

# Urban Resilience and Children's Rights



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## ABOUT THIS ISSUE

As the second most populous country in the world, India's has a greater share of young people in its population than other countries. Almost 65% of India's population is under 35 years of age, of which 39% is 18 years or below. Experts call this a demographic dividend. However, the optimism of this dividend is tempered by the dismal fact that more than 8 million children under the age of 6 years live in slums. This exposes a large number of children to a variety of risks. These risks are greatly amplified in the event of disasters, emergencies and climate extremes.

If India is to reap the benefits of this demographic dividend then the rights of children and young people need to be promoted and protected. Urban development and regeneration has been a recurring agenda of successive governments. However, holistic urban development can only be achieved by embedding children's rights to protection and prosperity in India's cities.

This issue of *Southasiadisasters.net* focuses on the theme of 'Urban Resilience and Children's Rights'. As Indian cities are constantly embattled against disasters and emergencies, its children often find themselves to be the victims of abuse, harassment and exploitation. This issue highlights the need for making children's rights to protection against the aforementioned risks indispensable in building 'Smart Cities' that are sustainable and resilient. ■ - **Kshitij Gupta**, AIDMI

## INTRODUCTION

# Smart Cities Must be Safe Cities



Cities are complex centres of life, culture, innovation and economic growth. India's disaster profile is alarming with frequent incidents of natural hazards like floods, droughts, cyclones, etc. Approximately 85 percent of Indian landmass is vulnerable to one or more natural hazards, with 68 percent vulnerable to drought, 57 percent to earthquakes, and 12 percent to floods. Estimates by the National Institute of Disaster Management (NIDM) suggest that in India, 50 million people are affected by droughts and 30 million by floods annually. The social, economic and environmental costs of hazards are exorbitant in view of rapid urbanisation and unplanned development being witnessed by cities in India; often leaving them vulnerable. In January 2013 alone, India suffered a loss of over INR 10 billion plus due to the adverse winter weather (TERI, 2014). In wake of various recent disaster events like Uttarakhand floods, *Hud-Hud* cyclone in Vishakhapatnam, Assam floods, earthquake shakes in the Himalayan region, safety concerns and disaster preparedness of our cities is put to question.

The Indian Government through its 'Smart Cities mission' is all geared to building new smart cities which will turn urban centres into more energy efficient, environment friendly, and lively centres for living. However, cities can't be just smart. They must be safe too. Several initiatives have been taken up by the government in the past to strengthen disaster readiness and decrease vulnerability of cities. These include laying out a National Policy on Disaster Management, setting out building codes for earthquake prone areas, awareness generation, and creating a number of disaster management institutions/departments at both national and state levels to strengthen existing infrastructure in disaster-prone areas/states. However, there is still a huge gap in terms of the kind of preparedness that is required given the magnitude of the potential dangers and costs of disaster events in Indian cities. Lack of capacity of the city officials in terms of assessing the risks at the local level and poor communication systems are some of the major challenges faced by the city government in disaster management. The high vulnerability of the cities also arises out of poor enforcement of rules and regulations and inadequate risk mitigation at the state/city levels.

In light of the high exposure to hazard risks and high vulnerability of our cities, it is important that disaster management becomes integral to development planning and smart growth of our cities. Not each hazard must turn into a disaster. Cities must create a pool of data, which clearly show the history of disaster events at each level and the destruction caused. Embedding new technologies for example early warning systems, integrated infra monitoring systems, emergency response systems and proper evacuation mechanisms can significantly help city managers to create an overall safe environment, safeguard city infrastructure and protect citizens in case of disaster events. By way of integrated city planning, capacity building, proper enforcement of the set land use and buildings regime, early warning and increased sensitisation of the communities on risk mitigation; cities can significantly help in reducing the social as well as economic losses arising from such events and moving towards building safer and disaster resilient cities. Community participation and cooperation in times of disaster can also go a long way in mitigating the impacts of disaster events. ■

- **Seema Singh**, Research Associate, Sustainable Habitat Division,  
The Energy and Resources Institute (TERI), New Delhi



# Urban Resilience and Children's Rights in Bangkok

The July 2011 monsoon rains caused Thailand and especially its capital, Bangkok, to experience the worst floods in the last fifty years<sup>1</sup>. The floods caused the death of more than 800 people, 75 of which were children<sup>2</sup>. According to the UNFCCC the major cause for the catastrophic 2011 floods was climate change. The most devastating consequences of the floods were of course suffered by the poorest and most marginalized segments of the population which, in an urban setting such as the city of Bangkok, mainly live in informal settlements. These people face higher risk as they live in spaces which are physically more precarious and vulnerable, such as river banks, and are simultaneously less equipped to recover from the damages caused by floods, which include inundated homes and disrupted livelihoods<sup>3</sup>.

Although, in contrast with other cities in the region, a significant proportion of slum dwellers in Bangkok pay rent, are connected to electricity and thus can expect to be relatively permanent in their surroundings<sup>4</sup> it is once again the poorest families which face the biggest challenges; many do not know how to register themselves as permanent residents, and many, especially "irregular" migrants,

choose not to do so for fear of becoming visible<sup>5</sup> and hence deportable. It is the poorest of the poor which lack any kind of safety net; as they cannot access public services and do not have permanent shelters, their vulnerability and precariousness is exacerbated.

Within a household children are particularly vulnerable to the consequences of climate change. Extreme weather events, such as the 2011 floods, kill many children immediately, through drowning or electrocution, and in the longer term, through diseases related to malnutrition, poor water and sanitation<sup>6</sup>.

Thus climate change, understood as a cause for heightened food insecurity and increased malnutrition especially in children, is an obstacle to children's right to "survive and thrive"<sup>7</sup>; it hampers their right to life, survival and their right to a standard of living adequate to their health and well-being.

The 2011 floods in Bangkok not only caused the suspension of thousands of children's right to healthcare, but also to education. In the face of the magnitude of the devastation caused

by the floods over 3000 schools across the country remained shut for over a month<sup>8</sup> so that even the children's right to education was hindered.

Yet, children have the potential of becoming key actors in the struggle for increasing resilience to climate change and its related natural disasters. They can help their communities identify risks and, as UNICEF studies suggest, they have the interest and capacity to engage in the search for adaptation solutions. Children should thus be given space to actively participate in policy making processes<sup>9</sup>. In this optic the global movement "Child Friendly Cities" emerged almost two decades ago<sup>10</sup>. The aim of the movement is to encourage the inclusion of children's voices in the creation of livable cities where every citizen, young and old, can exercise their human rights.

Movements like "Child Friendly Cities" are a beacon of hope in imagining a future where everyone, including the most vulnerable children, may be secure and protected in the face of natural disasters. A hope for Bangkok and the world alike. ■

- Costanza Ragazzi,  
Bangkok

- 1 Taylor, Anne. (2011, October, 12). "Worst Flooding in Decades Swamps Thailand". In: *The Atlantic*. Retrieved at: <http://www.theatlantic.com>
- 2 World Vision Asia Pacific. (2013), *Cities Prepare! Reducing Vulnerabilities for the urban poor*. Retrieved at: [http://www.preventionweb.net/files/42643\\_42643citiesprepare1.pdf](http://www.preventionweb.net/files/42643_42643citiesprepare1.pdf)
- 3 Berquist, Michelle et al. (2015). "Planning for global environmental change in Bangkok's informal settlements" In: *Journal of Environmental Planning and Management*. 58(10). pp. 1712.
- 4 World Vision Asia Pacific., pp.50.
- 5 ibid.
- 6 UNICEF (2011) *Children and Climate Change: Children's Vulnerability to Climate Change and Disaster Impacts in East Asia and the Pacific*. Retrieved at: [http://www.unicef.org/eapro\\_pp.7](http://www.unicef.org/eapro_pp.7).
- 7 UNICEF *Convention of the Rights of the Child*. Retrieved at: [http://www.unicef.org/crc/index\\_30160.html](http://www.unicef.org/crc/index_30160.html)
- 8 World Vision Asia Pacific., pp.50.
- 9 UNICEF (2011) pp. 15-17.
- 10 For more on this movement see <http://childfriendlycities.org>

# Relocation, Resettlement, Rehabilitation: Key Challenges and Opportunities for Cities

Historically, individuals, communities and enterprises have located themselves close to economically or socio-politically convenient locations, with limited knowledge of current or future risks. Some of these areas are particularly exposed to risks by virtue of their locations, such as trading ports or fertile river beds. Many existing neighbourhoods are now known to be exposed to high hazard risks, both climatic and tectonic, and in few cases decisions are being taken to relocate them (or themselves). While resettlement could provide a transformational opportunity for reducing long term risks (hazard and other socio-economic) for these people, their neighbourhoods and cities at large, other political and legal concerns often detract the decision makers from this goal and a holistic approach for long term development is not achieved.

Location decisions in the context of resettlements and relocations are based on various market forces, including availability of adequate, acquirable and 'safe' land and current value of the land in question for alternate uses. But each of those decisions have multiple sub-dimensions. Who defines adequate? What is the availability of subsidised public land versus price one is willing to pay for private land? Safety itself is a subjective term. The location may be safe with respect to currently known risk, but in the context of increasing and intensifying climate risks, will it still be safe in the future? Is it safe for hazard risks versus all other everyday socio-economic risks, and in this context is it safe for individuals versus its safety for the city? Who perceives what risks and



Photo: Yashodhara Udupa (IHS).

*Open drains outside of relocation site in Sevanagar Madhurvada, Vizag, Andhra Pradesh (November 2015).*

how do people's perceptions of risks drive market outcomes and vice versa?

Often people move voluntarily. What measures are taken such that the new areas they inhabit are less exposed to risks? How can people take informed decisions such that the cumulative outcome of such individual decisions is still beneficial for the cities at large? What instruments can help people to be more resilient to respond and cope with these risks that they could not before? In the context of resettlements and relocations as a corrective or preemptive response to hazard risks, what regulations and planning policies can help avoid risk creation? What incentives and disincentives could planning introduce to affect these distortions in inequitable land markets?

Risk is also often used as a pretext to move and evict people, especially when the alternate use of the land they are currently staying at is more

economically viable. Resettlement could be very 'costly' (financially, economically and psycho-sociologically) and must be treated as a last resort. Only when all other alternatives are understood as more 'costly', and less effective in reducing the 'un-mitigable' risks, that resettlement could be considered. It is for these conditions that there needs to be a better understanding of how then to design such interventions, for most effective, sustainable and equitable outcomes.

Much has been learnt from the resettlement and relocations in the context of developmental projects (ADB, 1995; WB, 2001), the work on climate or hazard related R&R is still recent and limited (de Sherbinin et al., 2011; Ferris, 2012, 2014; Oliver-Smith, 1996; Oliver-Smith & de Sherbinin, 2014). Often the same policies are used for development related R&R are also used in the disaster related R&R with limited understanding of the differences

between them. There is a further paucity of literature that examines the urban context of R&R. There needs to be more research for the most vulnerable urban centres, particularly in small and medium sized towns, which are often the sites where the most vulnerable are forced to live. Land tenure also is understood very well in the land acquisition context for development projects, but its understanding within the risk discourse seems to be very disjunctive.

India will be predominantly urban by 2030 (World Urbanization Prospects, 2014) and is now shifting its focus from being an agrarian society to largely an urban centric economy with the new national policies on cities (e.g. Smart City Scheme, Atal Mission for Rejuvenation and Urban Transformation, etc.). But at the same time, studies show, that about 76% of the Indian population is exposed to high to medium hazards, of which 29% lives in the 468 cities with population more than one lakh (Jain et al., 2015). In this context of concentrations of people and economy in cities, and growing risks, it is pertinent for the planning agencies to understand ways in which future risk creation could be averted, and current risks are reduced for the most equitable and sustainable outcome.

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**- Garima Jain,**  
Indian Institute for Human  
Settlements, Karnataka

## CHILDREN'S RIGHTS AND DRR

# Urban Resilience and Children's Rights in Sri Lanka

Sri Lanka has often been described as a tropical paradise. As the golden beaches, the mesmerizing heritage and the breathtaking wild life vie for one's attention, we can say that it is "The grand pageant of Asia". However, Sri Lanka is also plagued by weather related hazards. Like floods, landslides, lightning strikes, coastal erosion and much more. On top of that, Sri Lanka faces one of the world's longest running armed conflicts, one that continues to cause immense suffering and violations of children's rights.

During the period 1974-2004, 2,964,655 people in Sri Lanka were affected by floods, highlighting the country's vulnerability to low-frequency but high impact events.<sup>1</sup> With more than half its population likely to live in cities by the year 2020, Urban Resilience is becoming an increasingly important concept in the present era. The Sri Lankan government – with the help of the United Nations – is taking a serious measures and initiatives towards urban resilience. Overcoming the flood problem, the government has undertaken several strategies like improving the drainage infrastructure through the 'Metro Colombo Urban Development Project'<sup>2</sup>. One of the foremost urban development initiatives of the government in recent years has been the uplifting of underserved settlements through the provision of new housing. This is to ensure that there will be minimal disruption to peoples' lives. The urban development plans being drawn up for many of other cities will ensure that they are all greatly improved in the times to come.

Studies show that over two decades of armed conflict has meant that

today's children have grown up experiencing only a conflict situation with insecurity, violence, physical and emotional trauma and material deprivation.<sup>3</sup> A situation of violence and insecurity often disregards the rights of children as an affected group. The Government of Sri Lanka recognizes that the quality of childhood has tremendous influence on the development of the individual. Therefore, it is implementing the **National Child Protection Policy**<sup>4</sup> which will aim to create a protective and caring environment, where girls and boys are free from violence, exploitation, and unnecessary separation from family.

At last, we all know that the Sri Lankan government has made strenuous efforts towards urban resilience. They are also trying to change the way children are viewed and treated. But as Albert Einstein once said "*All that is valuable in human society depends upon the opportunity for development accorded to the individual.*" Since, the achievements of a nation are nothing but the combined efforts of each individual, therefore it is imperative to provide each child with the opportunity to realize his or her fullest potential as an individual. ■

**- Alaa Sagaa, Sri Lanka**

1 Ministry of disaster management-reports-hazard profile of Sri Lanka

2 The Metro Colombo Urban Development Project, <http://www.worldbank.org/projects/P122735/metro-colombo-urban-development-project?lang=en>

3 AMARAKOON, L., 2002. Armed Conflict and Sri Lankan Children. Colombo: Save the Children.

4 National Child Protection Authority Ministry of Child Development and Women's Affairs October 2013, 20Child%20Protection%20Policy%20-%20final%20-%202013.10.4.pdf



# Protecting Small Businesses in Urban Areas: From Disaster Response to Risk Reduction



Photo: AIDMI.

A Round Table discussion on 'Linking Disaster Risk Reduction with Risk Transfer' was held on 21st July, 2015 at the conference hall of Assam State Disaster Management Authority (ASDMA). Various stakeholders including humanitarian agencies, government officials, insurance companies and small businesses of Guwahati participated in the discussion. Assam, which has actively addressed the priorities of Hyogo Framework for Action (HFA) for Disaster Risk Reduction (DRR) at the local level, is now moving further for linking disaster risk reduction with risk transfer. "The biggest challenge in disaster response for us has been lack of coordination and contribution from all stakeholders. There is a need to work towards bridging this gap. The issues and challenges must be resolved with initiative and commitment from all stakeholders", said by Mr. A. K. Chetia, Deputy Chief Executive Officer, ASDMA during the opening remarks.

"The overlap between disaster risk and climate risk cannot be ignored. The frequency of climatic events and rapid and uncontrolled urban development needs to be addressed by all stakeholders together. It is high time for climate compatible development, said Mrs. Nandita Hazarika, ASDMA. The discussion moved ahead towards a concrete action plan that considers the linkages of climate risk in context of Guwahati city.

"We have been a strong advocate for the protection of street vendors and urban risk reduction cannot be visualized without involving them", said Mr. Simanta Sarmah, head of a Guwahati based NGO called sSTEP (society for Social Transformation and Environment Protection). Small businesses shared the experience of dealing with climate risk and the coping mechanisms that they have adapted.

The round table discussion also had a special session on findings from a

recent survey on the effect of disasters on small businesses with focus on disaster response and adaptation to climate change in Guwahati. The survey revealed some interesting facts about their coping mechanisms: like 53% of the respondents use their savings; 37% sell their assets and 9% take loans to recover from any disaster. This fact reflects the lack of protection measures for small (informal) businesses. This is in contrast to the contribution – 56% in GDP – by informal economy at national level. Also in post-disaster situations, these small informal businesses contribute to the recovery of the local economy. This is based on the stories shared by small businesses. "The round table discussion has given an opportunity to raise issues and arrive at an agreeable solution for reducing risk of the urban poor particularly the urban small businesses in Guwahati", said Mr. Vishal Pathak, representative from Gujarat based All India Disaster Mitigation Institute. ■

- Vishal Pathak, AIDMI

# The Impact of Heat Waves on Vulnerable Communities of Ahmedabad

The All India Disaster Mitigation Institute (AIDMI) has carried out research to measure the impacts of the 2014 heat waves on the vulnerable individuals of Ahmedabad, Gujarat, India. The study looks at vulnerability on a small scale, with 42 informants; the study provides an insight into the thoughts and concerns of some of the most vulnerable to heat waves.

Despite claiming many lives and causing countless people to become ill, heat waves in India have rarely been taken seriously. Therefore the purpose of this report was to expose how powerful these heat waves can be and highlight their deadly impact on the welfare of cities and communities. The data was collected from people who work in professions that require constant exposure to heat. These include vegetable vendors, auto repair mechanics, cab drivers, construction workers, road side kiosk owners etc. This report exposed how socio-economic status is intrinsically linked with vulnerability to climate extremes and hazards.

The data from the aforementioned group was collected through a detailed questionnaire. The analysis



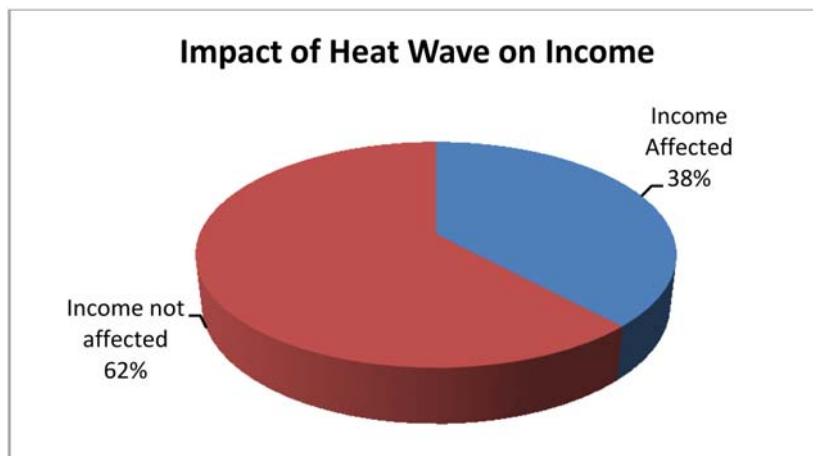
Photo: AIDMI

of the data reveals several interesting and enlightening facts about how heat waves are perceived by the respondent group, how they impact them and what the respondents deem as the best measures to counteract the ill-effects of a heat wave.

**Results:** The questionnaire produced some fascinating data about the vulnerable perception of heat waves.

One of the most interesting results was when respondents were asked whether heat waves affected their income a massive 38% responded with a yes. This is hugely disconcerting as the respondents already belong to the informal sector with infamously low incomes. It also exposes that even when heat waves do occur, people such as the respondents in this study, would still continue to expose themselves to the heat as a matter of survival. This result highlights the importance of taking the impact of heat waves on livelihoods seriously. For people who are barely surviving, the predicted increased heat in the very near future could have horrific consequences. It is arguably not just the heat directly that will damage lives but also the direct damage to livelihoods.

The research also revealed that every single respondent had felt an impact



on health. Of all the health hazards sweating and weakness was identified as the health impact with the highest incidence (19%) followed by heat rashes and cramps (17%). This is a startling statistic as it is clear that not enough precautions are being taken to protect their health.

### Heat Wave Plan

Along with primary data collection the study also looked into the Heat Wave plan created by the Ahmedabad Municipal Corporation (AMC). This plan, which is the first of its kind in South Asia, is founded on the principle of 'Awareness Generation' to combat the adverse effects of a heat wave. It rests on raising public awareness of extreme heat. This awareness raising exercise is complemented by training medical staff and community workers in the city to effectively respond to heat related illnesses. This plan strongly advocates and entails an interagency response effort when heat waves hit. One of the most interesting features of this Heat Action Plan of the AMC is that people will be issued weather alerts through mobile phones. Through this plan, the AMC hopes to raise the awareness of the people on heat strokes and their precautions.

Similarly, as per the findings of a survey by the Indian Institute of Public Health during the last heat wave, 10% of all construction workers were hospitalised due to heat related sickness. The slums of Ahmedabad also reeled under the spell of heat wave in 2010 and as a result have emerged a focus group targeted by this plan.

### Key Lessons and Recommendations

**Recognize Heat Wave as a major Health Risk:** The primary and secondary data collated and analysed in this research effort serve as evidence to the detrimental impacts of a heat wave on human health. However, authorities have not considered heat waves as a disastrous events. There is a lack of a thorough degree of preparedness when it comes to tackling heat waves as evidenced in earthquake and flood preparedness. This report strongly recommends that the detrimental impacts of a heat wave be given due priority at the institutional level and necessary counter measures (such as the up scaling of Ahmedabad Heat Action Plan) should be evolved and refined upon.

**Emulation of good practices by other cities:** The Ahmedabad Heat Action Plan is the first of its kind in South Asia. This plan, based on robust scientific research was aimed at building and raising public awareness to the risks of extreme heat by training medical and community workers on the ailments induced by heat and by improving inter-agency communication and coordination. This report recommends that such research efforts be emulated by other Indian cities that routinely reel under the adverse effects of heat waves

**Strengthening of Interagency Communication is key to a successful heat action plan:** The secondary research for this study revealed that there is limited interagency communication as evidenced in the limited communication between municipal agencies, hospitals and the general public. But the Ahmedabad Heat Action Plan has tried to facilitate a degree of unity in communication between the various agencies. Formal communication channels between different agencies have improved due to this plan as shown in the following figure.

*In conclusion* the study raises several points about heat waves in Ahmedabad. It reveals the opinions and worries of the local people and highlights what they believe the most productive solutions are. It also exposes interesting data about the extent heat waves affect livelihoods and also the damage to health. The study looks in detail at the heat wave plan; which illustrates the importance of recognising heat waves as a major health risk and the need to improve interagency communication through different media.

The study also exposes gaps in data and can be used to do further more extensive studies on the impacts. ■

- Grace Bears,  
AIDMI



# Community Resilience: Why Cities are Different

*A case of Kampala City – A combination of factors that have hindered resilience*

Kampala, the Capital City of Uganda has an urban population of 1.936 million (2015) which is 16.1% of the total population, with an annual rate of urbanization standing at 5.43%. These population figures show that a large percentage of the country's population is resident in a space of 189 km<sup>2</sup> with a population density of 9,429.6 persons per km<sup>2</sup>.

Traditionally, Kampala was a city of seven hills, but over time it has come to have a lot more, due to the increased rate of development, there have been several high rise buildings constructed within the same location. This has largely led to loss of green spaces in Kampala city. Kampala has a tropical rainforest climate under the Köppen-Geiger climate classification system. Another facet of Kampala's weather is that it features two annual wet seasons. There is a long rainy season from August to December and a short rainy season from February to June. However, the shorter rainy season sees substantially heavier rainfall per month, with April typically seeing the heaviest amount of precipitation at an average of



A flooded building in Kampala city suburbs after a heavy downpour in January 2008. Source: <http://m-consult.blogspot.com/2008/01/plan-uganda-pmtct-plus-changing-lives.html>

around 169 millimeters (6.7 in) of rain.

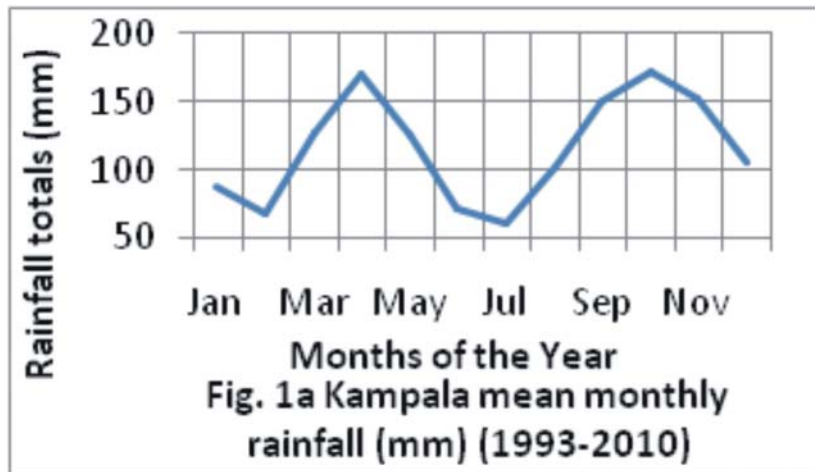
Environmental issues in Uganda include; draining of wetlands for agricultural use; deforestation; overgrazing; soil erosion; water hyacinth infestation in Lake Victoria; widespread poaching to mention but

a few. Of relevance to Kampala city is the drainage of wetlands which play a vital role in flood control.

Situations leading to natural disasters in Uganda are largely centered on precipitation; that is too much of it or lack of it. In Kampala city for instance, floods and the impact of floods have become worse over the years. Over population, increased runoff, unpredictable rainfall patterns have led to increased losses due to flooding.

The upscale urban areas built on the seven or more hills do not feel the effect of flooding as much as the persons that live in the low lying areas (wetlands that have been drained).

Uganda as a country also boasts of having very good laws and policies. Protection of the environment is



enshrined in Uganda's Constitution of 1995 and subsequent laws; The National Environment Act 1998, The National Environment (Wetlands, River banks, lakeshores Management) Regulations, The National Environment (Hilly and Mountainous areas) Regulations, to mention but a few.

Despite all these building blocks for Disaster Risk Reduction, the people of Kampala city have paid the price of non-enforcement of these laws both in loss of lives as well as loss of property.

Kampala city that is faced with issues of flooding can benefit from the following interventions that may not have exorbitant costs:

- Rain water harvesting, to contribute to the reduction of runoff
- Establishment of open green spaces which also contribute to storm water management
- Promote reuse of urban waste water to reduce pressure on wetlands and free fresh water for higher value uses
- Implementation of a drainage enhancement plan and community sensitization on the importance of having clear draining
- Enforcement of existing policies, laws and regulations to arrest further degradation.

In order for the resilience of the people of Kampala city to be

enhanced, a combination of ecosystem restoration, environment management, community awareness and enforcement of existing regulations would be required. A holistic approach has to be taken for all actions to be effective. One action cannot work in isolation of another; this necessitates all stakeholders concerned with the different aspects to put in near to equal energy in each component. Focus on 'green solutions' will be more cost effective than focusing on 'grey solutions' in a developing country where there are several competing priorities like health, livelihoods, safe water, education, etc. ■

- Enid Kabasinguzi Ocaya,  
DRR and Community Resilience  
Manager, World Vision Uganda

## SLUMS AND DRR

# The Vulnerability of Informal Settlements in Urban Centres of the Developing World

Informal settlements are particularly vulnerable to the adverse impacts of natural hazards. This article elaborates upon the vulnerability of slum dwellers created by their exposure and biophysical conditions along with their chronic and acute societal conditions. Furthermore, it explains how historical processes have changed and shaped the vulnerability of people living in these communities, showing how they have been disenfranchised compared to the formal community. It is suggested that for improvements to happen, disaster management plans need to be flexible to the differential

vulnerabilities of slum dwellers and more importantly, there needs to be greater consideration given to their situation and their ideas in the political decision-making process.

### The Global Magnitude of the Problem

"In 2012, 863 million urban residents in the developing world were living in slum conditions - up from 650 million in 1990 and 760 million in 2000." - *The UN Millennium Development Goals Progress Report 2013.*

In the developing countries of Asia, megacities such as Mumbai, Shanghai, and Jakarta have shifting dynamics, in terms of higher

population density, infrastructure, networking, information, and connectivity,<sup>1</sup> and can be considered 'incubators for disasters'<sup>2</sup> as they are mostly located in coastal areas. The changing characteristics of global and local environmental processes further aggravate the risk of extreme natural events,<sup>3</sup> with the most severe problems of environmental health occurring in the urban periphery and inner slum areas.<sup>4</sup>

In the 1980's, 90% of urban household growth took place in slums in South Asia.<sup>5</sup> Included here are areas that were originally left vacant because they were considered hazardous and

1 Chatterjee, Monalisa. "Slum dwellers response to flooding events in the megacities of India." *Mitigation and adaptation strategies for global change* 15, no. 4 (2010): 337-353.

2 Handmer, John W., and Stephen Dovers. *The handbook of disaster and emergency policies and institutions*. Earthscan, 2007.

3 Pachauri, Rajendra K. "Climate change 2007. Synthesis report. Contribution of Working Groups I, II and III to the fourth assessment report." (2008).

4 Tran, Pham Gia, and Roger Few. "Coping with floods in the Mekong Delta, Viet Nam." *Flood hazards and health: responding to present and future risks*. London: Earth Scan (2006): 128-145.

5 Davis, M. (2006). *Planet of slums*. *New Perspectives Quarterly*, 23(2), 6-11.





Photo: AIDMI.

prone to flooding, landslides and industrial pollutants; areas which are now occupied by squatters or informal settlements. Urban growth, whether planned or unplanned, was seldom used as a way to reduce disaster risk in disaster management plans.<sup>6</sup> In the last decade, the Government of India has brought about a paradigm shift in the approach to disaster management by embedding disaster mitigation into the development process.<sup>7</sup> Here, the emphasis is that *disaster can affect development as much as development can affect disaster*.

This was clear in the aftermath of the 2001 Gujarat earthquake. The direct losses (human lives, private property, health/education assets, etc.) and indirect losses (export/import, industry/services output, health hazards, etc.) affected over 180,000

lives and cost over Rs. 284,299 million, proving that disaster and development cannot be viewed in isolation of each other.<sup>8</sup> Chatterjee warns that marginal population groups in megacities suffer more negative consequences from increasing global processes and do not benefit from disaster risk mitigation strategies adopted by national and local governments. The magnitude of this issue will only increase, with an additional 500 million people estimated to be living in 7,000–12,000 urban settlements by 2060.<sup>9</sup> Clearly, this pertinent issue needs further attention.

#### **The Vulnerability of Informal Settlements**

Vulnerability can be driven by *exposure and biophysical conditions*, such as the locations of informal settlements in low-lying and disaster-prone areas, or *chronic and*

*acute societal conditions*, such as limited or no access to political and economic resources because of the illegal status of many slum dwellers.<sup>10</sup> The term "biophysical" suggests that there are physical components associated with the nature of a hazard and biological and social components associated with the resulting properties of the affected system. Concerned in this approach is to measure the ultimate impacts experienced by a system as a result of an encounter with a hazard. Slum dwellers, especially, suffer disproportionately from varying degrees of physical risk and social vulnerability than residents living in the formal economy.<sup>11</sup>

Using India as an example, the geomorphological vulnerability can be attributed to the fact that 57% of the landmass is prone to earthquakes and 40 million hectares (12%) is prone to flooding. Furthermore, 8000 kilometers (9%) of coastline is prone to cyclone, increasing the country's *exposure and biophysical condition*. This has implications for the differential population densities along the coast – the co-location of dense human settlements with potentially devastating natural and technological hazards can lead to an increase in disasters.

Informal settlements in these urban areas are particularly vulnerable to flooding, land subsidence, heat waves, and increased health risks.<sup>12</sup> Sharma and Tomar reason that this vulnerability is an inevitable and evident risk faced by emerging cities

6 Wamsler, Christine. "Mainstreaming risk reduction in urban planning and housing: a challenge for international aid organisations." *Disasters* 30, no. 2 (2006): 151–177.

7 Government of India, Ministry of Home Affairs. "Disaster Management in India." (2005).

8 Kumar, Santosh, and Chaturvedi, Shekher. "The Formulation of District Disaster Management Plan." National Institute of Disaster Management. <http://nidm.gov.in/PDF/modules/DDMP.pdf>. (accessed May 16, 2014).

9 McGranahan, Gordon, Deborah Balk, and Bridget Anderson. "The rising tide: assessing the risks of climate change and human settlements in low elevation coastal zones." *Environment and Urbanization* 19, no. 1 (2007): 17–37.

10 Burton, Ian. *The environment as hazard*. Guilford Press, 1993.

11 Gall, Melanie. "Social dynamics of Unnatural Disasters: Parallels between Hurricane Katrina and the 2003 European Heat Wave." *Dynamics of Disaster* (2011): 159–172.

12 Baker, Judy L., ed. *Climate change, disaster risk, and the urban poor: cities building resilience for a changing world*. World Bank Publications, 2012.

in India; the increase in drought from climate change causes the increase in seasonal migration to urban areas.<sup>13</sup> Furthermore, a lot of the coastal megacities are developed on reclaimed land, and the filling of the marshy areas in one location shifts water to low lying areas, where many informal settlements are commonly located.

In terms of *chronic societal conditions*, public flood mitigation funds are more likely to be used in large scale risk-reduction policies that benefit the formal economy,<sup>14</sup> and slum dwellers typically do not receive suggestions and consultancies from urban planning and development institutions to adapt hazard risk reduction techniques in building design.<sup>15 16</sup> As such, varying degrees of power relations are exhibited through historical social processes between the two groups (formal and informal),<sup>17</sup> showing that disaster management in slums is part of a larger development problem in megacities of developing countries.

Vulnerability may also be centuries in the making – societal and destructive agents co-produce and are embedded in natural and social systems as unfolding processes over time. The aftermath of a disaster strike is a process of coming to grips with history. In colonial India, the refusal of the Raj to provide minimal water supplies and sanitation to urban Indian neighbourhoods was parallel to its housing policies, which outlined the building of profitable, but often overcrowded and unsanitary, tenements that are still home to millions of Indians today.

At the time of independence in 1947, slums in India accommodated marginal communities like laborers and construction workers, refugee immigrants from East and West Pakistan, and low caste communities.<sup>18</sup> Over the decades, slum settlements have increased and changed to include diversity in their sociocultural background (region, caste, language, and religion) and economic characteristics (type of occupation, sector of employment and income). Davis describes it in his book, 'Planet of Slums', that *housing is a verb* – the urban poor must solve complex equations in order to optimize housing cost, tenure security, quality of shelter, transportation to work, and often, their personal safety. Since informal communities are heterogeneous communities, the different sociocultural and economic factors and characteristics contribute to determining the level of vulnerability each household suffers.

Thus, developing post-disaster support networks require the consideration of historical understanding, perceptions of coping abilities in each particular time and location, and the sociocultural characteristics of each household's vulnerability or resilience.<sup>19</sup> This helps address not just the political question of *why* a disaster happens, but also *how* the resilience or vulnerability of a community was rendered. However, caution needs to be taken when distinguishing between historical *understanding* and historical *acceptance* of the conditions of vulnerability.

## Concluding Remarks

Today's disaster risk and mitigation management needs to shift the model of thinking from dealing with the symptoms to dealing with the historical root causes.<sup>16</sup> It can be argued then that current disaster management institutions and policy processes in India have significant knowledge gaps on longer-term strategic policy development for informal settlements. As shown, informal settlements have differential vulnerabilities that increases their risks during natural disasters compared to the formal sector.

If urban development strategies are to be incorporated in disaster management plans, the local affected populations *need* to be incorporated as key stakeholders in the formal epistemic and political processes and the plans need to be flexible to the differential vulnerabilities. These are only the first steps of addressing a huge knowledge gap in the disaster management strategies not only in India, but in marginal populations of megacities around the world. Further neglect of this already neglected population will prove to be not only costly, but will bring the global community further away from international and local population health and livelihood goals. ■

– Jessica Yu,

McMaster University, Canada.

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*The content of this article is a continuation of the research that I've done for my courses in the Master of Science in Global Health program at McMaster University and Maastricht University.*

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13 Sharma, Divya, and Sanjay Tomar. "Mainstreaming climate change adaptation in Indian cities." *Environment and Urbanization* 22, no. 2 (2010): 451–465.

14 Arunachalam, B. "Drainage problems of Brihan Mumbai." *Economic and Political Weekly* (2005): 3909–3911.

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16 Wisner, Ben. "Marginality and vulnerability: Why the homeless of Tokyo don't 'count' in disaster preparations." *Applied Geography* 18, no. 1 (1998): 25–33.

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18 Planning Commission I, "First five year plan." (1951).

19 Henderson, Kathryn. "Mind maps, memory and relocation after Hurricane Katrina." Dowty, Rachel A. und Barbara L. Allen (Hg.), *Dynamics of Disaster. Lessons on Risk, Response and Recovery*, S (2011): 77–96.



# The Humanitarian Leadership Academy

## *Empowering People Around the World to Prepare for and Respond to Crises in their Own Country*

Humanitarian crises are becoming more frequent, widespread and complex. Globally, 2014 figures indicate that over 58 million people – the highest number to date – were reportedly forced to flee from violence or persecution, while an estimated 107.3 million people were affected by disasters caused by natural hazards.

While humanitarian action has become increasingly organised, interconnected and diverse, numerous international studies have shown the humanitarian sector today is still not fit for purpose. It lacks enough qualified and professional staff and existing humanitarians have little or no prospect of a defined career path. The 'humanitarian system' is not very flexible, does not allow us to cope adequately with the complex challenges we face, and does not provide us with the best possible information for how to respond to crises. In addition, it often fails to recognise the skills and expertise that already exists in local communities. This can mean responses to crises are weakened, and inappropriately resourced, with tragic consequences.

The Humanitarian Leadership Academy is an ambitious initiative to reduce the impact of future disasters by planning and preparing now. Prepared and connected communities will be developed and supported by the Academy through the training of the next generation of humanitarian leaders and responders in disaster prevention and management; the spread of best practice and knowledge; and, the

promotion of excellence at all levels of the sector.

Collaboration is at the heart of meeting the challenge at the scale that the Academy is aiming towards. The Academy will collaborate with partners to provide learning and development products and services for individuals and organisations. We'll find the best examples of local, national and international knowledge and innovation and translate it and make it available for other communities and organisations to use in their context.

The Academy recognises that the issue with humanitarian capacity building is not necessarily a lack of quality humanitarian training, which often already exists, but globally recognised standards and training accessible for local first-phase responders. The Academy will therefore focus on sustainable, cost-effective and efficient channels for conveying locally appropriate, quality-assured knowledge and best practice to humanitarians all over the world.

In the next five years ten training centres across Asia, Africa, Latin America and Europe will be established, with the Philippines amongst the first locations. By 2020, the Academy will have reached 100,000 members of local, regional and national organisations and communities, spanning 50 countries, with quality learning and development products and services.

An online digital platform will be built to provide responders around the world with access to quality courses, training tools and materials, translation and information search engine type facilities. 100 best practice case studies on disaster programming and capacity-building initiative will also be shared and showcased.

We will draw on the experience of the corporate sector, learning professionals, academia, international institutions, the UN, the Red Cross/Red Crescent movement and NGOs from across the globe. This will place continued emphasis on strengthening local organisations in vulnerable crisis-affected countries to respond effectively to disasters in their own areas.

Through partnerships, the Academy will work to ensure the learning products are externally accredited, cost-effective and sustainable, and can be delivered by the most efficient channels to maximise knowledge sharing – from face-to-face teaching to e-learning.

Ultimately, local, national and regional organisations and communities can provide the earliest, most informed and sustainable responses. We envisage a world where people respond to crises in their own countries, and the Humanitarian Leadership Academy has been set up to help make this happen. ■

**– Laura Jump,**

Head of Business Development for the  
Humanitarian Leadership Academy,  
Save the Children UK

## Looking Forward with Hindsight

*Building on two decades of Duryog Nivaran's work to launch focused action in South Asia during the first three years of SFDRR Implementation*



This request and my recent re engagement with key leader workers of Duryog Nivaran have set me thinking back 18 years to my first encounter during DN's partnership with ADPC, one of the founder members, in planning the launch of the first regional CBDRR course in Asia which was held in March 1997. Certainly LARED and Practical Action deserve kudos for spawning regional clones in DN in South Asia and Peri Peri in Africa, each of whom have developed deep roots and made their distinct mark in their respective continents.

DN has in these two decades has seen its alternative view go mainstream and impact governments of the region and find echoes in SFDRR. DN has engaged and shaped South Asian policy dialogue, done in-depth analytical work in its South Asia Disaster Reports whose advocacy has had focused impact, and deep engagement and impact with South Asian/Asian institutions and mechanisms that emerged later, the SAARC DM Center, the SAARC DRR Framework and Road Maps, the expanded Asia Partnership for DRR (IAP), the Asian Ministerial Conferences, and shaped the voluntary commitments made by civil society and women's groups in 2012 and 2014 AMCs. Together with its sister network ADRRN, born a few years later in 2002, it helped birth GNDR, the global CS movement on DRR in 2007 and decisively shaped its growth, governance and reach.

All of this wider impact is anchored in the work of its member organizations and dedicated practitioners who, deeply rooted in their communities, districts and 1 (27 f, g and h; 30 b, j and p; 33 a, d and i) 2 Edited version of section 36 a

countries have been practical wise and farsighted in working on issues of concern to the most vulnerable, (a) participation and voice in local risk and development governance, (b) community engagement with local and Sub national government, (c) building resilience of livelihoods, (d) women's empowerment and leadership and (e) microfinance and insurance. Kudos to the members, DN founders and leaders over these last two decades.

Advancing HFA's cautious approach, SFDRR rightly recognizes four levels of action for impact for each substantive priority; validates the role of major constituency groups in not just advocacy and monitoring, but partnerships in implementation with leadership exercised by civil society and its "vulnerable" sections; and recognizes the need trans boundary regional action. These three are the pivots of the SFDRR mandate for DN to base and design its role in working with Governments, other stakeholders and their organizations in advancing focused action on SFDRR in each South Asian country and at the South Asian regional level.

DN should consciously choose focused areas building on its members substantive strengths, and past track record (a) to (e) above, cautiously adding new areas of interest and preferably existing capacity of at least one member in a leadership role. These contribute directly to SFDRR global targets 4 and 5 and are well aligned with priorities 2, 3 and 4 and specific sections therein<sup>1</sup> (see box – *consider putting full or edited text of the relevant targets and sections in a box*). DN should help realize the full power of the newly mandated 'role of civil society stakeholders' by

looking at and supporting implementation of earlier AMC commitments for civil society and women's major groups, empowered by the new mandate to 'contribute to public awareness, provide knowledge and pragmatic guidance, engage in development and implementation, and advocate for an all of society, inclusive DRM which strengthen synergies across groups'<sup>2</sup> (SFDRR sect 36a).

When supporting implementation of SFDRR, let us not start from a clean slate. Let us revive and revise earlier regional and national roadmaps developed during the HFA Implementation decade, and infuse new life and energy into their continued implementation. So too this will require new energy and systematic, deepened engagement for DN with national CS networks in South Asia that have come into being in this last decade. And work at the province/state ad district level, supporting CSO forums and networks and engaging with governments at these levels. These are challenging tasks and difficult to achieve, but let us not shirk from them, instead setting the pace in the first of the five three year periods of implementation.

And finally this will require mature building of DN internal capacity and membership structures, greater reliance on organizational membership and partnership with national CSO networks, clearer articulation of rights and responsibilities, and constructive alliance building with other regional and global networks. But this is the subject of another longer piece for another day. ■

- Loy Rego,  
MARS Practitioners Network, India  
and Duryog Nivaran Fellow Traveler



# A New Reality: Drought Situation in Brazil

The first decade of the 21<sup>st</sup> century was the warmest since 1850, when more precise climate measurements started. This unprecedented increase in the temperature is one of the reasons that explains a higher incidence of extreme climatic events hitting the whole world. Particularly in Brazil, an increasing population coupled with a steep (268%) rise in the incidence of disasters during the first decade of the 21<sup>st</sup> century, has been responsible for killing hundreds and for displacing thousands.

Due to the rapid increase in the incidence of natural disasters in Brazil in the past few years, the government created the National Center for Risk and Disaster Management in 2012. It was also followed by the launch of the National Plan for Risk Management and Disaster Response, which intended to add BRL 18.8 billions in joint actions related to disaster mitigation until 2014. This plan was divided in four main cores: prevention (BRL 15.6 billions), mapping (BRL 162 millions), monitoring (BRL 362 billions), and response (BRL 2.6 billions).

Between 1980 and 2010, of all the people killed by disasters in Brazil, the least percentage of casualties can be attributed to droughts (behind, for example, floods, storms and mass movements). However, the greatest number of people have been affected by droughts (68,4% of reported affected people). In 2012, the Brazilian semiarid region experienced the worst drought of the last 30 years and more than 50% of the Northeast municipalities declared a state of emergency.

## The Brazilian 'Drought Polygon'

Apart from having the second longest river in the world (the Amazon), Brazil is also home to a variety of

climatic subtypes: while in Amazon region the Equatorial climate allows rainfalls throughout the year, the Semiarid climate in the Northeast is less generous to its people - especially in the zone called "Polígono da Seca" (Drought Polygon), where rainfall is scarce and erratic.

Although the climate is tough, it does not mean that society cannot overcome its consequences and adapt itself. The drought in Drought Polygon is a natural cyclic phenomenon and, as so, predictable and possible to monitor. Added to this, the implementation of appropriate techniques would ensure the livelihood security of its inhabitants.

But the northeast region of Brazil historically suffers from social inequality and poverty and features the worst socioeconomic indicators in the country. A "Drought Industry" has been developed there, which means that some politicians and some people of the ruling class seize the region's tragedy, using it as an excuse for their own advantage and misappropriating government subsidies.

## Handling the drought

As the drought is an ongoing event in the northeast, the government acts on it through two main ways: 1) Assurance of a proper hydraulic structure and 2) Human rights promotion, once the drought is chronic and continuously represent a threat for the socioeconomic development of the region - and, ultimately, of the country itself.

As for the federal multi-annual plan, being a sensitive matter in the context of Brazil, the topic of drought is included both in the Food and

Nutrition Security Program, under the world-renowned 'Brazil Without Extreme Misery Plan', and in the 'Water Supply Program.'

Besides the government initiatives, national and international aid institutions also develop activities in the northeast region aiming to improve the communities' resilience and reduce the risks from drought. In these communities, the main goal is to mitigate the effects of drought and create alternatives ways for its people to earn a living. Usually it is done through simple methods, which do not require high-tech solutions and which involve the community towards the objective.

## São Francisco River Diversion

As a solution for the adverse reality faced by the Brazilian Northeast, it was developed as a project for the diversion of the São Francisco River - fourth longest river in South America, it lies entirely in Brazil and is known as "the river of national integration".

Expected to finish by the end of 2015, the project is considered one of the 50 largest infrastructure constructions running across the world. It is the biggest government initiative towards water resource policy and intends to ensure water security for more than 390 municipalities in the northeast.

Nonetheless, the project divides opinions: São Francisco is a very distinguished Brazilian river -mainly due to its importance to biodiversity maintenance and utility in transport -and those who oppose to the project believe that it is an exceedingly expensive investment, incapable of meeting the inhabitants' real needs. ■

- Ana Carolina Richter, AIDMI

# Resilience and Sustainability for Smart Cities

The historically unprecedented deluge in Chennai, brought on by record-breaking levels of rainfall has brought life to a screeching halt in the city. Nature with an almost cruel sense of irony, decided to unleash its fury on Chennai at a time when the world was convening at Paris to settle on a new deal that would help in coping with climate change and extreme climate events. Till now the floods have claimed 347 lives and caused widespread economic losses to the tune of US \$ 3 billion.<sup>1</sup>

As Chennai staggers towards recovery, these floods offer two very important lessons. The first lesson is embedding resilience in the idea of a 'smart city'. The government of India's 'Smart Cities' programme aims at revitalizing the urban infrastructure in India by building 100 smart cities. An overhauling of the physical, institutional, social and economic

infrastructure of these cities is seen as a pre-condition of making these cities 'smart'. However, the Chennai floods have highlighted how resilience too should be an indispensable part of the 'Smart Cities' programme.

When applied in the context of a city, the term resilience can mean the ability of a city to function normally even in the face of an emergency. Clearly in Chennai's case resilience was sorely lacking. Despite having a plethora of modern high rises, IT parks, knowledge parks and a new age international airport, record-breaking rainfall brought the city to its knees. This highlights the importance of embedding the idea of resilience as an ideal of the 'Smart Cities Mission'.

The second lesson that the Chennai floods offer is that of sustainability. The lack of resilience was due to a lack of sustainable urban

development in Chennai. It is now becoming conventional wisdom that Chennai's urban development is a direct function of bad urban planning and rampant encroachment by fly-by-night property developers. The reclaiming of Chennai's numerous lakes and tanks for the purpose of real estate development have also meant a loss of natural drainage channels for excess water during the monsoons. Many experts believe that the loss of these natural drainage channels is the greatest reason behind the extreme flooding experienced by Chennai.

Perhaps this tragedy in Chennai will catalyze the establishment in embedding the ideas of resilience and sustainability in the lexicon of urban development of a country routinely plagued by disasters and climate extremes. ■

- Kshitij Gupta, AIDMI

1 How Chennai Floods Stack Up Against Other Natural Disasters in 2015, <http://blogs.wsj.com/indiarealtime/2015/12/11/how-chennai-floods-stack-up-against-other-natural-disasters-in-2015/>

## Editorial Advisors:

### Anshuman Saikia

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ARO, IUCN (International Union for Conservation of Nature), Thailand

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Visiting Professor in Disaster Risk Management in Copenhagen, Lund, Kyoto and Oxford Brookes Universities

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## ALL INDIA DISASTER MITIGATION INSTITUTE

411 Sakar Five, Behind Old Natraj Cinema, Near Mithakhali Railway Crossing, Ashram Road, Ahmedabad-380 009 India. Tele/Fax: +91-79-2658 2962  
E-mail: [bestteam@aidmi.org](mailto:bestteam@aidmi.org), Website: <http://www.aidmi.org>, [www.southasiadisasters.net](http://www.southasiadisasters.net)