

TEN YEARS AFTER: EVALUATING STATE ACTION PLANS IN INDIA

ANU JOGESH* AND MRIDULA MARY PAUL**

Projections on climate change in South Asia present a dire picture of how temperature and precipitation changes will impact lives and livelihoods, as well as the ecology and economy of the region. However, there is a growing recognition that there are large variations in how climate change will impact Indian states, and many states may fare worse than the regional average. State climate plans were conceived as a means to decentralise national efforts on climate change and have been a useful exercise in kick starting action, predominantly on adaptation, at the sub-national level. Their operationalization, however, remains inadequately monitored and documented. State climate planning today encompasses a diverse array of donor-led interventions, business-as-usual state efforts, and centrally managed schemes and funding mechanisms. These efforts, while they add up to a tangible body of action, are largely isolated, and remain at the side-lines of state governance mechanisms, as well as their planning and budgeting processes. They are also insufficiently aligned at the local and national level to form an effective multilevel governance system on climate change.

This paper provides a summary of how state plans were conceptually approached and prepared, where they stand today, what these plans have tangibly achieved, and what these efforts amount to. Finally, the paper provides a concrete example of this aforementioned process through the lens of Sikkim's climate plan.

Climate Vulnerability of Indian States

A number of scientific studies indicate that the Indian sub-continent is projected to warm significantly by the end of the century with sizable variations in frequency and intensity of precipitation, flood and drought events.¹ Given the agro-climatic diversity of Indian states, the full extent of these projected changes are still being worked out through various state and district-level climate modeling exercises. There is wide agreement that climate impacts

are already exacerbating current development challenges in states, in terms of water availability, food production, forest and biodiversity, and human health.² The current spate of extreme weather events in Maharashtra, Kerala, Assam, Uttarakhand, and Bihar are part of a larger trend that is expected to worsen if current modes of infrastructure development, critical service provision, and natural resource management are not tackled through a climate lens.³

Conceptualising and Preparing State Climate Plans

State climate plans in India were formally conceived through a top-down process.⁴ Following the development of India's National Action Plan on Climate Change (NAPCC), officials felt the need to devolve action under its key missions. There was also a recognition that climate-linked vulnerabilities were essentially local, and adaptation solutions needed to be correspondingly developed at a more granular scale. Consequently, in 2009, the Government of India (GoI) requested states to develop State Action Plans

* Policy and Governance Lead, Acclimatise,
Email : a.jogesh@acclimatise.uk.com

** Senior Policy Analyst, Ashoka Trust for Research in Ecology and Environment, Email : mridula.paul@atree.org

on Climate Change (SAPCCs), “consistent with the objectives of NAPCC.”⁵ There was an initial sense of urgency (and incentive) among some states in undertaking this exercise, in anticipation of funds to be allocated under the 12th five year plan.⁶ However, this initial suggestion of funding did not materialize, and most states and Union Territories (UTs) have since developed their climate plans at “various levels of motivation and speed.”⁷ While Odisha was among the first to develop its document in 2010, Delhi took eight years and finalised its plan only as recently as 2019.⁸

In terms of their sectoral focus, plans are broadly aligned to the national missions, but focus primarily on adaptation.⁹ States that have included mitigation-linked sectors such as energy and transport have done so based on local priorities.¹⁰ Given initial time constraints and lack of access to relevant data, most strategies and actions highlighted in the climate plans are insufficiently embedded in the available science[‡] on climate change.¹¹ In the absence of a conceptual understanding of what constitutes climate action, most of the plans equate ‘good’ development with adaptation. The recommendations, as a result, are quite broad in scope and amount to large sectoral wish-lists with limited efforts at prioritization. In addition, plans include areas of interest – sometimes economic, often environmental – that bureaucrats felt were in need of additional funding. For instance Odisha’s first climate plan focuses on interventions in the energy sector (in need of funds post reforms) as well as fly ash management (a polluting after-effect of coal production).¹² Budget estimates, wherever included, do not seem to follow a consistent methodology and vary substantially across states. Despite these limitations, the plans have served as a useful exercise in building awareness on climate change among government and non-government stakeholders involved in the process, and have provided an entry point to motivated bureaucrats for suggesting sustainable development imperatives as part of existing sectoral planning.¹³

Current State-of-play

Given that state climate plans in India have been a decade in the making, it is useful to map where they stand at the moment. As of 2019, 33 states and UTs[±] have their climate plans in place, reviewed and endorsed by the Government of India, making it a sizeable exercise in sub-

national climate planning with global salience.¹⁴ Bilateral and multilateral agencies, some of which initially assisted states in developing these plans, have since set up multi-year programmes and are working closely with around 22 states on building climate resilience, using these climate plans as a starting point.¹⁵ While the initial suggestion of central funding (from the 12th Five Year Plan) did not materialize, GoI set up the National Adaptation fund on Climate Change (NAFCC) in 2015 to address this gap.¹⁶ According to the National Bank for Agriculture and Rural Development (NABARD), which is the national implementing entity for the fund, 26 states have received grant assistance of over Rs. 650 Cr for pilot projects in areas such as water management, agriculture, livestock, coastal management, and forest eco-systems.¹⁷ Some states have also applied for, and received, international finance under the United Nations Framework Convention on Climate Change (UNFCCC)-led Adaptation Fund and The Green Climate Fund.¹⁸

Given that many of the plan recommendations provide an unwieldy list of broad development measures that are tagged to unrealistic budgets, GoI has also informally requested states to revise their plans and provide a more prioritized pipeline of actionable suggestions.¹⁹ These revised plans are expected to broadly align with India’s Nationally Determined Contributions (NDCs) under the Paris Agreement, as well as incorporate the UN-led Sustainable Development Goals (SDGs).

Measuring the Impact of State Climate Plans

Climate planning and implementation are broad in scope and encompass a diverse range of interventions. The objective of the state planning exercise in India has been moulded by the initial framework developed between the central government and donor agencies, and more substantively by what donor agencies have recently outlined in their multi-state programmes. Some of these include building capacity among various stakeholders, strengthening the scientific evidence base, prioritizing sectoral and cross-sectoral action, developing a pipeline of investible projects, and providing assistance on accessing finance. But the more elusive, overarching end-goal has been mainstreaming climate action in state development planning, ensuring that day-to-day sectoral planning and budgetary allocations factor current and future climate impacts. This is widely

† Mitigation in India is currently viewed as the national imperative, driven by the need to present a unified narrative on the country’s emission reduction commitments internationally.

‡ Particularly methodologies that used climate models to assess current and future risk in combination with local biophysical and socio-economic factors.

± Delhi’s action plan has been endorsed but is not yet in the public domain

recognized as the more sustainable way forward to address climate change, even finding a mention within India's NDC.²⁰

So how are states currently placed in implementing their climate plans? At present, there is little, if any formal data, identifying concrete actions emanating directly from state climate plans.²¹ Recommendations in the state plans are largely uneven in their specificity and it has been difficult to tease out tangible actions from generic statements of intent.²² Moreover, many plans capture existing state development priorities and some interventions that may have been undertaken, in any case, as part of prevailing sectoral mandates. Limited action has also been driven through central government schemes incorporating climate mandates such as the Green India Mission and National Water Mission etc.²³ There is, in short, no mechanism to tangibly monitor how and to what extent states have implemented their climate plans.

However, it is widely agreed that the plans have been useful in providing a rough blueprint and signal for continued action. Most donors – within the boundary and scope of their funding programmes – have used these plans as a mandate to kick-start further work.²⁴ As a consequence, some states are today able to provide a ready – reckoner of climate actions undertaken, led primarily by donor-linked programmes, pre-existing sectoral action, and national missions and central schemes. Regardless of whether these actions emanate directly from the climate plans, it is useful to understand the range and spread of these interventions, the extent to which they have been mainstreamed in development planning, and their linkages with local national and international interventions to facilitate effective multilevel governance of climate action.

Building Resilience on the Ground

Range and Spread of State Interventions : For the past decade, an oft repeated refrain among a select group of researchers, civil society organisations, mainstream media, and even courts has been that state climate plans have not amounted to much.²⁵ The narrative has loosely shifted over the years from 'the promised climate plans have not materialized,' to more recently, 'the drafted plans have not been implemented.'²⁶ These are valid observations as state plans were drafted at varying speeds, and there is limited formal data on how these plans have been operationalized. However, this is an incomplete depiction,

reinforced by the fact that action on the ground, wherever it has taken place, has not been adequately aggregated, monitored, or disseminated. To a large extent, donor-led programmes, state efforts and centrally led interventions have resulted in a spurt of climate linked activity on the ground. The section below highlights a selection of interventions, focusing particularly on efforts that span multiple states.

The most widespread effort, driven by central funding through NAFCC, has been the implementation of 27 pilot projects across 26 states. Projects and funds range from Rs. 17 cr for Climate Resilient Livestock Production System in Punjab to nearly Rs. 25 cr for Enhancing Climate Resilience of Forests and its Dependent Communities in Two Landscapes of Jharkhand.²⁷ Consultants tied to technical assistance programmes, as well as officers in NABARD have periodically provided training to government officials to interpret climate vulnerability assessments, identify fundable projects and develop proposals to access finance. There have also been efforts to drive cross-sectoral linkages in developing implementable projects, and in a few cases, align them with existing programmes or schemes.²⁸ Given the lack of scientific evidence underpinning action, the Swiss Development Corporation through its Indian Himalayas Climate Adaptation Programme developed a detailed framework for assessing climate risk and vulnerability across 12 Himalayan states.²⁹ According to the Department of Science and Technology (DST), these kind of assessments may be carried out for all states and UTs³⁰ going forward.[#]

26 states have also set up climate nodal bodies or offices to over see implementation of the climate plans, though their mandate and convening agency vary from state to state.³¹ States like Uttar Pradesh (UP) have set up a more formal climate change authority with money sanctioned to it with the aim of implementing the UP climate action plan.³² In Uttarakhand the nodal agency, while housed in the Environment and Forest Department, functions as a semi-autonomous body and has a separate provision for funding under the state budget. Some states have also put in place climate knowledge management cells to aggregate climate research and resources in the state with limited funding from DST.³³

Another novel effort-first initiated by a city (Ahmedabad) and subsequently driven by the National Disaster Management Authority (NDMA), has been the

[#] A number of states like Maharashtra, Uttarakhand, Gujarat, West Bengal etc. have also developed detailed sectoral vulnerability assessments with funds from other development partners, after their climate plans were finalised.

development of heat action plans. As of July 2019, 13 states have drafted heat action plans and are at various stages of implementing them.³⁴ While they do not strictly stem from state climate planning efforts, they constitute concrete adaptation action at the state-level.

These aforementioned interventions constitute tangible actions on building resilience on the ground and there are several other individual, sometimes innovative, efforts aligning donor mandates with state priorities and local appetite for action. These actions, however, remain standalone endeavours, uneven in their spread and impact. They are more focused in about 60% of the states where donor agencies have been actively involved. Barring a few exceptions, many of these interventions are still held together by efforts of technical staff and external agencies assigned to these projects, or at best, goaded by the mandates and timelines of central agencies like NABARD or NDMA. Their continuance and sustainability hinges upon the extent to which climate mainstreaming has occurred in states, which at present, seems to be an elusive goal.

Institutional Capacity and Mainstreaming

A number of factors have hindered effective mainstreaming of climate action. Some of these include limited alignment between the climate planning and sectoral implementing agencies, inadequate capacity among officials to interpret technical climate assessments and incorporate them in project and budgetary planning, capacity constraints in accessing external funding, and limited ownership of the process beyond the interest of some motivated bureaucrats.³⁵ Crucially, in the absence of dedicated planning and budgetary allocations, current governance mechanisms continue to keep climate change at the margins of state economic and development planning.³⁶

Another critical bottleneck is that state climate planning is almost divorced from ongoing socio-economic and environmental challenges in states. Floods, for instance, have overtaken droughts in India as the most economically damaging weather event, costing more than all other disasters combined. Between 1998 and 2017, floods killed over 27,000 people and caused economic damage of approximately US\$ 45 billion.³⁷ Such episodes are expected to increase in magnitude and frequency under a changing climate. Yet, the recurring spate of flood events in Uttarakhand, Assam, Chennai, Kerala and Mumbai have

not been explicitly tackled through the lens of climate change. State climate plans have not been funded, strengthened or brought into the mainstream disaster preparedness mandate as a response to these events.³⁸

Linked to this disconnect of climate planning from the political economy of the state, is the absence of a conversation on critical sectors, and stakeholders being inadequately represented in the planning and implementation process. The private sector is a key example. There have been almost no efforts at building awareness among companies to assess climate risk to their own operations and value chains, taking cognisance of how climate impacts on private sector assets, goods and services can in turn affect communities, livelihoods and the wider economy.³⁹

Linkages Between Local, National, and International Commitments

India's NDC mentions SAPCCs as a key part of its effort to address climate change.⁴⁰ More recently, the report by the Parliamentary Committee on Estimates on the performance of the NAPCC, states that "broad policy initiatives of the Central Government are supplemented by actions at the level of state governments and Union Territories."⁴¹ However, in practice there has been a disconnect between state level action and national efforts at tackling climate change. Despite convening regular meetings with state climate agencies, the central government has been unable to concretely aggregate state-level adaptation action in evaluating its national efforts. Current efforts at measuring sub-national action are focused on funds allocated to states under central schemes like MGNREGA and quantifying the climate benefits they offer.⁴² The onus of aligning state plans with India's NDC commitments has been placed on the states (in the form of the revised climate plans) with no framework or structure to adhere to.

Moreover, state climate plans have not adequately tackled the impact of climate change at a more granular level on cities and urban planning.⁴³ While a number of state plans have included urban development in their recommendations, funding for adaptation through NABARD – which is the only public sector implementing entity on climate change – has been exclusively in rural sectors.⁴³ Understandably, state climate plans are uneven

⁴³ Many agencies such as ICLEI, Rockefeller foundation, C40, SDC etc have been focused on urban climate action in cities in India, but they are not concretely aligned to the national or state climate planning process.

in scope and hard to quantify in terms of their cumulative impact. Not accounting for city and state interventions in the overall national effort is a lost opportunity to create an effective multilevel governance system that is aligned at the local, sub-national, and national level, and adds up to what India has voluntarily committed to do in the international arena.

State Climate Planning Through the Lens of the Sikkim Climate Plan

The states of the Indian Himalayan Region, with their low population density, diverse ethnic groups,⁴⁴ rich biodiversity, and extensive forest cover⁴⁵ are highly susceptible to climate change⁴⁶. In the state of Sikkim, temperatures have risen by 1.18°C on average, with the colder months showing increasing trends of warming.⁴⁷ This has resulted in drying of springs, changes in crop cycles, increased incidence of pest attacks and crop diseases, and degradation of pastures.⁴⁸ The NAPCC, recognizing the considerable climatic threats facing this region, instituted the National Mission on Sustaining the Himalayan Ecosystem (NMSHE) in 2008 to address current and future vulnerability in the region.⁴⁹

Sikkim produced its State Action Plan on Climate Change (SSAPCC) in 2015 setting out its strategies and actions, largely in the form of adaptation programmes. The strategies and actions, like most climate plans, present a combination of state priorities and sustainable development measures, only some of which loosely offer adaptation benefits, for instance restoring defunct lakes on hill-tops, creating more parking infrastructure, and upgrading the airport. Further, many of the action plans operate broadly as wish-lists with no explicit budgetary allocations.⁵⁰ Nevertheless, because SSAPCC seems to have incorporated existing development goals and ongoing government schemes, some of the targets have been achieved as part of routine state planning. The successful spring-shed development programme, that revived 51 springs and 4 lakes, was supported by a centrally sponsored scheme instituted in 2006.⁵¹ The SSAPCC vision of a 100% organic Sikkim was a reiteration of a resolution of the Sikkim Legislative Assembly passed in 2003.⁵²

While some aspects of the SSAPCC have been implemented as part of existing development priorities in the state, the recent provision of central climate funding has resulted in targeted adaptation action, albeit in the form of pilot projects. For instance, NAFCC has been used to address climate vulnerability in drought prone areas⁵³. Efforts in the sphere of vulnerability assessments,

institutional capacity building, glaciology, and climate monitoring through the establishment of automatic weather stations have also been undertaken with the support of bilateral aid⁵⁴.

According to IPCC's Fifth Assessment Report,⁵⁵ effective institutions and governance mechanisms are critical in successfully addressing climate change. For various historical and political reasons, states of the Indian Himalayan Region have tended to have weak institutions and apparatuses of governance.⁵⁶ The Planning Commission found these hill states to have the highest incidence of what it termed 'development disability' in the country.⁵⁷

In most states, the state action plan process inadequately accounts for such development constraints, or for institutional challenges as barriers to implementation. It is therefore unsurprising that Sikkim's action plan has fallen short in clearly defining and effecting climate resilience on the ground. In addition, there are limited mechanisms for measuring whatever little implementation has tangentially taken place. For instance, the annual reports and plans of many government departments are not available in the public domain, making it difficult to explicitly pinpoint implementation of the state climate plan.

Nevertheless, within the Government of Sikkim there exists a sense of achievement in referring to the state as carbon neutral and a front-runner on action to combat climate change.⁵⁸ Experts are of the view that given the limited potential at local and regional levels to combat climate change, a strategy that focuses on broad developmental stressors such as land-use and land cover change, pollution, degradation, urbanization may be more effective.⁵⁹

In this regard, Sikkim's SAPCC is not necessarily ineffectual in terms of its multi-sectoral focus on business-as-usual actions. The problem is rather that the document has a weak conceptual framework and does not use an explicit climate lens. For instance, strategies to build adaptive capacity by growing the tourism sector as a way of diversifying livelihoods, may come with their own share of problems, evident in the ecological and developmental fallout of the rise in tourism in the state.⁶⁰

The fact remains that substantial work continues to be done on climate change within Sikkim. Therefore, what is needed is a better mechanism to capture this work without overly relying on SSAPCC, which was in any case largely a conceptual exercise. More recently, with the support of international aid organizations, Sikkim has undertaken a second round of strategizing adaptation and

mitigation planning around climate change, including initiating studies to estimate the impacts of climate change in landscapes across the state.⁶¹ A revised climate action plan has also been drafted, which is currently in the process of being reviewed by experts. It remains to be seen whether this programme builds on the lessons from the earlier phase of SSAPCC and effectively addresses the gaps and challenges encountered thus far.

Conclusion

Initiated a decade ago, state action plans on climate change have been India's first efforts at formalizing sub-national action on climate change. While the plans themselves have fallen short in producing actionable priorities, they have served as a useful entry point for donor agencies to develop adaptation interventions and for the central government to finance pilot resilience projects across most states. While this effort has not been adequately measured or monitored, even anecdotally it amounts to a tangible body of work. However, these actions have largely taken place in pockets and the process has not resulted in mainstreaming adaptation in state development planning to any significant degree. Crucially state climate plans sit on the sidelines of current political economy considerations, and worryingly, remain detached from state endeavours at addressing the recent spate of extreme weather events. They are also inadequately aligned to both local urban and national efforts, and to commitments on climate action. To retain its usefulness and relevance as a sizable policy effort, the second iteration of the state plan process will need to account for and address a number of these prevailing gaps. □

References

1. Climate and Development Knowledge Network (CDKN), 2014. IPCC, What's in it for South Asia? <https://cdkn.org/wp-content/uploads/2014/04/CDKN-IPCC-Whats-in-it-for-South-Asia-AR5.pdf> Accessed on: 2 September 2019.
2. N. H. Ravindranath, S. Rao, N. Sharma, M. Nair, R. Gopalakrishnan, A.S. Rao, S. Malaviya, R. Tiwari, A. Sagadevan, M. Munsu, N. Krishna and G. Bala, 384-394 (2011). Climate change vulnerability profiles for North East India. *Current Science*, Vol. 101, No. 3.
3. C. Singh, 1-27 (2018). Assessing India's mounting climate losses to Financial Institutions. *Action on Climate Today (ACT)*, (ACT, New India, 2018. <http://www.indiaenvironmentportal.org.in/files/file/climate-losses-revised.pdf> Accessed on: 12 September 2019.
4. E. Gogoi, India's State Action Plans on Climate Change: towards meaningful action, *Oxford Policy Management [OPM]*, New Delhi 2017. pp. 1-11 <https://www.opml.co.uk/files/Publications/corporate-publications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1>
5. Ministry of Environment, Forest & Climate Change (MoEFCC), (2019). Performance of the National Action Plan On Climate Change (NAPCC), Committee on estimates (2018-2019) (Lok Sabha Secretariat, New Delhi 2019). http://164.100.47.193/lssccommittee/Estimates/16_Estimates_30.pdf Accessed on: 4 September 2019.
6. N. K. Dubash and A. Jogesh, From Margins to Mainstream? Climate Change Planning in India as a 'Door Opener' to a Sustainable future, Centre for Policy Research (CPR), Climate Initiative, Research Report (CPR, New Delhi, February 2014).
7. E. Gogoi, State Climate Change Planning Has It Reached the Mainstream? In N. Dubash (ed), *India in a Warming World OUP*, New Delhi, pp 370-380, 2019.
8. J. Thakur, (2019). Delhi submits its climate change action plan after 8 years. *Hindustan Times*, January 11, 2019. <https://www.hindustantimes.com/delhi-news/delhi-finally-submits-its-climate-change-action-plan/story-cocvenqvovWvVRFdIiIntL.html> Accessed on: 14 September 2019.
9. E. Gogoi, op.cit. (fn.7)
10. N. K. Dubash and A. Jogesh, op.cit. (fn.7)
11. A. Jogesh and N. K. Dubash. State-led experimentation or centrally-motivated replication? A study of state action plans on climate change in India, *Journal of Integrative Environmental Sciences*, Vol 12, No. 4, 2015, pp.247-266.
12. N. K. Dubash and A. Jogesh, op.cit. (fn.6)
13. Ibid
14. MoEFCC, Government of India (GoI), (2019). State Action Plan on Climate Change: Endorsed by National Steering Committee on Climate Change. <http://moef.gov.in/division/environment-divisions/climate-changecc-2/state-action-plan-on-climate-change/> Accessed on: 14 September 2019
15. Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), Climate Change Adaptation in Rural Areas of India (CCA-RAI). <https://www.giz.de/en/worldwide/16603.html>. Accessed on: 14 September 2019; Department for International Development (DFID). *Action on Climate Today: climate-proofing growth and development in South Asia*. <https://www.opml.co.uk/projects/action-climate-today-proofing-growth-development-south-asia> Accessed on: 14 September 2019; United Nations Development Programme (UNDP), Swiss Agency for Development and Cooperation (SDC), (2017). *Strengthening State Strategies for Climate Actions*. <http://www.climateactions.in/> Accessed on: 14 September 2019.
16. Press Information Bureau, MoEFCC, GoI, (2018). National Adaptation Fund for Climate Change, 5 February 2018. <https://pib.gov.in/newsite/PrintRelease.aspx?relid=176178> Accessed on: 4 September 2019.
17. National Bank for Agriculture and Rural Development (NABARD). National Adaptation Fund For Climate Change. <https://www.nabard.org/content.aspx?id=585> Accessed on: 6 September 2019.
18. Green Climate Fund. NABARD <https://www.nabard.org/content.aspx?id=584> Accessed on: 6 September 2019.
19. Presentation by Mr. Ravi S Prasad, Joint Secretary, Climate Change Division, MoEFCC at a discussion on, "Paris Agreement and India's INDC: Preparing for Implementation and Tracking of Mitigation Actions, Plans and Policies." 14th March 2016, New Delhi.
20. K. Mogelgaard, A. Dinshaw, N. Ginoya, M. Gutiérrez, P. Preethan and J. Waslander, (2018). *From Planning to Action: Mainstreaming Climate Change Adaptation Into Development*, (World Resources Institute, Washington DC, October 2018).

- <https://www.wri.org/publication/climate-planning-to-action> Accessed on: 6 September 2019.
21. E. Gogoi, (2019) op.cit. (fn.7).
 22. N. K. Dubash and A. Jogesh, (2014), op.cit. (fn.6)
 23. Ministry of Water Resources, River Development and Ganga Rejuvenation, GoI, (2019). National Water Mission. <http://mowr.gov.in/schemes-projects-programmes/schemes/implementation-of-national-water-mission> Accessed on: 6 September 2019.
 24. E. Gogoi, (2019) op.cit. (fn.7)
 25. A. Jha, (2011). Much ado about the State Action Plans on Climate Change; its business as usual, PAIRVI Occasional Paper Series (Pairvi, New Delhi, August 2011). <https://www.fairclimate.com/library/docs/5/Much%20Ado%20about%20State%20Action%20Plan%20on%20Climate%20Change.pdf>. Accessed on: 17 September 2019
 26. The Pioneer, (2017). Delhi Govt not submitting action plan on climate change: MoEF. New Delhi, 2 February 2017. <https://www.dailypioneer.com/2017/delhi/delhi-govt-not-submitting-action-plan-on-climate-change-moef.html> Accessed on: 6 September 2019; P. Kumar and A. Naik, (2019). India's Domestic Climate Policy is Fragmented and Lacks Clarity. *Economic & Political Weekly*, 16 Feb, 2019, Vol. 54, No. 7. <https://www.epw.in/engage/article/indias-domestic-climate-policy-fragmented-lacks-clarity> Accessed on: 17 September 2019; The New Indian Express, (2019). Where's revised action plan on climate change? 6 February 2019. <http://www.newindianexpress.com/cities/chennai/2019/feb/06/wheres-revised-action-plan-on-climate-change-1934983.html> Accessed on: 17 September 2019.
 27. NABARD, National Adaptation Fund For Climate Change. <https://www.nabard.org/content.aspx?id=585> Accessed on: 6 September 2019.
 28. Green Climate Fund, (2019). Projects + Programmes. <https://www.greenclimate.fund/projects/fp045> Accessed on: 17 September 2019.
 29. Department of Science and Technology (DST), GoI and SDC. Climate Vulnerability Assessment for the Indian Himalayan Region Using a Common Framework. http://dst.gov.in/sites/default/files/IHCAP_Climate%20Vulnerability%20Assessment_30Nov2018_Final_aw.pdf Accessed on: 1 September 2019.
 30. S. Choudhary, (2019). Climate vulnerability assessment of all states, UTs soon. *Mint*, 15 March 2019. <https://www.livemint.com/news/india/climate-vulnerability-assessment-of-all-states-uts-soon-1552623554342.html> Accessed on: 12 September 2019.
 31. The Energy Resource Institute, (2019). Workshop on Strengthening Non-State Climate Action in Global South, (New Delhi, 18 September, 2019).
 32. N. Shukla, (2017). Uttar Pradesh first state to have Climate in Country. *Times of India*, 10 October 2017. <https://timesofindia.indiatimes.com/city/lucknow/uttar-pradesh-first-to-have-climate-change-authority/articleshow/61023177.cms> Accessed on: 2 September 2019.
 33. E. Gogoi, (2019), op.cit. (fn.7)
 34. PIB, Ministry of Health and Family Welfare, GoI. Plan to Tackle Heat Wave in India, 23 July 2019. <https://pib.gov.in/newsite/PrintRelease.aspx?relid=192108> Accessed on: 2 September 2019.
 35. E. Gogoi, (2017), op.cit. (fn.7)
 36. E. Gogoi, (2019), op.cit. (fn.7)
 37. C. Singh, 1-27 (2018). Assessing India's mounting climate losses to Financial Institutions.
 38. South Asia Network on Dams, Rivers and People, (2014). Maharashtra State Action Plan on Climate change: Farmers Suffer, State and consultant TERI unaffected, April 8, 2014. <https://sandrp.in/tag/state-action-plan-on-climate-change/> Accessed on: 7 September 2019.
 39. V. Fayolle, C. Fouvet, V. Soundarajan, V. Nath, S. Acharya, N. Gupta and L. Petrarulo, (2019). Engaging the private sector in financing adaptation to climate change: Learning from practice (ACT, New Delhi, 2019). http://www.acclimatise.uk.com/wp-content/uploads/2019/02/ACT-Private-Sector-paper_final_web-res.pdf Accessed on: 17 September 2019.
 40. GoI, 2015. India's Intended Nationally Determined Contribution (INDC): Working Towards Climate Justice. <https://nmhs.org.in/pdf/INDIA%20INDC%20TO%20UNFCCC.pdf> Accessed on: 5 September 2019.
 41. MoEFCC, (2019). Performance of the National Action Plan On Climate Change (NAPCC). http://164.100.47.193/isscommittee/Estimates/16_Estimates_30.pdf Accessed on: 4 September 2019.
 42. GoI, 2015. India's INDC: op.cit. (fn.40) INDIA%20INDC%20TO%20UNFCCC.pdf Accessed on: 5 September 2019
 43. NABARD, National Adaptation Fund For Climate Change. <https://www.nabard.org/content.aspx?id=585> Accessed on: 6 September 2019.
 44. Census, 2011. Census of India. New Delhi, Office of the Registrar General and Census Commissioner of India, Ministry of Home Affairs, Government of India.
 45. FSI, 2017. State of Forest Report. Forest Survey of India. New Delhi, Ministry of Environment Forest and Climate Change, Government of India.
 46. DST, 2016. National Mission for Sustaining the Himalayan Ecosystem (NMSHE) Brochure Ministry of Science & Technology, Government of India; Philippus Wester, Arabinda Mishra, Aditi Mukherji, Arun Bhakta Shrestha Ed, 2019. *The Hindu Kush Himalaya Assessment: Mountains, Climate Change, Sustainability and People*, e Hindu Kush Himalayan Monitoring and Assessment Programme (HIMAP) International Centre for Integrated Mountain Development (ICIMOD)
 47. Tenzing Ingty, 2019 Regional Environmental Change (forthcoming); GoS, 2015. The Sikkim State Action Plan on Climate Change Report, Department of Science & Technology and Climate Change, Government of Sikkim
 48. ATREE, 2019. Policy Consultation on Temperate-alpine Grasslands, Gangtok: Proceedings Report, Ashoka Trust for Research in Ecology and the Environment, Bengaluru
 49. Warrior, 2016. *Himalayas, Climate Change and the Media: A Trainer's Manual*, Indian Himalayas Climate Adaptation Programme (IHCAP) Swiss Agency for Development and Cooperation; Mustafa Ali Khan and Kirtiman Awasthi, 2017 *Capacity Building for Climate Change Adaptation Planning & Implementation in the Indian Himalayas*, Indian Himalayas Climate Adaptation Programme (IHCAP) Swiss Agency for Development and Cooperation
 50. Koyel Mandal, Sunanda Rathi and Vivek Venkataramani, 2013. *Developing Financing Strategies for Implementing the State Action Plans on Climate Change*, Centre for Development Finance, IFMR Research, Chennai; Anu Jogesh and Navroz K. Dubash, 2014. *Mainstreaming climate change in state development planning: An analysis of the Sikkim Action Plan on Climate Change*, Working Paper: Climate Initiative, Centre for Policy Research (CPR), New Delhi

51. GoS __. Mahatma Gandhi National Rural Employment Guarantee Act Sikkim, Rural Management and Development Department, Government of Sikkim (<https://sikkim.gov.in/departments/rural-management-development-department/mgnrega-mahatma-gandhi-national-rural-employment-guarantee-act-sikkim>) accessed on 17 October 2019; Anu Jogesh & Navroz K. Dubash, 2015. State-led experimentation or centrally-motivated replication? A study of state action plans on climate change in India, *Journal of Integrative Environmental Sciences*, 12:4, 247-266
52. GoS __. Organic Movement in Policy Planning — Sikkim's Contributions to Nation, Sikkim Organic Mission, Government of Sikkim (<https://www.sikkimorganicmission.gov.in/about-us/organic-movement/>) accessed on 17 October 2019; Sandeep Tambe and M. L. Arrawatia, 2012. Climate Change Initiatives in Sikkim, *Climate Change in Sikkim - Patterns, Impacts and Initiatives*, Information and Public Relations Department, Government of Sikkim
53. Vineet Kumar, 2018. *Coping with Climate Change: An Analysis of India's State Action Plans on Climate Change*, Centre for Science and Environment (CSE), New Delhi
54. SSSCC __. Activity of Sikkim State Climate Change Cell, Department of Science & Technology and Climate Change, Government of Sikkim; IHCAP, 2013. *Linkages between the NMSHE and the Himalayan SAPCCs: Report 2 Indian Himalayas Climate Adaptation Programme (IHCAP)* Swiss Agency for Development and Cooperation
55. IPCC, 2014. *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.
56. R.S. Tolia, 2014. *Demise of the Planning Commission: Implication for Mountain States*. Centre for Public Policy, Doon University, Dehradun
57. B.K. Chaturvedi, 2013. *Report of the Committee to study development in hill states arising from management of forest lands with special focus on creation of infrastructure, livelihood, and human development*. Planning Commission, Government of India
58. ATREE, 2019. *Policy Consultation on Temperate-alpine Grasslands, Gangtok: Proceedings Report*, Ashoka Trust for Research in Ecology and the Environment, Bengaluru
59. ATREE, 2018. *Policy Consultation on Himalayan Wetlands, Leh: Proceedings Report*, Ashoka Trust for Research in Ecology and the Environment, Bengaluru
60. ATREE, 2019. *Policy Consultation on Temperate-alpine Grasslands, Gangtok: Proceedings Report*, Ashoka Trust for Research in Ecology and the Environment, Bengaluru
61. GoS, 2016. *Strengthening State Strategies for Climate Actions in Sikkim: Report of Inception Workshop*, Sikkim, Department of Science & Technology and Climate Change, Government of Sikkim