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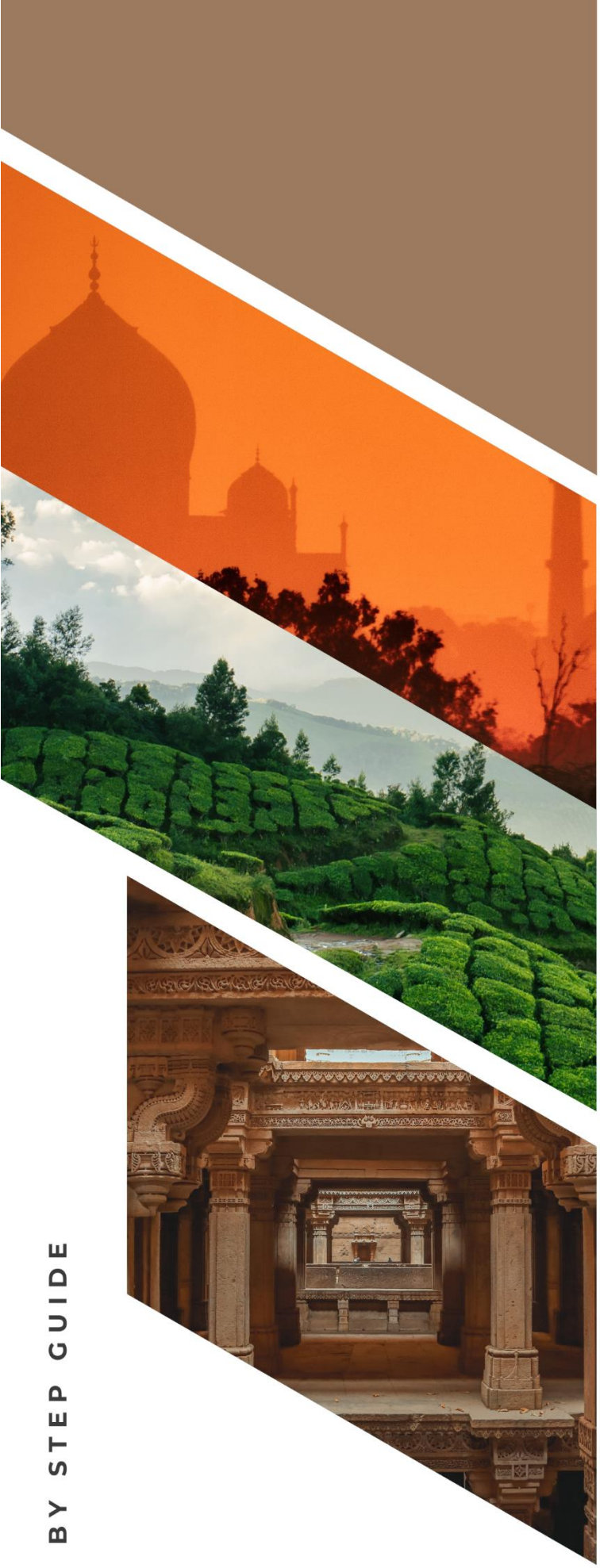

INDIA

ESTABLISHING EFFECTIVE GOVERNANCE AND INSTITUTIONAL ARRANGEMENTS FOR LOSS AND DAMAGE TRANSPARENCY

STEP BY STEP GUIDE

2025

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DISCLAIMERS

This is a step-by-step guide for governance and institutional arrangement required for Urban Loss and Damage Transparency.

The findings, suggestions, and conclusions presented in this Summary reflect the discussions held with thematic experts and do not represent UNEP's or UNEP Copenhagen Climate Centre's ((UNEP-CCC) position on Indicators and Reporting Tools for Loss and Damage.

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Part I

Introduction

Part I: Introduction

- **Rationale and Background**

India faces significant challenges due to climate change, including extreme weather events, urban flooding, heatwaves, and rising sea levels. Cities like Ahmedabad and Surat in Gujarat are particularly vulnerable due to their rapid urbanization, economic importance, and unique geographical challenges. Ahmedabad experiences extreme heat conditions, urban flooding, and air pollution, while Surat faces recurrent floods, heatwaves, and risks associated with sea-level rise. Despite efforts to adapt through frameworks like the National Disaster Management Act (NDMA) 2005 and state-level policies such as the Gujarat State Disaster Management Plan (GSDMP), gaps remain in systematically assessing, reporting, and responding to loss and damage (L&D) impacts.

Gaps in India's Loss and Damage Framework

India currently lacks a dedicated national framework specifically focused on loss and damage assessment. While the National Adaptation Plan (NAP) and Nationally Determined Contribution (NDC) acknowledge the importance of addressing L&D, they do not provide clear mechanisms for:

- Tracking losses from climate events.
- Reporting data in a standardized way.
- Developing targeted responses for affected communities.

At the city level, Ahmedabad's Climate Resilient City Action Plan (CRCAP) integrates climate risks but lacks detailed quantification of economic losses or non-economic damages such as health impacts. Similarly, Surat's resilience strategies address vulnerabilities but fail to capture the full spectrum of L&D data essential for informed decision-making.

Without structured approaches at both national and city levels, India risks missing out on critical international support, including funding from mechanisms like the Loss and Damage Fund under the Paris Agreement.

- **Why Strengthening Loss and Damage Governance is Essential**

A robust L&D governance framework would enable India to:

- **Make Informed Decisions:** Accurate data on climate-induced losses can guide national policies, disaster response plans, infrastructure investments, and local adaptation strategies.
- **Access Global Support:** Transparent reporting enhances India's ability to secure international climate finance and technical assistance.
- **Manage Risks Effectively:** Structured tracking systems improve preparedness for future climate impacts.

- **Meet International Commitments:** Aligning with global frameworks like the Enhanced Transparency Framework (ETF) under the Paris Agreement ensures compliance with evolving climate reporting standards.

- **Developing a National Approach for Loss and Damage**

To address these gaps, India should establish:

- A central coordinating body responsible for L&D assessment, reporting, and response strategies.
- Robust data collection systems integrated into disaster risk governance frameworks like NDMA 2005.
- Collaboration platforms connecting government agencies across national, state, and city levels.
- Mainstreaming L&D considerations into existing climate policies such as SAPCCs (State Action Plans on Climate Change) and disaster management plans.
- **Strengthening Loss and Damage Governance in Urban Areas**

Urban areas in India are increasingly vulnerable to climate change impacts such as extreme heat, urban flooding, and rising sea levels. Cities like Delhi, Mumbai, Kolkata, and Chennai face unique challenges due to their dense populations, critical infrastructure, and economic significance. Despite existing frameworks like the National Disaster Management Act (NDMA) 2005 and the National Action Plan on Climate Change (NAPCC), there remain gaps in systematically assessing, reporting, and responding to loss and damage (L&D) at the city level.

Key Benefits of Strengthened Governance

- **Provide Localized Data**
  City-specific assessments enable targeted climate resilience strategies tailored to local conditions. For example, identifying heat hotspots in Delhi or flood-prone zones in Mumbai can guide infrastructure investments and disaster preparedness plans.
- **Build Local Capacity**
  Strengthening municipal institutions ensures better disaster response and adaptation planning. This includes training local officials, enhancing early warning systems, and integrating L&D considerations into urban development policies.
- **Prioritize Funding**
  Accurate reporting at the city level helps direct resources to where they are needed most. For instance, data on economic losses in Mumbai's financial sector or non-economic impacts like displacement in Kolkata can inform funding allocations for recovery and resilience-building projects.
- **Improve Coordination**

Stronger governance ensures alignment between local, state, and national climate policies. This includes integrating city-level actions with frameworks like the State Action Plans on Climate Change (SAPCCs) and India's National Adaptation Plan (NAP).

- **Action Steps for Indian Cities**
  By establishing clear governance and assessment systems at the urban level, Indian cities can better understand and address their specific climate vulnerabilities. These steps include:
  - Developing robust data collection systems to track both economic and non-economic losses from disasters.
  - Creating city-level L&D frameworks that align with national priorities while addressing local needs.
  - Engaging communities in resilience planning to ensure inclusive decision-making.
  - Leveraging international climate finance mechanisms like the Loss and Damage Fund under the Paris Agreement.
  - Indian cities such as Ahmedabad, Surat, Delhi, and Mumbai have already initiated efforts with programs like Heat Action Plans (HAPs) or flood early warning systems.

Expanding these efforts through strengthened governance will enhance their ability to mitigate risks, recover from disasters, and build long-term resilience against future climate impacts.

- **The Role of Transparency in Loss and Damage Reporting**

A transparent system is essential for ensuring that climate loss and damage (L&D) data in India is accurate, accessible, and actionable. Transparency builds trust among stakeholders, strengthens decision-making processes, and improves resource allocation for climate resilience.

India can leverage the **Enhanced Transparency Framework (ETF)** under the Paris Agreement, which provides standardized methods for reporting climate actions and impacts. Strengthening L&D reporting in India will:

- **Demonstrate Commitment to International Climate Action:** By adopting transparent systems, India can showcase its dedication to addressing climate change impacts.
- **Enhance Credibility in Climate Negotiations:** Accurate reporting improves India's standing in international forums and negotiations.
- **Increase Access to Climate Finance and Technical Support:** Transparent data enables India to secure funding from global mechanisms like the Loss and Damage Fund.

- **Enhancing Readiness for the Loss and Damage Fund**

As the Loss and Damage Fund becomes operational, countries with robust institutional frameworks will be better positioned to access financial support. For India, investing in transparent and efficient assessment systems now will enable:

1. **Access to Funding for Recovery and Adaptation Efforts:** Clear documentation of losses ensures eligibility for international financial assistance.
2. **Effective Resource Allocation:** Transparent systems help direct resources to areas most affected by climate impacts at both national and local levels.
3. **Strengthened Resilience Against Future Climate Impacts:** Proactive investments in assessment frameworks will enhance India's ability to prepare for recurring climate challenges.

By taking these steps, India can protect its people, infrastructure, and economy while positioning itself as a global leader in implementing loss and damage strategies.

Part II

Framework for Assessing Loss & Damage Governance in India: Challenges & Solutions

Part II: Framework for Assessing Loss & Damage Governance in India: Challenges & Solutions

To strengthen loss and damage (L&D) governance in India, a structured approach is essential to evaluate existing institutional arrangements, identify gaps, and develop actionable solutions. The following step-by-step framework provides a roadmap for assessing national-level governance, ensuring that India is better prepared to address climate-related losses effectively.

1. Review Existing Frameworks and Policies

A comprehensive review of India's current climate change and disaster management frameworks is vital to build a strong foundation for L&D governance. This includes analyzing key policies to identify commitments, gaps, and opportunities for improvement.

Key Actions:

- Examine the **National Action Plan on Climate Change (NAPCC)** and its missions to assess L&D considerations.
- Analyze India's **Nationally Determined Contributions (NDCs)** under the Paris Agreement to understand current climate commitments.
- Review disaster risk management policies such as the **National Disaster Management Act (NDMA) 2005** and the **National Policy on Disaster Management (NPDM) 2009** for L&D integration.
- Assess state-level frameworks like the **State Action Plans on Climate Change (SAPCCs)** for alignment with national strategies.

2. Map Key Institutions and Stakeholders

Identifying the main actors in climate change governance and disaster management helps clarify roles, reduce overlaps, and improve coordination.

Key Actions:

- Identify key government bodies such as the **Ministry of Environment, Forest and Climate Change (MoEFCC)**, **National Disaster Management Authority (NDMA)**, and state disaster management authorities.
- Determine which ministries, agencies, research institutions, and private entities are involved in L&D assessment and reporting.
- Assess the role of local government institutions in implementing L&D strategies at urban and rural levels.

3. Evaluate Coordination Mechanisms

Effective coordination across government levels and sectors is critical for L&D assessment and response. This step ensures streamlined communication and collaboration.

Key Actions:

- Analyze inter-ministerial coordination on L&D issues at the national level.
- Assess the effectiveness of state-level disaster management committees in implementing L&D measures.
- Examine coordination between national, state, and local governments to identify gaps or redundancies.

4. Assess Data Collection and Management Systems

Reliable data is essential for tracking climate-related losses. India needs to evaluate existing data collection systems to ensure they are robust, comprehensive, and accessible.

Key Actions:

- Investigate current systems for collecting L&D-related data at national, state, and local levels.
- Evaluate the quality of available data on economic losses (e.g., infrastructure damage) and non-economic impacts (e.g., health effects or displacement).
- Determine whether centralized databases exist for managing L&D information.

5. Analyze Reporting Mechanisms

A clear reporting framework ensures that India's L&D data aligns with both national priorities and international obligations under frameworks like the Enhanced Transparency Framework (ETF) of the Paris Agreement.

Key Actions:

- Review current processes for reporting climate-related losses at national and state levels.
- Assess alignment with international reporting standards to ensure compliance with global commitments.
- Identify gaps in reporting capabilities or inefficiencies in existing procedures.

6. Evaluate Capacity and Resources

Adequate technical expertise, financial resources, and institutional capacity are critical for effective L&D assessment and governance.

Key Actions:

- Assess technical expertise available within government institutions for conducting L&D assessments.
- Evaluate financial resources allocated for climate adaptation, disaster response, and L&D initiatives.
- Identify capacity-building needs for government officials at all levels to enhance institutional effectiveness.

7. Examine Stakeholder Engagement

A well-functioning L&D governance framework must involve diverse stakeholders such as local communities, civil society organizations (CSOs), academia, private sector actors, and vulnerable groups.

Key Actions:

- Evaluate participation of local communities in L&D planning, reporting, and response efforts.
- Determine collaboration levels between governments and non-governmental stakeholders.
- Assess public awareness initiatives aimed at improving community understanding of climate risks.

8. Review Monitoring and Evaluation (M&E) Frameworks

Robust monitoring systems are vital to track progress in addressing loss and damage while ensuring accountability across all levels of governance.

Key Actions:

- Analyze existing monitoring frameworks for climate change impacts at national, state, and local levels.
- Assess how effectively L&D considerations are integrated into broader climate resilience strategies.
- Identify opportunities to improve tracking mechanisms using advanced technologies like GIS mapping or AI-based analytics.

Potential Challenges in India

- Fragmented coordination mechanisms leading to inefficiencies in L&D assessment.
- Limited institutional capacity at local levels affecting implementation efforts.
- Insufficient financial resources to support comprehensive L&D initiatives.
- Lack of centralized data collection systems for tracking climate-related losses.
- Weak integration of L&D into existing climate change policies.
- Low public awareness about loss and damage issues among vulnerable communities.

Key Solutions for Strengthening L&D Governance in India

- Establish a centralized coordinating body under NDMA or MoEFCC to oversee L&D assessment strategies across India.
- Develop a national framework specifically focused on loss and damage governance with clear roles for all stakeholders.
- Implement a centralized data management system to consolidate information from multiple sources.
- Strengthen institutional capacities through targeted training programs for government officials at all levels.
- Enhance stakeholder engagement by involving vulnerable communities in decision-making processes through participatory approaches.
- Align state-level SAPCCs with national priorities while integrating urban-specific vulnerabilities into disaster management plans.
- Secure international support by aligning reporting mechanisms with global standards like the ETF under the Paris Agreement.

By systematically assessing its governance structures using this framework, India can strengthen its ability to track, report, and respond effectively to climate-related losses. This will not only enhance national resilience but also position India as a global leader in addressing loss and damage challenges while meeting international commitments under frameworks like the Paris Agreement.

Part III

Step-by-Step Guide for Urban-Level Transparency Assessment in India

Part III: Step-by-Step Guide for Urban-Level Transparency Assessment in India

To strengthen loss and damage (L&D) governance at the city level in India, particularly in Ahmedabad and Surat, a structured approach is required to evaluate existing institutional arrangements, identify gaps, and develop solutions. This framework provides a roadmap for assessing city-level governance to ensure these urban centers are better prepared to address climate-related losses effectively. Here's a structured approach tailored for cities in India:

1. Review City-Level Policies and Plans

Understanding the existing city-level policies on climate change and disaster management is foundational for assessing L&D governance. This step identifies gaps and ensures that new L&D arrangements align with local priorities.

Key Actions:

- Examine Ahmedabad's **Climate Resilient City Action Plan (CRCAP)** and Surat's **City Resilience Strategy** to assess L&D considerations.
- Review local disaster management plans, such as Ahmedabad's **District Disaster Management Plan (DDMP)** and Surat's **Disaster Preparedness Plan (DMPP)**.
- Assess city-specific policies on heatwaves, urban flooding, and other climate risks, such as Ahmedabad's **Heat Action Plan (HAP)**.

2. Map Key Local Institutions

Identifying the key stakeholders involved in climate governance helps clarify responsibilities, reduce overlaps, and improve coordination.

Key Actions:

- Identify municipal departments responsible for climate action and disaster risk management, such as the **Ahmedabad Municipal Corporation (AMC)** and the **Surat Municipal Corporation (SMC)**.
- Determine which local agencies are involved in L&D data collection, such as health departments tracking heat-related illnesses or urban planning departments monitoring infrastructure damage.
- Assess the role of state-level agencies like the **Gujarat State Disaster Management Authority (GSDMA)** in supporting city-level L&D responses.

3. Evaluate Local Coordination Mechanisms

Effective coordination among city departments ensures streamlined L&D assessment and reporting.

Key Actions:

- Analyze how different departments within AMC and SMC collaborate on L&D issues, such as flood response or heatwave mitigation.
- Assess the effectiveness of local climate change committees or task forces in integrating L&D considerations into urban planning.
- Examine how city authorities coordinate with state or national agencies for disaster relief funding and technical support.

4. Assess City-Level Data Collection and Management

A robust data collection system is essential for accurate loss and damage assessment.

Key Actions:

- Investigate existing systems for collecting climate-related L&D data at the city level, such as health records during heatwaves or economic losses from floods.
- Evaluate the quality and completeness of available data, including spatial mapping of vulnerable areas.
- Determine if centralized databases exist for managing L&D information in Ahmedabad and Surat.

5. Analyse Local Reporting Mechanisms

Cities must ensure that their reporting aligns with both state-level frameworks like Gujarat's SAPCC and national requirements under international agreements.

Key Actions:

- Review how Ahmedabad and Surat track and report climate-related losses to state agencies like GSDMA.
- Assess alignment with India's national reporting requirements under the Paris Agreement's Enhanced Transparency Framework (ETF).
- Identify gaps or inefficiencies in current reporting processes that hinder access to international climate finance.

6. Evaluate City-Level Capacity and Resources

Assessing technical expertise, human resources, and financial allocations helps identify critical gaps in L&D governance.

Key Actions:

- Evaluate the technical expertise available within AMC and SMC for conducting L&D assessments.
- Assess financial allocations for climate adaptation projects, such as flood control infrastructure or heatwave preparedness programs.
- Identify capacity-building needs to enhance institutional effectiveness at the municipal level.

7. Examine Local Stakeholder Engagement

Involving local communities, businesses, and civil society ensures inclusive decision-making.

Key Actions:

- Evaluate how communities in vulnerable areas of Ahmedabad (e.g., informal settlements) or Surat (e.g., flood-prone zones) participate in resilience planning.
- Assess collaboration between municipal authorities and academic institutions for research on L&D impacts.
- Determine public awareness levels regarding climate risks and access to information on government support mechanisms.

8. Review Local Monitoring and Evaluation Frameworks

A structured monitoring system is vital for tracking climate impacts and assessing policy effectiveness.

Key Actions:

- Analyze existing monitoring frameworks for climate change impacts at the city level.
- Assess how L&D considerations are integrated into these frameworks.
- Identify ways to improve tracking through better indicators (e.g., economic losses from floods or health impacts during heatwaves) and technology like GIS mapping.

9. Assess Urban-Specific Vulnerabilities

Ahmedabad faces extreme heat risks due to urban heat islands, while Surat is highly vulnerable to recurrent flooding from the Tapi River. Tailored approaches are needed to address these unique challenges.

Key Actions:

- Identify high-risk zones within each city using spatial analysis of flood-prone areas in Surat or heat hotspots in Ahmedabad.

- Evaluate resilience of critical infrastructure like hospitals, schools, drainage systems, or transportation networks.
- Develop targeted interventions for vulnerable populations such as low-income households or migrant workers who face disproportionate impacts during disasters.

10. Analyse City-National Linkages

Ensuring alignment between city-level and national loss and damage (L&D) governance is crucial for efficient climate resilience strategies in Indian cities like Ahmedabad and Surat. A structured approach can help bridge gaps between local and national frameworks, ensuring streamlined communication, resource allocation, and effective disaster management.

Key Actions for Strengthening City-National Linkages

1. **Examine Alignment of City-Level L&D Mechanisms with National Frameworks**
    - Review how Ahmedabad's Heat Action Plan (HAP) and Surat's Disaster Preparedness Plan (DMPP) align with India's national frameworks, such as the National Disaster Management Act (NDMA) 2005 and the National Policy on Disaster Management (NPDM) 2009.
    - Assess whether city-level plans incorporate directives from state-level frameworks like Gujarat's State Action Plan on Climate Change (SAPCC) and Gujarat State Disaster Management Plan (GSDMP).
2. **Assess Flow of Information Between City and National Agencies**
    - Evaluate the effectiveness of communication channels used by Ahmedabad Municipal Corporation (AMC) and Surat Municipal Corporation (SMC) to report L&D data to state and national agencies.
    - Determine if city-level data collection systems, such as those tracking heat-related illnesses in Ahmedabad or flood impacts in Surat, are integrated into centralized databases like the National Disaster Information Management System.
3. **Strengthen Coordination Mechanisms**
    - Analyze how AMC and SMC collaborate with Gujarat State Disaster Management Authority (GSDMA) to ensure timely access to resources from the State Disaster Response Fund (SDRF) or National Disaster Relief Fund (NDRF).

- Examine the role of inter-agency coordination during extreme events, such as floods in Surat or heatwaves in Ahmedabad, to identify bottlenecks in response efforts.

4. **Enhance Capacity Building Across Governance Levels**
    - Identify training needs for municipal officials in Ahmedabad and Surat to improve their understanding of national L&D assessment tools like Post Disaster Needs Assessment (PDNA).
    - Facilitate workshops for local authorities to align city disaster management plans with state and national policies.
5. **Integrate Local Data into National Reporting**
    - Ensure that city-specific vulnerabilities, such as Ahmedabad's heat hotspots or Surat's flood-prone zones, are reflected in India's Biennial Transparency Reports under the Enhanced Transparency Framework (ETF) of the Paris Agreement.
    - Advocate for standardized reporting formats that allow cities to contribute detailed L&D data to national climate commitments.

Benefits of Strengthened Linkages

- **Improved Resource Allocation:** Efficient communication ensures that cities receive timely financial support from state or national funds during disasters.
- **Enhanced Policy Alignment:** Integration of local priorities into national frameworks strengthens India's overall climate resilience strategy.
- **Credibility in International Climate Negotiations:** Accurate city-level data enhances India's ability to secure global climate finance through mechanisms like the Loss and Damage Fund.
- **Effective Risk Management:** Streamlined coordination enables faster response during disasters, reducing economic losses and non-economic impacts.

By fostering stronger linkages between city-level governance in Ahmedabad and Surat with state and national frameworks, India can build a robust system for addressing climate-induced loss and damage while ensuring urban resilience against future challenges.

Conclusion: Strengthening Urban Loss & Damage (L&D) Governance for a Climate-Resilient India

As urban areas in India, particularly Ahmedabad and Surat, continue to grow, they face increasing exposure to climate risks such as extreme heat, flooding, and rising sea levels. These cities, with their dense populations, critical infrastructure, and economic importance, are especially vulnerable to climate-related losses and damages. Strengthening governance for tracking, reporting, and responding to L&D at the urban level is not only vital for building resilience in these cities but also provides a foundation for scaling these efforts nationally.

By starting with Ahmedabad and Surat, India can gain valuable experience in developing robust data governance systems and institutional arrangements for L&D assessment and reporting. These cities provide unique testing grounds due to their diverse vulnerabilities—Ahmedabad's challenges with extreme heat and urban flooding, and Surat's recurrent floods and industrial impacts. This localized approach allows for refining data collection systems, improving reporting mechanisms, and enhancing institutional coordination to address city-specific risks effectively.

Urban L&D Governance and International Climate Commitments

A well-structured, transparent, and data-driven L&D reporting system at the city level is essential for India to fulfill its international commitments under frameworks such as the Paris Agreement's Enhanced Transparency Framework (ETF). By accurately tracking urban climate-related losses and damages in Biennial Transparency Reports (BTRs), India can:

- **Strengthen Credibility in Global Climate Discussions**: Showcase Ahmedabad's Heat Action Plan (HAP) or Surat's flood resilience strategies as models for urban climate action.
- **Enhance Access to International Climate Finance**: Secure funding for urban adaptation projects like Ahmedabad's Cool Roof Program or Surat's flood mitigation infrastructure.
- **Facilitate Regional Collaboration**: Share lessons learned from urban L&D governance with other cities nationally and globally.

Leveraging L&D Reporting for Climate Finance and Urban Development

As mechanisms like the Loss and Damage Fund become operational globally, Ahmedabad and Surat should be positioned to lead the way in securing financial support. Demonstrating urban climate risks through accurate data will help these cities access funding to:

- **Enhance Infrastructure Resilience**: Invest in flood control systems in Surat or sustainable housing initiatives in Ahmedabad.
- **Implement Early Warning Systems**: Strengthen flood alerts in Surat or heatwave preparedness measures in Ahmedabad.
- **Support Vulnerable Populations**: Develop equitable policies that prioritize informal settlements in both cities.

Addressing Challenges in Reporting Loss & Damage

Ahmedabad and Surat face several challenges in effectively reporting L&D:

1. **Data Gaps**:
    - Inadequate tracking of heat-related health expenditures or mortality rates during extreme heat events in Ahmedabad.
    - Sparse documentation of non-economic impacts such as psychological stress or displacement due to floods in Surat.
2. **Institutional Barriers**:
    - Weak coordination between municipal agencies and state-level authorities like the Gujarat State Disaster Management Authority (GSDMA).
    - Limited integration of city-level L&D data into national reporting mechanisms.
3. **Economic Constraints**:
    - Lack of insurance coverage for small businesses affected by disasters.
    - Insufficient financial resources allocated for comprehensive disaster recovery.
4. **Social Inequities**:
    - Vulnerable populations such as informal settlers face disproportionate impacts but are often excluded from formal recovery frameworks.

Horizontal and Vertical Governance for Loss & Damage

Horizontal Governance at the City Level

- Strengthen interdepartmental coordination within municipal corporations like the Ahmedabad Municipal Corporation (AMC) and Surat Municipal Corporation (SMC).
- Enhance community engagement by involving local organizations in resilience planning.

- Establish centralized databases for tracking economic losses (e.g., infrastructure damage) and non-economic impacts (e.g., displacement or health burdens).

Vertical Governance Between City, State, and National Levels

- Align city-level plans with state frameworks like Gujarat's SAPCC and national policies under the Paris Agreement.
- Facilitate resource allocation from state disaster relief programs or national initiatives like the National Disaster Relief Fund (NDRF).
- Build capacity at municipal levels through training programs on advanced L&D methodologies like Post Disaster Needs Assessment (PDNA).

Scaling Up from Urban to National Level

By starting with Ahmedabad and Surat, India can gain hands-on experience in L&D governance that can be scaled up across other cities nationwide. This approach will enable:

1. **Refinement of Governance Frameworks**:
    - Integrate city-level insights into state-level policies like Gujarat's State Disaster Management Plan (GSDMP).
2. **Development of a Centralized National Database**:
    - Aggregate urban data from cities like Ahmedabad and Surat into a coherent national reporting system.
3. **Expansion of Stakeholder Engagement**:
    - Build cross-sectoral collaborations involving local communities, businesses, academia, and government agencies.

A Sustainable and Climate-Resilient Urban Future

Strengthening urban L&D governance in Ahmedabad and Surat offers a strategic pathway to ensure these cities are prepared for future climate challenges while fostering inclusive development. Key benefits include:

- **Reduced Economic Disruptions**: Mitigate losses from extreme events through targeted resilience measures.
- **Improved Transparency**: Enhance accountability through robust data systems.
- **Empowered Communities**: Prioritize vulnerable populations in climate adaptation strategies.

By investing in advanced L&D assessment frameworks, innovative data management systems, and cross-sector collaboration, Ahmedabad and Surat can serve as models for climate-resilient cities across India. This urban-focused approach will not only safeguard local communities but also provide India with the tools needed to scale up L&D governance nationally, ensuring a holistic response to climate-induced loss and damage across all levels of governance.

References

1. **Government of India. (2021). National Disaster Management Plan (NDMP) 2021.** New Delhi, India: National Disaster Management Authority (NDMA).
2. **Government of India. (2023). National Action Plan on Climate Change (NAPCC).** New Delhi, India: Ministry of Environment, Forest and Climate Change (MoEFCC).
3. **Government of India. (2022). India's Updated Nationally Determined Contributions (NDCs) under the Paris Agreement.** New Delhi, India: Ministry of Environment, Forest and Climate Change (MoEFCC).
4. **Government of India. (2020). Coastal Regulation Zone (CRZ) Notification.** New Delhi, India: Ministry of Environment, Forest and Climate Change (MoEFCC).
5. **Government of Gujarat. (2016). Gujarat State Action Plan on Climate Change (GSAPCC).** Gandhinagar, India: Gujarat Climate Change Department.
6. **Gujarat State Disaster Management Authority (GSDMA). (2022). Gujarat State Disaster Management Plan.** Gandhinagar, India: GSDMA.
7. **Ahmedabad Municipal Corporation & Indian Institute of Public Health-Gandhinagar (IIPH-G). (2019). Ahmedabad Heat Action Plan.** Ahmedabad, India: Ahmedabad Municipal Corporation.
8. **Ahmedabad Municipal Corporation. (2022). Ahmedabad Smart City Climate Adaptation and Resilience Report.** Ahmedabad, India: Ahmedabad Smart City Limited.
9. **Surat Municipal Corporation & Urban Climate Resilience Center (UCRC). (2021). Surat Climate Resilience Strategy.** Surat, India: Surat Municipal Corporation.
10. **Surat Municipal Corporation. (2023). Surat City Climate Change Action Plan.** Surat, India: Surat Municipal Corporation.
11. **Intergovernmental Panel on Climate Change (IPCC). (2021). Climate Change 2021: The Physical Science Basis.** Contribution of Working Group I to the Sixth Assessment Report of the IPCC. Cambridge University Press.
12. **United Nations Framework Convention on Climate Change (UNFCCC). (2015). Paris Agreement.** United Nations.
13. **United Nations Framework Convention on Climate Change (UNFCCC). (2024). Biennial Transparency Report (BTR) Guidelines.** United Nations.

14. **United Nations Office for Disaster Risk Reduction (UNDRR). (2015). Sendai Framework for Disaster Risk Reduction 2015-2030.** Geneva, Switzerland.
15. **Mechler, R., Bouwer, L. M., Schinko, T., Surminski, S., & Linnerooth-Bayer, J. (2014). Managing unnatural disaster risk: Linking insurance to vulnerability reduction.** Climate Risk Management, 4-5, 52-54.
16. **Atteridge, A., Remling, E., Savvidou, G., & Mechler, R. (2022). Loss and Damage: What does it mean and what is known?** Stockholm Environment Institute.
17. **World Bank. (2023). India Country Climate and Development Report.** The World Bank.
18. **UN Habitat. (2022). State of the World's Cities Report.** UN Habitat.