



Ministry of Urban Development
Government of India

The Centre of Excellence

for

Urban Development and Climate Change



 **IRADe** Integrated Research and
Action for Development

IRADe—The Centre of Excellence (CoE)

In recognition of demonstrated long-term expertise and quality work, the Ministry of Urban Development, Government of India, designated IRADe as the Centre of Excellence for Urban Development and Climate Change.

Since 2008, the Centre of Excellence has been addressing issues related to urban development and climate resilience in India. IRADe collaborates with national institutions, state urban departments, municipal corporations, urban local bodies, non-government organizations and academia for capacity building, promoting awareness, research and training on specific topics in the areas of urban development and climate change.

As a Centre of Excellence, IRADe is furthering the agenda of integrating various urban development efforts and documenting best practices and policy level prescriptions that could be understood and adopted by state and national level decision makers; local administrations to help them link climate issues with the existing programmes in urban development. The presentation on project findings, results, methodology, cities covered and future strategy for India's Urban Climate Resilience has been delivered to various forums like IPCC-SREX, European Union and others.

Studies conducted by IRADe (CoE)

1. Climate Vulnerability Profiles of Twenty Indian Cities

The study developed climate vulnerability profiles for 20 cities covered under the Jawaharlal Nehru National Urban Renewal Mission. It assessed climate induced risks, including various hazards such as cyclones, storms, floods and droughts, infrastructure needed for resilience and the importance of Governance and institutional framework at the city level. It helped create a better understanding of the city level vulnerability by exploring various aspects influencing the vulnerability of the cities and the nature of actions needed for climate resilient development.

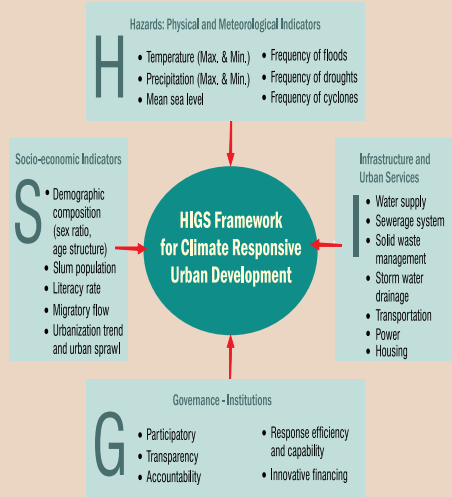


Funded by: Rockefeller Foundation under ACCCRN Project

2. Working Paper on the HIGS Framework for Climate Resilient Urban Development in India

IIED commissioned IRADe to develop a working paper on the Hazards, Infrastructure, Governance, Socio-economic variables (HIGS) framework for Rapid Vulnerability Assessment (RVA) of cities, in order to inculcate the RVA methodology into the public domain.

The working paper will help policy makers, urban planners, city administrators, experts, academia, students and aid agencies, to appreciate issues regarding urban climate vulnerability and will help them to deal with climate related impacts and formulate adaptation strategies.



Funded by: International Institute for Environment and Development (IIED)

3. Rapid Assessment of Vulnerability to Climate Change in Indian Cities

Rapid Assessment of Vulnerability for 14 cities in India was based on various indicators of vulnerability to climate change to strengthen the national policy framework. IRADe’s approach and methodological framework included developing an index to assess the vulnerability of Indian cities to climate change, generating baseline data pertaining to urban development in terms of socio-economics and infrastructure, in order to recommend adaptation strategies that help formulate effective urban policies and programmes. The two cities studied in greater detail were Haridwar and Surat.

The study identified areas of vulnerability and adaptation measures to be incorporated in the city development plans and stressed on enhancing the capacities of local bodies to increase climate resilience.

Funded by: Ministry of Urban Development, Government of India

4. Mainstreaming Climate Resilience in Urban Development: Policy Landscape for Urban Climate Resilience

IRADe reviewed the Asian Cities Climate Change Resilience Network (ACCCRN) project from the policy perspective and supported assessments of vulnerabilities due to disasters, such as floods and droughts. The report identified

opportunities to reorient urban development programmes to address convergence points and facilitate climate resilience at city levels. Lessons from these have been brought to the national level, thereby, informing city governments of opportunities available at that level. IRADe integrated the policy structure and decision-making needed at the national, state and city level.



Funded by: Rockefeller Foundation under the Asian Cities Climate Change

5. Review of City Disaster Management Plans in Six Cities

IRADe reviewed the City Disaster Management Plans (CDMPs) of six cities – Bhubaneswar, Gangtok, Madurai, Shimla, Trivandrum and Vijayawada to assess the clarity, comprehensiveness, efficiency, appropriateness of climate risk management measures and dissemination, including integration in the CDMP planning process and each plan document.

IRADe has made specific recommendations to improve efficacy, visibility and implementation of the CDMP. To update the existing CDMP it presented strategies to each city administration for addressing the gaps observed during the review process.

Funded by: United Nations Development Programme (UNDP)

6. Vulnerability of Coastal Cities on Rivers to Climate Change: A Case Study of Surat for Flood Management

The study aims to develop an integrated analytical framework for floods and a disaster management strategy for urban areas close to the River Tapi basin, Ukai dam and the coastline. A specific case study assessed the vulnerability of Surat city using RIS/GIS tools to identify inundation of vulnerable areas and locations, such as slums, schools, hospitals, industries, etc. These areas were surveyed to understand their vulnerabilities and difficulties in the event of floods.

A hydrological model of the river was developed to assess the extent of inundation and water depths under various scenarios. Lessons from other cities will also be drawn and necessary linkages with decision support systems will be highlighted in the study.

Funded by: Ministry of Earth Sciences, Government of India

7. Urban Vulnerability and Risk: A Key Factor for Building Climate Resilient Urban Development in Indian Cities

A policy brief on urban vulnerability and risk for building climate resilient urban development in Indian cities was developed by IRADe for Asian Cities Climate Change Resilience Network (ACCCRN). It was developed as an urban policy guidance brief for decision makers at national/state and city government levels on Urban Climate Change Resilience.

IRADe stresses mainstream climate resilience measures as a priority. The well targeted interventions emerging out of the HIGS framework developed by IRADe can help in building capacities and better planning for adaptation.

Funded by : TARU leading Edge Private Limited

8. Sustainable and Disaster Resilient Urban Development Interventions through JnNURM

This study provides insights on decision support at city levels and coordination with administrative bodies such as municipal corporations, urban development authorities; and other parastatal agencies and think tanks. The study packages and sequences activities in the context of the city's financial /technical capacities, planning/ budgeting cycles and political/cultural environments; and outlines implementation details. The ten cities (Ahmedabad, Bhopal, Bhubaneswar, Dehradun, Guwahati, Hyderabad, Pune, Shillong, Srinagar and Vishakhapatnam) were approached to address: hazards and risks effectively, city specific capacity building, knowledge dissemination as well as stakeholder engagement.



Funded by: Ministry of Urban Development, Government of India

9. Okhla Landfill: Waste Management

IRADe studied gases emitted from the landfill site at Okhla, New Delhi and analyzed whether the gases may be captured commercially as the landfill emits methane. The assessment was based on observations and information provided by the officials of the Central Pollution Control Board, Delhi Pollution Control Committee, Municipal Corporation of Delhi and at the landfill site. The feasibility of Land Fill Gas (LFG) supply as a domestic fuel to the surrounding areas through the existing network in Okhla sewage treatment plant was also assessed.

Funded by: [United States Environmental Protection Agency](#)

10. Preparation of Master Plan of Jodhpur City under Solar Cities Development Program

IRADe developed the master plan for the Solar City - Jodhpur with detailed actions for various activities for the years 2009-10, 2010-11, 2011-12 during the 11th five year plan period. The master plan was developed as per specifications, guidelines, terms and conditions of the Ministry of New and Renewable Energy.

Funded by: [Ministry of New and Renewable Energy, Government of India](#)

11. Strengthening of Solid Waste Management System in the Industrial Park, Cherlapally

IRADe studied the viability of various solutions for municipal solid waste management system in the industrial park at Cherlapally. The study addressed social, economic and environmental concerns, including livelihoods of the involved workers. The investigation covered: analysis of different waste streams and the state of the existing waste management system; identification of all the different stakeholders and the consultations with them; and identification of viable technical options for collection, storage, treatment, disposal, recycling, etc. along with a rough cost estimate for a sustainable waste management system.

Funded by: [Bread for the World](#)

About IRADe

Founded in 2002, IRADe is a fully autonomous, non-profit advanced research institute, which aims to do research and policy analysis. It is a 'think tank' that works with 'action tanks'. For more information, please visit our website at www.irade.org.

IRADe's Thematic Areas

- Energy and Power Systems
- Climate Change and the Environment
- Agriculture and Food Security
- Urban Development Infrastructure and Services
- Poverty Alleviation and Gender

Key Publications



Executive Director



Dr. Jyoti Parikh, founder director of IRADe, was amongst the recipients of the Nobel Peace Prize awarded to the Intergovernmental Panel on Climate Change for 2007. She is a member of the Prime Minister's Council for the National Action Plan for Climate Change, a member of the governing council of the National Institute of Urban Affairs, a member of the board of the North South Institute and is also a member of the Intergovernmental Panel on Climate Change (IPCC).

Our Partners in Development



C-80 Shivalik, Malviya Nagar
New Delhi 110017
Ph: +91 (11) 2667 6180, 2667 6181
Web: www.irade.org