

# Addressing Climate Change through Local Governments

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**Abstract:** *Governments are actively encouraging citizen-driven climate action programmes to bolster societal fortitude in response to climate change. This heightened public engagement may require local authorities to adapt their roles. Whilst the scale of governmental involvement might not decrease, a transformation in operational approach could be necessary. This transformation would entail transitioning from a prescriptive and regulatory approach to a more adaptable and cooperative stance that encourages and supports self-directed, community-driven endeavours. By entrusting citizens with responsibility, significant obstacles to implementing adaptive measures could be surmounted. These hurdles include constrained resources and capabilities, institutional fragmentation and uncertainty, overburdened institutions, and institutional gaps. In the past, actions to address climate change were primarily led by worldwide and country-level programmes focused on lowering greenhouse gas output, organised under the United Nations Agreement. However, there has been increasing acknowledgement of the importance of redirecting attention to local causes and effects of climate change, which has gained substantial momentum.*

**Keywords:** Climate Change, Local Self Government, Adaption Tool Kits, Shared Learning Dialogues, Community Resilience

## 1. Introduction

In India, local governance is managed by panchayats and municipalities, deriving authority from the 73rd and 74th constitutional amendments. These bodies supervise development projects and manage natural and human-induced disasters. The Panchayati Raj system ensures disadvantaged groups are represented at the village, block, and district levels. Effective governance through these institutions can significantly reduce poverty. Studies show panchayats assist in disaster management by rebuilding homes, protecting crops, overseeing animal care, and enforcing health and hygiene standards. Panchayat officials also organise medical camps, assist in rescue operations, and provide temporary shelter during disasters (Mondal et al., 2018). As climate change impacts are predominantly felt at the local level and requirements are heavily influenced by local conditions, there is an increasing recognition that climate adaptation should be a locally-managed responsibility. The UNDP stresses the localised nature of climate adaptation, urging local authorities to make adaptation initiatives a priority and develop area-specific strategies and action plans (UNDP, 2021; UNDP, 2023). Likewise, the EU's Strategy on Adaptation to Climate Change highlights the importance of climate adaptation at the local scale (European Commission, 2021). The GCA places significant emphasis on locally-driven adaptation, with the aim of shifting authority to local stakeholders (OECD, 2023).

At COP21, India became a signatory to the Paris Agreement, pledging to decrease its GDP's emission intensity by 33-35% by 2030. Additionally, the nation committed to increasing the proportion of electricity generated from non-fossil fuel sources. From a global perspective on mitigating climate change, this transition is crucial to reduce greenhouse gas emissions and prevent climate-related disasters (Pai et al., 2023). The Paris Agreement aims to keep the global temperature increase this century under 2 °C above pre-industrial levels. Efforts are ongoing to restrict the rise to 1.5 °C (IPCC, 2018) by reducing Greenhouse Gas (GHG)

emissions from fossil fuels. Besides mitigating GHGs, it is essential to develop resilient societies. If current GHG emission rates continue, global warming is expected to reach 1.5 °C between 2030 and 2052 (IPCC, 2018), leaving only 0.5 °C before reaching the 2 °C threshold (Heath et al., 2020).

## 2. Climate Change and Decentralised Approaches

In various Western countries, the rise of New Public Governance has sparked novel governance strategies, including joint ingenuity networks and the involvement of citizens in co-producing services. These strategies aim to address budgetary constraints and complex societal challenges. Citizens are now conceptualised as empowered individuals possessing valuable assets that can enhance their communities' resilience. This concept has been promulgated through programmes such as the "Big Society" initiative in the UK and the "Participation Society" agenda in the Netherlands (Mees et al., 2019). Municipal authorities implement specific adaptation strategies and policies at the local level, particularly in flood management and urban heat mitigation. To effectively distribute responsibilities, maximise resources, and identify low-risk measures, it is crucial to engage businesses and citizens. This engagement may help overcome adaptation challenges, including misaligned timelines, strategic and institutional uncertainties, overcrowded or absent institutional frameworks, disjointed efforts, insufficient awareness and communication, varying motivations and readiness to act, and resource scarcity (Hegger et al., 2017).

Australia established a National Climate Adaptation Framework and launched its Local Adaptation Pathways Programme (LAPP). This initiative offered funding to municipal authorities for the development of localised climate risk evaluations and adaptation strategies (Baker et al., 2012). The growing involvement of local governments in environmental matters has led to their recognition as crucial players in global environmental governance. This stems from

the significant impact of municipal transnational networks on climate action. These networks have expanded since the early 1990s, with estimates suggesting at least twenty-eight such networks exist in Europe alone. A prominent example is the International Council for Local Environmental Initiatives (ICLEI), established in 1990 and based in Toronto. ICLEI functions as a worldwide association of local governments and their organizations, committed to sustainable development. The council offers assistance to local authorities, while facilitating knowledge exchange amongst members (Selin & VanDeveer, 2009).

In US, Portland, Oregon, was the first municipality to implement legislation aimed at reducing carbon dioxide emissions, mandate that city-owned buildings adhere to third-party requirements. In California, San Francisco requires new large commercial construction, significant alterations, new residential construction, major modifications, and new municipal projects, including additions and alterations, to comply with city green building standards aligned with LEED and Green Point Rated systems. These frameworks document sustainable, energy-efficient practices and assess a building's energy-related performance across categories. Examples include the Leadership in Energy and Environmental Design (LEED) by the U.S. Green Building Council (USGBC), the National Green Building Standards by the National Association of Home Builders, and the Green Point Rated System for residential developments in California. (McArdle, 2016).

The provincial government of Albay, Philippines has implemented an innovative approach to advancing climate change adaptation within the province and nation. In October 2007, they initiated the country's first "National Conference on Climate Change Adaptation (NCCCA)". In 2008, Albay's government established the "Center for Initiatives and Research on Climate Adaptation" (CIRCA) in collaboration with the Environment Management Bureau (EMB), World Agroforestry Centre (ICRAF), and Bicol University (BU). CIRCA aims to enhance research capabilities and implement projects in sustainable agriculture, forestry, fisheries, energy, and eco-cultural tourism, taking into consideration the impacts of climate change. The primary objective of CIRCA is to improve the resilience of Albay residents and Filipinos in addressing climate-related risks resulting from a changing climate (Rangasa et al., 2008).

### 3. Indian Scenario

The Gram Panchayat serves as the village's foundational governing body, akin to a local cabinet. Its democratically chosen members wield considerable authority over the community. Academic institutions have collaborated with Gram Panchayats on rural development initiatives. However, this approach must evolve into a structured, sustainable model. Leveraging government policies to cultivate village-level climate change advocates necessitates multifaceted engagement, fostering a human-centric development approach. Addressing climate change adaptation requires a robust, action-oriented strategy involving multiple stakeholders and a collaborative methodology (Mehta et al., 2024).

With over half the global population residing in urban areas, future city management will play a crucial role in determining worldwide carbon emissions. Nations like India and various Asian and African countries face the challenge of implementing international frameworks to reduce urban carbon emissions while experiencing rapid population growth, urbanisation, and economic development. While it's acknowledged that cities contribute to climate change, there is limited empirical evidence regarding their specific contributions and appropriate models for mitigating greenhouse gas emissions (Sethi & Mohapatra, 2013). Research conducted in four villages - Aurepalle and Dokur in Mahabubnagar, Andhra Pradesh, and Shirapur in Sholapur and Kanzara in Akola, Maharashtra; revealed that climate variability is a significant issue for farmers. The agricultural community has observed changes in climate patterns for approximately two decades, with these alterations becoming more pronounced in recent years. Farmers perceive extreme weather events, such as extended dry periods or unexpected floods, as indicators of this variability. Consequently, many conclude that agriculture is becoming less economically viable as a livelihood option. Despite these challenges, farmers have developed long-term adaptation strategies to mitigate the effects of climate uncertainty. These individual efforts are complemented by institutional and community-level adaptations, which play a crucial role in preventing farmers from resorting to asset liquidation during adverse circumstances (Banerjee et al., 2013).

### 4. Challenges Faced by Local Governments

Rural local institutions play a pivotal role in climate adaptation. These institutions influence how households are affected by climate change, shape their adaptive capacity, and facilitate external interventions. The extent to which households and social groups can access institutions and their resources significantly influences their ability to adapt effectively. Development strategies and institutional interventions that focus on enhancing overall benefits for impoverished households, without considering how they can manage livelihood fluctuations, are insufficient in addressing climate change impacts. This insufficiency stems from two factors. Firstly, such approaches disregard a fundamental aspect of climate-related stresses: increased vulnerability of livelihoods due to climate change impacts. Secondly, they fail to acknowledge the legitimate concerns of rural poor populations regarding the prevention of famine and extreme poverty (Agrawal, 2008).

Various institutions, including public, civic, and private entities, struggle to adjust to potential future challenges related to climate change. In particular, community-based civic organisations in Maharashtra villages faced obstacles stemming from a lack of collective will and action. This deficiency impedes their ability to negotiate better market prices and explore alternative livelihoods (Banerjee et al., 2013). In India, numerous local government entities are currently experiencing substantial deficiencies in infrastructure and services. Consequently, these entities do not prioritise climate change adaptation or consider it within their purview. Nonetheless, these authorities may become more engaged if they can identify the mutual benefits between

adaptation strategies and initiatives addressing development and environmental health issues (Sharma & Tomar, 2010).

## 5. Conclusion

Acknowledging the significance of regional growth, numerous investigations are essential to provide comprehensive guidance for decision-makers. Establishing a novel sustainability initiative—be it home insulation programmes in less affluent areas, photovoltaic installations, electric vehicle infrastructure, neighbourhood heat and flood resilience projects, or eco-friendly infrastructure—will necessitate collaboration between community groups, businesses, and governmental bodies. However, climate-related cooperation introduces typical collaborative effort challenges.

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