

URBAN RESILIENCE UNIT



National Institute of Urban Affairs

PIONEERED BY THE
ROCKEFELLER FOUNDATION

100

RESILIENT CITIES



About National Institute of Urban Affairs (NIUA)

NIUA is a premier institute for research, capacity building and dissemination of knowledge for the urban sector and is an autonomous body under the Ministry of Housing and Urban Affairs, Government of India. NIUA conducts research and supports innovations in the urban sector through informed dialogues, knowledge exchanges, training and capacity building in emerging themes such as urbanization, urban policy and planning, municipal finance and governance, land economics, transit oriented development, urban livelihoods, environment and climate change and smart cities.

About 100 Resilient Cities (100RC)

100RC pioneered by the Rockefeller Foundation is dedicated to helping cities around the world become more resilient to the physical, social and economic challenges that are a growing part of the 21st century. 100RC supports the adoption and incorporation of a view of resilience that includes not just shocks such as floods, fires, riots, but also stresses such as growing diversity and ageing infrastructure that could threaten and weaken the fabric of the city on a day-to-day or cyclical basis. 100RC Cities in India include Chennai, Pune and Surat.

About the Urban Resilience Unit

Established in collaboration with 100 Resilient Cities (100RC) Program of the Rockefeller Foundation, the Urban Resilience Unit (URU) at the National Institute of Urban Affairs (NIUA) aims at promoting and supporting the development of resilient cities across India.

The Unit is bringing together theoretical frameworks and practical city assessments for developing evidence and policy frameworks that can be used by the Ministry of Housing and Urban Affairs (MoHUA), Government of India, state and city level development agencies and urban local bodies (ULBs) to build local capacity and mainstream resilience in the urban discourse. This includes developing tools, proof of concepts, data frameworks and protocols, curricula and training programs for urban planning institutes and universities, urban practitioners, city managers and policymakers to enable evidence-based, informed decision making for resilience building in cities.

The Unit is also involved in developing a national platform and convening a wide range of stakeholders including urban planning institutes, philanthropies, private sector, multilateral financial institutes, and urban experts to build strong partnerships for advocating resilience in Indian cities and incorporating resilience in the national urban agenda.

According to World Bank, up to **77 million urban residents** could **fall back into poverty** by **2030** in a likely **scenario of high climate impacts and inequitable economic growth**

India has been ranked as the **sixth most climate change-vulnerable** country by the Climate Risk Index 2018

A study by the World Bank estimates about **600 million people** to be **living in areas which could turn into moderate or severe hotspots of climate change in India**

According to the National Disaster Management Authority, Government of India, **58.6% of India's landmass is prone to earthquakes** of moderate to very high intensity. Over **40 million hectares (12 % of land)** is **prone to floods and river erosion**. Of the **7,516 km long coastline**, close to **5,700 km of the coastline is prone to cyclones and tsunamis**, and as per studies, more than **250 million people live within 50km of the coastline**; a **majority consisting of urban population**

World Bank studies show that **rising temperatures and changing monsoon rainfall patterns from climate change** could cost India **2.8 per cent of GDP** and **depress the living standards of nearly half the country's population by 2050**

What is urban resilience?

100RC defines urban resilience as “the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.”

Need for Urban Resilience in India

Sustainable and inclusive urban growth are essential in revealing the true benefits of India's urbanization. According to McKinsey & Company, by 2030, the country's urban population is expected to be 590 million and cities will be producing 75% of India's GDP. Along with being an economic driver, cities have the opportunity to provide residents with a better quality of life with access to better service provision and infrastructure.

However, without smart growth and effective planning efforts, the economic, social and environmental costs are consequential. Studies show that poor planning and urban management are expected to cost Indian cities somewhere between \$2.6 and \$13 billion annually. Furthermore, trends like climate change will cost the Indian economy \$1.178 trillion by 2050 if emissions continue at their current rates.

Currently, Indian cities are underprepared for future urbanization prospects. Analysis by McKinsey & Company shows infrastructure provision is inadequate in most cities: annually, the deficit in infrastructure spending is more than \$100 per capita, which has resulted in poor maintenance and insufficient new infrastructure development. In the context of rapid development, cities have struggled to manage shocks like urban floods. In 2015, heavy rainfall in Chennai ended up costing the city \$2 billion in damages and losses.

In India, the increasing pace of urbanization and associated challenges are aggravating the vulnerability of cities to such shocks and stresses and there is a growing need to embed resilience at the heart of urban discourse. Urban policies and decisions taken today will have direct impacts on a city's ability to improve governance and manage urbanization. As cities grow, urban governance and planning systems must be strengthened to ensure cities reach their maximum potential. The Urban Resilience Unit within the National Institute of Urban Affairs, has therefore been established with a mandate to mainstream resilience within Indian Cities.

What URU is doing

- ▶ Developing evidence and policy frameworks for mainstreaming resilience in the urban planning and development discourse at various levels of governance in India

- ▶ Building local capacity for resilience building efforts in cities through the development of tools, curricula and training programs for urban planning institutes and universities, urban practitioners, city managers and policymakers

- ▶ Developing data frameworks and protocols to support the establishment of 'data observatories' and GIS-based 'integrated spatial decision-support systems' (ISDSS) to enable evidence-based, informed decision making

- ▶ Supporting existing 100 RC cities in India to become the drivers of the 'urban resilience' agenda and creating 'light houses' for scaling up resilience building efforts in cities.

What support URU can Offer



Urban local bodies and Development agencies

- ▶ Mainstreaming urban planning, project development and business processes
- ▶ Capacity building and training
- ▶ Handholding for city assessments and resilience planning
- ▶ Tools, methodologies, good practices
- ▶ Data frameworks and protocols to develop 'data observatories' and decision support systems
- ▶ 'Match-making' for technical assistance and resources
- ▶ Network and cooperation with cities, experts, national and international agencies



Policy makers and Decision Makers at National and State level

- ▶ Mainstreaming urban policy and governance frameworks
- ▶ Capacity building and training
- ▶ Monitoring and performance evaluation for urban resilience and achievement of SDGs and India's NDCs
- ▶ 'Match-making' for technical assistance and resources
- ▶ Network and cooperation with cities, experts, national and international agencies



Institutes/ NGOs/ CSOs/ Private Sector/ National and International agencies/ Experts

- ▶ Partnerships and engagement with urban local bodies, city managers, national and international sector experts and agencies
- ▶ National level Network Platform on 'urban resilience'
- ▶ Opportunity to promote innovation, collaborate and showcase cutting-edge research on urban resilience
- ▶ Opportunity to create and share knowledge and good practices
- ▶ Support for developing curricula and training programs on 'urban resilience'



"Bird View of Gangtok" by Aasif Iqbal J is licensed under CC BY 2.0 (<https://bit.ly/2rERrif>)



Current Initiatives within the Urban Resilience Unit

Urban Data Observatories

Given the managerial and policy challenges of rapid urbanization that India is expected to experience in the coming decades, city managers need data to begin taking informed decisions now. This will require rethinking in data collection, collation and visualization systems to support evidence-based policy making.

To assist policy makers in developing actionable and effective strategies, URU is developing a national framework for establishing urban data observatories.

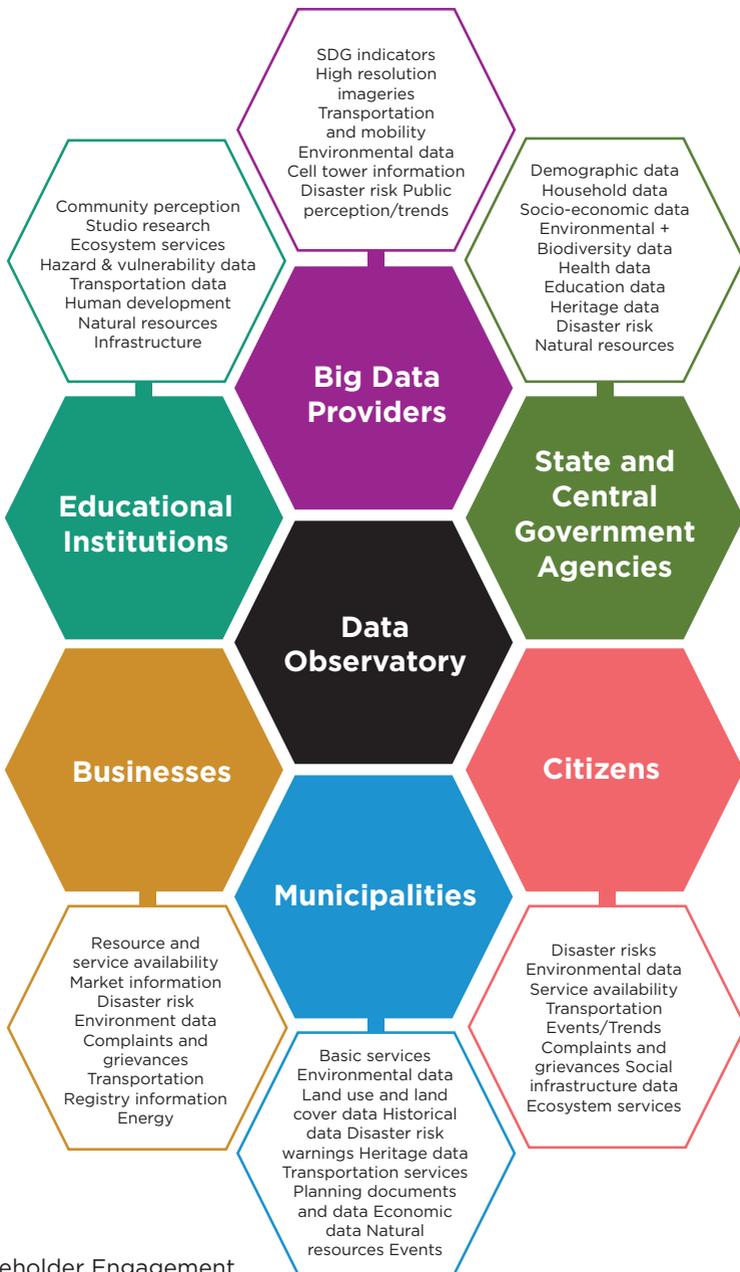
This framework will serve as a tool for city managers, business, institutions and citizens to help them in their decision-making process. The observatory will also help cities in synergizing various matrices such as the liveability index, sustainable development goals (SDGs) and World Council on City Data standards (WCCD).

What is an Urban Data Observatory?

An urban data observatory is a platform which serves as a repository for accurate and frequently updated city specific spatial and non-spatial data that could be used as a decision support system. The platform would include visualization and analytical tools that would assist stakeholders in prioritizing issues that need to be addressed as well as assist in evidence-based decision making.

Stakeholder Engagement

Strong urban systems will ensure that residents, businesses and institutions have the ability to “withstand, respond to, and adapt more readily to shocks and stresses to bounce back stronger after tough times”. Much of the urban data that is generated comes from city wide stakeholders on a daily basis. To ensure that decision makers can make the most effective decisions it will be necessary that all stakeholders are associated with the observatory.



Stakeholder Engagement

Engagement Opportunities



Analytical Support

Through the development of a data framework, URU can assist cities in framing key decision questions and optimizing data for decision support.



Technical Support

URU can help cities choose the tools and vendors that best meet their budgetary and technical needs. URU can assist with user need assessments and risk scoping.



Connections and Linkages

URU can facilitate linkages with central and city government agencies to help collate data. URU can also connect national and international data observatories to build an urban data network.

Impacts

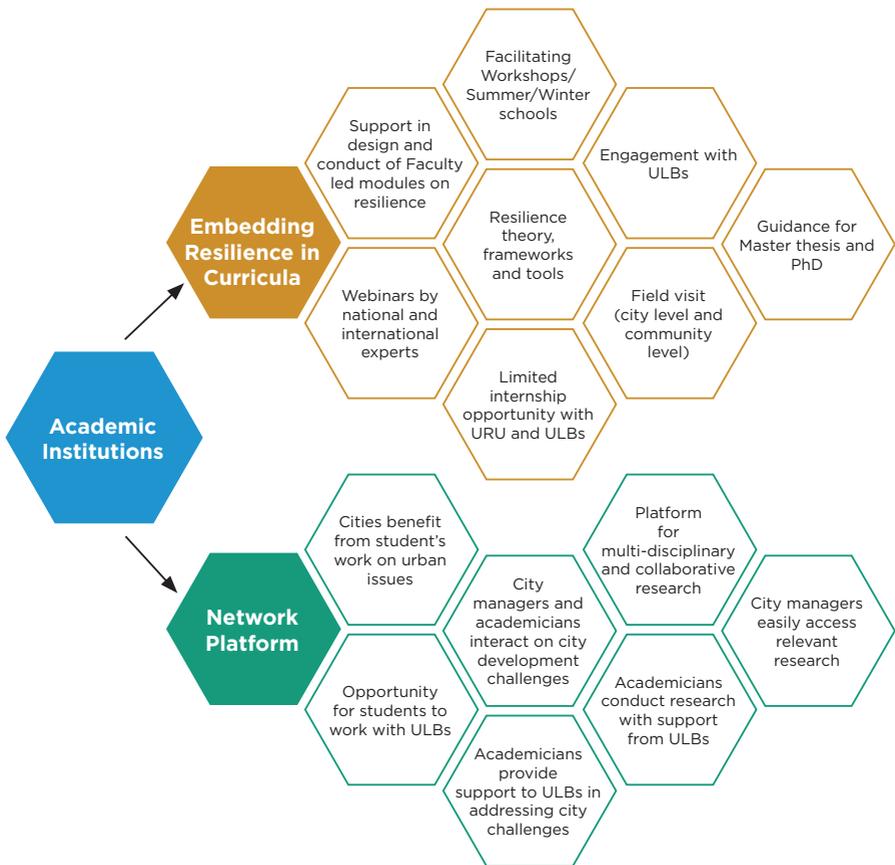
- ▶ Government officials and policy makers will use the observatory to better understand the city challenges. The observatory will also serve as a decision support system, resulting in informed urban planning and management.
- ▶ Businesses would be able to understand the impact of urban spatial factors on their business through visualizations.
- ▶ Institutions and NGOs could use the platform to conduct research and visualize the impacts of their work.
- ▶ The public would benefit from more active engagement through the observatory as well as information about service provision from the government. This would also increase transparency.



"Mumbai India - Bandra Kurla Complex - BKC" by Logan King is licensed under CC BY 2.0 (<https://bit.ly/2SVYqzb>)

Knowledge Networks

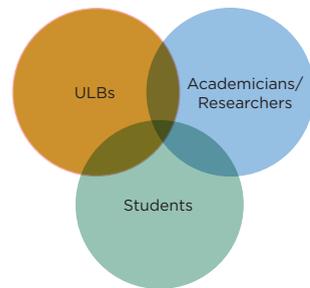
Added to the stresses of urbanization, cities are challenged with acute shocks like flooding, earthquake, heat wave etc., that pose risks to urban infrastructure, quality of urban life and the entire urban systems. The development initiatives in India are increasingly focused on addressing rapid urbanization, however, the coping ability of city systems to shocks and stress require resilient approaches. Embedding resilience into development and planning processes is crucial for building the capacity of cities and mainstreaming resilience into training and education is key for building the capacity of future urban planners, engineers and managers.



In order to mainstream resilience, URU has identified two opportunity areas. One, a **Network Platform** that would bridge the gap between Urban Local Bodies (ULBs) and domain-expert academicians/researchers to build synergy between cities and academia for addressing real urban challenges. Two, **Enhancing Curriculum** on urban education by introducing resilience concepts, frameworks and tools in ongoing courses. Through this initiative and in the first phase, we are engaging with over 20 educational institutions teaching graduate level courses in the field of architecture, disaster management, engineering, environment/urban/regional planning, geography, and urban governance and management.

Network Platform

The network platform, conceptualized as a network and knowledge dissemination platform for the Universities will be embedded within SMARTNET*. The platform will bring together city managers from ULBs, academicians, researchers and students for learning and sharing of information and knowledge for building urban resilience.



Impacts

1. Strengthening synergy and collaborations between ULBs and academicians/researchers around urban planning, management and development.
 - ▶ ULBs will be able to easily access relevant and cutting-edge research done by academicians and researchers.
 - ▶ ULBs will be able to identify and connect with local experts for support.
 - ▶ Academicians/researchers will be able to conduct research and develop contextual solutions in collaboration with the ULBs.
2. Exposing students to real time challenges faced by ULBs, and opportunities to conduct relevant urban research and work with ULBs.
3. Strengthening exchange of knowledge across universities to promote innovation and multi-disciplinary urban research, besides creating dialogues on emerging urban issues.

*SMARTNET, developed and maintained by NIUA is an initiative of the Ministry of Housing and Urban Affairs to support the development of cities across India and to create a resource-rich ecosystem of learning, sharing and disseminating for city managers and primary stakeholders in the urban transformation of India. Log onto smartnet.niua.org for further details.

Embedding Resilience in Curricula

To help build the capacity of future urban planners and managers to address the current and future urban challenges, URU is working with faculties from academic institutions to provide them with necessary frameworks and tools for incorporating resilience within their existing studio, course modules and research. This will help students learn and adopt resilience thinking as part of their ongoing curriculum and implement in their future practice.

Support offered to Academic Institutions

Resilience framework and tools

Support in developing or modifying course curriculum to incorporate resilience

Collaboration across Indian and International Universities

Link to ULBs

Studios/modules/electives/webinars/workshops/summer & winter school/
Thesis guidance/PhD guidance

Showcase and publish research work on Network Platform

Limited internship opportunities at NIUA and with ULBs

Knowledge 'Network Platform'



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Support to Government of India for mainstreaming urban resilience

The URU is providing support to the Ministry of Housing and Urban Affairs (MoHUA), Government of India for mainstreaming urban resilience in national urbanisation policy and frameworks, including the national urban missions such as Smart Cities and AMRUT, urban planning guidelines, plans and tools, and procurement processes.

To this end, URU organized a strategic expert consultation meeting on 'Urban Flood Resilience' and a thought leaders convening on 'Conceptualizing Hub for Smart Cities'. Experts from city government, state government, smart city special purpose vehicles (SPVs), multi laterals, World Bank, Asian Development Bank, private sector, educational institutions and NGOs participated in the consultations.



Experts deliberating in the workshop on 'Urban Flood Resilience'



Hon'ble Minister, Shri Hardeep Singh Puri with the team of Urban Resilience Unit and other experts at the workshop on 'Urban Flood Resilience'



Experts deliberating at the convening on 'Conceptualizing Hub for Smart Cities'



Shri. Kunal Kumar, Mission Director, Smart Cities with the experts from the convening on 'Conceptualizing Hub for Smart Cities'

How You Can Contribute

Join the Resilient Cities movement in India!

- ▶ If you are a Research Institute/ NGO/ CSO working on 'urban resilience' - Be a 'Knowledge Partner' with URU/ NIUA and help us build the discourse and momentum on 'urban resilience' in India, curate good practices and success stories, and build local capacities.
- ▶ If you are a business/ start-up - Be a 'Technology Partner' and help us to support cities in developing innovative solutions for resilience building.
- ▶ If you are an academic institute/ university - Join our 'Knowledge Platform' and provide robust, cutting edge, research-based resilience building solutions to cities across India
- ▶ If you are a city manager/ urban practitioner - Bring 'urban resilience' to your city. Read about the good practices and resilience building techniques being used in India and beyond, and tell us what works and does not work for your city. Share your experience with other cities.
- ▶ If you are an international financing institution/ philanthropy/ donor agency - Support a city or business in developing and implementing resilience building 'solutions' such as data observatories; support URU/ NIUA in building knowledge networks and local capacities, mainstreaming national policies and programs, and build the urban resilience movement in India.

Urban Resilience Unit

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