

Managing Urban Risks in HFA2



Source: <http://1.wp.com/mumbaiatalkies/wp-content/uploads/2014/08/misconceptions-about-Mumbai.jpg?fit=667%2C999>

- 2 Loss and Damage: Beyond Numbers
- 3 Addressing Risk in Urban Informal Settlements
- 4 Loss and Damage in Urban Areas: Some Challenges in South Asia
- 5 Installing Urban Resilience to Hydro-Climatic Risks
- 6 The Jigsaw Puzzle of Recovery in Disaster Management
- 8 Pathways to Urban Resilience: Information, Communication and a New Community of Practice
- 9 Urbanisation and its Impact on Ground Water
- 10 A Framework for Rapid Vulnerability Profiling to Build Climate Resilient Urban Development
- 12 A Lens to Recognise Urban Resilience: The City Resilience Framework
- 14 An Urban Resilience Agenda for India: 5 Key Issues
- 15 Urban Uncertainty in India and Climate Change
- 17 Urban Resilience and Youth
- 18 Sustainable Urban Development and the Role of the Government
- 20 AIDMI: Addressing Risk in Indian Cities

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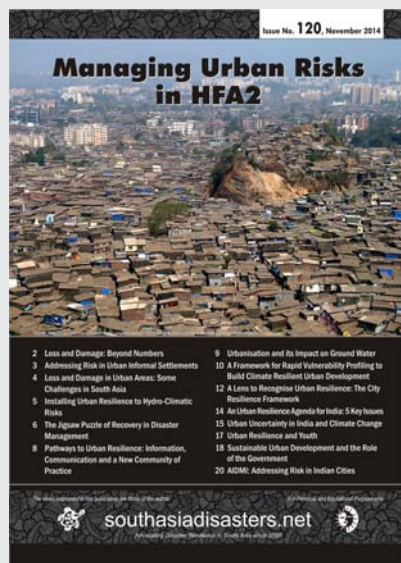


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ABOUT THIS ISSUE



We live in an era of historically unprecedented urbanization. With the influx of large swathes of people to cities, the carrying capacity of a lot of urban systems often gets exceeded. This pushes a greater number of people under the column of vulnerability, giving rise to newer risks and exacerbating the existing ones.

Thus, it is imperative for the post-2015 framework for disaster risk reduction or the HFA2 to provide mechanisms which address the exigencies of urban risks. This issue of Southasiadisasters.net focuses on the important theme of 'Managing Urban Risks in HFA2'. It highlights policy discourses and institutional mechanisms such as frameworks for city resilience and rapid vulnerability profiling that will help manage urban risk.

The important themes focused upon in this issue range from addressing risk in informal settlements to the challenges of urban resilience in South Asia; and from the need for climate resilient urban development to the role of governments in engendering urban resilience and sustainability. Insightful and incisive, this issue of Southasiadisasters.net is aimed to emphasize sustainable solutions to the challenges of urban risk through a robust HFA2. ■

- Kshitij Gupta, AIDMI

LOSS AND DAMAGE

Loss and Damage: Beyond Numbers

When the decision to establish an institutional framework on loss and damage was made last year at the nineteenth Conference of the Parties (COP), Typhoon Haiyan had just ravished through the Philippines days prior. While Yeb Sano, a delegate from the Philippines, gave an emotional speech on behalf of his country during the negotiations, humanitarian aid organizations were busy helping survivors and cleaning up the mess the super typhoon left behind. It was a clear demonstration that even for a country accustomed to extreme weather events, the Philippines was not well-prepared for a super typhoon. The devastation was incredible but one can only wonder how much worse it would have been if the typhoon had hit Manila instead.

The Asia-Pacific region is an interesting case study in this regard since it is characterized by fast development, expanding cities and high risks to typhoons, earthquakes and extreme weather events. Further considering most cities in the region are low-lying and located on a coast, it is expected that most countries in the region will face serious losses and damages due to climate change in the future (if they have not already). Yet most governments have been slow to respond, likely in part due to a lack of research and finances. Despite this, organizations such as the Asia-Pacific Network for Global Change Research (APN) have started to support research and capacity building in the region to identify linkages between disaster risk reduction (DRR), climate change adaptation (CCA) and loss and damage.

While large uncertainties exist as to the future of loss and damage in negotiations, research on the issue remains paramount since climate change will continue to test our ability to adapt and respond to climatic events. As was discussed in Kuala Lumpur at the APN Loss and Damage Workshop, researchers must ensure that the issue is framed in a way that supports CCA and DRR research while also ensuring slow onset events and non-economic losses and damages are not overlooked.

In an urban setting, measuring impacts therefore should extend beyond calculations of human loss and infrastructure damages during extreme weather events. In this regard, framing the issue and conducting research for assessing and addressing losses and damages will need to be informed by continuous discussions and the development of a new methodology. To a certain extent, doing so will help to support the argument that governments around the world need to devote more to mitigate their emissions and adapt to future possible climate scenarios so as to avoid losses and damages in the future.

As ongoing loss and damage research will demonstrate, climate change will test our ability to highlight our sensibilities to vulnerable societies and responsibility to protect our environment in spite of our obsession with measuring and calculating economic impacts. ■

- Stephanie Andrei, Researcher,

International Centre for Climate Change and Development, Bangladesh

Addressing Risk in Urban Informal Settlements

The importance of addressing risks posed by climate change impacts in urban areas cannot be underestimated. Urban areas concentrate people, assets and risks. The large impacts of both rapid and slow onset disasters can be seen as the failure of urban governments to reduce risks.¹ Climate change will increasingly aggravate many disasters, if the new risks or risk levels it brings are not understood and acted on. There are around a billion people living in urban informal settlements around the world. They are usually particularly at risk to the impacts of climate change because of poor quality housing, lack of risk-reducing infrastructure and services, and often because they live on sites exposed to flooding or landslides

The IPCC Special Report on Extreme Events states that "a prerequisite for sustainability in the context of climate change is addressing the underlying causes of vulnerability, including the structural inequalities"². However, adequate building regulations, universal provision of infrastructure and services, and emergency preparedness, is often beyond the capacity or power of local authorities, while appropriate legal and financial systems, access to insurance, as well as national strategies for risk preparedness, may be lacking³. Thus, most low-income urban dwellers face the 'double vulnerability' of increased exposure to climate-related

risks, and limited resources to respond to the risks themselves⁴.

Addressing risk can be done through "hard" measures such as building or improving infrastructure, or "soft" measures which focus on social and governance-based approaches – or a combination of both. There are already many examples of residents of urban informal settlements, lacking protective infrastructure, taking their own household-level measures to minimise the impacts of extreme events before, during and after events, such as by building protective walls, elevating assets above flood waters, and rebuilding damaged structures respectively. There are also increasing examples of collective approaches to minimise impacts, from collective drain maintenance to building elevated walkways. Combined with this can be measures to build local social safety nets, from community savings groups to establishing community funds which

Addressing risk can be done through "hard" measures such as building or improving infrastructure, or "soft" measures which focus on social and governance-based approaches – or a combination of both.

can function as risk transfer mechanisms.

To ensure that the risks are adequately understood, residents of informal settlements themselves can also play a role in risk mapping. Processes of settlement and hazard mapping using simple GPS technologies have been carried out in Indian cities, and used to plan upgrading activities. These maps can also be the basis for opening dialogue between the urban poor and city officials for upgrading and in highlighting the particular risks that need to be addressed as a priority by the city government⁵.

The solutions proposed to address climate change impacts may vary according to who defines the problem and who faces the impacts. Thus, individual households and communities can take their own measures - however, these need to be enabled and supplemented by robust city-based disaster risk management strategies, including addressing infrastructure deficits and service gaps to reduce exposure and vulnerability, and inclusive governance systems. Without these processes, the adaptive capacity of a city will remain severely constrained. ■

– Diane Archer,

PhD, Researcher, Human Settlements Group, International Institute for Environment and Development (IIED), UK

1 Dodman, D. and Satterthwaite, D., 2008. Institutional capacity, climate change adaptation and the urban poor, IDS Bulletin 39(4)

2 IPCC, (2012), Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation, Summary for Policymakers, CUP: Cambridge

3 See reference 1

4 Jabeen, H., Johnson, C., and Allen, A., 2010, Built-in resilience: learning from grassroots coping strategies for climate variability, *Environment and Urbanization*, 22(2), 415-431

5 see for example Livengood, A., and Kunte, K., 2012, Enabling participatory planning with GIS: a case study of settlement mapping in Cuttack, India, *Environment and Urbanization*, 24(1): 77-97

Loss and Damage in Urban Areas: Some Challenges in South Asia

Loss and Damage as an issue was introduced in the mainstream climate dialogue since the 13th Conference of the Parties (COP) of UNFCCC, as a part of the Bali Action Plan. At COP 18 in Doha, parties decided to establish institutional arrangements to improve understanding, strengthen coordination and enhance action and support, to be able to address the issue of loss and damage at COP 19 (UNFCCC, 2013). The need for national actions and research was also identified to help developing countries address. In Warsaw (COP 19, 2014), institutional arrangements to address loss and damage were created with the establishment of the Warsaw International Mechanism for Loss and Damage (WIM) associated with Climate Change Impacts. It aims to enhance knowledge and understanding of approaches to address loss and damage; strengthen dialogue, coordination and coherence among relevant stakeholders and enhance action and support to address loss and damage (UNFCCC, 2014).

So far much of the debate and the work done by LDCs such as Bangladesh has been to deepen understanding and provide case studies on the fact that Loss and Damage is actually happening. These discussions have rather been generic but at an ecosystem based perspective. Looking at the issue of Loss and Damage from an Urban view point has not been taken up. The urban economic and non-economic losses and its impact on population (lives and livelihoods), infrastructure, social (health, education, water supply and sanitation) and environment concerns has not been taken up at the global discourse. Basic

scoping studies and assessments need to be undertaken to generate knowledge, help in creating awareness of linkages, institutions, capacities and responsibilities towards loss and damage in urban areas at the national, as well as state and sub state levels.

As far as the global dialogue is concerned, it looks like a leap forward from a developing country perspective. But certain pre requisites and challenges do remain to be conquered:

1. There is no consensus on the definition of Loss and Damage. Some call it residual loss and damage (beyond climate change adaptation and mitigation). It has moved to also include slow onset hazards, other than impact of extreme events. In addition to the direct economic impact, non-economic losses have also been factored in the loss and damage framework.
2. Research and information is needed on future climate change

impacts and where adaptation and mitigation fail and loss and damage become evident. Where the limits of adaptation and mitigation lie?

3. An important area that has not been researched thus far is how to assess and, more importantly, quantify loss and damage. How do you measure how much loss and damage has been made - keeping in mind all the component of the above mentioned definitional components.
4. Will the definition and measurement framework to assess loss and damage differ based on ecosystems, rural/urban dynamics and level of development within a country?
5. What are the financial instruments available to address loss and damage? Is it additional or what is being offered under existing climate change funds (green climate fund, adaptation fund etc)
6. How does the international mechanism translate at the national level? What kind of policies and frameworks need to be developed backed by evidence based research?

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While we all gear up for COP 21 next year, hope that we have answers to some (if not all) of the questions. We hope that sound body of evidence and knowledge is generated to make a convincing case to support (technically and financially). Varied approaches to address loss and damage are researched, understood and shared among relevant stakeholders for greater buy in. ■

- Hina Lotia,

Director Programmes, Programme Development Department, LEAD Pakistan

Installing Urban Resilience to Hydro-Climatic Risks



New Delhi to Sendai via Bangkok Declaration towards HFA-2

India's high level delegation to 6th Asian Ministerial Conference on DRR led by Minister In-charge for Disaster Management put in the tune towards efficient local planning and preparedness for greater urban resilience against disasters in India. It carried a range of lessons from major disasters like earthquakes in Bhuj, Kucch, floods in Kosi, Leh, Uttarakhand, episodes of drought in Karnataka, Andhra, Bundelkhand, etc. and cyclones like Laila, Aila, Phailin, etc. The 2nd Paradigm shift in disaster management to climate change adaptation based DRR now calls to keep out towns and cities in the centre of 'habitat safety agenda' not only for India but for the region witnessing pace of urbanization.

The Special Report on Extreme Events (SREX) of the IPCC in 2011, which was further interpreted for climatic disasters risks in India in particular and broadly for South Asia, by NIDM's publication 'Environmental Extremes – DRR' 2012, can be clearly linked to the following urban climatic disaster types:

- (a) Metropolitan cities (urban flooding Mumbai, Surat, Bhopal, Kolkata, etc.)
- (b) Pilgrim cities and towns (e.g., kedarnath floods, forest fire, landslide, epidemic outbreak, coastal storms and surges, etc.)
- (c) Epidemic episodes (Surat plague, dengue, chikungunya, etc.)
- (d) Cyclonic disasters in coastal cities, and heavy winds in non-coastal cities (e.g. recent damaging windstorm in Delhi).

Interestingly, looking from the 'disaster vulnerability' lens makes understand impact of climate change on underlying risk factors causing earthquake a devastating disasters as livelihood, economic resources, occupations and land-stability that govern liquefaction, besides house interiors and fixtures. Recognizedly, the hydro-meteorological disasters are growing linearly, if not exponentially, due to increasing abruptness and uncertainties in rainfall patterns, winds, thermal episodes, besides environmental changes driven by anthropogenic

factors – climate change, land-use and landscape dynamics and loss of urban ecosystem basis. For example, shifting to urban agriculture from purely rural, degradation of wetlands and other waterbodies, avenue and road plantations, gardens, besides urban drainage – sewerage, storm runoff with redundancy, waste management and disease prevention, and broadly landscape-land-use management, are some of key issues in urban climatic resilience for prevention and protection of disasters.

Additional dimension is brought by the impact of geophysical hazards like earthquake and lack of maintenance on infrastructure and amenities, on impending hydro-climatic disasters. This is intensified with growing population pressure exceeding carrying capacity. In certain cases floating population with uncertainties about in-and-out flow of tourists in tourism towns is also important in determining disaster risks. Recent intervention of climate resilient DDMP in Gorakhpur under CDKN project is an example to address urban risk in a holistic manner. However, given new dimensions to risk the approach needs value addition.

Taking lessons forward from Delhi Declaration on CCA-DRR integration for Resilient Housing adapted on 28th January 2014, which fed to the Bangkok Declaration 2014 adapted during 6th AMCDRR. While preparing for the 3rd World Conference on DRR at Sendai in March 2015, specific attention for making our cities and towns resilient against climatic disaster risks is a key concern globally and nationally. ■

– **Dr. Anil Gupta**, Head of Policy Planning at NIDM, New Delhi, and Coordinator of Technical Advisory Committee

'Addressing Underlying Risks' remains the most inadequately achieved objective of HFA-1 and, therefore, seeks critical emphasis.

While lessons of recent disasters like Kedarnath flood and Phailin cyclone mooted experimenting local planning dealing Underlying Risks in many pilot projects, leading to fair ideas and approaches useful in ground-level mainstreaming of DRR and CCA into development, India's recent stride to install holistic, pro-active, participatory and planned approach to Disaster Management are: developing the **National Plan for Disaster Management** (including prevention-mitigation plan, response plan and capacity building) 2013, **National Human Resource Plan for DM 2012**, and **Perspective Plan for NIDM's Strengthening & Expansion 2014** to address the multifaceted and huge demand of DRR capacity development in India and the region.

A clear focus on 'safer and sustainable habitat' on 'climatic change adaptation, ecosystem approach, livelihoods and local planning integration with DRR' envisaged in these documents, attained place in Bangkok Declaration 2014 (adapted in 6th AMCDRR) and foresee to Sendai Declaration 2015 and HFA-2.

The Jigsaw Puzzle of Recovery in Disaster Management

Let's first start with a concise working definition of 'Recovery' in the context of disaster management. Once emergency needs have been met and the initial crisis is over, the people affected and the communities that support them are still vulnerable. Recovery activities include rebuilding infrastructure, health care and rehabilitation. These should blend with development activities, such as building human resources for health and developing policies and practices to avoid similar situations in future¹.

In the recent past Pakistan has witnessed a number of disasters and some of those include Kashmir Earthquake - 2005, IDP Crisis - 2009 and Pakistan's mega Floods - 2010. The frequent happening of disasters developed a common understanding of disaster management cycle amongst various stakeholders. The relatively fast pace of occurrence also popularized the vocabulary of the management process of the disaster and recovery and rehabilitation, after search and rescue and immediate relief, is one of them. Floods-2010 hit Pakistan during the month of July coupled with heavy monsoon rains. These rains affected provinces of Sindh, Punjab, Baluchistan and Khyber Pakhtunkhwa which in turn disturbed the Indus River basin. The total economic loss due to floods-2010 was approximately 10 billion USD.²

Development brought about by the colonial regime in India, before partition, had four main objectives⁴:

1. To exploit existing natural resources to serve the needs of industrialization in Britain.
2. To increase agricultural production in response to the demands of industry and domestic consumers in Britain.
3. To prevent the development of an indigenous industrial sector in India, and limit or destroy existing industrial activity, and
4. To increase the revenues of the Empire.

The British enacted a number of laws in support of their development objectives. As a result, a large percentage of natural resources, such as forests, lakes and mines, were taken over from the old feudal order and local communities and became the property of the colonial state, thus making their large-scale commercial exploitation possible. After independence, the government of Pakistan continued most of the policies of the colonial state. Government embarked upon major development initiatives that had far-

reaching environment implications. These developments resulted in the growth of commercial agriculture, the creation of new mandi (market) towns, rapid urbanization and a very large increase in population. Pakistan has also seen the development of a large informal sector in both the urban and the rural areas. And this had an adverse impact on the natural resources of the country.

The transport revolution of 70s when Suzuki pickup replaced the traditional bull-driven carts, hence increased outreach, and economic liberalization of 80s, provided the market forces an opportunity to make inroads to upgrade the traditional mode of economy as run by the conventional power broker, the feudal. In brief democratic spells of the Country, feudal took the role of legislators. The influential and the market forces were smart enough to recognize the power of each other. The feudal lords co-opted and patronized the market by establishing commercial and industrial ventures

FLOODS – 2010, A BALANCE SHEET

Province	Deaths	Injure d	Houses Damaged	Population Affected
Baluchistan	54	104	75,596	700,000
Khyber Pakhtunkhwa	1,156	1198	284,990	3,800,000
Punjab	110	262	497,700	6,000,000
Sindh	410	1,235	876,249	7,274,250
AJ & K	71	87	7,106	200,000
Gilgit Baltistan	183	60	2,830	100,000
Total	1,984	2,946	1,744,471	18,074,250

Source: NDMA, PDMAs, GBDMA³

1 <http://www.wcpt.org/disaster-management/what-is-disaster-management>

2 (Murtaza)

3 (Early recovery plan for the health sector- Health Cluster- Pakistan, 2011)

4 This and the next three paragraphs are borrowed from Environmental Repercussions of Development in Pakistan by Arif Hasan and Amenah Azam Ali, Published by Orangi Pilot Project - Research Training Institute, (OPP-RTI), 1996.

on their land and market forces facilitated to carry the produce and the products to the big and small market towns and to the international market, swiftly. It resulted in increased rural poverty, amplified exploitation of natural resources, out-migration to small towns and cities and above all the lost connectivity between the inhabitants of the same habitat.

Socially, the barter economy being replaced with the cash economy resulted in melting down of the centuries old caste system – which defines the professional occupation of the subjects as well. With the advent of cash and almost no dependence on exchange method the lower tier tasted their limited liberation. Though they still remain under the social pressure of residues of feudalism but serfdom got challenged and less economic obligation was sensed. The maintenance of communal heritage got weak and became tragedy of commons as the bureaucracy traditionally relied upon community work force to maintain the infrastructure, but the latter dwindled. That resulted in poor upkeep of what earlier deemed

mandatory; from riverine forests to river infrastructure.

The Devolution Plan of Musharraf in 2000s⁵, caused a saw a see-saw style political shift in power centres of the Country and it decapitated another important actor, the bureaucracy. Though the bureaucratic machinery is used to be ruthless and a vanguard of the state interests, nevertheless, had a systematic structure and used to be independent of the whimsical political decision making. The Devolution Plan made Deputy Commissioner (DC) a District Coordination Officer (DCO) and subservient to political leadership and whatever space was available for public interests got shrunken and the commercial interests, as ally of political establishment, got a further boost. This also resulted in the exploitation of natural resources and tampering of natural assets.

According to a research conducted by Church World Service Pakistan/ Afghanistan (CWS-P/A) with the support of Christian Aid (CA) on structural causes of Floods - 2010 the root causes are the lack of canal cleanings, altered river regimes, poorly managed embankments,

encroached katcha (riverine belt/ land) land, construction of elevated roads along river spill ways and patronization of deforestation. If those pointers are correct then the prime casual explanation of destruction is the collusion of market forces with traditional power brokers. This factor proved pivotal to convert a natural hazard into a man-made disaster and had politicized the entire calamity. Thus, the destruction as caused by Floods –2010, cannot be viewed in isolation from the political history, the uneven economic development and profound demographic changes and those needs to be understood on scholarly grounds. Without such understanding any attempt for recovery and rehabilitation will be putting bandage on the wound without curing the wound itself. How to do recovery and rehabilitation in such a manner that it can address the core causes of an occurred disaster is question to ponder on by policy makers and disaster management professionals, and as Mr. Arif Hasan – the most celebrated urban planner of Pakistan – put it aptly "Dole is surely not the answer."⁶ ■

– Mansoor Raza,

Deputy Director, Advocacy and Research, Church World Service Pakistan/Afghanistan (CWS-P/A)

5 Pakistan's military government launched a campaign for political devolution in 2000 that it said was aimed at transferring administrative and financial power to local governments. The scheme was to strengthen local control and accountability and, according to President Pervez Musharraf, "empower the impoverished".

6 <http://arifhasan.org/articles/thar-drought-and-change>

Transport and Crisis

The Ministry of Urban Development (MOUD) of the Government of India has a policy that focuses on the mobility of people rather than on the movement of vehicles; and on catalyzing orderly and efficient spatial development towards a "compact city" through "densification" along public

transport corridors—a fundamental departure from the current inefficient retrofitting approach to catch up with uncontrolled urban sprawl.

Recent interventions in India's urban development focused mostly on basic urban infrastructure and services including water supply, sewerage sanitation, drainage, urban road

resurfacing and junction improvements while missing the opportunities in the urban transport sector.

The joint workshop in Jodhpur was a good training opportunity for the counterpart staff and contributed to raising the awareness for stakeholders. ■

– Mihir R. Bhatt

Pathways to Urban Resilience: Information, Communication and a New Community of Practice

Mahatma Gandhi said in the 1940s that city civilisation and village civilisation were two totally different things. This argument is now much harder to make – media and telecommunications systems provide instant connection between migrant urban workers and their home villages. What is indisputable, however, is that we are becoming a predominantly urban species. According to the World Bank, within 15 years 60% of humanity will be based in urban areas. Furthermore, rural populations have no monopoly on exposure to risk: for instance, the Fifth Assessment Report of the IPCC identifies the threats that climate change poses to large urban populations and to the critical infrastructure and services that support them.

The IPCC's First Assessment Report was completed back in 1990, the year in which the first ever web browser, WorldWideWeb, was built. The quarter century since has witnessed an acceleration in urbanization and a transformation in access to information and connectivity through the spread of the internet and the mobile phone – the ITU predicts that the number of mobile phone subscriptions will exceed our 7.1 billion population this year.

The growth of the mobile internet has also coincided with significant developments within the humanitarian system, reflected by the rise of the principles of providing agency, accountability, and empowerment to communities as the primary responders and agents of their own recovery. Technological change has created new pathways to putting these important principles into practice, and has spawned new communities of practice such the

Standby Task Force of digital volunteers and the Communicating with Disasters Affected Communities (CDAC) Network, which, through the responses of its members, has demonstrated that effective two-way interactive communication is an enabler of disaster recovery.

Cities combine much more than density of population, and the built environment with their function as centres of economic activity. They also host media and technology companies, key communications installations, and diverse communities that produce continuous flows of social media. How can we capitalize on these features to protect our urban populations from the shocks and stresses that will come from climate change and other hazards? Below are four elements that should underpin a more comprehensive strategy.

1. **Include Information and Communication in Frameworks and Indicators:** Infrastructure integral to information delivery such as contingency for emergency broadcast facilities and telecommunications needs to be part and parcel of resilience assessment.



Radio station signs for Ishinomaki City Emergency FM, central to supporting information flows after the Japan Tsunami.

(Credit : Lois Appleby)

An assessment of emergency broadcast legislation, media leadership, corporate engagement of media and technology agencies and the capacity of journalists is also important. The role of committed proprietorial and editorial leadership in facilitating the flow of information in Haiti, for instance, following the 2010 earthquake via radio to the population of Port au Prince was significant. Responsible and prepared media leadership needs, however, to be underpinned by journalists literate in the key systems that allow our complex cities to function. Significantly, the groundbreaking City Resilience Framework recently launched by the Rockefeller Foundation and Ove Arup includes reliable communications through diverse and affordable ICT networks – and contingency for them – as one of 12 key indicators of resilience to future shocks.

2. **Protect Information Systems for Markets:** Urban centres develop in the first instance as the locations of markets. Information is essential to market function, and business media are key enablers of market activity and influencers of sentiment. An urban resilience strategy needs to include an assessment of how information services support market functioning, and what contingencies need to put in place to help them provide continuity of information service to markets, particularly to those markets that supply the most vulnerable.

3. **Use New Digital Tools but apply Old Principles:** new geo-mapping digital tools such as Open Street Map have been deployed by the crisis mapper community in urban contexts, making significant contributions to the spatial management of disaster response post Typhoon Haiyan. Big and open data curation are equipping disaster risk managers with novel instruments to identify urban hazards. Social network analysis powered by visualisation technology could play an important role in mapping the vulnerability of the multilayered communities that cities host. These approaches

need, however, to be backed by principles often developed in rural contexts by theorists such as Paolo Freire, the pioneer of participatory communication practice. Specifically, this means working with urban communities in the process of collecting information and with them in identifying risks to generate ownership both of risk and of ways of managing it.

4. **Build New Communities of Practice:** There is currently no network of practitioners and researchers dedicated to the information dimension of urban resilience and risk management. In order to develop collective

learning and coordination mechanisms in this critical area, we need to bring together urban disaster managers, urban planners, researchers, community organizations, and humanitarian agencies alongside media, technology and telecoms companies and the technical volunteer community. Creating novel alliances of these groups is the best way to generate the 'constructive RNA' that could make information and communication a key thread, if not, the golden thread of urban resilience. ■

– **Mark Harvey**, Founder, Resurgence, Co-Founder, Communicating with Disaster Affected Communities (CDAC) Network

NEW DIMENSIONS OF URBAN RISK

Urbanisation and its Impact on Ground Water

Amongst the basic necessities to survive, water is the one of the most important. One of the greatest challenges to cities is rapidly depleting fresh water sources. The main sources of fresh water are surface reservoirs like rivers, lakes, ponds and the other is ground water. Ground water is essentially more important to focus upon as it is the main source of potable water in a majority of regions.

Urbanisation, the process of expansion of towns and cities into large urban centres is posing a great challenge to reserves of ground water. These reserves are extensively being used to cater the requirements of drinking water as well as for needs of construction. To meet these requirements bore wells are being dug and ground water is being drawn out at an irreplaceable pace. The main factors which control the demand of fresh water are the physical & geographical situation of the urban centre and the economic importance of it. A city located in rocky or hilly terrain will depend more on surface water, and an urban district in plains and river basin will

depend more on ground water. Since the growth of cities is much higher in plains, the threat to ground water reserves is much higher.

During the course of rapid urbanisation, some major aspects of environmental protection are overlooked to keep up with the pace of demands. The supply of potable water in cities is catered by either municipal supply lines, or through bore wells covering some localities in the vicinities. People who can afford to get their personal access to water dig up their own wells. But the other aspect associated with urbanisation is generation of pollutants. Cities generate varied kinds of waste which are sometimes highly toxic and dangerous to health. These toxic wastes find their way through to the ground water reserves and pollute it. There can be seen a steep increase in the cases of health problems related to drinking water.

Another important issue is the process of ground water recharge. The prime source of fresh water in our country is the rains in monsoon season. But due to urbanisation, the percolation areas are depleting and surface runoff

increases. Most of the rain water drains away due to concreting and very less amount of water percolates into the ground. Furthermore, the land regulation laws in our country give the owner of a property all the rights to use ground water. It becomes difficult to keep a check on illegal extraction.

There are a lot of areas which require interventions. Regulating use of existing water reserves and maximizing the retention of rain water are some of them. Rain water harvesting should be promoted and can be enforced as mandatory provision in some cases. Surface runoff should be checked by creating proper drain channels and guiding rain water towards recharge pits and lakes. Any new construction taking pace should comply to these regulations, whether it is a residential construction, or relating to infrastructure like bridges and roads. The existing sewage structure should be maintained and kept free of leakages and other deformations. Through these and similar reforms the rate of ground water use be matched with its recharge capacity. ■

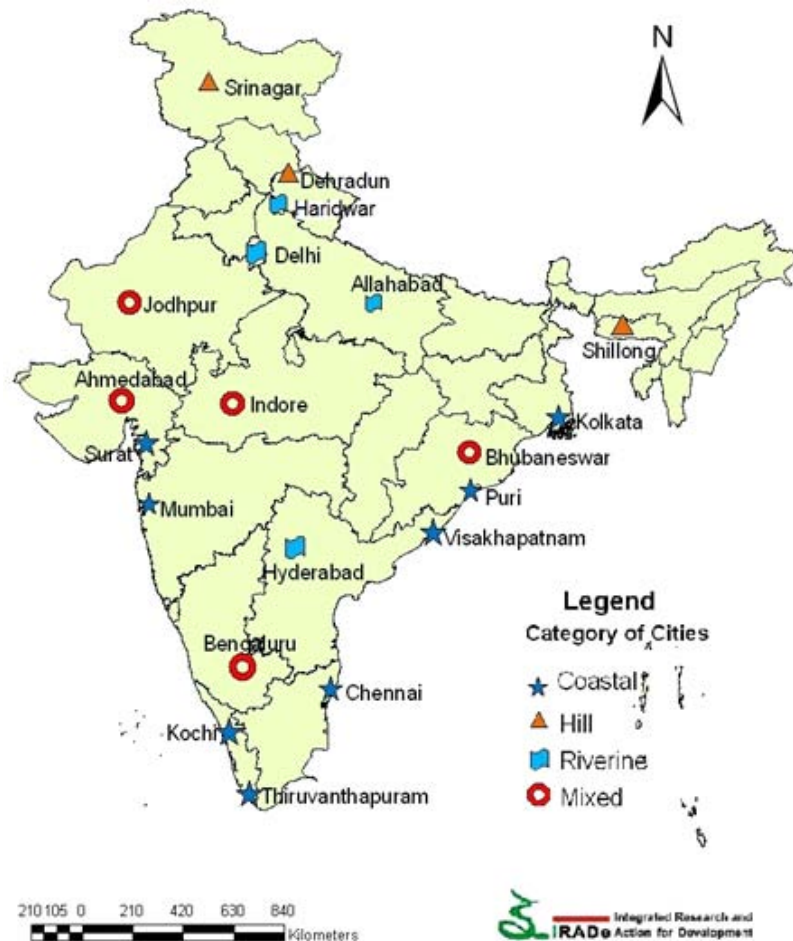
– **Aditya Jain**, AIDMI

A Framework for Rapid Vulnerability Profiling to Build Climate Resilient Urban Development

Background

Indian Cities in the 21st century are facing enormous changes – growing populations, physical expansion, and major new infrastructure investments, shifting governance parameters, and increasing citizen demand for quality services. This growth challenge comes just as impacts of climate change will become ever more severe. Increasing temperatures, stronger and more frequent coastal storms, longer heat waves and drought, more intense precipitation events and flooding will further aggravate the strains that cities face with regard to addressing poverty, inadequate services, infrastructure deficits, and environmental stress. Climate change could also become a strategic economic and political concern as it starts to erode India's economic performance and affect the lives and livelihoods of millions of people.

The genesis of IRADe's work lies in a question raised at the meeting of National Action Plan for Climate Change (NAPCC) chaired by the former Prime Minister, Dr. Manmohan Singh while discussing the National Mission on Sustainable Habitat (NMSH), about "How many cities in India are vulnerable to climate change and in what way?" IRADe approach of the study is based on the fact that to be climate resilient, a city has to first put itself on a sustainable path in terms of infrastructure, governance and socio-economic development. Unless these have their foundation in sustainability, cities cannot handle a new stress such as climate change and be disaster resilient. The main



Selected 20 cities from 14 states cities for case study.

objective of this study was to develop a rapid vulnerability assessment of cities by highlighting various risk exposures and vulnerability factors. Study will help policy makers, urban planners, city administrators, experts, academics, students and aid agencies to appreciate issues regarding climate vulnerability of the cities and help them to deal with climate change related stress and formulate adaptation strategies.

Methodology:

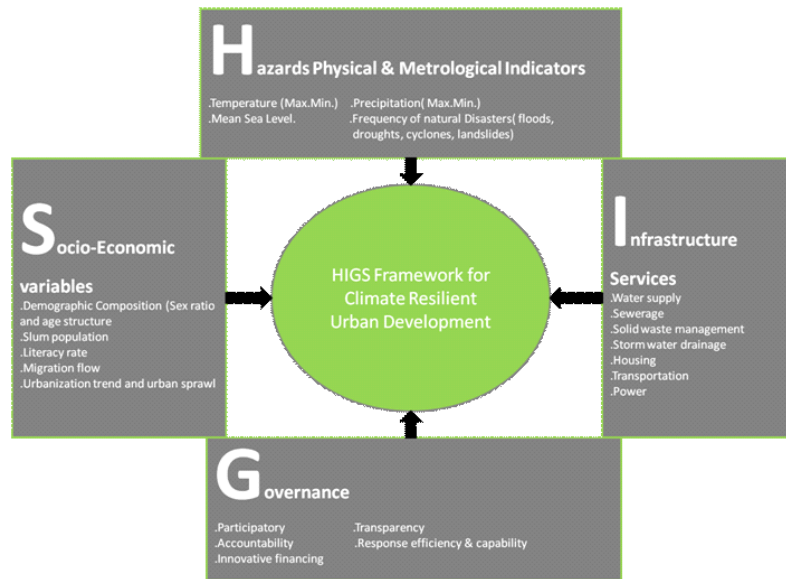
To understand and analyze these measures for India's urban centres,

IRADe designed a framework based on four themes 'H' denotes Hazards and extreme events, 'I' is for the Infrastructure status, 'G' for Governance and 'S' for Socio-economic characteristics, IRADe named it as HIGS. The framework categories the cities on the basis of their characteristics like location, economic and geographical significance. To determine the exposure to the hazards, population density, urbanization sprawl, basic service level benchmark /standards are included and the institutional initiatives and structure are also

considered to highlight governance section. This framework has been tested on 20 cities from 14 different states that represent different demography and diverse physiographic characteristics and ecosystems like 1) Coastal cities – cities along the sea coast, 2) Riverrine cities – cities located along the river or on river delta, 3) Mountainous Cities, 4) Mixed cities – cities with arid climatic conditions, it also consider those cities which are landlocked cities and are not exactly on the river side or sea coast.

Results

A vulnerability matrix was prepared for detailed analysis of the types of the hazards that major cities in the country are exposed to and the issues due to the infrastructure failure that led to such problems. It helped in understanding that coastal cities are



HIGS framework and detailed list of Variables.

affected by very high cyclonic wind velocities causing severe damage to tall flexible and sheeted residential and industrial structures.

Concluding Comment

The challenge of climate change can only be met if cities are healthy and sustainable under normal circumstances. Their existing infrastructure should be adequate. Efficient and responsive governance should be in place. Such cities bounce back against nature's fury in a much shorter time. In order to have climate resilient development with positive mark on India's growing urban centers, IRADe is stressing to mainstream climate resilience measures in urban development programmes and policies as a priority. It is necessary to set up windows to promote and support research and development, with innovation and entrepreneurship through enabling policy environment like legal and institutional landscape, financial and physical infrastructure for urban services. Thus well-targeted interventions emerging out of "HIGS" framework has multiplier effects in promoting sustainable and inclusive urban growth. ■

– Dr. Jyoti K Parikh, Executive Director, and Miss Geeta Sandal, Research Analyst, Integrated Research and Action for Development (IRADe), New Delhi, India

S.No.	Classification	City Name	Hazards					Infrastructure				Population base in 2011	Categorization of cities on basis of population
			Drought	Flooding	Landslides	Cyclones	Heat/cold waves	Water supply	Sewerage	Drainage	MSW		
1	Coastal	Kolkata	Y	Y		Y	Y	Y		Y	Y	14.1	A
2		Mumbai		Y	Y	Y				Y		18.4	A
3		Chennai	Y	Y		Y	Y					8.6	A
4		Surat	Y	Y		Y				Y		4.5	A
5		Visakhapatnam	Y	Y		Y	Y		Y	Y		1.7	B
6		Thiruvananthapuram		Y		Y				Y	Y	1.6	B
7		Kochi	Y	Y		Y	Y		Y	Y	Y	2.1	B
8		Puri	Y	Y		Y		Y	Y	Y	Y	0.2	C
9		Srinagar		Y	Y		Y		Y	Y	Y	1.2	B
10		Shilong		Y	Y		Y		Y	Y	Y	0.3	C
11	Hill	Dehradun		Y	Y		Y		Y	Y	0.7	C	
12	Riverine	Hyderabad	Y	Y			Y	Y	Y	Y		7.7	A
13		Delhi	Y	Y			Y			Y	Y	16.3	A
14		Ahmedabad	Y	Y		Y	Y			Y		6.3	A
15		Allahabad	Y	Y			Y		Y	Y	Y	1.2	B
16		Haridwar	Y	Y	Y		Y				Y	0.3	C
17		Bengaluru	Y	Y			Y	Y		Y		8.5	A
18		Jodhpur	Y				Y			Y	Y	1.1	B
19		Indore	Y	Y			Y			Y		2.1	B
20	Mixed	Bhubaneswar	Y	Y	Y	Y	Y	Y	Y	Y	0.8	C	

Categorization of Cities on the basis of Population
 ● >4 million = A ● 1 to 4 million = B ● <1 million = C ● Y indicates vulnerable

A Lens to Recognise Urban Resilience: The City Resilience Framework

Cities operate in a dynamic environment. They are continuously evolving in response to changing circumstances, as well as internal and external pressures, including: resource shortages, disease, conflict and natural disasters. This century will witness many cities needing to overcome additional stresses arising from rapid urbanization, demographic change, globalization and climate related risks. Historically, some cities have thrived in the face of shocks and stresses, while others have either declined in stature, or perished altogether, either due to physical collapse, social breakdown or economic deprivation occurring suddenly or gradually.

Those cities that continue to function and support their people under adverse circumstances are increasingly described as resilient. But what makes some cities resilient? What made a city like Surat, evolve in response to the challenges arising from its location on a flood plain, including an outbreak of the plague, to become recognised as one of the cleanest and most prosperous cities in India? On the other hand, why has recovery in Port au Prince, Haiti following the earthquake in 2010 proven so challenging? Why did the massive 8.8 earthquake in Concepcion, Chile lead to extensive looting and arson a month later? We know that cities comprise of a complex web of interconnected

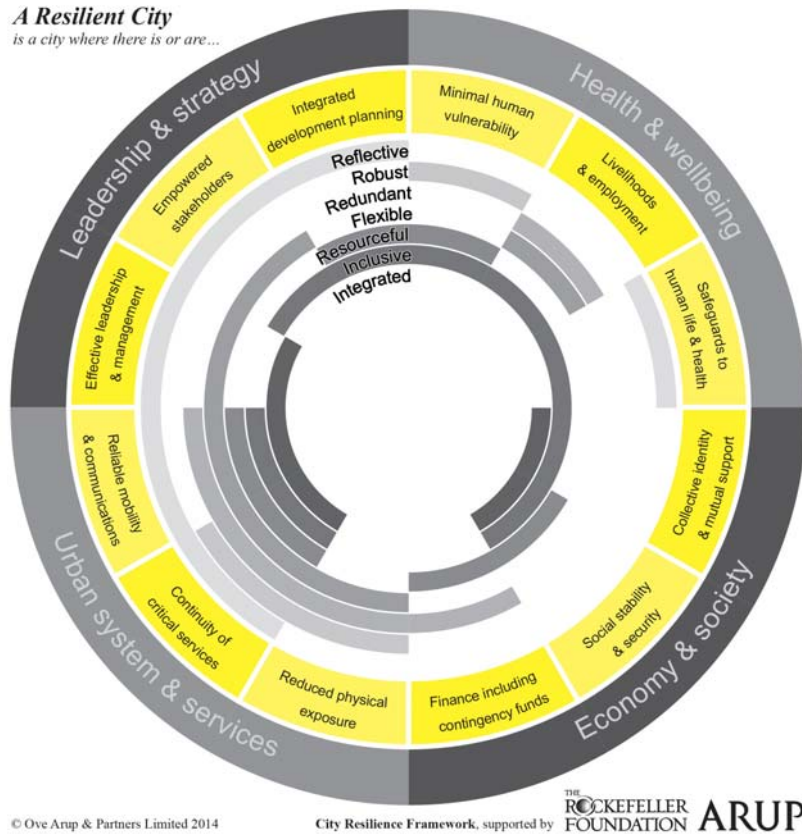
institutions, communities and infrastructure that respond in an evolving way and make the city resilient to varying degrees. But, can we define the characteristics that make a city more, or less, resilient than another?

Over the past year, with the support of The Rockefeller Foundation, a team from Arup has studied these questions through both academic research and direct engagement with cities. The study relied not only on emerging approaches taken to framing or assessing resilience, but also on extracting evidence from cities that have responded positively and negatively to the experience of sudden shocks or chronic stresses. This

A resilient city is a city where there is or are...

1. **Minimal human vulnerability:** Indicated by the extent to which everyone's basic needs are met.
2. **Diverse livelihoods and employment:** Facilitated by access to finance, ability to accrue savings, skills training, business support and social welfare.
3. **Adequate safeguards to human life and health:** Relying on integrated health facilities and services, and responsive emergency services.
4. **Collective identity and mutual support:** Observed as active community engagement, strong social networks and social integration.
5. **Social stability and security:** Including law enforcement, crime prevention, justice, and emergency management.
6. **Availability of financial resources and contingency funds:** Observed as sound financial management, diverse revenue streams, the ability to attract business investment, adequate investment, and emergency funds.
7. **Reduced physical exposure and vulnerability:** Indicated by environmental stewardship; appropriate infrastructure; effective land use planning; and enforcement of planning regulations.
8. **Continuity of critical services:** Indicated by diverse provision and active management; maintenance of ecosystems and infrastructure; and contingency planning
9. **Reliable communications and mobility:** Indicated by diverse and affordable multi-modal transport systems and information and communication technology (ICT) networks; and contingency planning.
10. **Effective leadership and management:** Involving government, business and civil society, and indicated by trusted individuals; multi-stakeholder consultation; and evidence-based decision-making.
11. **Empowered stakeholders:** Indicated by education for all, and access to up-to-date information and knowledge to enable people and organisations to take appropriate action.
12. **Integrated development planning:** Indicated by the presence of a city vision; an integrated development strategy; and plans that are regularly reviewed and updated.

A Resilient City
is a city where there is or are...



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City Resilience Framework, supported by THE ROCKEFELLER FOUNDATION ARUP

research led to the development of the City Resilience Framework (CRF) which capture show resilience is understood from the perspective of different city stakeholder groups in different contexts. Uniquely, the CRF provides a holistic articulation of city resilience which recognises the importance of social dynamics alongside physical assets. It provides a lens that focuses on the twelve critical aspects of a city's performance that specifically contribute to the resilience of a city – as distinct from other agendas such as liveability or efficiency.

By understanding their inherent strengths and weaknesses with respect to resilience, cities can then ensure that their development strategies and investment decisions will enhance, rather than undermine, the city's resilience.

The three layers of the City Resilience Framework – categories,

indicators and qualities – illustrated in Figure each contribute to a richer articulation of resilience. It comprises 12 key outcome *indicators* (see the box) that fall into four *categories*: the health and wellbeing of individuals (people); urban systems and services (place); economy and society (organisation); and, finally, leadership and strategy (knowledge). A deeper level of articulation is provided by approximately 50 *sub-indicators*, each associated with 3 or 4 *variables* that form the basis for either qualitative or quantitative

measurement. The variables reflect the eight qualities that distinguish resilient systems, including: resourcefulness and redundancy, inclusiveness and integration. This structure purposively allows different cities to adopt different approaches to measurement, based on the availability of data and resources.

The framework was presented at the recent World Urban Forum in April 2014 where it was very positively received, notably by the signatories to the Medellin Collaboration for Urban Resilience. This recognises the need to build a common basis of understanding urban resilience among leading global organisations, in order to align global efforts to build resilience and link this to local action in cities. Over the next six months we are continuing to develop our thinking and carry out further research leading to the City Resilience Index which will be published later this year. Meanwhile the 100 Resilient Cities initiative pioneered by the Rockefeller Foundation is collaborating with us to develop associated tools that can help cities to progressively understand, baseline and subsequently monitor their efforts to make their city more resilient. We very much welcome feedback and comment on the City Resilience Framework as input to this further work, so please email us on Braulio.Morera@arup.com. ■

– Sachin Bhoite, Jo da Silva,
and Braulio Eduardo Morera,
Arup, UK

Rapid Assessments

What are rapid assessments for Disaster Risk Reduction and how rapid are they? This is the question AIDMI team is addressing in its work on urban resilience in small cities in India. Assessments are often lengthy, delayed and uncoordinated. The qualitative and quantitative information collide and contradict, and the ways of using assessments remain open to the user. How to address these issues? Be in touch if you have interest. ■

– Mihir R. Bhatt

An Urban Resilience Agenda for India: 5 Key Issues

Interest in urban resilience is growing fast. This is because more than 50 % of the world's population now lives in urban areas, and most cities are located along coasts and rivers-as such, they are highly exposed to the impacts of climate change. At the same time, city authorities in middle-income and low-income countries usually do not have the finances or the technical knowledge to appropriately engage with these impacts. This is why powerful development actors that include DfID, ADB, USAID, the World Bank and the Rockefeller Foundation are all supporting large initiatives to build the resilience of urban areas in developing countries to the impacts of climate change



Vulnerable urban communities participate in a resilience planning process, Gorakhpur, India.

While, it is impossible to provide a universal prescription of steps for building urban resilience, the following are 5 key issues that resilience practitioners aiming to help Indian cities deal with the impacts of climate change must keep in mind.

Work across scales and beyond the city limits: Classic resilience theory demonstrates that systems are highly interconnected therefore it is critical to understand that building urban resilience requires a focus on more than only the city in question. In India this means that actors and organisations working on urban resilience need to engage with state governments effectively. This is because due to incomplete decentralisation and the inadequate implementation of the 74th Amendment to the Constitution (that empowers Urban Local Bodies) by state governments, city governments do not have the power to effect substantial changes in protocols and ways of planning that resilience

requires. Secondly, it is crucially important to understand that the resilience of urban systems is contingent on areas that lie beyond city limits. Peri-urban areas need to be firmly in the sights of those attempting to build urban resilience as these act as ecological buffer zones where, for instance, rivers can flood their banks safely avoiding catastrophic inundation of inner city areas. Also, this is where the next phase of urban development will occur-providing a clear opportunity to ensure that this takes place in a resilient manner.

Engage with a diversity of actors: Indian cities have a diversity of institutions that have a critical bearing on the city's functioning. While each city has an Urban Local Body (e.g. municipal corporation) that is charged with key service delivery functions, many also have para-statal bodies such as 'development authorities' that are charged with key planning functions (that can define the

resilience profile of the city) but do not fall under the purview of the ULB. To make matters more complicated, in resource constrained and politically complex settings such as many tier 2 and tier 3 cities in India-civil society organisations can play a key role in building urban resilience. Apart from disbursed authority, the other imperative for engaging with a diversity of actors in enterprises of building urban resilience springs from the fact that conceptually resilience operates at the level of a 'system'. And a clear understanding of the 'city as a system' can only be derived through deep and sustained engagement with those engaged in disparate elements of the city's functioning to understand interdependencies and complex inter-linkages between different sectors.

Think beyond infrastructure: Supporting a vision of resilience as the 'climate proofing' of critical infrastructure is tempting. This is because it is easier to monitor, easier

to secure political support, it builds on existing systems and for these reasons, it is also easier to find funding for it- but this is only part of the picture for resilience. Key to ensuring the resilience of urban populations is building the innate capacity of individuals to adapt to climate change. This innate 'adaptive capacity' can be built in a number of ways that include ensuring that livelihoods become less sensitive to climate change (e.g. using climate resilient seeds), mainstreaming disaster risk reduction into school curricula, improving drainage (so that flood waters are ejected before they cause cholera) and so on.

Take politics seriously: We have often seen well intentioned resilience initiatives that employ sophisticated analytics, downscaled projections and robust data-led vulnerability analyses fail because the 'politics' is missing. It is not easy to get city politicians to buy into the resilience agenda as often this entails investment of political and financial capital now for an unseen benefit in the distant future, after the next election. Understanding what drives

key decision makers within cities and ensuring that resilience is defined as an agenda that will yield immediate benefits but also reap political dividend in an uncertain future is a way forward. For instance, it is important to communicate how ensuring that drainage is improved is about improving hygiene and sanitation today as well as an important way for reducing flood risk.

Couple with existing priorities and policies: It is critical to understand that building the resilience of towns and cities to the impact of climate change is not an enterprise that will draw resources away from existing important development issues but is essentially a lens that will make development more robust. This means that advocates of urban resilience must push for improved livelihoods but ensure that these are not climate sensitive; they must support improved water and sanitation facilities but ensure that this infrastructure is built using the principles of redundancy and flexibility in order to stand extreme events, and so on. Along with coupling the resilience agenda with

existing priorities, it is also important to couple with existing policies. Urban land use policies and master-plans can be an entry point for building resilience (by, for instance, ensuring that economic assets and housing stock are not located in exposed and risky areas). Funds from policies such as the Jawaharlal Nehru National Urban Renewal Mission and the Rajiv Awas Yojna can all be deployed in a manner that supports the reduction of vulnerability and the promotion of resilience to a changing climate. This is all to say that resilience need not and should not be a stand-alone policy stream.

While resilience initiatives need to be highly tailored to the individual social, economic and physical conditions of different cities, integrating these 5 key issues in resilience programs will allow practitioners to ensure that the initiatives that they are designing and executing will have the maximum impact possible. ■

- **Aditya V. Bahadur**, PhD,
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Environment Program, Overseas
Development Institute, UK

CLIMATE CHANGE AND CITIES

Urban Uncertainty in India and Climate Change

Megacities of India like Delhi and Mumbai are exhibiting today what we can call 'urbanization of poverty' and urbanization of consumption'. If on the one hand we find that more than half of the population in both the cities survives under acute poverty then we also at the same time find that both these megacities house today the most upwardly mobile sections of middle class and elite populations of India. Resources like water and land, consumables like energy, transportation, buildings, goods and services etc. are highly disproportionately divided among the different socio-economic groups

residing in Indian megacities. The resultant pollution, overuse, depletion and exploitation of life sustaining resources like water, greens etc. are also contributed to very differently by cities' heterogeneous populace.

Like many other cities, since long ago Delhi and Mumbai gained urban salience due to their topographies. Whereas the confluence of river Yamuna and extension of the Aravali Forest Ridge placed Delhi uniquely, it was the natural creeks with dense mangroves around the seven islands along with small rivers flowing amidst which helped over time in the

creation of Mumbai as we see today. Among many other things, certainties about their weather pattern and climatic features helped evolve the urban ecologies of both megacities.

Human induced global warming due to greenhouse gas emissions is gradually stoking climate change across the world. Megacities like Delhi and Mumbai of developing countries like India are highly vulnerable to ensuing climatic disorder. Such cities are already experiencing multiple affects. On the one hand these cities are turning into urban heat islands due to their hugely concretised landscape where heat gets



Power plants sitting cheek and jowl by the Yamuna.

trapped and further more their natural greens, like Delhi's ridge forest and Mumbai's mangrove creeks, which help to absorb the heat, are being slowly encroached upon by urban 'desires'. Massively populated slums of both cities are constantly exposed to dangers of flooding resulting from more and more unpredictable rainfall, and alongside not to forget the expanding cycles of seasonal epidemics like dengue fever, typhoid, cholera, chikungunya etc. Energy guzzling nature of India's megacities is best exemplified if one looks at the transportation and built environment of these urban regions. Both, rapidly growing private motorized transport and electricity usage in city buildings are almost totally dependent on fossil fuel based supplies and in turn contribute to GHG emissions. Be it Delhi's river *Yamuna* or Mumbai's *Mithi* today are of scant value as drinking water sources because of being dangerously choked with cities' untreated sewage dumped directly into them. Both cities are expanding their ecological footprints by drawing water from distant sources. The landfill sites of both Delhi and Mumbai have long back exceeded their limits and today have transformed into mountains of solid waste constantly emitting one of the most dangerous GHG called methane.

The above stated certainties of today's Indian cities further complicate for us the conundrum of uncertainties associated with a future of altered climate. Urban India has to scale up on both adapting to climate change and mitigating upon causes of global warming. The certainty of this dire requirement is faced with multifaceted uncertainties. Successful mitigation requires fundamental scaling down in the lifestyle of the rich and middle classes whereas adaptation is the key to make cities resilient against climatic change in favour of the most vulnerable poor. Will the political economy of economic growth based development become inclusive for all urban residents in future or will it continue to widen the gap between rich and poor? Moreover, within the matrix of a globalised world economy what is the scope for Indian cities with their own complexities to develop an economic paradigm which would turn them sustainable ecologically? Government of Delhi and Municipal Corporation of Mumbai in their efforts to deal with climate change are mostly inclined towards raising awareness, developing partnerships with private sector, publicizing technological shifts towards climate sensitive usage of materials and machines, and encouraging behavioural changes towards three

Rs (reduce, reuse, recycle). It is as crucial an institutional uncertainty as climatic for urban areas whether state and market led initiatives will be able to deal with global warming induced climate change.

Increasing climatic uncertainty is also bringing forth our knowledge uncertainties. Which way(s) to deal with climate change are getting prioritized by the key policy/decision makers (why) and what kind of assessments are becoming the driving forces. The tackling of the issue of global warming is so expert driven that democratic or consensual ways of looking at it are most often relegated. Expertise to resolve such a complex issue is so given today that even gauging its impacts on huge number of people is being left to be pursued by professionals. Growth of media is today strongly attached to increasing consumption of goods, products and services within society. Such increasing consumptive patterns of people today, changing them from citizens to consumers fuels not just media but also the way nationally and internationally economies are modeled. Consumption is entrenched within the global warming context. Urbanization is a key constituent in increased consumption. Can there be a decoupling possible between urbanization and consumption in ways to abate climate change and could it be possible for media to play a role?

Since 2007 more than half of the world's population has urbanized and this growing phenomenon has a distinct relation with global warming. What type of urbanism is going to prevail, especially in developing countries, is going to shape the lives of people and our planet. And, there seem huge uncertainties about this trajectory. ■

- Dr. Alankar*

* He is a researcher with SARAI, Centre for the Study of Developing Societies (CSDS), Delhi and is working in the STEPS Centre Uncertainty from Below Project

Urban Resilience and Youth

Cities have ever symbolised the zenith of human development and progress. They have always embodied the highest achievements and accomplishments of a civilisation or people. Cities act as gateways to the world outside and provide such opportunities and avenues of employment and education that cannot be found elsewhere.

Historically, India has witnessed the rise and

growth of a number of cities. Situated often on the banks of rivers, these cities became flourishing centres of art and commerce. These factors made cities very appealing and attracted people, especially the young, to migrate to them from the hinterlands. The trend continues till date, in fact, it has shown an increase, as instead of cities having become redundant units or losing their significance in the scheme of things, they have become much more important given their global nature and connectedness.

Indian cities, like several cities in the developing world, house huge populations, a large proportion of which are youths. This demographic profile of cities is not only a reflection of the current national demographic profile, but is also a result of the mass migration of rural youths to urban areas. Cities are the oases, the greener pastures that attract these young minds, whose attempts at finding windows of opportunities for themselves in the rural areas have met with bottlenecks and dead-ends. Whatever may be the nature of association of youths with urban areas, as citizens or migrants, the



Whither Urban Resilience and Youth?

question of resilience stands as one of the most important. In the following few lines I shall try to briefly chalk out the complexities and connections between the aforementioned terms, urban resilience and youth.

Considering case two first-migrant youth will help us expound the distinction between what urban resilience means to the two youth groups and how it relates to each of them. When rural youth migrate to urban areas, they do so largely with empty hands, accompanied just by the dream of acquiring avenues for development. This makes them vulnerable. On arriving in urban areas, they are often flummoxed by the very size, diversity and the functioning of the city and when they find themselves without the adequate knowledge of their rights and duties as migrants, they find themselves under pressure from all sides economic, political as well as administrative and this is when resilience comes into the picture. These youths are not resilient to these changes and are often unable to deal with them as they are ill-equipped to do so, which many a times pushes

them into conflicting situations or onto the wrong side of law.

On the other hand, this influx of migrant youth attracts the wrath of urban citizens, especially urban youth, who, though well equipped to deal with change introduced through modern technology, are less resilient to the realities of resource constraints and infrastructural overuse.

Infrastructural overuse is itself apocalyptic and leads further to natural disasters of the type witnessed in Mumbai a few years back, when the entire city came to a standstill due to floods. Resource constraints have also led to conflicting situations. Interesting to note during the episode were the initiatives that young people took during the crisis in order to deal with it, which were efficient but also cut across cultural, economic and other boundaries. These incidents go to show the various ways in which resilience makes its way into the lives of youths in urban areas. Though this association is largely covert, it is comforting to know that it exists and it would do us good to educate and train our youths such that their quotidian urban lives are informed by its presence and strengthened and rendered better by it so that they do not fall back upon this association just as the last resort in the face of catastrophes, eliciting it out at the very last moment. Thus, what we need now is to actively incorporate both these components, youth as well as resilience into disaster management in urban areas. ■

– Swati Bhattacharya, MSE Candidate, Hult International Business School, San Francisco California, USA

Sustainable Urban Development and the Role of the Government

Urbanization is an inevitable outcome of modern civilization. Tonnies (1957) differentiated between rural and urban communities in terms of social relationship and values. Each and every region is directly or indirectly associated with urbanization.

Assam is an important state of north-east India bounded by Bhutan and Arunachal on the north; Arunachal Pradesh, Nagaland and Manipur in the east; Mizoram and Meghalaya on the south; and Bangladesh and West Bengal on the west. The state has a narrow corridor of 35 Km. wide between Bangladesh and Nepal which is the link with the rest of the country. Total geographical area of the state is 78,523 sq. Km.

Assam's physiography is characterized by diverse features such as flood plains, marshes and beels, scattered hillocks, folded hill range and old plateaus. The total population of Assam was 32.9 lakh in 1901 which increased to 146.25 lakh in 1971 and 266.38 lakh in 2001.

The growth of urban population been meager in Assam. The growth of urban population in Assam remains substantially low as compared to the national average. In 1901 the urban population in Assam was 2.34% as against 10.85% of all India average. In 1951, the percentage of urban population increased to 4.3 % in 1951 and further to 12.72% in 2001 as against the all India level of 17.29% and 27.78% respectively for the some period. Thus, urbanization in Assam is very slow, both in hills and plains.

Modernization and urbanization are closely co-related and modernization

is marked by increasing urbanization which in turn resulted in the spread of literacy and employment opportunities. Most of the nations of the world have energized their efforts for rapid industrial development which has the power to attract more money, men and materials for urban centers. Both the heavy industries and the small and medium sized industries in urban areas attract the people from agricultural activities to industrial activities.

However, urbanization is a natural outgrowth of socio-economic development for proper urban development in the backward states of India and the urban governance has to work sincerely. Urban governments today is characterized by fragmentation of responsibility, inadequate devolution of functions to the elected bodies, lack of a clear line of financial resources to them, adherent to outmoded methods in property taxation and hesitance in the matter of every user changes . Municipal bodies are to be given all support and legislative and administrative measures to make them into institutions of local governance. Furthermore, capacity building for resources raising and provision of services are important with urban government. Through them, the proper development can be ascertained of the urban areas of Assam.

It is clear that urban policy in India and north-eastern states remains in its nature unconscious, partial, uncoordinated and negative.

It is clear that urban policy in India and north-eastern states remains in its nature unconscious, partial, uncoordinated and negative. The national or regional urban policy speaks of a balanced welfare, environmental protection in the growth centers of urban areas. In this, the administrative, technical, managerial and financial capacity of urban bodies should be strengthened.

Role of the Government

Among many conflicting ideas generated by tradition and modernization, three basic issues stand out prominently. First, there is a fundamental issue of desirability or otherwise of urbanization on large scale. Secondly, there is a choice between an idealized and highly decentralized settlement system with the self-sufficient villages as the basis and opposite of a highly centralized urban system. Thirdly, in federal political system, urbanization is state subject.

However, our Governments have been adopting various types of direct and indirect measures to develop the process of urbanization. These processes include industrialization, formation of new administrative settlements, establishment of new trade and commerce centers etc. modern governments have immense roles for urban development. Modern governments are welfare governments with decentralization and democratic set up. Hence, the people's welfare is the main concern for modern democratic set up. The performance of the government is highly reflected in the development of the cities and towns of modern India. It is true that urbanization is the most powerful socio-economic

component of modernity. In India urbanization has come to occupy an important place in economic development of different regions. In India the highest urbanization has been found in the metropolitan areas of Delhi besides Chandigarh, Lakshadweep, Pondicherry and Daman and Diu. In these areas 90 percent to 45 percent live in urban areas. In West Bengal about 27 percent people, in Tamilnadu 34 percent, in Punjab 30 percent, in Kerala 26 percent, in Maharashtra 38 percent, in Gujarat 35 percent people live in the urban areas.

When compared the rest of the World, the level of urbanization is very low in India. The World as a whole had a level of 45 percent in 1990 and the highest level being 85-90 percent in Australia. It has been estimated that by the early part of 21st century half of World population will reside in India.

The diversified roles of the Governments can be mentioned as firstly, the Government plays the role of moderator of urban development. Secondly, the Government plays the role of growing agency for modern large and strategic industries. Thirdly, government plays the role of controlling agency of ill and defective activities occurring inside the urban areas. Fourthly, both cooperation and competition should be introduced for better development of urban areas. Fifthly, the environmental balance should be properly utilized in urban areas for sustainable and holistic urban development. However, the development of commerce and trade gives a new dynamism to rapid urban development.

Suggestive Measures

Though the problems are increasing with the growth of urbanization, yet urban areas are increasingly attractive centers for the modern

people. Therefore, some measures have to be adopted if we want to remove the urban problems. Some of the suggestive measures are as follows:

1. Systematic development of the fast growing urban centers and planning programme for creation of job opportunities should be started by the government with a goal of sustainable urban development.
2. Regional planning along with city planning should be started very carefully for proper growth and development of our towns and cities.
3. To remove the overcrowding problem of the urban areas and to reduce the high pressure on land the industries the concerned agencies should be encouraged to move to backward areas or districts.
4. The financial resources of the urban bodies should be generated through well developed infrastructures in the urban areas so that the people in the urban areas may be benefitted by improved services.
5. Private transport along with Government Transportation should be developed properly for the people.
6. Pragmatic housing policy should be developed in the urban centers for proper housing facilities.
7. Structural decentralization policy should be adopted by the urban government for proper community development through 'neighborhood-action groups'.
8. Corruption inside the urban government bodies should be minimized for proper development of the urban areas.

Through these measures, we can expect the meaningful development of urban areas.

To conclude, it can be said that the problems of urbanization can never be solved until and unless strong urban planning and policies are adopted. In this era of developed technology, urban facilities should be developed and they should be ensured for all people, irrespective of their socio-economic status. Modern people's increasing eagerness for the urban life is a good sign but the approach for sustainable urban development should be started everywhere. It is the need of the hour. ■

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AIDMI: Addressing Risk in Indian Cities

Since the year 2001 All India Disaster Mitigation Institute (AIDMI) has worked at least in 42 cities from 13 states/ union territories of India. The activities include emergency management exercises, community consultations, participatory risk assessments, school safety audit, hospital fire safety audit, capacity building activities through trainings, demonstrations and mock-drills; advocacy through round tables, community researches, gender studies and information dissemination; participatory shelter and school reconstruction activities, restoration of livelihoods, micro-finance to businesses and risk transfer initiatives of slum dwellers. These activities support slum dwellers and the urban poor from marginalised communities. ■

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