated in the action plan.<sup>55</sup> Tight deadlines, set either by the state or the MoEF, likely restricted deliberations across sectors, scales, and among various stakeholders.

### *The SAPCC process as an opportunity to communicate on climate change*

During regional workshops, MP officials had the unique opportunity to talk about climate change to local audiences. The Hindi booklet prepared by CEE and EPCO offers some insights on what was communicated. The book highlights agro-climatic vulnerabilities in MP and how climate change will impact the state. It also offers sector-wise information on climatic impacts, and lists priorities for each sector. For instance in the forestry section, it highlights increased forest fires and reduction in the production of Tendu leaves as a result of climate change. In its list of priorities, it talks of spreading awareness

on environmental benefits of forests, not cutting trees for firewood, and assessing carbon storage capacity of MP forests. No specific study is cited in the report, and all information is attributed generically to scientists. The booklet ends with a definition of climate change as dissimilar to the notion of weather, and how humans are responsible for the former. Finally, it also provides a blank page for stakeholders to offer their comments.

The workshops, in all likelihood, helped familiarize stakeholders with the idea of climate change in MP. And for those who came with no prior knowledge on the subject, a means to connect perceived climatic variability with climate change in their region. However this was perhaps more of a 'conversation starter' rather than a means to gather studied responses on the subject, except perhaps from a small number of climate-knowledgeable people. The booklet also offers ready sectoral recommendations and it is worth asking if people were able to share thoughts and ideas beyond the stated agenda. Officials however note that stakeholders needed some reference point to begin a conversation on climate change and the booklet was an attempt at doing that.<sup>56</sup>

In sum, the MP draft plan process stands out in two areas: multiple institutional structures that were set up to draft the document; and the design of extensive district-level workshops that attracted a large number of regional stakeholders. While the two procedural elements improved the scope of participation in the plan, it is unclear how the regional workshops were finally incorporated in the draft.

While the Climate Change Cell sought external assistance to help generate relevant climate science for the state, develop the vulnerability assessment report, organise regional workshops, and finally redraft the final document, much of the final work in terms of collecting and collating inputs during workshops, as well as writing the draft was carried out by the nodal agency. It is unclear if departments were sufficiently engaged in the process. As the paper details in the final section, EPCO, since completing the draft, has been trying to induce departmental ownership through innovative ideas for implementing the MP climate plan.



“In Sagar people talked about experiencing increasing heat, change in rainfall patterns, increased incidence of mosquitoes...we looked at knowledge of local people.”

- Stakeholder, MP Climate plan

### III. Content and sectoral analysis

The content in the SAPCC pertains to the recommendations intended to guide policy action in the state and is examined as an outcome of the framing and process design followed in drafting the plan. This section provides an overview of the content in the MP plan (Table 2), and discusses the following four aspects of the draft:

- The vulnerability assessment study and its linkages with sectoral recommendations;
- Links between content, climate science, and other research outcomes;
- The scale at which sectoral recommendations are addressed.
- Role of mitigation and scope of MP’s plan in addressing climate change in a transformative manner

#### *The vulnerability assessment study and linkages with sectoral recommendations*

The vulnerability assessment study in MP was conducted as part of the MOEF-GIZ project on Climate Change Adaptation in Rural Areas. GIZ commissioned INRM to carry out the analysis and the vulnerability assessment chapter in the SAPCC presents early findings from this work.<sup>57</sup> The chapter examines the exposure, sensitivity and adaptive capacity of various districts in MP in six sectors: climate, social, economic, water, agriculture, and forests. Each indicator is measured based on a number of proxy variables.<sup>58</sup> Officials lamented the quality and availability of state government data used as proxies for accurately measuring the vulnerability of the region.<sup>59</sup> Understandably, there are some concerns with the relevance of some proxies used as well as the consistency of their base periods. For instance under agricultural vulnerability the draft looks at fertilizer consumption between 2001 and 2007, but livestock population for 2004 alone.

The findings are organised as a list of highly vulnerable districts in each sector for the base, mid, and end century periods. For instance, the Climate Vulnerability Index section offers the following information:

- “Baseline: Cluster result shows that 3 districts Chhindwara, Balaghat, and

Mandla have very high vulnerability to current climate. 15 districts are in the low vulnerable category...”<sup>60</sup>

- “Mid century: Cluster result shows that Seoni and Dindori move to very high vulnerable category from the high vulnerability in the baseline...”<sup>61</sup>

- “End century: Cluster result shows that 12 districts become very highly vulnerable, some of them are Umaria, Singrauli, Harda, Sheopur, Jhabua and West Nimar from high vulnerability category in mid century period.”<sup>62</sup>

The outcome – as seen above – is a district-wise ranking across time-scales. However, findings are not aggregated across all six sectors to identify the most vulnerable regions or districts.<sup>63</sup> Moreover, sector-wise recommendations (with a few exceptions) do not seem to be informed by the district specific information outlined in the vulnerability assessment chapter.<sup>64</sup> For example Dindori, a district which falls in the “high vulnerability” category in four sectors – climate, forests, social, and economic – is not mentioned in any of the sectoral recommendations. In fact none of the recommendations mention any specific district. So even as the focus of the MP climate plan is vulnerability and adaptation, linkages between findings in the vulnerability assessment study and sectoral recommendations seem inconsistent. Officials in MP agreed that the vulnerability assessment inferences were not fully linked to SAPCC outcomes, as the vulnerability assessment study at the time of preparing the draft was not yet ready. As one official noted, “We asked MoEF to delay the SAPCC deadline so the vulnerability report could be incorporated. (They did not) So the latest SAPCC document only has early trends emerging from the report.”<sup>65</sup> This highlights the constraints of anchoring multiple donor-led projects that follow different time-lines.

#### *Links between the content, climate science and other research outcomes*

One of the recurring concerns in the MP SAPCC, as with other state climate plans,

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- Official, Government of MP

is the disconnect between climate-based research and process outcomes on the one hand, and final recommendations on the other, both because of time constraints and because of the absence of a framework to generate climate actions. In the case of MP, as noted earlier, findings in the vulnerability assessment study do not seem to be integrated with final recommendations. In addition, outcomes from the regional workshops are not always woven into sectoral suggestions. Further, climate science forecasts do not specifically inform the final content of the draft plan. The climate forecast chapter for instance, predicts a 1.25 fold increase in rainfall in all but four districts in the state during the monsoon period in 2021 and 2050.<sup>66</sup> Final recommendations in the agriculture sector, however, focus on a water-stressed scenario with techniques such as dry-land farming, drip irrigation, dry flooding, and usage of drought-resistant crops.<sup>67</sup> MP officials in response to this observation noted that any increase in rainfall might not necessarily indicate a proportional increase in ground water recharge or fresh water availability.<sup>68</sup> However recommendations in this instance seem to be informed by national climate scenarios than specific regional outcomes.<sup>69</sup>

### *The scale at which sectoral recommendations are addressed*

As with all state climate plans, recommendations in the MP draft plan are organized sectorally. In keeping the central mandate of aligning SAPCC objectives with those put forth in the corresponding National Missions, it is worth noting that 4 out of 10 prescriptions in MP's water chapter are directly related to objectives listed in the National Water Mission. This is similar to how recommendations seem

to be framed in other states as well.<sup>70</sup> However the state plan does not progress beyond the realm of such objectives to offer actions specific to MP. This is also an outcome of not being able to incorporate specific data generated during regional workshops or the vulnerability assessment study in final recommendations. Recommendations both in the sectoral chapters as well as the final 'strategies and budget' section are largely broad-based; often at the level of objectives than policy prescriptions. For instance, suggestions in the water sector include wide-ranging goals such as promoting accelerated rate of surface water development, promoting ground water recharge, and improving water use efficiency.<sup>71</sup> In the forestry sector, suggestions include sustainable forest management, forest and water conservation, and protecting livelihoods.<sup>72</sup> In the 'strategies and budget' section, activities are equally broad based, such as commissioning a study to understand climate impacts on forest productivity, identifying critical areas for forest conservation,<sup>73</sup> reassessment of ground water recourses, and capacity building for water use efficiency in urban areas.<sup>74</sup>

### *Role of mitigation and scope of MP's climate plan in addressing climate change in a transformative manner*

As noted earlier, while the MP climate plan is predominantly adaptation focussed, a small percentage of the draft targets mitigation action essentially through the urban development, transport, industry, energy, and renewable energy sectors. Action plans under these chapters are also largely non-specific in nature. For instance in the industry sector, recommendations include,

“strategy to integrate climate change concerns,” in industrial development, “Increase efforts and investments in CDM project(s).”<sup>75</sup> In energy, “The development of policy framework for generating clean energy through clean coal approaches”, “augmentation of distributed power generation” and “scoping study for leveraging international financing instruments for promoting energy efficiency.”<sup>76</sup> The chapter on renewable energy essentially builds on existing work the state has undertaken on renewables including existing targets for solar, wind and biomass.<sup>77</sup> That present thermal and hydropower expansion plans have not been altered indicates that there is no significant rethink on the state's present growth trajectory from a climate lens. The SAPCC for instance talks of the target to build, “30 large, 135 medium and 3000 small dams” on the Narmada river.<sup>78</sup> This proposal has stayed unaltered for three decades.<sup>79</sup>

In short, despite extensive district-level workshops, and a vulnerability assessment study that offers a district-wise list of vulnerable regions across sectors, final recommendations in the MP climate plan do not carry information to the degree of specificity merited. Crucially, climate trends and forecasts do not always inform plan outcomes. Time and capacity constraints coupled with the presence of multiple climate projects (with different, funders, objectives and time-lines) meant that climate research and process outcomes could not be effectively integrated in the final action plan. As a result, recommendations lean toward broad sustainable development objectives. The MP climate plan therefore, while being an important placeholder for sustainability, does not address future climate change in a transformative way.

## TABLE 2: OVERVIEW OF THE CONTENT IN MP'S SAPCC

CATEGORIES	DETAILS
Section-wise break-up	<p><b>Section I :</b> 1. Introduction 2. Madhya Pradesh Profile 3. State Initiatives in Climate Change 4. Observed Climate Trends and Projected Climate Change 5. Vulnerability Assessment</p> <p><b>Section II :</b> Sectoral chapters <b>Section III :</b> Strategies and budget for each sector.</p>
Sectors covered	<ol style="list-style-type: none"> <li>1. Forests and Biodiversity</li> <li>2. Water Resources</li> <li>3. Agriculture and allied services</li> <li>4. Human health</li> <li>5. Urban Development and Transport</li> <li>6. Energy Sector</li> <li>7. Renewable Energy</li> <li>8. Industry</li> <li>9. Rural Development</li> <li>10. Cross-cutting Issues</li> </ol>
Sectoral chapter break-up	<ol style="list-style-type: none"> <li>1. Background</li> <li>2. Policies and programmes</li> <li>3. Concerns</li> <li>4. Impact of climate change</li> <li>5. Strategies</li> </ol>
Content in the recommendations table	<p><b>Under the chapter titled: 'Strategies &amp; Budget'</b></p> <ol style="list-style-type: none"> <li>1. Strategies</li> <li>2. Activities</li> <li>3. Department/organisation</li> <li>4. Priority</li> <li>5. Cost</li> <li>6. Possible technical/ financial resources</li> </ol>
GHG Emissions inventory	<p><b>No</b> MP government commissioned a GHG inventory report but did not include it in the final SAPCC, at the behest of the MOEF.</p>
Vulnerability Assessment	<p><b>Yes</b></p> <ol style="list-style-type: none"> <li>1. Climate Vulnerability Index</li> <li>2. Agricultural Vulnerability Index</li> <li>3. Forest Vulnerability Index</li> <li>4. Water resource Vulnerability Index</li> <li>5. Social Vulnerability Index</li> <li>6. Economic Vulnerability Index</li> </ol>
Finances	<ol style="list-style-type: none"> <li>1. The cost column offers a cost requirement for each strategy but not a specific activity or action.</li> <li>2. The Cumulative budget is Rs 4653 Crore for five years.</li> </ol>

Source: MP climate plan.

“ It’s a weak link for all states. If we had left it [budgetary allocations] blank, it would have given the document more academic credibility... The costs are currently indicative.”

- Official, Government of MP

#### IV. Implementing MP’s climate plan: Mechanisms and finance

Most states so far have focussed their energy on completing the climate plans. To ensure implementation, the focus for any state going forward, needs to be a combination of prioritising action plans, examining finances, and putting in place mechanisms to monitor and mainstream climate change in development planning. This section elaborates on the aforementioned themes in the context of the MP plan.

##### *Prioritisation and finance*

SAPCCs tend to be sizeable wish-list generators with little indication of how actions were prioritized or arrived at. The legitimacy of these lists is further weakened by the fact that the nodal agency is only responsible for proposing actions that departments may or may not implement. In the case of the MP climate plan, the chapter on strategies and budgets carries anywhere between 13 to 30 recommendations in each of the 13 sectors listed. If counted individually, the MP plan lists as many as 337 final activities which is a sizable number. While each activity is categorised as ‘high’, ‘medium’, or ‘low’, no broad time frame is tagged to the categories.<sup>79</sup> In addition, the document offers no explanation as to how these actions or even the prioritisation was arrived at.

In terms of finance, each overarching strategy in a specific sector is accorded a budgetary allocation. The document also mentions possible sources for this amount, such as ‘Gol’ (Government of India), ‘GoMP’ (Government of Madhya Pradesh) or ‘Bilaterals’ (bilateral agencies).<sup>80</sup> Other sources such as MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Scheme) and CAMPA (Compensatory Afforestation Fund Management and Planning Authority) are also mentioned, indicating that EPCO also considered funds from existing centrally funded schemes that departments could tap into. The document however does not make a

distinction between funds already in use for existing programmes and additional funding required. Officials conveyed their hesitancy in setting these allocations. As one officer noted, “It’s a weak link for all states. If we had left it (budgetary allocations) blank, it would have given the document more academic credibility... The costs are currently indicative.”<sup>81</sup> The cumulative stated amount is Rs. 4653 crore for five years. There is no benchmark to evaluate this figure since costs quoted by other states to implement the SAPCC are equally indicative.<sup>82</sup> This lack of clarity on additional financial requirements as well as approximate budgets could make it problematic for MP to make a strong case for funding from the central government or external agencies, going forward.

##### *Mechanisms for monitoring, evaluation and implementation*

As noted earlier, state nodal agencies typically have little control over the implementation of the climate plan. According to MP state officials though, the Housing and Environment Department has been considering innovative ideas to get line departments to implement some of the SAPCC recommendations. The MP climate plan is one of the few plans that includes a section on monitoring and evaluation. It talks of the possibility of revisions and “midterm course changes” as an outcome of this institutional setup.<sup>83</sup> The section suggests consultations with stakeholders to develop indicators as well as sectoral baselines to monitor progress on implementation. Officials stated that they would distribute a checklist of schemes or examples of best practices to help departmental policies be more “climate compatible.”<sup>84</sup> Another emerging idea was asking departments to voluntarily share their policy assessment reports. As one official stated, “we won’t comment on it. We would put in the public domain and let people respond/react to it.”<sup>85</sup> It is worth

noting that such initiatives reinforce the importance of departmental ownership in the SAPCC, since cross-departmental and bureaucratic power relations may limit EPCO’s ability to enforce any mainstreaming of climate concerns in state planning, calling instead for a facilitative approach.

##### *Mechanisms for mainstreaming climate change*

In light of invariable bureaucratic shifts, one of the advantages that MP possesses is a dedicated resource like the Climate Change Cell to plan and hopefully coordinate future developments in the action plan.<sup>86</sup> However, the MP climate plan is just one of the many climate related projects undertaken by the state. One possible outcome, therefore, is that the agency approaches the SAPCC as a project-driven exercise with time-bound outcomes alongside other climate related activities, without a sustained focus on developing revised iterations. Much therefore depends on the time that the cell is able to dedicate to the SAPCC process and how it improves its capacity on climate change over time.

In sum, MP possesses an advantage in having a dedicated platform like the Climate Change Cell to ensure continued focus on the draft plan. In fact the cell has been developing innovative mechanisms to get line-departments to climate-proof their policies and plans. One concern however is that financial allocations are estimates at best and the draft does not seem to have a framework for selection or prioritisation of sectoral recommendations. This could delay efforts at sourcing external finance as well as setting a timetable to implement the draft plan. Moreover the Climate Change Cell may approach the SAPCC as a time-bound project, along with other climate related work in the state, which may limit its long-term utility.

## Conclusion

MP has clearly invested in planning processes associated with climate change. Spurred by high-ranking bureaucrats with knowledge of the issue, the state has created a dedicated agency – the Climate Change Cell in EPCO, and sought to build capacity in the area. In addition to the SAPCC, there are several other initiatives on climate change, supported by various donors, on both mitigation and adaptation. The SAPCC therefore, is not an umbrella for all climate change action, but one among several projects on climate change in the state being coordinated by EPCO.

As with other states, the scientific basis for the SAPCC process is weak. As a result, the conceptual basis for policy formulation is also unclear. Climate forecasts and the vulnerability assessment study are not directly linked to final recommendations, which are driven by existing sustainable development concerns. As with other states, more clarity on the framework through which policies are formulated and prioritized would help both identify specific

climate concerns, and linkages between climate and development concerns.

The MP process is perhaps the most thorough of all the states studied in terms of its emphasis on using the SAPCC as a mode of communicating and broadening awareness. Somewhat exceptionally, MP organized 13 agro-climate zone specific regional consultations, which were supported by a public outreach pamphlet. While an important start, the productivity of this effort could have been enhanced by ensuring a greater diversity of audience, and a clearer process for using the results of these consultations, which appeared to be somewhat divorced from the main policy formulation process.

While the policy process was guided by a three-level management structure, the bulk of the work was carried out by the Climate Change Cell. Policy recommendations were intended to be developed through sectoral workshops, although a limited scope for interaction likely precluded new creative

thinking. Moreover, EPCO taking the lead role in preparing background papers and collating recommendations, may also have limited departmental ownership of the agenda. The MP experience suggests that a fine balance is to be drawn between leadership by a central climate-focused agency and stimulating ownership and engagement by line departments.

MP has also shown some innovation in thinking seriously about implementation issues. While EPCO is understandably hesitant (as other states have been) in placing firm numbers on financial needs, MP has formulated an approach to implementation based on nudging line departments to take ownership of the SAPCC agenda through preparation of checklists and public circulation of departmental reports on climate links. This approach to mainstreaming through transparency and information is worth watching further.

## About Centre for Policy Research, Climate Initiative

The Climate Initiative seeks to generate research and analysis on the global climate negotiations, and on the links between the global climate regime and domestic laws, policies and institutions in India. It also seeks to create a platform from which scholars and activists can engage in policy and academic debate on climate change.

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## Notes

1. There are two versions of the Madhya Pradesh (MP) State Action Plan on Climate Change in the public domain prepared by the Climate Change Cell in the Housing and Environment Department; one in the Ministry of Environment and Forests (MoEF) website dated February 2012, and one in the Government of MP, Housing and Environment Department website dated April, 2012. The authors refer to and cite from the April 2012 document, as it is a later iteration.
2. The Madhya Pradesh report is part of a larger study examining climate plans in Himachal Pradesh, Karnataka, Madhya Pradesh, Odisha and Sikkim. Plans are generally referred to as SAPCCs
3. Navroz K. Dubash, D. Raghunandan, Girish Sant, Ashok Sreenivas, "Indian Climate Change Policy: Exploring a Co-Benefits Based Approach," *Economic & Political Weekly*, vol. 48 (June 1, 2013), pp. 47-61.
4. Interview with Manohar Dubey, Executive Director, EPCO, Government of MP, August 29, 2012, Bhopal, Madhya Pradesh.
5. Housing and Environment Department, Government of MP, "Madhya Pradesh State Action Plan on Climate Change," (Bhopal: GoMP, April 2012), p. 11. (<http://envfor.nic.in/downloads/public-information/MP-SAPCC.pdf>).
6. Planning Commission of India, "Madhya Pradesh Development Report," *Academic Foundation* (New Delhi: Government of India, 2011). ([http://planningcommission.gov.in/plans/stateplan/sdr/sdr\\_mp1909.pdf](http://planningcommission.gov.in/plans/stateplan/sdr/sdr_mp1909.pdf)).
7. MP climate plan, p. 13.
8. Pradeep Thakur, "Madhya Pradesh topples Bihar, new No. 1 in economic growth," *The Times of India*, March 30, 2013. ([http://articles.timesofindia.indiatimes.com/2013-03-30/india/38145207\\_1\\_capita-income-rs-other-backward-states](http://articles.timesofindia.indiatimes.com/2013-03-30/india/38145207_1_capita-income-rs-other-backward-states)).
9. Shruti Tomar, Sravani Sarkar, and Ashutosh Shukla, "Bhopal gas tragedy: 28 yrs on, they are still victims," *Hindustan Times*, December 2, 2012. (<http://www.hindustantimes.com/india-news/bhopal/bhopal-gas-tragedy-28-yrs-on-they-are-still-victims/article1-967354.aspx>).
10. Ama Marston, "No fairy tale: Singrauli, India still suffering years after World Bank coal investments," *Bretton Woods project* (London: Bretton Woods Project: November 18, 2011). (<http://www.brettonwoodsproject.org/wp-content/uploads/2013/10/singrauli.pdf>).
11. Press Information Bureau, Government of India (GoI), "PM's Address at the National Conference of Ministers of Environment & Forests" (New Delhi: GoI, August 18, 2009). (<http://pib.nic.in/newsite/erelease.aspx?relid=51926>).
12. Environmental Planning and Coordination Organization. ([http://www.epco.in/epco\\_division\\_ccc.php](http://www.epco.in/epco_division_ccc.php)).
13. Integrated Natural Resource Management (INRM) is a research and development firm set up by the Indian Institute of Technology, Delhi.
14. Avani Vaish, Former Chief Secretary, Government of MP had previously held positions in the MoEF and had been deputed as a consultant to The World Bank, and the United Nations Global Environmental Facility (UN GEF) Secretariat. Alok Srivastava, Former Principal Secretary, Department of Housing and Environment, Government of MP, had previously been deputed to the United Nations Development Program (UNDP); Babus of India, 2013. (<http://www.babusofindia.com/2010/01/profile-new-chief-secretary-of-madhya.html>); Department of Personnel & Training, "Executive Record Sheet Generator (IAS officers)" 2012. (<http://www.persmin.nic.in/ersheet/MultipleERS.asp?HiddenStr=01MP036500>).
15. Interview with Lokendra Thakkar, Coordinator, Climate Change Cell, EPCO, Government of MP, August 29, 2012, Bhopal, Madhya Pradesh.
16. Johannes Urpelainen, "Explaining the Schwarzenegger Phenomenon: Local Frontrunners in Climate Policy," *Global Environmental Politics*, vol. 9 (August, 2009), pp. 82-105.
17. Interview with Avani Vaish, Former Chief Secretary, Government of MP, September 7, 2012, New Delhi.
18. Interview with Lokendra Thakkar, August 29, 2012, Bhopal, Madhya Pradesh.
19. MP climate plan, p. 22.
20. MP climate plan, p. 13.
21. Not-for-attribution interview with a senior official, Government of MP, August 29, 2012, Bhopal, Madhya Pradesh.
22. The Indian Network of Climate Change Assessment (INCCA) in its second report uses the PRECIS model and A1B scenario to project temperature and precipitation trends in the 2030s for four climate sensitive regions and sectors in India; Ministry of Environment and Forests, GoI, "Climate Change and India: A 4X4 Assessment: A Sectoral and Regional Analysis for 2030s" (New Delhi: GoI, November, 2010). (<http://gbpihed.gov.in/CLIMATE%20CHANGE%20AND%20INDIA%20A%204X4%20ASSESSMENT.pdf>).
23. The MP SAPCC chapter titled, 'Observed Climate Trends and Projected Climate Change' was drafted by Sumana Bhattacharya, Head – Climate Change and Sustainability, Intercooperation, India, and Former Expert Consultant for India's Second National Communication (NATCOM) to the United Nations Framework Convention on Climate Change (UNFCCC); Interview with Lokendra Thakkar, August 29, 2012, Bhopal, Madhya Pradesh.
24. MP climate plan, pp. 99 – 104.
25. Not for attribution discussion in, "State Action Plans on Climate Change in India: Framing, processes, and drivers," *A report on the round table dialogue organized by the Climate Initiative, Centre for Policy Research* (New Delhi: CPR, April 27, 2013) ([http://cdkn.org/wp-content/uploads/2013/05/SAPCC-Workshop-Report\\_CPR\\_27-April-2013\\_update.pdf](http://cdkn.org/wp-content/uploads/2013/05/SAPCC-Workshop-Report_CPR_27-April-2013_update.pdf)).

26. Not for attribution discussion in, *State Action Plans on Climate Change in India: Framing, processes, and drivers, Climate Initiative, Centre for Policy Research*.
27. A physical count and categorisation of all the recommendations indicates that 62% of the proposed actions in the final "strategies and budget" section are focused on adaptation; MP climate plan, p. 97.
28. MP climate plan, p. 97.
29. MP climate plan, p. 99.
30. MP climate plan, p. 102.
31. Water Resources Department, GoMP, "State Water Policy 2003" (Bhopal: GoMP, 2003); Madhya Pradesh State Biodiversity Board, GoMP. (<http://www.mpsbb.nic.in/eng/infoanddoc.html>); Department of Farmer Welfare & Agriculture Development, Government of MP. (<http://www.mprkrishi.org/EngDocs/AgriTop/Ext/extAboutServices.aspx#SST>).
32. Interview with Lokendra Thakkar, August 29, 2012, Bhopal, Madhya Pradesh.
33. Not for attribution interview with a retired senior official, Government of MP, September 7, 2012, New Delhi.
34. MP climate plan, p. 13.
35. The Steering Committee was headed by the Chief Secretary of the state and consisted of Principal Secretaries of other departments as well as the country head of UNDP. The committee's role was to offer senior-level advice and feedback, and give the draft its final stamp of approval.
36. MP climate plan, p. 17.
37. Interview with Lokendra Thakkar, August 29, 2012, Bhopal, Madhya Pradesh.
38. This is consistent with guidelines offered by the Common Framework Document (CFD) which expects states to, "provide adequate scope for addressing state specific issues and context under the over arching National Action Plan on Climate Change"; Ministry of Environment and Forests, GoI, "Summary of Discussion: National Consultation Workshop on Preparation of State Level Strategy and Action Plan on Climate Change," (New Delhi: GoI, August 19, 2010). (<http://www.moef.nic.in/downloads/others/SAPCC-workshop-summary-2010.pdf>).
39. MP climate plan, p. 19.
40. MP climate plan, p. 125.
41. In fact departmental participation both in the workshops and in providing feedback was the result of personal entreaties by senior officials in the Housing and Environment department; Not for attribution interview with a state official, Government of MP, August 29, 2012, Bhopal, Madhya Pradesh.
42. Not for attribution interview with a state official, Government of MP, August 29, 2012, Bhopal, Madhya Pradesh.
43. Indian Institute of Forest Management saw its role as an external consultant in assisting EPCO with drafting the final plan. EPCO states that they wanted technical assistance on specific inputs from IIFM.
44. Sumana Bhattacharya, Head – Climate Change and Sustainability, Intercooperation, India and Former Expert Consultant for India's Second National Communication (NATCOM) to the UNFCCC.
45. Not for attribution interview with a NGO representative, August 29, 2012, Bhopal, Madhya Pradesh; The MP SAPCC dated April 2012 does not make a mention of INRM, CEE, IIFM or the independent consultant in the draft plan process. The latter two however, are mentioned in the document annexure as being part of some of the workshop groups. In addition, an earlier version of the draft (dated February, 2012) states that the UNDP country head was part of the project steering committee. This and other details such the list of all individuals who were part of various workshops and project groups are absent from the April 2012 document.
46. Panchayats are local self-governing units in villages and small towns in India; MP climate plan, p. 13.
47. MP climate plan, p. 126.
48. Interview with A. K. Patil, Coordinator, Climate Change Cell, IIFM, August 29, 2012, Bhopal, Madhya Pradesh.
49. Anthony Leiserowitz and Jagdish Thaker, "Climate Change in the Indian Mind," *Yale Project on Climate Change Communication* (New Haven: Yale University, August 26, 2012).
50. Telephone interview with Sanskriti Menon, Programme Director, Centre for Environment Education (CEE), October 30, 2012.
51. Interview with A. K. Patil, August 29, 2012, Bhopal, Madhya Pradesh.
52. Housing and Environment Department, Government of MP, "Proceedings Agro-climatic Zone Stakeholder Consultation," *GoMP-UNDP Project*.
53. Government of MP, "Proceedings Agro-climatic Zone Stakeholder Consultation," p. 6.
54. MP climate plan, p. 98.
55. The work on incorporating the regional data was undertaken by the Climate Change cell. Department officials as well as sector-based experts were asked to review completed sectoral chapters.
56. Interview with Lokendra Thakkar, August 29, 2012, Bhopal, Madhya Pradesh.
57. "Integrated Natural Resources Management Consultants Pvt. Ltd. is a R&D based company set up under Technology Business Incubation Plan of the Indian Institute of Technology (IIT) Delhi by the faculty and alumnus of the institute in 2001"; INRM Consultants Pvt. Ltd. (<http://inrm.co.in/>).

58. Ten variables are used to address climate sensitivity. For instance, percentage of cool nights when the minimum temperature between 1961 and 1990 was below the 10th percentile, and the annual average rainfall. Under social vulnerability 11 indicators such as density of population and percentage with access to safe drinking water are used.
59. Not for attribution interview with a state official, Government of MP, August 29, 2012, Bhopal, Madhya Pradesh.
60. MP climate plan, p. 27.
61. MP climate plan, p. 28.
62. MP climate plan, p. 28.
63. A district-wise ranking of overall vulnerability is present in the February 2012 version of the draft.
64. One of those exceptions that illustrates the rule is the forests chapter, which states that forests in central districts of MP are not likely to be impacted by future climate change. This is consistent with the trend outlined in the vulnerability assessment chapter. However, there is no such connection between water resources vulnerability and the concerns outlined in the water resources chapter, or districts that are agriculturally vulnerable and the chapter on agriculture.
65. Not for attribution interview with a state official, Government of MP, August 29, 2012, Bhopal, Madhya Pradesh.
66. MP climate plan, p. 24.
67. MP climate plan, pp. 99 – 104.
68. Interview with Lokendra Thakkar, August 29, 2012, Bhopal, Madhya Pradesh.
69. Another example of the disconnect between science and recommendations is in the agriculture sector where the MP climate plan suggests integrating climate change planning in each agro-climatic zone. This objective however, is not tagged with any specific recommendations on crops, sowing periods, or precipitation scenarios.
70. A comparison of the broad strategies listed in the water sector of the West Bengal, Karnataka, Sikkim and MP SAPCCs with the National Action Plan on Climate Change, indicates that several state recommendations closely correspond with objectives stated in the National Water Mission.
71. MP climate plan, pp.46- 47.
72. MP climate plan, pp. 39-40.
73. MP climate plan, p. 100; MP climate plan, p. 97-98.
74. MP climate plan, p. 118.
75. MP climate plan, p. 115.
76. MP climate plan, p. 85.
77. MP climate plan, p. 42.
78. Madhav A. Chitale, "The Narmada Project," *International Journal of Water Resources Development*, vol. 13 (Issue 2, 1997), pp. 169-180.
79. MP Climate plan, p. 97.
80. MP climate plan, pp. 97- 122.
81. Not for attribution interview with a state official, Government of MP, August 29, 2012, Bhopal, Madhya Pradesh.
82. For instance Odisha has quoted a cumulative figure of Rs. 17,000 crore for five years, Himachal Pradesh states Rs. 1560 crore, while Sikkim and Karnataka offer no cumulative numbers.
83. MP climate plan, p. 123.
84. Interview with Manohar Dubey, August 29, 2012, Bhopal, Madhya Pradesh.
85. Interview with Lokendra Thakkar, August 29, 2012, Bhopal, Madhya Pradesh.
86. In MP's case, the two senior bureaucrats in the MP government who drove the process, have moved office, and the coordinator of the Climate Change Cell has been charged with other responsibilities.