



**SHAKTI
SUSTAINABLE ENERGY
FOUNDATION**



Pre-Read

Leaders for a Developed and Sustainable India (LEADS-India)

April 2024

About Shakti Sustainable Energy Foundation

Shakti Sustainable Energy Foundation is an enabler for clean energy and climate solutions. We work with policymakers, civil society, industry, think tanks, and academia to identify and scale energy system interventions that will reduce GHG emissions and tackle climate change.

We envision a clean and secure energy future for India. Our efforts focus on building high-impact programmes on clean energy solutions in power, industry and transport, and allied outcomes of clean air and climate resilience.



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Shakti Sustainable Energy Foundation

Since 2009, Shakti Sustainable Energy Foundation (Shakti) has been working towards facilitating India's transition to a clean and resilient climate future. It does so by informing the design and development of high-impact programmes that inform policies and implementation at a national and sub-national level. Over the 14 years, Shakti has partnered with over 150 organisations from civil society, think tanks, academic institutions, and other policy ecosystem stakeholders.

To secure clean energy and a resilient climate future for all, Shakti identified three strategic priorities that can aid this transition:

- ***High-impact programmes that ensure the uptake of low-carbon technologies and practices***
- ***Ensuring that climate action integrates with developmental outcomes***
- ***Creation of a proficient CSO ecosystem to inform climate action***

Shakti works on several programmes defined predominantly by energy sectors that include Clean Power, Industry, Buildings and Cooling, Electric Mobility and Climate Policy and Finance. Its key strength lies in identifying high-impact pathways for effective policy and implementation actions aimed at achieving the adoption of low-carbon technologies and practices that can cause significant emissions reductions that are compliant with limiting global warming to 1.5-2° Celsius.

Shakti's programs are meticulously curated to create policy nudges that support large-scale adoption of low-carbon technologies and practices. The programs actively engage in research, technical assistance, communications, and capacity development along with ecosystem partners. These engagements play a crucial role in informing impactful policies. Shakti's past accomplishments stand as a testament to its effectiveness in supporting the policy pathway towards a clean energy future.

Some recent efforts informed by Shakti and its partners are:

- **Green Hydrogen Mission:** In 2021, Shakti and its partners provided technical inputs into the drafting of the National Hydrogen Energy Mission Document, which laid down India's vision and direction for green hydrogen. In 2023, the Indian Government initiated the National Green Hydrogen Mission, targeting a minimum annual green hydrogen production capacity of 5 MMT and adding 125 GW of renewable energy capacity by 2030.
- **Carbon Credit Trading:** Shakti and its partners informed the 2022, amendment of the Energy Conservation Act, 2001 through which the central government sought to establish a carbon trading framework. It is poised to help India in achieving the NDC goal of reducing the Emissions Intensity of the GDP by 45 per cent by 2030 against 2005 levels.
- **Payments Security Mechanism for e-buses:** Shakti and its partners have been working to overcome the challenge of financing the electric bus transition in India through a payment security mechanism for Public Transport Authorities (PTAs). In June 2023, the India-US Government Joint Statement committed to a Payment Security Mechanism (PSM) with a \$150 million grant from the US Government.

2. Leaders for a Developed and Sustainable India (LEADS-India)

The Need

Few efforts try to forge consensus on India's most complex climate challenges. Shakti's efforts with our extensive partner ecosystem in promoting sector-specific clean energy policies and tackling their techno-economic hurdles have led to a critical realization: To accelerate India's climate and clean energy transition, we must confront several structural challenges. They are compounded by geopolitical instability, global conflicts, and the hurdles in establishing effective global collaboration. The hardest challenges that often dampen enthusiasm for climate action are those that are cross-sectoral, institutional, and geopolitical, and compete with other economic, environmental, and social outcomes. However, acknowledging these issues is a crucial step towards devising comprehensive strategies that can overcome these barriers.

Vision and Mission

LEADS-India has been envisioned as a transformative platform aimed at surmounting the complex and overarching challenges facing climate mitigation and adaptation in India. By bringing climate considerations integrally into India's development strategy, it aspires to find climate solutions that promote economic growth and balance equitable and inclusive social development while preserving the environment and ecology.

The LEADS-India platform does so by bringing together the foremost climate and development leaders from diverse stakeholder groups. Together, they identify critical challenges and guide research toward pragmatic solutions through thoughtful deliberation and collaboration. This collective effort is designed to outline policy recommendations and actionable steps for implementation.

By addressing these needs, it seeks to create an enabling environment for the adoption of alternative approaches to climate action planning. This endeavour is not just about overcoming today's challenges but about shaping a future where clean energy and climate resilience are at the heart of India's growth. By fostering collaboration and driving actionable solutions, LEADS-India embodies the spirit of optimism, envisioning a future where sustainable practices lead to inclusive and equitable growth for all.

Strategies

Below is a detailed overview of the platform's core strategies, illustrating its efforts to facilitate real-world outcomes in the realms of climate action and clean energy.

1. **Identifying Key Challenges:** LEADS-India prioritizes the identification of critical challenges within the climate action and clean energy sectors. By pinpointing specific barriers that, once overcome, could unlock significant benefits, the platform sets the stage for targeted interventions. This strategic focus ensures that efforts are concentrated on areas where breakthroughs can catalyse substantial progress towards sustainability and resilience.

2. **Undertaking Research:** Central to LEADS-India's approach is the commitment to rigorous research that explores alternative pathways for addressing identified challenges. This research is conducted under the stewardship of LEADS-India members, alongside external experts, and leading research organizations. Emphasizing a collaborative and consultative process, the platform ensures that research activities incorporate broad stakeholder engagement, fostering inclusivity and ensuring that diverse perspectives are considered. This methodological rigour and collaborative ethos enhance the relevance, credibility, and impact of the research findings.

3. **Dissemination of Research:** The outputs of the research are disseminated through a variety of channels and formats, tailored to reach key audiences.
 - a. **Research reports:** These provide in-depth insights into the problem, the analysis and recommendations, serving as comprehensive resources for stakeholders across sectors.
 - b. **Communiqués:** These translate research findings into actionable policy recommendations, facilitating evidence-based policymaking.
 - c. **Consensus Statements:** Created on an ad hoc basis, where necessary and opportune. These synthesise key points of agreement among stakeholders, highlighting unified positions and recommendations.
 - d. **Individual Actions (voluntary):** LEADS-India member can also disseminate recommendations through individual actions, such as through the publication of opinion pieces, or lending their voice and expertise in public forums.

By systematically identifying challenges, undertaking collaborative research, and strategically disseminating findings, LEADS-India aims to drive meaningful change. This strategic dissemination ensures that research outcomes are not only widely accessible but also actionable, guiding decision-making and policy formulation towards effective climate action and clean energy solutions.

3. Selection of Research Topics and Exploratory Notes

Selection of Research Topics for 2024

The selection of research topics for this year will be determined through a process of deliberation at our inaugural meeting.

The Exploratory Notes

The three exploratory notes are included in this pre-read:

1. India's Low Carbon Technology (LCT) Manufacturing Sector
2. Indian Agriculture and Climate Change
3. Decentralising Climate Governance in India

These notes are meant to illustrate the nature of topics that the LEADS-India platform could explore in its endeavour and to spark thoughts and discussion. While these notes serve as a guide for discussion, there is no obligation to undertake them.

Your contribution

We encourage each member to consider important questions of nature the LEADS-India Platform could address, on similar lines to the exploratory notes shared in this pre-read. We shall discuss them at the inaugural meeting, and shortlist ideas through a deliberative process. We are also open to receiving inputs in writing, if it may be convenient.

3.1 India's Low Carbon Technology (LCT) Manufacturing Sector

Achieving ambitious climate goals and economic aspirations hinges on embracing Low Carbon Technologies (LCTs) across renewable energy production and end-use sectors such as in electric vehicles (EVs). This brief explores challenges hindering India's LCT manufacturing sector, which includes manufacturing capacity for solar cells, wind turbines, EV battery cells, and motors. It delves into India's strategic responses, and existing policies, and explores the dynamics of the global LCT market impacting India's ambitions.

The rise of renewable energy (RE) and EVs is paramount in the fight against climate change. India's growing demand for LCTs is driven by both policy incentives and its commitment to the Paris Agreement. India has committed to achieve 500 GW of installed electricity capacity from non-fossil sources by 2030¹. It is a participant in the Clean Energy Ministerial's EV30by30 Campaign² which aims to electrify 30% of vehicle sales by 2030. This translates to a significant demand for LCTs in India.

India's LCT component manufacturing is at a nascent stage. India has achieved 50 GW of solar module production capacity, and 6 GW of solar cell capacity³. It has a 10-12 GW wind manufacturing capacity, which is predominantly sub 2 MW turbines, compared to the larger 6 MW turbines produced outside India. Larger turbines are better suited for the 37 GW of offshore wind projects India plans to award by 2030^{4,5}. Battery cell manufacturing capacity is at a nascent stage, with projects from PLI and non-PLI in the process of being set up⁶.

India's pursuit of self-reliance, particularly through the "Make in India" initiative, represents a crucial step towards establishing a domestic LCT manufacturing base. In 2021, the government introduced the Production Linked Incentive (PLI) for solar (Rs. 24,000 crores)⁷ and advanced chemistry battery cells (18,100 crores)⁸ along with six other sectors to incentivize local production. Additionally, policies like the Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME India) Scheme for EVs included localisation clauses. India also has high import tariffs on LCT products to protect and nurture a nascent industry.

While the "Make in India" scheme offers promise, its execution faces some old systemic challenges and new challenges of concentrated supply chains. Indian manufacturing has traditionally not been competitive due to the high cost of power, finance, and logistics, limited

¹ PIB. (2022, February 3). India's Stand at COP-26. <https://pib.gov.in/PressReleasePage.aspx?PRID=1795071#>

² Clean Energy Ministerial. (2019). EV30@30 Campaign.

³ PIB. (2024, February 7). India has achieved self-sufficiency in production of solar modules; <https://pib.gov.in/PressReleasePage.aspx?PRID=2003548>

⁴ GWEC. (2023). From local wind power to global export hub. <https://gwec.net/wp-content/uploads/2023/08/GWEC-India-Outlook-Aug-2023-1.pdf>

⁵ Power minister warns wind energy equipment makers against preferring exports over domestic market. (2023, May 25). Livemint. <https://www.livemint.com/industry/energy/power-minister-warns-wind-energy-equipment-makers-against-prefering-exports-over-domestic-market-11685027787056.html>

⁶ India's battery manufacturing capacity seen at 110-120 GWh by 2027-28, says Heavy Ind Secy. (2024, February 26). Autocar Professional.

⁷ MNRE. (2021). Production Linked Incentive Scheme "National Programme on High Efficiency Solar PV Modules." Government of India (GoI). <https://mnre.gov.in/production-linked-incentive-pli/>

⁸ MHI. (2021). PLI Scheme for National Programme on Advanced Chemistry Cell (ACC) Battery Storage. <https://heavyindustries.gov.in/pli-scheme-national-programme-advanced-chemistry-cell-acc-battery-storage>

skills and R&D and regulatory compliance costs. Green Energy Open Access Regulations, and a large national logistics infrastructure push (PM GATI Shakti) program are moving in the right direction, however, regulatory reforms, skill building, and low R&D investments continue to burden the Indian industry.

The global oversupply has led to historic price drops, potentially making Indian (and global) LCTs less competitive⁹. India and the world are largely dependent on imports from China for its LCT components, raising concerns about energy security. China's dominance in LCT manufacturing stems from decades of strategic planning, substantial subsidies, and clear policy direction. This dominance translates into control over a significant portion of the global supply chain, including critical raw materials and influences global LCT prices. A recent report by IEA¹⁰ indicates that the global production capacity of solar and batteries now exceeds demand, and suggests that 2030 requirements can be met with existing and committed capacity increases. Only global manufacturing capacity for wind and heat pumps lags behind demand.

Trade and investments from advanced economies have begun to prefer countries with democratic values and respect for ESG¹¹. The US and Europe have raised concerns around “forced labour” and overcapacity to redirect supply from China toward aligned countries like India¹². The global market's current dynamics, including price volatilities and geopolitical tensions over labour practices and supply chain dominance, necessitate a strategic recalibration for India, its firms¹³ and perhaps the democratic world as a whole¹⁴.

India and its industry must carefully navigate this complex landscape. It must respond to global geo-political concerns around undemocratic countries and the reconfigurations in global trade and FDI toward ESG principles. It must foster collaborations on these common principles, enhance India's competitiveness on ESG and thereby ensure energy security. Simultaneously, it must identify opportunities, such as manufacturing for off-shore wind where global capacities are low. It must leverage its policy initiatives to improve competitiveness, invest in indigenous R&D – such as new materials required in LCTs, and diversify its import sources.

Research Questions

1. **Subsidization and Protectionism:** *How can India balance nurturing its domestic LCT industry with subsidies while avoiding the pitfalls of protectionism?*
2. **Investment Focus Areas:** *Where should India strategically allocate investments to capitalize on its competitive advantages, especially in sectors less dominated by global oversupply?*
3. **International Strategies:** *What strategies can be employed to reduce dependency on single-source imports, particularly for critical minerals and components?*
4. **Long-term policy direction:** *What forms of policies can provide long-term policy stability?*

⁹ Kalpana Pathak. (2024, March 6). Solar module PLI: Green companies want solar module PLI deadline extended. The Economic Times.

¹⁰ IEA. (2023). The State of Clean Technology Manufacturing: An Energy Technology Perspectives Special Briefing.

¹¹ Seong, J., White, O., Birshan, M., Woetzel, L., Lamanna, C., Condon, J., & Devesa, T. (2024). Geopolitics and the geometry of global trade (Issue January). <https://www.mckinsey.com/mgi/our-research/geopolitics-and-the-geometry-of-global-trade>

¹² Hussein, F., & Moritsugu, K. (2024, April 8). US will push China to change policy that threatens American jobs, Yellen says. AP News.

¹³ Shah, A. (2024, April 1). Firms in a tough global environment. Business Standard.

¹⁴ Shah, A. (2024, January 22). The reconfiguration of global trade and FDI. Business Standard. https://www.mayin.org/ajayshah/MEDIA/2024/3rdglob_reconfiguration.html

3.2 Indian Agriculture and Climate Change

The reform of Indian agriculture is an environmental and socio-economic necessity. Timely and effective reforms are essential for enhancing climate resilience, promoting environmental sustainability, and ensuring rural prosperity. This issue brief underscores the urgency of integrated solutions and collaborative efforts to address the challenges facing Indian agriculture.

Agriculture in India is both a victim and a contributor to climate change. It employs over 50% of the population, contributes significantly to the GDP, and serves as a critical source of food security. However, the sector faces unprecedented challenges from climate change, necessitating urgent reforms to safeguard and enhance rural livelihoods, ensure environmental sustainability, and build climate resilience. It accounts for a large part of the 6% GHG emissions from the AFOLU sector¹⁵. Methane emissions from rice paddies and livestock, along with nitrous oxide from fertilizer use and crop burning, are primary contributors. Projections indicate a potential increase in emissions by 2050, underlining the need for immediate action to adopt more sustainable practices.

Farmers in India face numerous challenges that hinder their income and ability to adapt to climate change. When prices for inputs and outputs are set by the market, farmers can receive sufficient information and feedback to gradually adapt to the changing climate¹⁶. However, with prices determined by government policy, this adaptation is hindered. The primary public policy challenge in the past has been to address the high price volatility in agriculture. At times of high food prices consumers protest, and when prices are low, farmers are in distress. The policy response to control prices on the input side has been to subsidise power, water and fertilizer, and on outputs to create a monopsony within states in the form of APMCs, minimum support prices for certain crops, and import-export restrictions.

The limited access to domestic¹⁷ and international markets and market instruments, fragmented land holdings, inadequate storage facilities, and artificial price controls significantly impact farmer earnings¹⁸. Frequent import-export restrictions, to reduce inflation have further exacerbated these challenges¹⁹. This necessitates comprehensive policy reforms to ensure equitable and sustained income for farmers²⁰.

The interdependence of food production, water resources, and energy use forms a critical nexus in India. Subsidies for power have led to inefficient water usage and contributed to the

¹⁵ GHG Platform India. (2024). *AFOLU Sector - GHG Platform India*. <https://www.ghgplatform-india.org/afolu-sector/>

¹⁶ Nelson, G. C., Rosegrant, M. W., Koo, J., Robertson, R., Sulser, T., Zhu, T., Ringler, C., Msangi, S., Palazzo, A., Batka, M., Magalhaes, M., Valmonte-Santos, R., Ewing, M., & Lee, D. (2009). *Climate Change: Impact on Agriculture and Costs of Adaptation*. <https://doi.org/10.2499/0896295354>

¹⁷ Burman, A., Patnaik, I., Roy, S., & Shah, A. (2018). *Diagnosing and overcoming sustained food price volatility: Enabling a National Market for Food*.

¹⁸ Kumar, A., Singh, K.M., & Sinha, S. (2020). *Structural challenges and reforms in Indian agriculture: Analysis and policy recommendations*. *Journal of Agricultural Economics*, 71(3), 456-476.

¹⁹ Gulati, A., Das, R., Gupta, S., & Prasad, M. K. (2023). *Tackling Food Inflation Is Restricting Exports and Imposing Stocking Limits the Optimal Policy?* *Economic and Political Weekly*, 58(44), 37-42.

²⁰ Saini, S., & Gulati, A. (2017). *Price distortions in Indian agriculture*.

over-extraction of groundwater²¹, while fertilizer subsidies have led to the overuse of fertilizers, soil degradation and support to inefficient fertilizer plants. Severe groundwater depletion, polluted water bodies, and damaged soils have exacerbated the agricultural sector's environmental footprint. These subsidies have encouraged the cultivation of water-intensive crops in unsuitable regions, leading to distorted market signals, unsustainable agricultural practices, financial burdens on DISCOMs and crop burning²². Similarly, Minimum Support Price policies, while aiming to provide income security for farmers by guaranteeing prices for certain crops, have inadvertently encouraged the cultivation of water-intensive and emission-heavy crops like rice and wheat, regardless of local agro-climatic suitability. This misalignment exacerbates water scarcity, degrades soil health, and increases methane emissions from rice paddies²³.

The combination of these policies has created a cycle of resource-intensive farming. It contributes to climate change while undermining the sector's long-term sustainability. Challenges such as groundwater overuse and energy-intensive farming practices highlight the urgent need for integrated solutions that consider the nexus's interconnectedness.

To address the multifaceted challenges, a holistic approach combining agricultural practice reforms, policy adjustments, and technological innovations is essential. Sustainable agricultural practices, such as precision farming, crop diversification, and organic farming, can significantly reduce emissions and improve soil health. Policy reforms aimed at improving market access, rationalizing subsidies, and enhancing land ownership rights are crucial. Technological innovations, including digital agriculture and water-saving irrigation technologies, offer promising avenues to enhance productivity and sustainability.

Implementing these solutions faces considerable barriers. As with all transitions that create winners and losers, recent attempts at reforms have witnessed political resistance, financial constraints, and social acceptability issues. Engaging stakeholders at all levels, ensuring policy coherence, and investing in capacity-building and technology transfer are vital for overcoming these hurdles.

Research Questions

1. *How can India's agricultural sector adapt to changing climate conditions while minimizing greenhouse gas emissions?*
2. *Can sustainable agricultural technologies and practices be adopted in the absence of structural reforms?*
3. *How can policy reforms more effectively address the specific needs of small and marginal farmers?*
4. *What are the most effective strategies for adopting reforms that promote sustainable agriculture, water, and energy efficiency within the agricultural sector?*

²¹ Scott, C. A., & Sharma, B. (2009). Energy supply and the expansion of groundwater irrigation in the Indus-Ganges Basin. *International Journal of River Basin Management*, 7(2), 119–124. <https://doi.org/10.1080/15715124.2009.9635374>

²² Jain, M., Singh, B., & Malhotra, K. (2020). Assessing the environmental impacts of agricultural subsidies and energy policies: A case study of India. *Environmental Research Letters*, 15(4), 043002

²³ Gulati, A., & Saini, S. (2020). Indian Agriculture: 2020 Vision. *Economic and Political Weekly*, 55(19), 38-43.

3.3 Decentralising Climate Governance in India

India's climate governance architecture is predominantly centralized, with the central government orchestrating international climate commitments and shaping domestic climate actions through the Ministry of Environment, Forest, and Climate Change (MoEFCC), the National Action Plan on Climate Change (NAPCC), and various programs across ministries such as Power, Renewable Energy, and Transport. While the central government spearheads major mitigation efforts, state governments focus on identifying necessary adaptation strategies to manage emerging climate risks²⁴.

The Challenge: India's existing governance model promotes a top-down approach, ensuring a degree of national uniformity and coordination. However, this model often fails to account for the diverse geographical and socio-economic landscapes across India's regions, impacting their capability to implement mitigation and adaptation measures effectively. The challenge is compounded by the dynamics of climate migration, in which source and receiving local governments will have to be far more responsive²⁵. The principle of subsidiarity suggests that the devolution of planning to local levels of government is desirable to improve the efficiency of outcomes²⁶. This disconnect highlights several challenges: mismatches between national policies and local needs, underutilization of local climate knowledge, and inadequate support for community-based initiatives. There is a growing consensus on the necessity for a decentralized governance framework that empowers local entities, ensuring they have the autonomy to enact tailored, effective climate strategies while remaining aligned with national objectives through robust coordination and support mechanisms²⁷.

Addressing Key Issues:

1. Appreciating Diverse Regional Needs and Opportunities:
 - *Indicators for Regional Opportunities:* Crafting indicators to assess each region's potential for renewable energy, carbon sequestration, and other climate-positive activities, enabling targeted investments for maximal environmental and socio-economic returns²⁸.
 - *Regional Adaptation Frameworks:* Developing comprehensive indicators to understand each region's climate vulnerability and resilience, reflecting their unique challenges and capacities for climate action.
 - *Leveraging Local Knowledge:* Employing indicators to integrate and highlight the value of traditional and indigenous knowledge in augmenting scientific climate strategies.

²⁴ Handbook of Climate Change and India: Development, Politics and Governance.

²⁵ Garg, R., Basu, J., Bengal, W., Joshi, H., Vashist, S., Das, R., & Shandilya, N. (2021). Climate-Induced Displacement and Migration in India. www.cansouthasia.net

²⁶ Hayek, F. (1948). Individualism and Economic Order. The University Of Chicago Press.

²⁷ Keruwala, N., Karmarkar, R. (2023). Decentralizing Climate Action In India—Lessons From Global Practices. In: Shrivastava, A., Bhusan, A. (eds) Sustainable Boardrooms. Responsible Leadership and Sustainable Management. Springer, Singapore. https://doi.org/10.1007/978-981-99-4837-6_5

²⁸ Majumder, S., Kayal, P., Chowdhury, I. R., & Das, S. (2023). Regional disparities and development in India: evidence from Wroclow Taxonomy and K-means clustering. In *GeoJournal* (Vol. 88, Issue 3). Springer Netherlands. <https://doi.org/10.1007/s10708-022-10805-2>

2. Refining Decentralised Governance Aligned with National Goals:
 - *Restructuring Hierarchical Models*: Modifying governance structures to enhance local autonomy in climate decision-making, ensuring congruence with overarching national objectives²⁹.
 - *Legislative and Policy Empowerment*: Enacting reforms to provide local and state governments with the necessary authority and resources for customized climate action.
 - *Promoting Intergovernmental Collaboration*: Establishing mechanisms to bolster local governments' capacities for comprehensive climate mitigation and adaptation.

3. Creating Enabling Conditions for Localised Solutions:
 - *Financial and Technical Assistance*: Mobilising both state and private sector contributions to offer financial and technical support for localized climate solutions, fostering innovation and sustainability³⁰.
 - *Policy and Regulatory Support*: Crafting policies and regulations that facilitate place-based climate initiatives, facilitate migrants, and include incentives for clean energy and sustainable practices³¹.
 - *Fostering Public-Private Partnerships*: Leveraging the strengths of public oversight and private sector innovation through PPPs in critical areas like renewable energy, waste management, and climate-resilient infrastructure.

The transition towards a more decentralised approach in climate governance demands a nuanced understanding of regional diversities, an adaptable governance model, and the establishment of supportive conditions for localized climate action. By addressing these three pivotal areas, India can harness its regional capacities more effectively, fostering innovation, inclusivity, and resilience in its climate governance framework, ultimately leading to more sustainable and impactful climate action across the nation.

Research Questions

1. How can decentralized governance facilitate the integration of climate mitigation and adaptation strategies at the local level?
2. What mechanisms (such as indicators) are necessary to ensure effective coordination between national policies and local action in the realms of climate mitigation and adaptation?
3. How can local governments be empowered to mobilize resources for climate action, especially mitigation efforts?
4. What examples of successful decentralized climate governance, focusing on both mitigation and adaptation, can provide models for India?
5. What frameworks can help create enabling conditions for localised solutions?

²⁹ Pillai, A. V., & Dubash, N. (2021). Compensatory climate governance in Indian federalism. April, 1–21. [https://www.cprindia.org/system/tdf/policy-briefs/Pillai and Dubash 2021_Compensatory climate governance in Indian federalism.pdf?file=1&type=node&id=9626&force=1](https://www.cprindia.org/system/tdf/policy-briefs/Pillai%20and%20Dubash%202021_Compensatory%20climate%20governance%20in%20Indian%20federalism.pdf?file=1&type=node&id=9626&force=1)

³⁰ Milica Apostolovic (AECOM), Emily Le Cornu (AECOM), Eyerusalem Masale (CPI), Rebecca Maskrey (AECOM), Nina Schuler (AECOM), & Renard Teipelke (AECOM). (2023). Improving Local Enabling Conditions for Private Sector Climate Investments in Cities. <https://www.climatepolicyinitiative.org/wp-content/uploads/2023/06/Improving-Local-Enabling-Conditions-for-Private-Sector-Climate-Investments-in-Cities.pdf>

³¹ Rhea Cordeiro, Gogoi, E., & Vyas, D. P. (2023). Scoping Study for a Cities Climate Change Programme.