



# MAINSTREAMING SUSTAINABLE DEVELOPMENT AND ENHANCING CLIMATE RESILIENCE: NEW OPPORTUNITIES FOR STATES IN INDIA

## AUTHORS:

**Ms Neha Pahuja\*,**  
Fellow, TERI

**Ms Aanchal Pruthi,**  
Research Associate, TERI

**Ms Aishwarya Raj,**  
Research Associate, TERI

**Ms Rhea Puri,**  
Project Associate, TERI

**Ms Mekhala Sastry,**  
Research Associate, TERI

## REVIEWER:

**Mr R.R. Rashmi,**  
Distinguished Fellow, TERI

This study is a part of the project 'Developing Country Participation in Addressing Climate Change' supported by the Royal Norwegian Embassy in India. This project aims to contribute to the policy discourses on implementing Nationally Determined Contributions (NDCs). One of the key activities in the project is to track NDCs and domestic linkages with Sustainable Development Goals (SDGs). For more details, visit <https://www.teriin.org/projects/nfa/climate-change-wp2.php>

---

\* neha.pahuja@teri.res.in.

# Mainstreaming Sustainable Development and Enhancing Climate Resilience: **New Opportunities for States in India**

---

## KEY MESSAGES

---

**01**

State Action Plans on Climate Change (SAPCCs) provide a risk-based perspective to developmental planning in the changing climate and are forward-looking planning documents that take view of challenges of climate change and possible future risks while incorporating them into the planning process.

**02**

SAPCCs offer a unique opportunity for states to achieve multiple benefits of policies and programmes, thereby optimizing limited resources while achieving goals of (i) sustainable development, (ii) enhancing climate change resilience, and (iii) climate mitigation.

**03**

A SAPCC cannot achieve its objectives if implemented as a stand-alone plan. It has to be mainstreamed in different sectoral plans and policies and implemented through a coordinated effort from several departments in the state.

**04**

The existing SAPCCs were formulated and implemented from 2011 onwards. While the focus of National Action Plan on Climate Change (NAPCC) has been to meet mitigation goals through central policies, the adaptation goals fall largely in the domain of state governments to be met through ongoing programmes and channelized through SAPCC. However, state-specific actions need specific capacity, budget, and policies, which are fairly limited at the state level.

**05**

Over these years, SAPCC have been able to build capacity within the states to understand the climate change issues and to look at developmental policies and plans from a climate lens, thereby taking the issue of climate change to the sub-national/local levels from international negotiations and national policies.

**06**

This paper looks at the challenges of drafting, implementing, and monitoring SAPCCs. This was done through a questionnaire survey and stakeholders consultations. States faced several challenges during the different stages of SAPCC implementation (drafting, implementing, monitoring, and evaluation). Most prominent challenges were (i) availability of required granular information on climate parameters, (ii) lack of capacity (technical and institutional) and adequate resources (technical and finance), (iii) lack of intrastate departmental coordination, (iv) inability to mainstream climate change concerns in sectoral regulations and policies, and (v) limited leadership and guidance to steer climate actions in various departments.

**07**

Some states have done exceptionally well in implementing respective SAPCCs as compared to others. Factors such as (i) political will and leadership and (ii) governance and institutional arrangement set these states apart. The experiences of drafting, implementing, and monitoring SAPCCs offer learnings that can be used while revising the SAPCCs.

**08**

Some SAPCCs were also criticized for being (i) inadequately rooted in science, (ii) largely focusing on adaptation, and (iii) lacking specificity of actions and information on the available budget.

**09**

The process to revise SAPCCs was initiated in 2019. This is in line with the changing context/ circumstances in states and national NDC and SDG goals. The experiences of drafting, implementing, and monitoring the existing SAPCCs will be useful in drafting revised SAPCCs. The capacities built in states while implementing the existing SAPCCs offer learnings to be included in the revised SAPCCs.

**10**

SAPCCs can serve as a vehicle for climate policy integration and facilitate in achieving SDGs. The states must capitalize on this opportunity to enhance the potential of meeting climate change and SDG-related goals in a synergistic manner that can also prove to be cost-effective in the long run.

**11**

Sub-national actions are key to fulfil both NDC and SDG targets. Mainstreaming SDGs into the climate policy framework and *vice versa* is the first step towards such fulfilment. This would require sound policymaking at national and sub-national levels in sectors that are core to sustainable development and climate change.

# Introduction

---

India's varied physiographic and climatic conditions render it extremely vulnerable to natural disasters, particularly flooding, cyclones, drought, extreme heatwaves, landslides, wildfire, and earthquakes. The lurking risks have been further exacerbated by climate change and population-induced environmental stress that have led to a threatening emergence of insecurity in natural, human, financial, and social capital. National governments are instrumental in planning and implementation of climate policies domestically so as to keep their international obligations. Sub-national actions are critical to undertaking climate action due to their proximity to the consequences of climate change, which are most likely to be local (Oliveira 2009). They are in a better position to identify local needs, exert local influence, and mobilize local resources, which can help them both devise tailored solutions and identify complementarities in policies (Harrison, Muller, Staden, *et al.* 2014).

In 2010, all states in India were asked to develop a SAPCC dovetailing the NAPCC and also focusing on state-specific circumstances. The Ministry of Environment, Forest and Climate Change (MoEFCC) advised states to develop a common framework for preparation of the SAPCC in a participatory and inclusive policymaking process. The

action plans were developed at the state level by state governments and with the help of consultants. Once they were approved by the state, they were submitted to the expert committee in the MoEFCC for technical scrutiny and endorsed by the National Steering Committee. Currently, 33 SAPCCs from states and union territories have been endorsed by the steering committees.

This gave states an opportunity to develop their developmental plans that were climate resilient and promoted investments in low-carbon infrastructure. Mishra, Pandey, Upadhyay, *et al.* (2011) suggest that the process of formulating SAPCCs should represent the first planning exercise for the states to prepare themselves for the challenges posed by climate change, and it would be a continuously evolving process requiring 'in-process learning and improvement'. Dubash and Jogesh (2014), in their critical assessment of a few SAPCCs, also suggest it to be a starting point and argue for more informed engagement with varied actors to make it a valuable exercise. Atteridge, Shrivastava, Pahuja, *et al.* (2012) noted that the centre directs the state-level actions, whereas Jörgensen, Mishra, and Sarangi (2015) observed that it goes beyond the top-down approach, where states try to experiment with individual approaches





to develop specific actions often shaped by the priorities of each state. According to the literature available, SAPCCs outline climate strategies for a wide range of sectors. These include agriculture, water, transport, energy, industries, and forestry. These sectors are prioritized based on the vulnerabilities and circumstances existing within states. It has been observed that most of the actions set out in the plans focus on adaptation (Jørgensen, Mishra, and Sarangi 2015; Gogoi 2017). Kumar (2018) noted that these plans mainly focus on a state government's approach to adapting to the existing and future impacts of climate change. Although states prepare plans to address specific vulnerabilities, they also take developmental agendas into account. Therefore, budget estimates for the sectors depend on the state's economy and the sectors that contribute to local livelihoods.

States have largely prepared their SAPCCs in line with the eight missions under the NAPCC. Only a few have gone beyond this ambit to address the issues of health, urban development, and so on. There has also been an effort to espouse the co-benefits approach. This largely caters to the developmental activities and schemes. With the heavy focus on adaptation, the climate interventions are expected to be implemented mostly through programmes under the various sectors mentioned in the plans.

A major gap that has been identified is the ambiguity surrounding the issue of funding the climate action interventions as mentioned in SAPCCs (Gogoi 2017). The literature suggests that budgeting for these interventions will be leveraged through sectoral development budgets. State climate change departments and cells are the nodal agencies that cater to all the SAPCC-related issues. Although most states report the existence of these bodies, they have minimal powers

(TERI 2019). Therefore, states fall short in implementing their SAPCCs.

The past experiences of states during the process of planning, drafting, and implementation of SAPCCs and the challenges faced thereafter create a huge room for improvement and refinement of these climate change plans. States have also expressed that the SAPCC should remain as a working document, which can be updated and refined on a regular basis (Gogoi 2017). Further, with the evolution of the scientific knowledge, socio-economic understanding, and the policy landscape on climate change, a need to revise the existing SAPCCs has been reflected by various states even before the issuance of a formal notice.

In this paper, we try to (i) understand the challenges faced during the drafting, implementation, and monitoring of SAPCCs, (ii) highlight experiences of states as the best practices so that they can be replicated in other states, and (iii) view SAPCC documents through a lens of sustainable development to explore whether SAPCCs can act as a vehicle for climate policy integration and facilitate in achieving SDGs. This paper presents a compilation of insights drawn from TERI's experience of working with state governments<sup>1</sup> during the formulation of their SAPCCs, questionnaire survey<sup>2</sup> of different stakeholders (including stake level government officials, consultants, researchers) involved in various stages of SAPCCs formulation, and outcomes of the event<sup>3</sup> organized as a part of TERI's World Sustainable Development Summit 2020.

---

<sup>1</sup> TERI has drafted SAPCCs for Assam, Maharashtra, Rajasthan, and Gujarat. It is currently in the process of revising the SAPCCs for UTs - Puducherry and Chandigarh.

<sup>2</sup> The survey is a part of the project 'Developing Country Participation in Addressing Climate Change' supported by the Royal Norwegian Embassy in India.

<sup>3</sup> Event titled 'Mainstreaming Development and Enhancing Climate Resilience: New Opportunities for States in India' held on January 29, 2020 at World Sustainable Development Summit 2020 organized by TERI. The event was supported by the Royal Norwegian Embassy in India.



# Challenges

---

This section discusses the key challenges observed across the three stages of drafting, implementing, and monitoring and evaluation, as shown in Figure 1, followed by an example that can act as a precedent to address issues of similar nature in SAPCC 2.0.



**Figure 1** Challenges faced during different stages of the first phase of SAPCCs





## Lack of Climate Change Science Context

The concern pertaining to the lack of climate change context due to the practical difficulties faced during conceptualization and assessment of climate risks is one of the major issues identified. A majority of the respondents (~50%) stated that there is a lack of climate change expertise at the state level that impedes their ability to undertake any sort of a scientific assessment. Dhanapal and Panda (2014) also highlighted that varied understanding of climate risks has led to deployment of different vulnerability assessment methodologies used amongst many SAPCCs and there is lack of a common framework for assessing vulnerability and measuring adaptive capacity. Other concerns stemming from this issue, such as difficulties in prioritizing climate activities and limited capacity to include climate additionality to existing developmental activities, have also been echoed by stakeholders involved as a part of this study. Respondents have also stated that the severity of this issue is further aggravated due to inadequacy of climate data and fragmentation of data across various entities.

### **Department of Science and Technology Building Capacities in State towards Holistic Climate Change Assessments**

The Department of Science and Technology (DST), Government of India has undertaken several actions towards combating the issue of climate change. The department focuses on and coordinates two of the missions enlisted under the NAPCC, namely, (i) National Mission for Sustaining the Himalayan Ecosystem (NMSHE) and (ii) National Mission on Strategic Knowledge for Climate Change (NMSKCC).

Under the NMSHE, the department has successfully established state climate change cells in around 11 of the 13 Himalayan states responsible for carrying out different activities in accordance with their SAPCCs. The department provides technical support to these cells to organize capacity building activities for manpower and institutions and generate public awareness. For this mission, the department has supported major research and development programmes across different areas of climate science, impacts, and adaptation along with development of six knowledge network programmes [Network on Climate Change & Human Health (Phase I & II), Network on Climate Change Modelling (Phase I & II), Network on Climate Change and Coastal Vulnerability, Network on Climate Change and Aerosol] on climate change. Other than this, DST has also established state climate change cells in 11 non-Himalayan states with a mandate to conduct vulnerability assessments, institutional capacity building, organization of training programmes for key stakeholders, and awareness generation for communities.

The Strategic Knowledge Mission for Climate Change is another mission being coordinated and managed by DST and it focuses on contributing to climate science with regional modelling, development of new scientific knowledge in both mitigation and adaptation, institutional capacity building in knowledge gap areas, and leveraging international cooperation. The department has identified six lead institutions (ICRISAT, IIT Kharagpur, NIMR, and IIT Madras) for conducting training on climate change science, impacts, and adaptation under human capacity building programme. The department has also urged to establish Global Technology Watch Groups (GTWGs) to match the emerging technologies in the field of climate science, renewable energy, carbon sequestration and storage, watershed management, and so on.

## Insufficient **Political Momentum**

---

In the light of competing developmental priorities of states in India, climate change still remains to be addressed with enough capacity and effort as desired. Most of the present climate change efforts being undertaken by state governments are reactive in nature; however, the state governments are cognizant of the fact that a proactive approach is required in the long run given the inherent uncertainty associated with climate change risks. The SAPCCs follow a top-down set-up wherein the guidelines issued by the central government form the basis for SAPCC formulation at the state level. Although the responsibility of SAPCC lies with the state government, it was found that the states lack motivation, urgency, and ownership to devise these plans as indicated through unclear division of responsibilities (80% responses) as well as untimely action on the proposed climate change measures. Furthermore, the discussions also reflected that inadequacy in political ownership and motivation affected financial allocation towards climate measures adversely.







## Divergence in Institutional and Planning Processes

Lack of interdepartmental coordination has been indicated by almost 80% of the respondents as a major barrier affecting all the three SAPCC phases. The communication and coordination gaps are quite persistent between the centre and states and also between the departments within states. There is absence of transparency between states and the centre on numerous issues, such as specific expectations and outcomes from SAPCCs, funding and technical arrangements, and guidelines. For example, although the central government focused on both mitigation and adaptation components in the NAPCC, it, on the contrary, directed the states to emphasize on adaptation measures in the SAPCC (Chandrappa, Kulshrestha, and Gupta 2011). Within the state's institutional apparatus, the state climate change cells are responsible for formulation of climate plans that include various line departments, but they see limited or no buy-in from the respective departments. Such an unclear division of responsibilities and lack of

coordination mechanisms have created a sense of confusion between different line departments, further making the process of SAPCC implementation inefficient. A divergence in planning processes within various state departments, climate change cells, and central ministries also obfuscates the idea of maximizing benefits through an integrated planning approach, which is essential to SAPCC formulation process given the vast potential of convergence.

However, interactions with government officials emphasized that the absence of specific understanding of the impact of climate change on ongoing sectoral activities or programmes hindered the efforts in streamlining the planning process as the sectoral programmes need to be tweaked to include climate risks in their assessment of programme costs and benefits. If climate risks are properly understood, the departments will respond to the coordination needed by the state-level agencies in implementing SAPCCs.

### Madhya Pradesh driving integrated planning through institutional coordination

In Madhya Pradesh, around 10 departments are actively involved in the entire process of SAPCCs under the core agency that is responsible for preparation of the plan. The state government has nominated a climate change nodal officer within each department who is responsible for overseeing the overall climate change planning specific to their department. Large-scale consultations were organized for setting up the targets and working upon the strategies between the departments during the development of the first SAPCC that showcased a great example of an enhanced institutional structure (TERI 2020).

By adopting the bottom-up approach for SAPCC planning and implementation, the state has set out a great example. For this, it involved all the concerned line departments, civil society organizations, and so on, through consultations for undertaking climate action, which bestowed a greater position on the state. Specific consultations were organized with civil society organizations and community-based organizations, as well as with groups working across 11 agro-climatic zones of the state, to ensure inclusivity of the action plan.

The State Knowledge Management Centre on Climate Change focuses on establishing a link between all the sectors and climate change. For this, the state government adopted a vision document 2018, which acted as a guiding document highlighting the key aspects of good governance, change, and development. For greater transparency of the strategies and actions being undertaken, policy briefs based on the SAPCC were developed that provide in-depth understanding of the situation of climate change in the state (EPCO n.d).

## Limited Availability of Finance

---

The poor and untimely availability of finance has been found to be a huge impediment to any state-level action. Some of the key financing challenges identified include limited access to additional funding sources other than state budgets (50%), uncertainty in the source of funding (30%), and insufficient allocation under state government budgets (20%). It was noted that most of the states had given probable budgetary allocations in their respective sectoral recommendations; however, they were mostly estimates that resulted in

large discrepancies in the aggregated costs quoted by the states (Centre for Policy Research 2013). The existing SAPCCs are to be implemented largely through ongoing programmes and no specific budgetary allocation was done. Furthermore, states possess limited capacity to mobilize resources from additional sources, such as national climate change funds (Adaptation Fund) and international funds like Green Climate Fund, particularly due to their inability to draft technical proposals.





## Absence of Monitoring and Evaluation Frameworks

The analysis of SAPCC 1.0 documents indicates that monitoring and evaluation (M&E) were completely absent or insufficiently analyzed for a majority of states. At present, most of the M&E activities are limited to tracking financial allocations made towards each proposed activity and do not really account for physical progress. For a few states that have devised M&E frameworks under their climate plans, issues such as lack of expertise, irregularity in organizing steering committee status meetings, and coordination across departments hinder the process further. Studies reveal that there is an absence of M&E due to delays in the implementation of strategies. Furthermore, no specific institutional

framework has been developed to supervise the implementation specifically for M&E (Kumar 2018). In the absence of an agreed framework for M&E at the national level or the state level, developing a common M&E framework is an urgent necessity as much for adaptation as for mitigation-related activities. Effective M&E issues become even more pertinent for tracking progress on adaptation actions, which do not have a fixed baseline unlike mitigation issues. Despite the need for an effective M&E framework that can help evaluate the impacts and define the success of the policy, it has remained as a sticky point for many states.

### **Odisha: Paving the way towards a creation of a sound monitoring and evaluation system**

In addition to being one of the first states to prepare an SAPCC, the Government of Odisha has also been the only state to publish a SAPCC progress report after the closure of the first phase of the SAPCC implementation (2010–15). This clearly reflects the success of the sound M&E framework developed by the state during formulation of the first SAPCC. The framework in the first SAPCC was intended towards evaluating the progress of activities, understanding the benefits accrued, exploring the achievements made during the implementation process, and tracking financial expenditure on a quarterly basis. Despite issues associated with M&E process, the state has worked towards setting up strategically measurable parameters pertaining to the impacts and targets of the proposed activities. Although an integrated framework has not been presented as a part of the SAPCC, the state has emphasized and integrated monitoring and surveillance activities under each sector.

# Traversing Through Sustainable

## Development Goals Linkages in SAPCCs

SAPCCs have generically navigated across mapping climate vulnerabilities, estimating future projections, demonstrating sectoral implications of climate change, and consequently advocating actionable strategies to address the same. Under the ambit of 'climate action', SAPCCs run parallel to the SDG 13 on 'taking urgent action to combat climate change and its impacts'. Other manifestations of SDGs penetrate into SAPCCs through sectoral interventions in the domain of agriculture (SDG 2), health (SDG 3), water (SDG 6), energy (SDG 7), industries (SDG 9), sustainable habitats (SDG 11), waste (SDG 12), coastal areas (SDG 14), forestry and biodiversity (SDG 15), and capacity building requirements (SDG 17). All of

these sectors are as closely influenced and connected to climate change as they are to development and socio-economic growth. These sectors not only drive the economy, sustain livelihoods, and nurture the population, but also contribute to and are at the receiving end of the adverse climate change impacts. Undeniably then, the SAPCCs are inherently complementary to the SDGs and any strategy or action plan implemented under the banner of any of the two would significantly impact the other.

The NITI Aayog developed the SDG India Index, (NITI Aayog 2019) which was intended to provide a holistic view on the social, economic, and environmental status of states and UTs. It was designed to provide an aggregate assessment of





the performance of all Indian states and UTs and help policymakers to assess their progress on the SDGs.

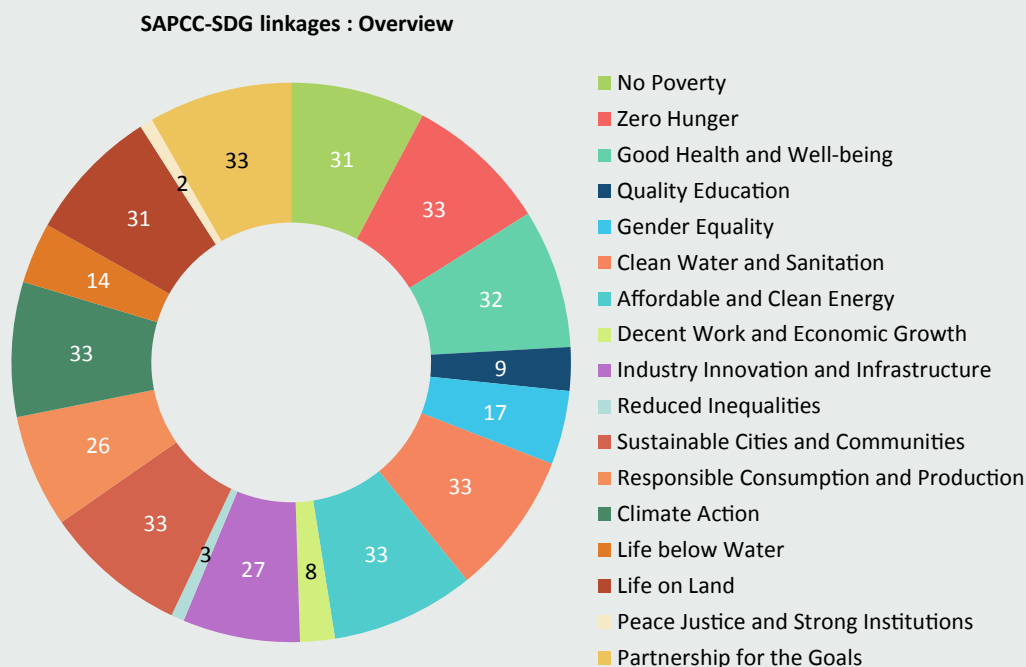
It is important to note that the first version of SDG Index developed by the NITI Aayog in 2018 and ranking done for various states in respect of performance related to SDG goals did no ranking of states for SDGs 12, 13, and 14. The ranking done in 2019–20, (NITI Aayog 2019) however, included these goals. On Goal 13, four national-level indicators were identified to measure India's performance towards the goal of climate action. These indicators captured 2 out of the 10 SDG targets for 2030 outlined under Goal 13. These indicators were selected based on the availability of data at the sub-national level and with the aim to ensure comparability across states and UTs. However, an alternative methodology of finding the climate change and SDG linkage in SAPCCs is necessary.

The SAPCC-SDG linkage in SAPCCs as part of this paper was carried out using content analysis and rapid assessment processes under the qualitative methodology. A total of 33 SAPCCs were collected and a qualitative inquiry using iterative data analysis was conducted using keywords within the text. Certain words or concepts, such as 'assess the amount of water use efficiency' (Assam SAPCC), 'installation of solar pumps for small farmers...' (Gujarat SAPCC), 'sustainable fisheries' (Puducherry SAPCC), 'capacity building of the farmers' (Kerala SAPCC), 'improving rural infrastructure and hygiene/

sanitation, primarily targeted towards below poverty line' (Madhya Pradesh SAPCC), correspond to the SDGs on clean water and sanitation (SDG 6), affordable and clean energy (SDG 7), life below water (SDG 14), zero hunger (SDG 2), partnerships for the goals (SDG 17), and no poverty (SDG 1). The keywords that emerge specifically are 'water efficiency' pertaining to Target 6.4 ('by 2030, substantially increase water-use efficiency...') under SDG 6, 'solar pumps' pertaining to Target 7.2 ('increase substantially the share of renewable energy...') under SDG 7, 'sustainable fisheries' pertaining to Target 14.4 ('levels that can produce the maximum sustainable yield as determined by their biological characteristics') under SDG 14, to name a few. The keywords were searched within the table of contents essentially to understand the focus of each SAPCC and the priority sectors. For ensuring authentic mapping of SAPCC strategies and SDGs, a keyword search for other SDGs, such as on gender equality (SDG 5), quality education (SDG 4), decent work and economic growth (SDG 8), reduced inequalities (SDG 10), and peace, justice and strong institutions (SDG 16), was also carried out. Rapid assessment and content analysis tools were selected owing to their prompt usage and for larger data sets (SAPCC documents and SDGs) and also due to the essentially qualitative nature of SAPCCs. It would be of relevance to map out complementarities using the aforementioned methods for arriving at a comprehensive climate cum developmental policy paradigm scanning.



## Prominent SAPCC-SDG Linkages: An Analysis



**Figure 2** An overview of the SAPCC-SDG linkages mapping depicting the number of linkages found for all the SAPCCs

The SAPCCs were mapped alongside SDGs to gather information on the number, types, and nature of linkages that can be established between two policy frameworks (Figure 2). As anticipated, the SDGs corresponding to climate action, food security, sustainable agriculture (zero hunger), and affordable and clean energy had the highest number of matches. These linkages prominently showcase the priorities that SAPCCs have designated to the three sectors of agriculture, energy, and climate action. Since the Indian economy employs 54.6% agricultural workers (Ministry of Agriculture & Farmers Welfare 2019) and its states are primarily agrarian driven for their economic growth, employability, and sustenance, SDG 2 on food security

and sustainable agriculture is of prime importance for the states. SDG 2 also interconnects with SDG 1 (no poverty), SDG 6 (clean water and sanitation), and most certainly SDG 13 (climate action). States acknowledge the dual nature of agriculture towards climate change (mitigation and adaptation) and thus have aimed at sustainable agricultural practices involving cropping patterns based on agro-climatic zones, reducing climate risks on productivity by sound scientific planning, crop management, and use of organic fertilizers and farming methods. Sikkim's SAPCC highlights the necessity to promote organic farming and endorses a state policy to emerge as a fully organic state, which it achieved in 2016. Water efficiency, management, and



conservation techniques are extremely essential for states and all the SAPCCs have the linkage established through SDG 6. Building sustainable habitats in the form of greener cities and communities score on SDG 11, which also inculcates strategies on mitigation of emissions from waste and transport and espouses the principles of disaster risk reduction based on the Sendai Framework. The SAPCCs have unanimously adhered to various components of SDG 11 by venturing into building modalities for scientific methods of municipal water management with options for recycling and reuse (SDG 12), increasing the use of public transport and greener buildings, which harness energy efficiency (SDG 7), and also enhancing their resilience against disasters by building resilient infrastructure and preparedness. In light of the current pandemic, upscaling of disaster preparedness, which has been highlighted in the case of Madhya Pradesh SAPCC, has gained appeal. The interconnectedness of the linkages will create multiple SDG co-benefits, arising out of SAPCC strategies and interventions. Through SDG 11 itself, SDG 3 on health can be positively impacted. States, while creating greener and more sustainable habitats, are simultaneously reducing pollution and risk for vector-borne diseases. SDG 3 on good health and well-being is in fact another addition to the list of the prominent linkages, with 32 out of 33 SAPCCs adhering to it with the goals of attaining adequate prevention and curative response infrastructure, strategies for managing recovery and treatment of contextual diseases, and health adversaries, such as heatwaves, and so on. Apart from the enlisted SDGs that saw explicit mention in the SAPCCs, energy and industry are the two other sectors that have found a strong niche therein. Energy as a sector is of prime importance to all the states and

the usage of cleaner, more affordable sources can boost several other cross-cutting sectors, such as agriculture by installing solar pumps, electricity, transport, railways, and aviation – all of which are prerequisites for growth and yet can contribute significantly to GHG emissions. For the states, reinvigorating industries to make them much more sustainable, cleaner, and efficient is crucial to execute on economic growth and job creation potential. SDG 15 on forestry and biodiversity is a major sector that can contribute generously towards climate change mitigation and adaptation. States have unanimously responded to the need to conserve ecosystems and biodiversity, improve the health of forests and related resources, and focus on sustainable and stringent forest management. Finally, SDG 17 on building capacity is a comprehensive linkage as states are determined to build on advanced technologies and capacities within each sector to sustain the climate action plans for long while also leveraging on development necessities.

While the above-mentioned SDGs have stronger linkages with SAPCC strategies, it must be noted that the decisions to commemorate these as the core sectors for interventions have not been entirely contextual or individualistic in nature. As mentioned previously, SAPCCs have secured guidelines for planning and design by the NAPCC, and within the NAPCC eight missions inherently connect to the aforementioned SDGs. What is intriguing to note is the extent of mapping witnessed for other non-conventional SDGs, such as the ones relating to gender, education, green jobs, and conservation of coastal areas and marine life. Some of these congruencies are linked to sociological contexts and needs and the others to geographical contexts. Nonetheless, it is imperative to understand the linkages that a few SAPCCs have shown regarding selective SDGs.

## Exceptional SAPCC- SDG Linkages

In total, there were 17 SAPCCs that showed synchrony with SDG 5 on 'gender'. The SAPCCs identified the close-knit linkage that womenfolk share with respect to resource management, labour, societal roles, and also how critically vulnerable they are to the repercussions of climate change. Some SAPCCs even elaborated on the theme and supported a gender-led approach to the climate action plan.

Himachal Pradesh's SAPCC reflects on the gender dimension under the Green India Mission. For the state, gender will be integrated into the policy space relating to the management of natural resources. Kerala's SAPCC also takes cognizance of the role that women play in forest management as a dependent community. The SAPCC aims to remove constraints to women's participation in forestry activities and promotes a collaborative approach to forest management and related policy with women's organizations. Uttarakhand's SAPCC values men and women equally and seeks to promote gender equality and gender sensitization to mainstream priorities relating to women in the climate action narrative. Tripura's SAPCC overarchingly recognizes the relevance of a gender-based approach for understanding climate change and subsequently addressing challenges therein. It also acknowledges the role of women in increasing social capital and enhancing resilience of the community through the work of self-help groups (SHGs), which is crucial for withstanding climate adversities apart from leveraging economic growth. Jammu and Kashmir's SAPCC is considerate towards the gender issues in climate change. Its assessment on disproportionate impacts from climate-related disasters on women

and the induced vulnerabilities is sound and in sync with socio-economic gender dimensions wherein women are dependent on different resources and exercise their own unique role in livelihood maintenance. Evidently, these SAPCCs recognize that the sectoral impacts along with societal roles and responsibilities will vary between men and women and due to increasing vulnerabilities of women, a gender-based approach to climate action plans is a desirable policy tool.

In terms of SDG 4 on education, nine SAPCCs were synced to the targets set out in the SDG itself. Most of the SAPCCs had education-related strategies strictly adhering to climate change knowledge and skill development and also in the sectors such as forestry, biodiversity, health, water, and waste through the Strategic Knowledge Mission. Thus, such interventions correspond and link directly with Target 13.3 under SDG 13 on climate





action rather than SDG 4 on education. Nonetheless, there were a few states that propagated 'education' as imperative to achieving resilience and development potential for themselves. Andhra Pradesh and Telangana outline education and literacy as key adaptation moves. In fact, its 'adaptive capacity' has been analysed taking the status of education as a key determinant towards building human capital endowment. Similarly, Rajasthan's SAPCC seeks to improve R&D capacities to boost sectoral strategies and their designs. Lakshadweep's SAPCC leverages on education as key to building public awareness and resilience. SAPCCs of Chhattisgarh and Tamil Nadu have encouraged including climate change-related modules in the educational curriculum, delivering on both SDG 4 and SDG 13. Similarly, Sikkim's SAPCC aims to foster distant learning into the remotest corners and rural habitats. Puducherry's SAPCC emphasizes on the need to have adequate elementary and good quality educational infrastructure in place apart from streamlining education related to climate change issues, while that of Karnataka builds on the same objective to also address rural-urban migration issues.

Creating 'green jobs' would promote environmentally friendly and economically sustainable enterprises while directly linking to SDG 8 on decent work and economic growth. Gujarat's SAPCC advances on this goal in both urban and rural settings through activities relating to irrigation, conversion of bio/agricultural wastes into biofuel, afforestation plans, and renewable energy installation plans. All of these activities will mitigate climate change while simultaneously generating green employment for the masses. Similarly, Himachal Pradesh has iterated the opportunity to reduce unemployment while boosting environmental protection. Tripura's SAPCC clearly outlines the need to build on clean-tech start-ups

and green enterprises as consumer awareness and capacities rise. The state has in fact planned for setting up an institutional framework to guide such a 'green entrepreneurship' development. Similarly, Jammu and Kashmir's SAPCC also points out the need to stimulate green jobs and clean-tech start-ups and bring eco-efficiency into the already running local businesses. The SAPCC of Uttar Pradesh further highlights the need to create green jobs and sustainable 'green economies'. Other SAPCCs, such as those of Andaman and Nicobar Islands and Madhya Pradesh, iterated the need to create jobs and employment sectorally within fisheries, industries, forestry, and in general within communities for sustainable growth and development.

As regards SDG 14 on life below water, the SAPCCs of most of the states having coastal peripheries focus on targets 14.2 and 14.6, relating to protection of marine and coastal ecosystems, and fisheries. Puducherry's SAPCC underlines support for conservation of marine turtles and other marine habitats. There has also been recurring emphasis on sustainable fisheries, creating sustainable coastal tourism, and working for the welfare of fishermen in the SAPCC. Lakshadweep's SAPCC also speaks on sustainable harvesting of fisheries, revitalizing them through modern technologies, compliance of marine and fisheries laws and their enforcement, and undertaking capacity building. The SAPCC of Andaman and Nicobar Islands focuses on both reef fisheries management and supporting the fishing communities by upgrading their equipment and improving technical skills and incomes. Also, much emphasis has been put on maintaining fish production by enhancing fisheries infrastructure (processing, storing, and marketing). Undertaking similar policy stance as other coastal states and UTs, West Bengal focuses on protecting



mangroves to secure nutrient contents and successively promote fish production. The state has further formulated a fishery policy for the Sundarbans with a focus on conservation in light of climate change impacts. In fact, West Bengal's SAPCC puts a special focus on the Sundarbans ecosystem with activities such as mangrove plantation, construction of embankments, early warning systems, promoting alternative livelihoods opportunities, and conservation of biodiversity under adaptation strategies. These SAPCCs have fisheries as a sector contributing substantially to the economy and providing livelihood to a significant number of people. The sector also contributes to eco-tourism and acts as a repository of important marine resources.

Altogether 14 SAPCCs were found to have linkages with SDG 14.

Finally, SDG 16 on strong institutions built on effectiveness, accountability, and transparency was explicitly underscored by only two SAPCCs. Andhra Pradesh's SAPCC invokes the organization of people and institutions to work cohesively towards building broad stakeholder engagements, gathering wider perspectives, regular coordination between line departments, and so on to fruitfully implement climate action plans. Tamil Nadu's SAPCC also accentuates the need to strengthen institutional mechanisms and processes, institutional capacities, and synergizing developmental and climate change plans and programmes.





## Deciphering SDG Index: Performance of Indian States

---

The SDGs succeeded the MDGs (Millennium Development Goals) in 2015 to set out new goals for humanity along cross-cutting and multidimensional lines covering the social, environmental, economic, and collaborative (international partnerships) facets. A number of 'missions' targeting specific sectors and resources, such as health, water, energy, habitat, ecosystems, and agriculture, had been delineated in NAPCCs, which evidently link to SAPCCs while also driving ambition towards fulfilling SDG targets for India. Therefore, states and local governance structures are indispensable stakeholders in the SDG progress that India intends to build upon.

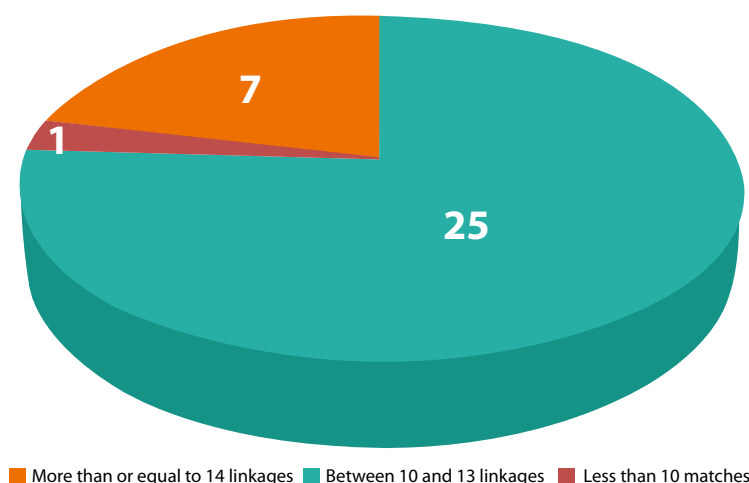
According to the SDG Index 2019–2020 rankings, Kerala, Himachal Pradesh, Andhra Pradesh, Tamil Nadu, Telangana, Karnataka, Goa, Sikkim, Chandigarh, and Puducherry were the 'front runners', having a score of greater than 65 out of 100. The other states held the tag of 'performers', with scores ranging 50–64

out of the total 100. Dissecting the SDG-wise rankings for the toppers – Kerala amongst the states and Chandigarh amongst the UTs, it was observed that Kerala led on SDG 3 (good health and well-being) and SDG 9 (industry, innovation, and infrastructure), while also performing impressively on SDG 2 (zero hunger), SDG 4 (education), SDG 6 (clean water and sanitation), SDG 7 (affordable and clean energy), SDG 10 (reduced inequalities), SDG 15 (life on land), and SDG 16 (peace, justice, and strong institutions). Chandigarh topped the state/UT rankings for SDG 2 (zero hunger), SDG 4 (education), SDG 6 (clean water and sanitation), SDG 8 (decent work and economic growth), SDG 11 (sustainable cities and communities), and SDG 12 (responsible consumption and production), while also performing well on SDG 7 (affordable and clean energy), SDG 15 (life on land), SDG 16 (peace, justice, and strong institutions), and SDG 17 (partnerships for the goals).



In fact, on SDG 6 (clean water and sanitation), the UT achieved a perfect score. It is interesting to note, however, that both Kerala and Chandigarh scored poorly on SDG 13 (climate action), only around 54–56 on the scoreboard. Amongst the front runners, states such as Andhra Pradesh, Karnataka, and Telangana scored well along with some other states and UTs, such as Odisha, Andaman and Nicobar Islands and Lakshadweep. In fact, Lakshadweep was the only state/UT to attain a maximum score of 100. Further, according to the index, states such as Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Haryana, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Tripura, West Bengal, and Puducherry scored quite low on the SDG 13, belonging to the ‘Aspirant’ category, which implied that these states have yet to achieve even 50% of the actual targets.

The National Indicator Framework is the key to understanding the SDG Index rankings. For SDG 13 (climate action), the national indicators consisted of accounting for enhancing adaptive capacity with respect to extreme weather events, deaths attributed to extreme climate, reduction in emission intensity of GDP, achievement of NDCs, and integrating climate science into education curricula as strategies by the states (MoSPI 2020). Amongst the enlisted indicators, building adaptation capacities, mortality rates arising from extreme climate, and climate science as part of academia are some of the indicators that SAPCCs can devote to and in fact have also included in their strategies. Therefore, an overview on comparative parallels drawn between SAPCCs and SDGs would suggest the need to elevate the climate action strategies to specifically address these segments.



**Figure 3** Number of SDG linkages within states from the SAPCC-SDG analysis carried out

Figure 3 shows the number of SDG linkages in different states.

**More than or equal to 14 linkages:** Andhra Pradesh, Chhattisgarh, Gujarat, Kerala, Tamil Nadu, Tripura, and Lakshadweep

**Between 10 and 13 linkages:** Arunachal Pradesh, Assam, Bihar, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Sikkim, Telangana, Uttar Pradesh, Uttarakhand, West Bengal, Andaman & Nicobar Islands, Chandigarh, Delhi, and Puducherry

**Less than 10 linkages:** Meghalaya



In our analysis carried out for establishing SAPCC-SDG linkages, by default all SAPCCs corresponded to SDG 13 (climate action) by virtue of the nature of the policy document. On an average, the SAPCCs had 10–13 linkages with the 17 SDGs. It is of value to also note that some states/UTs have progressively worked their way up in the rankings from 2018 to 2019. The SDG Index 2019–2020 states that Uttar Pradesh, Odisha, and Sikkim have improved their scores over the past year. Sikkim became the first state in India to be declared as completely organic and is a top performer for SDG 7 (affordable and clean energy) and

SDG 15 (life on land) and has also upscaled its performance on SDG 9 (industry, innovation, and infrastructure), much like Odisha that has also performed similarly with respect to the same SDG. Uttar Pradesh might not have made it into the list of ‘top performers’ but has drastically upgraded its potential in SDG 6 (clean water and sanitation), SDG 7 (affordable and clean energy), and SDG 9 (industry, innovation, and infrastructure). These three states also had more than 10 linkages out of 17 in the analysis conducted at TERI, reflecting potential for improvement in both the SAPCC and the SDG sphere.

The MoEFCC directed the states to revise their existing SAPCCs based on 'The Common Framework for Revision of SAPCCs' in January 2018 (MoEFCC 2018). The framework provides a consistent methodology for states to identify actions that are in coherence with the national and global climate change goals, such as NDCs and SDG, that were not integrated during the initial phase of the drafting process. The revised action plan

envisages the inclusion of a prioritized list of adaptation and mitigation actions targeting specific sectors that are backed by the latest vulnerability assessments, greenhouse gas inventories, and climate change projections of the state. In addition to the themes covered under the first SAPCC, the second phase of SAPCC has included the following four new elements:

**Financing roadmap:** The first lot of SAPCCs did not have pre-identified financing sources for all the proposed climate change strategies, which led to untimely and uncertain disbursement of funds. Even the states that attempted to estimate the costs required for SAPCC implementation faced issues pertaining to their credibility and consistency of estimates (Mandal, Rathi, and Venkataramani 2013). Therefore, the inclusion of a financing roadmap in the revised SAPCC would help states improve the predictability of funds through prior identification of relevant financing sources for the proposed sectoral activities.

**Monitoring and evaluation:** Another element that had been omitted or partially reflected during the first cycle of SAPCCs is the M&E of climate change strategies. Though some states had formulated conceptual M&E frameworks, the use of such frameworks remains limited to monitoring of financial progress on expenditures (Kumar 2018). The M&E framework envisaged as a part of the revised SAPCC seeks to include a clear and robust list of indicators for states to report on their progress of implementation. This is not only crucial for tracking progress, but also important for accessing finance from various sources.

**Linking SDGs and Climate Action:** While MoEFCC framework provides for including possible linkage and relevance of SDGs with respect to SAPCCs, no common methodology for linking or ascertaining the relevance of SAPCC for SDGs has been provided or suggested. Therefore, this is an important gap that needs to be delved further.

**Institutional mechanisms:** Presence of multiple institutions has often raised concerns about the absence of a coordinating entity, lack of stakeholder engagement approaches, and limited capacity to prepare SAPCCs, which are generally prepared with assistance from consultants (Dubash and Jogesh 2015). The introduction of a formal institutional mechanism in the revised SAPCC, therefore, becomes a necessity to facilitate effective engagement of stakeholders at all scales.



The addition of new elements in the SAPCC revision framework offers new opportunities for states to work towards stronger integration of the key pillars of the state climate policy. Going forward, institutionally robust structures need to be established and maintained for both the SAPCCs and the SDG implementation by the states. In 2018, data from NITI Aayog indicated that six of the states had not established a unit or a centre for SDGs and 12 states had not yet initiated the process of establishing a monitoring framework for SDGs (NITI Aayog 2018a). For SAPCCs as well, not all states had outlined an M&E framework, which is essential for reinforcing planning and implementation strategies. Nonetheless, the initiatives such as 'Aspirational District Programme' that ride on the principles of cooperative and competitive federalism are a break in the clouds as they provide incentives for the states to participate and benefit from implementation of SDGs, which can augment climate action as well (NITI Aayog 2019). Some of the key points for consideration that states must account while preparing the revised SAPCCs and operationalizing them are as follows:

01

**Adopt a risk-based planning approach for formulation of climate change plans:**

A tranche of the first set of SAPCCs was found to be inadequately rooted in science, which therefore creates difficulty in identification, prioritization, and implementation of climate change strategies, especially considering the varying risks faced by different states. The uncertain and dynamic nature of the climate system and the risks faced thereafter make it extremely pertinent for states to provide scientific backing to their revised climate change plans by undertaking long-term climate modelling, vulnerability, and GHG emission assessment. This will ensure that the SAPCCs provide a risk-based perspective to developmental planning and serve as forward-looking planning documents that account the impending climate change risks. As the state governments are being capacitated on issues pertaining to climate change since the past decade, they are now in a much better position to recognize these concerns and take proactive measures.

02

**Devise a climate information system to aid decision-making:**

The data required to assess the climate risks in its entirety are presently housed with various line departments of states and the centre. The fragmentation of data across different entities and their collection in varying formats make it challenging to undertake long-term climate assessments, thus affecting decision-making. Therefore, states must also work towards setting up a climate information repository or system that captures data on hazard, risk exposure, adaptive capacity, and developmental parameters. This would ensure that state governments account for long-term climate change variations and state-specific developmental indicators as well as their interactions in regard to their climate change decision-making processes.



## 03

### **Mainstream sustainable development into climate change planning:**

SAPCCs offer a unique opportunity for states to achieve multiple sustainable development goals through a co-benefit approach. The current set of SAPCCs do contribute to various SDGs in an implicit manner; however, states in their revised SAPCC must work towards establishing clear linkages with these goals. This is a crucial step towards exploring synergies in climate and development plans, optimizing the use of resources through integrated action, and maximizing the benefits intended from a climate change strategy. The introduction of the 'Aspirational District Programme' (NITI Aayog 2018b) by the Government of India also opens up new prospects for the most backward districts of India to advance themselves in the areas of health, education, agriculture and water resources, financial inclusion, and basic infrastructure. With most of these areas being closely associated with climate change, introducing relevant district-specific strategies will help the states to advance on both climate change and developmental parameters concurrently.

## 04

### **Develop effective institutional mechanisms to promote sectorial alignment:**

Many of the states follow a similar institutional model comprising a state-level steering committee under the chairmanship of the chief secretary of the state government. Although such a model does fairly well on taking inputs from respective line departments, it lacks an integrated approach towards mitigating and adapting to climate change. Each line department contributes in its own capacity to develop their own set of climate change strategies, all of which contribute to a broader climate change objective. However, these strategies are misaligned despite having scope for acting synergistically. For instance, both the water and agriculture departments operate in silos but address a similar objective of enhancing resilience to disaster. It is, therefore, suggested that states can possibly develop core working groups that can help them reorient towards a long-term cross-sectorial planning. This would help in increasing the alignment of strategies in the planning stage itself and also achieve benefits that reinforce climate benefits on other sectors. An effective institutional mechanism, while having representatives from the state government, must also include representation from local governments and communities/community-level organizations to use the experience of these communities in the decision-making process and make use of the vast indigenous knowledge they possess.

## 05

### **Undertake a comprehensive budgeting exercise to ensure predictability of finance:**

Ensuring timely and sufficient availability of finance is crucial for the uptake, sustenance, and completion of proposed climate change strategies. Inclusion of financing roadmaps was overlooked by states in the first set of SAPCCs and did not receive much focus. A financial roadmap encapsulating financial availability for each proposed activity along with clear identification of its sources could go a long way in securing finances for SAPCC implementation. A similar exercise can be undertaken by state governments to assess any financial shortfalls and prepare a plan for procuring these resources. Acknowledging the fact that the states do have competing priorities for financial resources, attempts can also be made to introduce climate change additionality into the existing developmental initiatives. Allocating money towards the additional climate-proof component of business-as-usual strategies can significantly save costs and serve the interest of state governments.



**06 Formulate sound monitoring and evaluation frameworks to assess performance:** The SAPCC document outlines strategies to be executed for a period of 10 years, which itself emphasizes the indispensable need to develop M&E framework to monitor activities over such a long time frame.

Given the uncertainties associated with climate change and the evolving nature of developmental concerns, it is imperative to prepare frameworks that help evaluate progress of climate strategies as well as identify strategies that require strategic, financial, or technical reorientation. In practice, this would mean a clear articulation of proposed activities that are measurable to an extent that a theory of change (including identification of outputs, outcomes, and impact) can be developed. The monitoring frameworks must focus on identification of measurable indicators under each activity that capture both the physical and the financial progresses. While this list of indicators can include specific parameters to start with, it is suggested that the list must be revised over the course and made extensive enough to capture sustainable development benefits as well in the long run.

**07 SAPCCs can serve as a vehicle for climate policy integration and facilitate in achieving SDGs:** The states must capitalize on this opportunity to escalate the potential of meeting climate change and SDG-related goals co-beneficially and in a cost-effective manner. This could be nurtured through contextually sound sectoral strategies and advancing on best practices within and outside the Indian states. There is a unanimous global onus on India to fulfil both the NDC and the SDG targets and thus the country will find it harder to achieve either without the active participation at the sub-national level.

**08 Mainstreaming SDGs into the climate policy framework and vice versa is the first step towards such fulfilment:** This would require sound policymaking at the national and sub-national levels in sectors that are core to sustainable development and climate change, such as health, water, energy, agriculture, education, to name a few. In fact, agriculture, water, public health and sanitation, and electricity are subjects under the 'state list' (Indian Constitution) and thus strengthening states and their SAPCCs can play a crucial role here. Cooperative federalism in the form of capacity building initiatives, contextually sound budgetary allocations, sensitization to indigenous needs, and inclusive strategies that involve communities and all strata of society can contribute immensely. Further, competitive federalism, as seen in the form of surveys, such as SDG Index, Composite Water Management Index, School Education Quality Index, and Health Index, can help states in self-assessment and enhancing ambition.

## References

---

- ACT (Action on Climate Today). 2016. Report Regional Dialogue on Financing Climate Resilient Growth in South Asia, Workshop Report, November 2016
- Atteridge, A., M. K. Shrivastava, N. Pahuja, and H. Upadhyay. 2012. Climate policy in India: what shapes international, national and state policy? *AMBIO* 41: 68 -77
- Centre for Policy Research. 2013. State Action Plans on Climate Change in India: Framing, Processes, and Drivers. Details available at [https://cdkn.org/wp-content/uploads/2013/05/SAPCC-Workshop-Report\\_CPR\\_27-April-2013\\_update.pdf](https://cdkn.org/wp-content/uploads/2013/05/SAPCC-Workshop-Report_CPR_27-April-2013_update.pdf)
- Chandrappa, R., U. C. Kulshrestha, and S. Gupta. 2011. Coping with Climate Change: Principles and Asian Context, pp. 213 -224. Berlin: Springer. Details available at <https://doi.org/10.1007/978-3-642-19674-4>
- Dhanapal, G. and A. Panda. 2014. Climate change vulnerability assessment: Gaps and challenges. *Economic & Political Weekly* XLIX (26 and 27)
- Dubash, N. K. and A. Jogesh. 2014. From Margins to Mainstream? Climate Change Planning in India as a 'Door Opener' to a Sustainable Future. New Delhi: Centre for Policy Research
- Dubash, N. K. and A. Jogesh. 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: 247-266
- EPCO (Environment Planning and Coordination Organisation). n.d. Climate Change in Madhya Pradesh: A Compendium of Expert Views-I. Environment Planning and Coordination Organisation
- Gogoi, E. 2017. India's State Action Plans on Climate Change: Towards Meaningful Action. Oxford Policy Management
- Government of Odisha. 2015. Odisha State Action Plan on Climate Change (2015 -2020). Details available at [http://climatechangecellodisha.org/pdf/Odisha\\_SAPCC\\_2016-2020.pdf](http://climatechangecellodisha.org/pdf/Odisha_SAPCC_2016-2020.pdf)
- Harrison, N., S. Muller, V. M. Staden, A. Marques, R. Benioff, A. Kelly, and A. Gardiner. 2014. Integrating National and Subnational Action: Resource Guide. Details available at [https://openei.org/w/images/e/ec/LEDSPG\\_SNI\\_Resource\\_Guide.pdf](https://openei.org/w/images/e/ec/LEDSPG_SNI_Resource_Guide.pdf)
- Jørgensen, K., A. Mishra, and G. Sarangi. 2015. Multilevel climate governance in India: The role of the states in climate action planning and renewable energies. *Journal of Integrative Environmental Sciences* 12: 267-283
- Kumar, V. 2018. Coping with Climate Change: An Analysis of India's State Action Plans on Climate Change, Volume II. New Delhi: Centre for Science and Environment
- Mandal, K., S. Rathi, and V. Venkataramani. 2013. Developing Financing Strategies for Implementing the State Action Plans on Climate Change. Chennai: Centre for Development Finance, IFMR. Details available at [http://uchai.net/pdf/knowledge\\_resources/Publications/Reports/Developing%20Financing%20Strategies%20for%20Implementation%20of%20State%20Action%20Plan%20on%20climate%20change.pdf](http://uchai.net/pdf/knowledge_resources/Publications/Reports/Developing%20Financing%20Strategies%20for%20Implementation%20of%20State%20Action%20Plan%20on%20climate%20change.pdf)
- Ministry of Agriculture & Farmers Welfare. 2019. Pocket Book of Agricultural Statistics. (page 13). Details available at <https://eands.dacnet.nic.in/PDF/Pocket%20Book%202019.pdf>
- Mishra, A., N. Pandey, H. Upadhyay, P. Gupta, and A. Kumar. 2011. Sub-national actions on climate change in India and implications for international collaboration. UNFCCC COP 17



MoEFCC (Ministry of Environment, Forest and Climate Change). 2018. A Common Framework for Revision of State Action Plan on Climate Change. Ministry of Environment, Forest and Climate Change, Government of India

MoSPI (Ministry of Statistics and Programme Implementation). 2020. National Indicator Framework on SDG (2.1), pp. 44 -46. New Delhi: Ministry of Statistics and Programme Implementation. Details available at [http://www.mospi.gov.in/sites/default/files/publication\\_reports/SDGProgressReport2020.pdf](http://www.mospi.gov.in/sites/default/files/publication_reports/SDGProgressReport2020.pdf)

NITI Aayog. 2018a. Meeting with States/UTs: Improving Implementation of SDGs. Details available at <https://niti.gov.in/sites/default/files/2019-01/NITI-Aayog-SDG-Presentation-to-States.pdf>

NITI Aayog. 2018b. Transformation of Aspirational Districts. Details available at <https://niti.gov.in/sites/default/files/2018-12/Transformation-of-AspirationalDistricts-Primer-A-New-India2022.pdf>

NITI Aayog. 2019. SDGs India Index & Dashboard 2019-2020. New Delhi: NITI Aayog

Oliveira, J. A. P. 2009. The implementation of climate related policies at sub-national level: An analysis of three countries. Habitat International 33: 253-259

TERI. 2019. India Summary. Workshop on Strengthening Non-state Climate Action in Global South, 18 -19 September 2019, New Delhi

TERI. 2020. Event on Mainstreaming Development & Enhancing Climate Resilience: New Opportunities for States in India, World Sustainable Development Summit, 29th January 2020