



The role of citizen activism in climate change protection in West Bengal

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Abstract

The impacts of climate change are becoming more noticeable in the ecologically fragile regions of West Bengal, particularly in the Darjeeling hills and the Sundarbans delta. These geographically distinct regions face unique yet interconnected climate challenges ranging from glacial retreat, erratic rainfall, and landslides in the hills to rising sea levels, salinity intrusion, and increased frequency of cyclones in the Sundarbans. While governmental and institutional responses have often been slow or insufficient, citizen activism has emerged as a vital force in promoting local resilience and environmental justice. In the hills, grassroots organizations and youth groups have taken initiatives to promote sustainable agriculture, prevent deforestation, and raise awareness on climate education. In the Sundarbans, community-based networks have organized mangrove replantation drives, disaster preparedness training, and advocacy for climate-resilient infrastructure. These efforts have often operated in the absence of or in response to inadequate governmental intervention, showcasing the power of local knowledge and community participation. Citizen activism has also leveraged digital tools and social media to amplify voices from marginalized communities, pressuring policymakers to prioritize climate adaptation and mitigation measures. Despite limited resources, these local movements have created replicable models of environmental stewardship and resilience. This paper explores the evolving landscape of citizen-led environmental activism in these two regions, examining how localized initiatives are responding to global environmental threats. It highlights the ways in which grassroots movements are not only filling governance gaps but also fostering a deeper sense of environmental responsibility among residents. By documenting and analyzing these efforts, this study aims to underscore the importance of bottom-up climate governance and advocate for stronger policy support and recognition for community-driven solutions.

Keywords: Climate change, citizen activism, West Bengal, Darjeeling Hills, Sundarbans, community participation, local knowledge, resilience, grassroots movements

Introduction

In the twenty-first century, one of the most crucial worldwide issues is climate change, with localized effects that disproportionately impact ecologically sensitive and economically vulnerable regions. In the Indian state of West Bengal, the Darjeeling hills in the north and the Sundarbans delta in the south represent two such critical ecological zones, each grappling with unique climate-related threats. The Darjeeling hills are witnessing shifting weather patterns, erratic rainfall, increasing instances of landslides, and loss of biodiversity, while the Sundarbans: one of the world's largest mangrove ecosystems and a UNESCO World Heritage site. faces rising sea levels, frequent cyclones, salinity intrusion, and loss of livelihoods for its predominantly rural population. While national and state-level policies have aimed to address climate adaptation and environmental conservation, the scale and urgency of the crisis often outpace institutional responses. In this context, citizen activism has become a powerful and necessary driver of change. Communities, local NGOs, youth organizations, and individual activists are stepping forward to advocate for environmental protection, promote sustainable practices, and build local resilience. Their efforts range from community-led mangrove restoration in the Sundarbans to awareness campaigns and afforestation drives in the Darjeeling hills. This paper explores the evolving landscape of citizen-led environmental activism in these two regions, examining how localized initiatives are responding to global environmental threats. It highlights the ways in which grassroots movements are not only filling governance gaps

but also fostering a deeper sense of environmental responsibility among residents. By documenting and analyzing these efforts, this study aims to underscore the importance of bottom-up climate governance and advocate for stronger policy support and recognition for community-driven solutions.

Pillars of Citizen-Led Climate Action

Citizen-led climate action in West Bengal is a crucial and evolving movement, centered on empowering communities to address climate change. The initiatives and efforts on the ground can be broadly categorized into three key pillars. These pillars reflect a holistic approach that combines grassroots efforts with strategic partnerships and policy advocacy.

1. Community Mobilization and Awareness

This pillar is about building a strong, informed, and motivated base of citizens who understand climate risks and are willing to take action. This is the foundation of any citizen-led movement, focusing on education and behavioural change.

- **Awareness Campaigns:** Organizations like the SwitchON Foundation lead initiatives such as the 'Move for Earth' movement, a cycle yatra across the state to raise public awareness about the climate crisis. They use a variety of media, including street art and puppet shows, to engage people from all walks of life.

- **Youth and Student Engagement:** The youth are a key demographic for climate action. Programs like the Clean Air Sustainable Cities (CASC) initiative empower students through workshops and projects, training them to use air quality monitors and advocate for clean air in their communities.
- **Knowledge Dissemination:** Creating accessible resources is vital. For example, some initiatives are working on a Bengali climate glossary to help people better understand complex climate-related issues and solutions in their native language, facilitating more informed discussions.

2. Grassroots Implementation and Adaptation

This pillar focuses on tangible projects and on-the-ground actions that help communities mitigate climate change and adapt to its impacts. These initiatives often leverage local knowledge and resources to create sustainable solutions.

- **Sustainable Agriculture and Livelihoods:** In rural areas, citizen-led action involves adopting climate-smart farming practices. A good example is the promotion of solar-powered pumps for irrigation, which reduces reliance on fossil fuels and lowers electricity bills for farmers.
- **Water Management and Conservation:** In regions like the tea gardens of North Bengal, community-led action plans are being developed to address water scarcity exacerbated by climate change. These projects train local individuals, including women, as barefoot hydrogeologists to identify and implement water conservation measures.
- **Urban Greenery and Waste Management:** In cities like Kolkata, citizens and NGOs are actively involved in waste segregation drives and campaigns to reclaim and restore urban green spaces. These efforts help minimize the urban heat island effect, improve air quality, and enhance biodiversity.

3. Advocacy and Policy Influence

This pillar is about ensuring that citizen voices are heard in the halls of power. It involves citizens and civil society organizations working with or influencing government bodies to adopt more ambitious and effective climate policies.

- **Policy Dialogue:** Citizens' groups and civil society organizations are often involved in consultations for major climate policy documents, such as the Kolkata Climate Action Plan (KCAP). They provide crucial feedback and push for inclusive, evidence-based solutions that prioritize the most vulnerable populations.
- **Accountability and Transparency:** Organizations like the Kolkata Clean Air (KCA) network advocate for transparent data collection and policy implementation. They work to hold government and industry accountable for their climate commitments and push for stricter regulations on pollution and emissions.

- **Cross-Sectoral Collaboration:** Citizen-led advocacy often involves building platforms that bring together different stakeholders—including government officials, experts, and private sector representatives—to work together on climate-related challenges. This collaboration is key to creating synergy between government programs and grassroots efforts.

The Role of Non-Governmental Organizations (NGOs)

In West Bengal, non-governmental organizations (NGOs) play a multifaceted and crucial role in protecting against climate change. They act as key intermediaries, bridging the gap between scientific knowledge, government policies, and grassroots communities. Their work is especially vital in a state with a long coastline, a large population, and significant climate vulnerabilities, particularly in regions like the Hills and Sundarbans.

1. Community-Level Adaptation and Resilience Building

NGOs are on the front lines, helping vulnerable groups adjust to the impacts of climate change that are already happening. They implement practical, on-the-ground projects that directly benefit people's lives and livelihoods.

- **Climate-Smart Agriculture:** NGOs like the Ambuja Foundation and Mukti train farmers on sustainable and climate-resilient farming techniques. This includes promoting drought-resistant crops, organic farming to improve soil health, and using solar-powered pumps for irrigation to reduce reliance on fossil fuels.
- **Water Management:** In coastal and deltaic regions, NGOs work to improve water security. This can involve building rainwater harvesting structures, restoring traditional ponds, and promoting sustainable aquaculture practices to manage water resources more effectively in the face of rising sea levels and salinization.
- **Disaster Preparedness:** NGOs conduct workshops and training sessions to prepare communities for extreme weather events like cyclones and floods. They help establish early warning systems and build community-based disaster management teams, which are critical for saving lives and property.

2. Awareness, Education, and Mobilization

Many NGOs focus on raising public awareness and empowering citizens to become agents of change. They translate complex climate science into easily understandable information and mobilize people to take action.

- **Public Campaigns:** Organizations like the SwitchON Foundation organize large-scale public campaigns, such as cycle rallies and street art projects, to highlight climate issues and encourage sustainable behaviors.
- **Environmental Education:** NGOs, including the Centre for Environment Education (CEE), run programs in schools and communities to educate children and adults about environmental conservation, waste management, and the importance of reducing their carbon footprint.

- **Youth Engagement:** They actively engage young people, training them to become "eco-warriors" and advocates for climate action. This creates a new generation of leaders who are committed to a sustainable future.

3. Policy Advocacy and Research

NGOs are not just service providers; they are also important advocates and sources of information for policymakers. They use their expertise and grassroots connections to influence government policy and hold institutions accountable.

- **Policy Dialogue:** They participate in government consultations and provide expert input on state-level climate action plans. For example, NGOs contribute to the Kolkata Climate Action Plan (KCAP), ensuring that policies are inclusive and responsive to community needs.
- **Data and Research:** NGOs conduct their own research and data collection on environmental issues like air pollution and water quality. This information is crucial for evidence-based advocacy and for holding polluters accountable.
- **Legal Action:** In some cases, NGOs may resort to legal measures, such as filing public interest litigations (PILs), to challenge policies or actions that harm the environment. This ensures that environmental laws are upheld and enforced.

Challenges Faces by Citizen Activism in the Protection of Climate Change

Citizen-led climate action in West Bengal, while growing, faces several significant challenges that can hinder its effectiveness and scalability. These challenges stem from a combination of socio-economic factors, institutional barriers, and a lack of resources.

1. Financial and Resource Constraints

Many citizen-led initiatives, especially those run by small, local groups, struggle with a lack of consistent and adequate funding.

- **Reliance on External Funding:** Most climate action NGOs and community groups depend on grants from international organizations or larger national foundations. This can create instability and short-term project cycles, making it hard to plan and implement long-term strategies.
- **Limited Access to Green Finance:** Accessing green or climate-specific finance from banks and financial institutions is difficult for smaller organizations. The complex application processes and stringent requirements often favour larger entities, leaving community-based projects underfunded.
- **Inadequate Community Resources:** Local communities, particularly in vulnerable areas like the Sundarbans, often have limited financial resources to invest in costly adaptation measures, such as building cyclone-resistant homes or transitioning to solar energy.

2. Policy and Governance Gaps

Despite some progress, the policy environment in West Bengal presents several obstacles for citizen action.

- **Lack of Integration:** There's a disconnect between high-level climate policies and their implementation at the grassroots level. While the state has a State Action Plan on Climate Change (SAPCC), its integration into local-level planning and governance, particularly in rural and urban local bodies, remains weak.
- **Fragmented Governance:** Climate change is a cross-cutting issue, but governance is often fragmented. Different departments (e.g., agriculture, disaster management, and urban development) work in silos, leading to uncoordinated efforts and missed opportunities for synergy with citizen-led initiatives.
- **Bureaucratic Hurdles:** Navigating the bureaucracy to get permissions, funding, and support for community-led projects can be a significant challenge. This slows down progress and can demotivate local leaders.

3. Capacity and Knowledge Deficits

Building the capacity of citizens and local activists is a continuous challenge.

- **Limited Technical Expertise:** While citizens have invaluable local knowledge, they frequently lack the technical know-how needed for intricate climate programs, such as building resilient infrastructure or developing sophisticated early warning systems.
- **Lack of Awareness:** Despite the clear impacts of climate change, a significant parts of the population, especially in marginalized communities, lacks a scientific understanding of the causes and long-term consequences. This makes it difficult to mobilize them for sustained action beyond immediate disaster response.
- **Brain Drain:** Talented youth and leaders with climate knowledge and skills often migrate to bigger cities or move to different sectors for better opportunities, leaving a vacuum in local leadership.

4. Socio-Economic and Behavioral Barriers

Deep-seated social and economic factors can also inhibit climate action.

- **Poverty and Livelihood Priority:** For communities living on the brink of poverty, the immediate concerns of daily survival and earning a livelihood often overshadow long-term climate risks. It can be a challenge for them to invest time and money in actions that may not offer immediate economic returns.
- **Behavioral Resistance:** Changing long-standing behaviors and cultural practices is difficult. For example, convincing people to switch from traditional, high-emission cooking methods to cleaner energy or to change farming practices requires sustained effort and resources.

Future Directions in the Protection of Climate Change By Citizen Activism

The future of citizen activism for climate change in West Bengal is expected to be more integrated, tech-driven, and youth-centric. It will move beyond traditional protest and awareness campaigns toward more direct, solutions-oriented engagement with government, business, and local communities.

1. Integration of Technology and Data

The use of technology will become a cornerstone of future climate activism. Citizens will increasingly leverage digital tools to monitor environmental conditions and advocate for change.

- **Citizen Science and Data Collection:** Individuals and community groups will use low-cost sensors to monitor air quality, water pollution, and heat island effects in real-time. This crowdsourced data can be used to hold local governments and industries accountable, as it provides independent, verifiable evidence of environmental issues. For example, groups may deploy simple sensors to track pollution levels on the Ganges and share the data publicly.
- **Digital Advocacy Platforms:** Online platforms and social media will be used to create viral campaigns, mobilize supporters, and directly engage with policymakers. Digital maps and dashboards could visualize climate risks and community-led solutions, making the issue more tangible and accessible to the public.
- **AI and Analytics:** Machine learning and artificial intelligence will assist in examining the enormous volume of data gathered by citizen scientists. This will enable activists to identify pollution hotspots, estimate the effects of severe weather events, and model the effectiveness of different climate solutions.

2. Solutions-Oriented and Collaborative Action

Future activism will shift from a purely protest-based model to one focused on collaboration and delivering tangible solutions.

- **Co-creating Local Action Plans:** Instead of just critiquing government policies, citizens will be actively involved in co-creating and implementing local climate action plans. This includes working with municipal bodies to design green urban spaces, improve waste management systems, and develop localized disaster preparedness strategies.
- **Public-Private Partnerships:** Activists will increasingly collaborate with businesses to promote sustainable practices. This could involve partnerships to encourage the use of renewable energy, reduce plastic waste in supply chains, or invest in eco-friendly infrastructure. This approach seeks to drive change from within the economic system rather than just from the outside.
- **Micro-level Projects:** The focus will be on small, scalable, and replicable projects at the neighborhood or

village level. These might include setting up community-owned solar grids, restoring local ponds for water security, or establishing rooftop gardens to reduce urban heat. These successes can then be showcased to inspire broader change.

3. Intersectional and Youth-Led Movements

The next wave of climate activism will be led by a more diverse and interconnected group of individuals.

- **Youth as Leaders:** Young people, who are most affected by climate change's long-term impacts, will continue to be a driving force. They will not only raise awareness but also take on leadership roles in policymaking and project implementation, using their energy and tech-savviness to innovate.
- **Focus on Climate Justice:** The movement will increasingly center on **climate justice**, linking environmental issues with social and economic inequalities. Activism will highlight how climate change disproportionately affects the poor, women, and marginalized communities. Campaigns will advocate for solutions that address both environmental degradation and social inequities, such as ensuring a fair shift for workers in the fossil fuel sector or providing resources to climate-displaced communities.
- **Cross-Sectoral Alliances:** Future citizen movements will forge stronger alliances with other sectors, including health professionals, scientists, artists, and business leaders. This will create a broader, more powerful coalition, making the case for climate action more compelling and harder to ignore.

Conclusion

After analysing all these things it can be said that the role of citizen activities in protecting against climate change in West Bengal is transformative. By acting as a dynamic force, citizens are not only adapting to the current impacts of climate change but also actively shaping a more sustainable future. From individual actions to organized community movements and the strategic work of NGOs, these grassroots efforts are crucial for translating policy into practice and ensuring that climate solutions are just, effective, and resilient. The future of West Bengal's climate resilience hinges on the continued empowerment and active participation of its citizens.

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