

Resilient Urban Governance, Climate Change and Children

INTRODUCTION

The world's population is increasingly concentrated in urban settlements because of the pressure of development and the demand for better livelihoods and lifestyles. This presents both opportunities for and challenges to sustainable development. Cities that have become hubs of commerce, transportation, communication and government drive economic and social development. But rapid, unplanned urban growth can lead to an expansion of urban slums, exacerbating poverty and inequality, hampering efforts to expand or improve basic infrastructure and deliver essential services, thereby threatening the environment. Asian cities, and more prominently the ones in India, are facing increasing climate change impacts and increasingly children are the first

victims. Children who lack appropriate safeguards and adequate care are vulnerable to heat waves, sea-level rise, seasonal flooding and more extreme weather events such as cyclones. Yet, very little is understood about the realities that children face, in particular the specific climate risks that impact their right to life, survival and development in this rapidly changing physical environment globally. Children are exposed to all sorts of social vulnerabilities including poor health and nutrition, lack of sanitation, poor access to drinking water, lack of formal education and exposure to abuse and violence. Considering this, a sound roadmap needs to be developed as an integral part of urban governance that safeguards their interests.

1. URBANIZATION AND ITS RISKS: THE GLOBAL AND THE INDIAN CONTEXT

In today's increasingly global and interconnected world, over half of the world's population (54 per cent) lives in urban areas, although there is still substantial variability in the levels of urbanization across countries. The coming decades will bring more profound changes to the size and spatial distribution of the global population. The progressing urbanization and overall growth of the world's population is projected to add 2.5 billion people to the urban population by 2050, with nearly 90 per cent of the increase concentrated in Asia and Africa. At the same time, the proportion of the world's population living in urban areas is expected to increase, reaching 66 per cent by 2050¹.

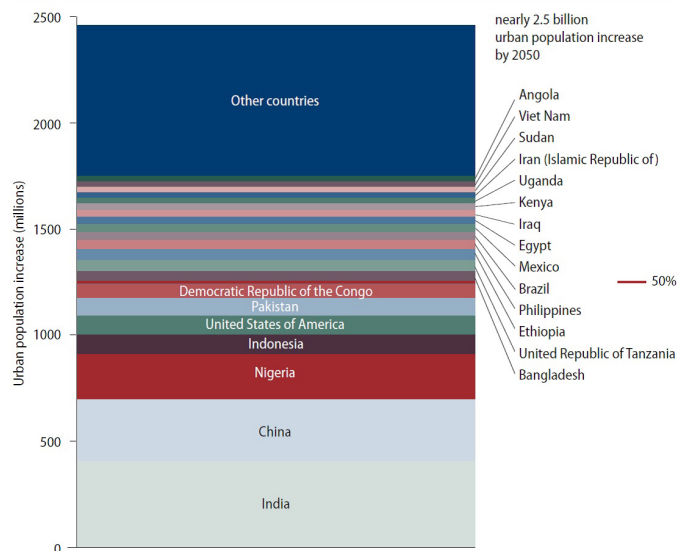


Figure 2: Contribution to the increase in urban population by country, 2014 to 2050²

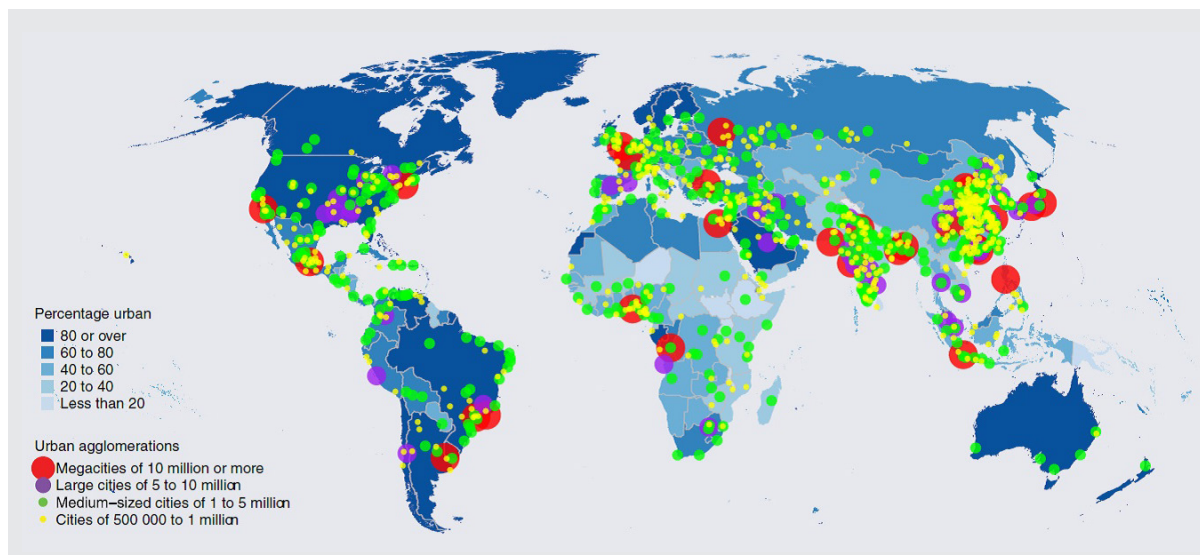


Figure 1: Percentage urban and location of urban agglomerations with at least 500,000 inhabitants, 2014

Urban expansion in India will happen at a speed quite unlike anything the country or the world has seen before. It took nearly 40 years (from 1971 to 2008) for India's urban population to rise by nearly 230 million; it will take only half that time to add the next 250 million. This expansion will affect almost every state. For the first time in India's history, five of its largest states will have more of their population living in cities than in villages. The graphic below indicates India's contribution to urbanization at a global level.

With the rapid urbanization, the elements of risk associated are becoming more prominent. The cities in India and abroad are struggling with ill-effects of urbanization that may be identified as (but not limited to):

- Poor local governance
- Critical infrastructure shortages and major service deficiencies that include erratic water and power supply, and woefully inadequate transportation systems

¹ The World Urbanization Prospects, 2014 revision, UN Department of Economic & Social Affairs

² The World Urbanization Prospects, 2014 revision, UN Department of Economic & Social Affairs

- Socio-economic issues concerned with healthcare, sanitation, livelihood, education, nutrition, drinking water, space, safety etc.,
- Rapidly deteriorating environment

Among urban centres in developing countries, perhaps the most obvious increased risk comes from the likely increase in the number and intensity of extreme weather events such as heavy rainstorms, cyclones or any natural disaster. The urban centres most at risk are generally those where these events are already common and cause serious damage and disruption. For any city, the scale of the risk from the extreme weather events is much influenced by the quality of housing and infrastructure in that city, the extent to which urban planning and land-use management have successfully ensured risk reduction within urban construction and expansion, and the level of preparedness among the city's population, key emergency services and most importantly the nature of socio-economic demography of the region.

2. URBAN GOVERNANCE: INSTITUTIONAL CRISIS IN INDIA

India's urbanisation process has laid bare the crisis, or rather absence of urban governance. India's urban local bodies, which are democratic institutions conceived to be closest to the citizens, have been rendered inefficient by the governments at the Centre and the States. The 74th Constitutional Amendment Act meant to devolve power to urban local bodies was merely a cosmetic exercise, which did not bring about any changes in the way our municipalities were governed. States continue to have overriding powers and accountability structures in urban areas are weak. Devoid of power — legal, financial and administrative — urban local bodies merely remain a tool of party politics at the grassroots level.

a) History: The enactment of 74th Constitutional Amendment Act (CAA) made it compulsory for the state governments to constitute municipalities. For the first time, urban local bodies (ULBs) were granted the 3rd tier of governance. The act accepted that in many states, the local bodies had become weak and ineffective on account of a variety of reasons, including the failure to hold regular elections, prolonged supersession and inadequate devolution of powers

and functions. As a result, the ULBs were unable to perform effectively as vibrant democratic units of self-governance. CAA classified the ULB's into:

- a. Nagar Panchayat- Transitional area (area that is being transformed from rural to urban)
- b. Municipal Council- For small urban area
- c. Municipal Corporation- For larger urban area

With this amendment, Part IX A was added to the Constitution along with Schedule 12.

b) Discrepancy in the legal provision: Post 74th CAA, different states were empowered to enact their own state municipal acts. Hence the respective states enacted their municipal acts with their own contents and formats. The structure, functions and powers were also different from state to state. There were striking variances in provision for the devolution of powers, functions and funds to the municipal corporations since this is determined by the financial condition of the state and the willingness of the state government to empower the ULBs. Hence, it is a matter of inference that there is not much difference after the 74th CAA. The ULBs have the power to make their own byelaws for the betterment of the urban administration after the 74th CAA. But it did not make them more independent as they continued to be controlled by the state government and lack autonomy. The state government and the members of the party in power, dictate the enactment of the byelaws to suit their motive and that of their party. Hence, there is a constant lack of vision of integrated urban development resulting in making the urban centres more resilient.

c) Other institutional overlaps: Under the schemes such as MPLAD and MLALAD, there is provision of fund allotment to the MPs and MLAs of the constituencies for the development of the area. Quite obviously, most of the areas also fall under ULBs and they are not consulted before they see any developmental activities under these schemes. This gives an inferior status to the councillor compared with an MP. Hence these schemes militate against the concept of separation of powers and the principal of three-tier federalism. The MPs and MLAs use these funds on the works that are ideally to be done by

the ULBs thus negating the vesting of power in these local self-governance institutions.

The article 243W in the constitution requires state laws to endow the municipalities “with such power and authority as may be necessary, to enable them to function as institution of self-governance. The XII schedule of the Constitution recommended a list of local functions which state’s may by law endow to urban local bodies. But this has only given rise to a confusing mix of multiple agencies.

- d) **Financial provisions:** The XII schedule of 74th CAA has the list of responsibilities that the ULBs have to discharge; the amendment did not have a similar list to demarcate the finances of the ULBs. The ULBs were left at the mercy of the state governments for revenue sources. The ULBs have not been able to perform to their optimum as they lack the funds to discharge their duties. There is a gross mismatch between the responsibilities they need to undertake and the funds that are made available to them to undertake the tasks.
- e) **Public accountability:** Between the weak financial powers and structural drawbacks and many more issues, one of the most prominent areas that impact the overall performance of the ULBs is lack of public accountability. For the urban citizens, the ward councillors were the closest constitutionally mandated arm of the local governance. But in ULBs, some of the ULBs elect Mayors indirectly. Hence, there is total loss of accountability and public suffers as its local concerns are not addressed.

Hence, we see that decentralization still remains an unfinished agenda. The functional domain of the municipalities is still not clearly defined vis-à-vis the other levels of government and the casualties, in the process, are transparency, responsiveness and accountability to the citizens. The municipalities, moreover, are not adequately endowed with sources of revenue commensurate with their obligatory functions. Disparity in functions and finances result in unfunded mandates, which strike at the root of autonomy and efficiency of local bodies.

3. CITIES: THE NEW CENTRES

Urbanisation did not receive much attention in the policy domain during post-independence era as cities

were seen as symbols of colonial exploitation. As a matter of fact, the initial Five Year Plans made scant mention of urbanization. It was not until the Seventh Five Year Plan that agglomeration benefits from urbanization was acknowledged as a ‘part and parcel’ of economic development. This followed by several institutional interventions until 74th CAA which, as discussed above, aimed to strengthen the ULBs. The following points establish the fact that India has started seeing its megacity rush:

- a) As India maintains its pace of economic and industrial growth, its urban population which currently makes up 31 per cent and contributes nearly 60 per cent to the national GDP, is expected to grow to 40 per cent and make up for nearly 75 per cent of the national GDP by 2030. India only spends \$17 per capita annually on urban infrastructure whereas most benchmarks suggest a requirement of \$100.
- b) As per the world urbanization data (UN), during 1990, there were just ten mega-cities across the world in 1990. During 2014, the number had increased to 28, with Asia accounting for nearly sixteen of these mega-cities in the world. Indian cities such as Delhi and Mumbai are counted in the top five.
- c) As the number of mega-cities sees manifold increase due to migration, it is projected that largest urban growth is likely to take place in India, China and Nigeria. UN estimates that India is expected to add around 404 million urban dwellers by 2050, much higher than any other country. As per the 2015 liveability index of the Economist Intelligence Unit, New Delhi is ranked 110 out of 140 cities, while Mumbai was ranked 115 – both in the bottom forty.
- d) This unprecedented speed of urbanisation is unforeseen since India’s independence. The urban landscape in India follows an uneven and distributed pattern with large and small cities dotted all across the nation. With influx of population into these urban centres, there is increasing demand for basic infrastructure such as low-cost housing, electricity, water, transportation, sanitation, as well as social infrastructure such as healthcare and education.
- e) The World Bank report ‘*Leveraging Urbanization in South Asia: Managing Spatial Transformation for Prosperity and Liveability*’ highlights the

spiralling urban pressures and calls India's urbanisation "*messy and hidden*". The report observes that messy urbanization is reflected in almost 65.5 million Indians who, according to the country's 2011 Census, live in urban slums, as well as the 13.7 per cent of the urban population that lived below the national poverty line in 2011.

- f) Over the last decade, approximately 91 million people have shifted to cities. Despite increased participation from private players and sustained development focus from the public sector, the demand-supply gap in India's housing sector was to stand at 75.5 million units by the end of 2014, as per a CRISIL estimate. This growing housing shortage is a culmination of the high rate of urbanization, with over 300 million people expected to shift to urban cities over the next decade, according to estimates in the 12th Five Year Plan.
- g) As per the projections by the Registrar General of India, urban population is expected to rise by 38 per cent from 286 million in 2001 to 534 million in 2026. It is also observed that 50 per cent increase during this period is likely to occur in some of the least developed states, including Uttar Pradesh, Madhya Pradesh, Rajasthan, Bihar, Chhattisgarh and Jharkhand. Interestingly states of Uttar Pradesh, Maharashtra, Tamil Nadu, and Gujarat are expected to contribute over 45 per cent of urban growth in the next 25 years.
- h) This unplanned growth of urban centres has led to overcrowding and urban sprawl with rising poverty levels, accompanied by unemployment and under employment amongst immigrants. Hence, there is an urgent need to revisit our approach to building cities which need to take regional imbalances into consideration rather than become islands of excellence in oceans of poverty.

4. GROWTH OF PERI-URBAN AREAS

One of the ill-effects of urbanization is the uncontrolled population and physical growth in the peri-urban areas. Those who are unable to live in the prime areas of the city due to affordability factor, find

peri-urban areas as very reasonable place to reside and operate from. Haphazard growth happened in these areas as they are weakly governed. Two factors are responsible for this. First, there is a lack of clarity among the government agencies on the physical boundaries of these areas. Neglect in monitoring the physical development of these areas over a period of time allows the migrant settlers to carry out contiguous physical changes to the landscape. In this process, the new construction, many-a-time merges with the periphery of the adjoining rural areas. Due to this factor, neither the rural nor the urban agencies come forward to take the ownership of the peri-urban areas and hence their administration gets grossly neglected. Second, the rural-urban ambiguity also prevents the agencies to formulate and apply any of the land or building regulations.

The pressure created by urbanization has thus, the severe most impact on the peri-urban areas, which suffers from host of social, economic, environmental and developmental problems. This has given rise to many issues in these areas like rampant violations of building bye-laws, uncontrolled and unplanned construction, intrusion in the productive farmlands and lack of civil protection of the people. Some of the deeply rooted concerns, attributed to urbanization, in these areas are alarming:

- a) **Social exclusion:** As these areas are weak in administration because of lack of clarity between the government bodies, the social welfare schemes and public amenities are in a poor state. Be it, electricity, water or food, the residents are neglected in all cases. They lack proper housing, do not get access to basic sanitation facilities, struggle due to poor transportation system, find difficult to make a decent livelihood due to lack of employment opportunities and are the victims of crimes due to poor civil protection and street safety.
- b) **Extension of slums:** Slum dwellers are the worst victim of urbanizations. Due to many reasons, people migrate to urban areas in search of a better living. But they end up living a far worse life. Every city witnesses huge inflow of people from the rural areas in the vicinity and far-off places. Finding no place to live, they become part of the rapidly growing slums. These slums, again, similar to peri-urban area, face similar issues pertaining to development, social

problems, environmental issues and unplanned housing. Due to tremendous population pressure, shrunk natural resources and lack of livelihood opportunities, many a times, these areas become soft targets of anti-social elements leading to crimes, drugs and physical abuse of women and children. Also, lack of education and healthcare pushes the residents further behind in the race to prosperity.

- c) **Escalating water crisis:** Human settlements require sufficient and equitable water. But in most of the cities in India, the goal is far from achieved. The population pressure strains the water supply and excessive exploitation leads to continuous deteriorating groundwater. This forces people to use expensive methods to draw water and spend lot of income in making the water drinkable (through purifiers). An overall assessment of city water reveals that:
- i. there is a huge demand and supply gap
 - ii. poor operation and maintenance of water supply system as well as water losses due to leakages in transportation and distribution lines
 - iii. excessive usage and wastage of water
 - iv. contamination of surface water bodies and ground water
- d) **Mismanagement of solid waste:** As the population grows, the solid wastes get generated in equal proportion. Also, due to lack of proper solid waste disposal/recycle methods, there is garbage accumulation possible in any part of the city at any point of time. This threatens the very population that produces it. The toxic matters in the garbage mix with the groundwater and flows back to the residents causing health hazards.

5. STATE OF THE URBAN INFRASTRUCTURE

- a) **Civic infrastructure:** It is a widely accepted fact that with increasing urbanization there is tremendous pressure on civic infrastructure such as water, sanitation, sewerage and drainage, solid waste management. Recent data released by the government indicates that nearly 62,000 million litres per day (MLD) sewage is generated in urban areas, while the treatment capacity across India is only 23,277 MLD, or 37 per

cent of sewage generated. It is also observed that out of 816 municipal sewage treatment plants (STPs) only 522 are in working condition. With almost 70 per cent of sewage generated in urban India left untreated, this has serious health implications for the large population that inhabit these cities³. According to the Faecal Sludge Management report by Water Aid, sewage generation in India from class-I cities and class-II towns is estimated at 38,255 MLD, of which only 11,787 MLD (30 per cent) is treated. Similarly, it observes that only 17 million urban households lack adequate sanitation facilities in India, with 14.7 million households having no toilets at all.

- b) **Urban transport:** India's growing cities are finding existing transport solutions woefully inadequate for meeting the needs of its burgeoning population. This imbalance can be attributed to many factors including a lack of integration between land use and transport planning, deteriorating public transport and rising income levels and easy financing options that are encouraging use of private vehicles. While several cities have prepared Comprehensive Mobility Plans, mooting modern bus services, transport corridors such as BRT and new metro connectivity, there is much need for policy discourse on the same by creating single transport authority and integrating with land-use planning.
- c) **Policy framework:** The deplorable condition of most cities is also due to several archaic policies which have become impediments to implementing effective urban governance. These policies manifest in the form of inadequate policy and legal frameworks governing land and housing policies, pricing of utilities, maintenance of civil services amongst others. Unless, these policies are addressed through appropriate legislative amendments, it is very unlikely that urban reforms will gather momentum in the near future.
- d) **Inclusive cities:** One of the biggest challenges is to create cities which can accommodate the urban homeless and marginalized who are pushed to the

³ Mallapur, C. (2016, January 27). India News. Retrieved April 1, 2016, from firstpost.com: <http://www.firstpost.com/india/what-a-stink-70-of-urban-indias-sewage-is-untreated-2600142.html>

cities due to migration. However, unfavourable regulation and high cost of housing gives rise to urban sprawl making these sections vulnerable with barely any property rights or protection. In this regard, access to affordable housing is an extremely critical enabler to ensure social equity for low income groups.

6. THE CLIMATE CHANGE IMPACT

Urban governments have critical roles in adaptation to climate change in all nations as well as in mitigation (reducing greenhouse gas emissions). It can be argued that they have the central role in adaptation within their jurisdictions – although it is obvious that they need a supportive institutional, regulatory and financial framework from higher levels of government and, for most low and middle income nations, also from international agencies. Unlike most environmental hazards, local governments in these nations have poor capacities to reduce the climate change-generated hazards that those within their jurisdiction will face. For many environmental hazards, local governments can reduce the hazard – e.g., treat water before it is distributed, reduce breeding possibilities for disease vectors, reduce physical risks through better quality buildings and infrastructure, traffic management and reduce exposure to dangerous chemicals through pollution control and occupational health and safety. But hazard reduction from climate change in low and middle income nations depends on major changes in lifestyles and consumption patterns among middle and upper income groups, and most of them live in high-income nations. There is a pressing need to address adaptation in urban areas in low and middle income nations as these nations have most of the world's urban population, most of the high-risk urban sites and the largest deficiencies in adaptive capacity. Urban areas in low and middle income nations are also projected to house almost all of the world's population increase in the next two decades (United Nations, 2006).

IPCC's Fourth Assessment Report lists the different aspects of climate change, the evidence for current impact, projected future impacts and the zones or groups most affected. It highlights the different kinds of impacts that arise from changes in extremes and changes in means; it also notes the need to consider

the impacts of abrupt climate change, while also noting that its significance is less clearly established. Among urban centres in low and middle income nations, perhaps the most obvious increased risk comes from the likely increase in the number and intensity of extreme weather events such as heavy rainstorms, cyclones or hurricanes. Of course, there are large differentials in the scale of such risks between urban centres in each nation. The urban centres most at risk are generally those where these events are already common and cause serious damage and disruption – although there is some evidence of the geographic range of some extreme weather events expanding. Coastal cities that are at risk from storms will be doubly at risk as sea-level rise increases hazards from coastal flooding and erosion. For any city, the scale of the risk from these extreme weather events is much influenced by the quality of housing and infrastructure in that city, the extent to which urban planning and land-use management have successfully ensured risk reduction within urban construction and expansion, and the level of preparedness among the city's population and key emergency services. For small and large coastal settlements, the integrity of coastal ecosystems and in particular protective mangrove and salt marsh systems will also influence risk.

7. WHO IS AT RISK?

Hazards combine with vulnerabilities for extreme weather to produce direct impacts on health, living conditions and incomes/livelihoods/assets. The main impact of climate change on urban areas, at least in the next few decades, is likely to be the increased level of risk from existing hazards. For poorer groups, some of the impacts are very direct – for instance, more frequent and more hazardous floods. Some are less direct – for instance, reduced availabilities of fresh water supplies for whole cities that reduce supplies available to poorer groups (or that increase prices). Some are indirect – for instance, as the impacts of climate change-related weather events increase food prices or damage poorer households' asset bases or disrupt their incomes.

In general, in any urban area, the people most at risk from climate change are those who are:

- Least able to avoid the direct or indirect impacts (e.g. by having good quality homes and drainage systems that prevent flooding, by moving to

places with less risk or by changing jobs if climate change threatens their livelihoods);

- Likely to be most affected (for instance infants and older groups who are less able to cope with heat waves);
- Least able to cope with the illness, injury, premature death or loss of income, livelihood or assets caused by climate change impacts.

8. URBANIZATION AND CLIMATE CHANGE: CHALLENGES FOR CHILDREN

Infants and children are one such vulnerable group that bear the brunt of the disasters the most. The following points unfold the cause of the same.

a) Climate Change Impact

As per the IPCC Assessment Report 2014, the coastal regions of Asia, particularly urban areas, could face some of the most devastating impacts of climate change, such as increasing heat stress, extreme rainfall, flooding, drought and water scarcity. Many of India's largest cities are in the floodplains of major rivers and in cyclone-prone coastal areas. As different places experience changes in climate (e.g. increase in temperatures or rainfall), specific impacts on cities will vary. Cities have always lived with natural hazards, but climate change will increase the frequency (or intensity) at which some natural hazards occur. These impacts and hazards will intensify risks for those lacking essential infrastructure and services, and make poverty reduction more challenging by prolonging existing and creating new poverty traps in urban centres⁴.

b) The Vulnerability Factor

Urban children are generally better off than their rural counterparts, but this is not true for the hundreds of millions living in urban poverty. There are children who migrate to cities due to many different reasons and form a part of informal settlement because of;

- better economic and educational opportunities;
- to escape neglect and abuse;
- loss of a parent;
- To escape conflict or natural disasters; and other reasons.

These children are typically pushed to the margins of society with no access to public services, social protection, emergency healthcare and often education. This puts them at a more disadvantaged and vulnerable position than other children in urban areas. Migrant children tend to get excluded from both rural (source) and urban (destination) policy designs and programmes. Migrant children, especially if migrating alone, are exposed to violence, abuse and exploitation, though most migrant children move with their families. Children are potentially exposed to newly developing or worsening environmental hazards in the future.

Without adequate planning and good governance, poor urban areas can be among the world's most life-threatening environments. In some informal settlements, a quarter of all children still die before the age of five. Nor does the "*urban advantage*" come into play in terms of education and life opportunities – the failure to complete, or even start, primary education is especially high among the urban poor, and prospects of upward mobility can be dim. In many urban areas, the risks children face are bound to be intensified by climate change. Most of the people and enterprises at most serious risk from extreme weather events and rising sea levels are located in urban slums in low-income countries, which are often in the most hazardous areas – flood plains or other areas at risk of floods, places at risk from landslides, sites close to industrial wastes, and areas unserved by the kind of infrastructure that can be strengthened and adapted to withstand more extreme conditions. Although the urban poor are at highest risk of loss and harm, they are the least able to afford preventive measures and the least likely to have their needs for risk reduction taken seriously by local governments⁵.

Children, especially young children, are in a stage of rapid development and are less well equipped on many fronts to deal with deprivation and stress. Their more rapid metabolisms, immature organs and nervous systems, developing cognition, limited experience and behavioural characteristics are all at issue here. In addition, their exposure to various risks is more likely to have long-term repercussions than with adults. Adaptations to climate change will be less than adequate in responding to the challenges

4 IPCC, 2014

5 Bartlett, S. (2008), "Climate change and urban children: impacts and implications for adaptation in low- and middle-income countries", Pg 501-502, Environment & Urbanization, Vol. 20, Issue 2, IIED

if they fail to take account of both the particular vulnerabilities of children and the protective factors that can best support their resilience. The following factors tend to impact the children on the following socio-economic and physical parameters;

1. Mortality related to extreme weather events:

Small children, along with women and the elderly, are most likely to be victims of such extreme events as flooding, high winds and landslides. A study of flood-related mortality in Nepal, for instance, found the death rate for children to be double that of adults, with pre-school girls five times more likely to die than adult men. Poor households were at six times higher risk than their better-off neighbours. The distribution of deaths related to the 2004 Indian Ocean tsunami followed a similar pattern.

2. Water and sanitation-related illnesses:

Inadequate access to clean water and proper sanitation increases the risk of a range of health problems. Globally, children under five are the victims of 80 per cent of sanitation-related illnesses and diarrhoeal disease, primarily because of their less-developed immunity and because their play behaviour can bring them into contact with pathogens. Diarrhoeal disease also results in higher levels of malnutrition and increased vulnerability to other illnesses, with effects on overall development.

3. Malnutrition: Malnutrition is related to food shortages resulting from reduced rainfall and other changing means that affect agriculture; also to interruptions in food supplies in sudden, acute events.

4. Vector-borne and infectious diseases: Increased temperatures and changes in precipitation are increasing the incidence and range of various vector-borne diseases, and with it the level of exposure, with particular implications for children.

5. Respiratory illnesses: Respiratory illnesses cause 20 per cent of under-five deaths worldwide. A number of factors are involved, not all affected by climate change. However, changes in mean temperature and precipitation can increase the number of forest and bush fires, which affect air quality for thousands of miles, generally increasing the number of people experiencing respiratory difficulties. Changing pollen counts,

fungal growth and moulds related to flooding, and increases in ozone and other pollutants also increase rates of pneumonia, upper respiratory diseases and asthma.

6. Heat stress: Those most at risk from increasingly frequent and intense heat waves are the elderly and the very young, who sweat less and have more surface area relative to body mass

7. Injury: Children are particularly susceptible to injury – curious and driven to explore, yet lacking the capacity to understand and respond well to danger. Falls and burns, along with drowning, disproportionately affect children under five.

8. The quality of care: As changes in extremes and means create conditions that are more challenging to health, this also affects the burdens faced by caregivers. With a life under constant pressure from various dimensions in stressful urban environment, overstretched and exhausted caregivers are more likely to leave children unsupervised and to cut corners in all the chores that are necessary for healthy living, with potentially serious implications for children's health.

9. Learning and Competence: For some children in some places, the challenges related to climate change could contribute to an erosion of both their mental capacity and opportunities for learning and growth. The early years are the most critical time for brain development, which can be shaped by a range of environmental factors. Good health is central, as sick or malnourished children lack the energy to be active learners.

10. The capacity to cope with adversity: The shock and distress of extreme events, as well as the deprivations and humiliations of displacement or slow recovery, can be profoundly debilitating. Children's psychological vulnerability and resilience in the face of hardship depend on their health and internal strengths, but also on household dynamics and levels of social support. Especially in countries such as India, children may end up orphaned or separated from family or migrate to urban areas to sustain their lives. With minimum or no support/ supervision, children can become a target for mistreatment.

11. Victim of circumstance: All the above factors combined, makes children very soft targets

for abuses in many forms. They are subjected to sexual violence and drug abuse leading to a waning life.

The table below summarises the combination of urbanization, climate change and vulnerability to give an idea on how climate change impacts affect urban children⁶.

Exposure due to projected change in climate	Consequences for children's socio-physical environments in cities	Implications for children's health	Implications for children's safety, protection, education, play and recreation, and social development
Warm spell/ heat waves	<ul style="list-style-type: none"> ▪ Increased heat island effect ▪ Declining urban air quality ▪ Water shortage ▪ Decreased water quality ▪ Power outages 	<ul style="list-style-type: none"> ▪ Heatstroke ▪ Asthma and allergic disease, bronchitis ▪ Renal disorders from heat-related dehydration ▪ Water-borne and food-borne diseases: diarrhoea, malaria, dengue, cholera 	<ul style="list-style-type: none"> ▪ Children living and working on the streets are most vulnerable to heat stresses ▪ Children working in factories without proper ventilation and cooling for long hours are subjected to multiple health hazards
Heavy rainfall events/ Cyclonic events	<ul style="list-style-type: none"> ▪ Flooding, strong winds and landslides ▪ Disruption of public water supply and sewer systems, and adverse effect on quality of surface and groundwater ▪ Damage and losses to physical assets and infrastructure: houses, public facilities and utilities ▪ Disruption of transport, commerce and economic activities ▪ Withdrawal of risk coverage in vulnerable areas by private insurers ▪ Potential for population migrations 	<ul style="list-style-type: none"> ▪ Drowning, injuries ▪ Ingestion of contaminated water leading to communicable water-borne and water-washed diseases: diarrhoea, cholera, hepatitis, leptospirosis ▪ Post-traumatic stress disorder (PTSD) in populations displaced through natural disasters, which is often manifest in children through increased bedwetting and aggression 	<ul style="list-style-type: none"> ▪ Young girls and boys are at highest risk of flood-related fatality ▪ No safe play spaces ▪ Children living in unsafe housing in informal settlements without proper drainage are at most risk from non-communicable and communicable diseases and injuries ▪ More children out of school due to illnesses ▪ Poor children likely to drop out of school and engage in paid work to augment family income ▪ Separation from families including due to death of family members, migrating on their own, child trafficking ▪ Migrant children are more vulnerable: least likely to attend school; more exposed to violence; typically unreached by child protection services

6 IIED, (2015), "Climate Change Risks and Resilience in Urban Children in Asia"

Exposure due to projected change in climate	Consequences for children's socio-physical environments in cities	Implications for children's health	Implications for children's safety, protection, education, play and recreation, and social development
Drought	<ul style="list-style-type: none"> Increased water demand puts stress on water resources; declining the water quality Land degradation with lower agricultural yields and increased risk of food shortages; dust storms Potential for population migration from rural to urban areas 	<ul style="list-style-type: none"> Malnutrition Diseases related to poor hygiene and inadequate sanitation as water sources get depleted: diarrhoea, scabies, conjunctivitis, trachoma Pneumonia, measles 	<ul style="list-style-type: none"> Forced migration occurs due to water stress and food shortage Internally displaced persons typically seek refuge in marginalised urban areas and in urban poor settlements Increased resource conflict exposes children to violence; girls and women especially vulnerable Increase in cost of food leading families to adopt adverse coping strategies such as removing children from school, selling assets, and compelling children to work
Extreme high sea level	<ul style="list-style-type: none"> Permanent erosion and submersion of land; cost of coastal protection versus cost of land use relocation Decreased groundwater availability because of saline incursion into aquifers Increased effects of tropical cyclones and storm surges, particularly coastal flooding Loss of property, enterprises, livelihoods; damage to buildings from rising water Potential for population migration 	<ul style="list-style-type: none"> Increased risk of deaths and injuries by drowning in floods Physical and mental trauma Highest health risks from salinization of water supplies; long-term developmental implications for children Diseases related to poor hygiene and inadequate sanitation as water sources get depleted Water-borne, water-washed and food-borne diseases 	<ul style="list-style-type: none"> Influx of displaced refugee children in cities Loss of habitat, loss of sense of belonging to the place, loss of favourite places and friendship and social networks, loss of cultural identity, loss of play and recreation opportunities Disruption of children's everyday routines, healthcare and school attendance Increasing vulnerability for children in poverty, migrant children, girls in poverty; reduction in protection

9. ADAPTATION TO CHANGING ENVIRONMENT – IMPROVING URBAN INFRASTRUCTURE

In the last decade, India's outlook on urbanisation has undergone a paradigm shift, with urban planning being brought to the forefront of development policymaking. The view that cities are central to the country's economic growth and development is gaining wider acceptance, strengthened by the increasing contribution of the urban sector to India's GDP. To expedite investment and effective planning in urban infrastructure and service provision, the Government of India has been launching several schemes/programmes—for example, Environmental

Improvement of Urban Slums (1972), Integrated Urban Development Programme (1974–1979), Integrated Development of Small and Medium Towns (1975), Mega City Scheme (1992–1997), Two Million Housing Programme (1998–1999), Valmiki Ambedkar Awas Yojana (2001), Total Sanitation Campaign (1992, but renamed Nirmal Bharat Abhiyan in 2012), Urban Reform Incentive Fund (2003), and Pooled Finance Development Scheme (2006). However, the turning point of bringing the urban development agenda into focus was achieved with the launch of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) in December 2005.

a) JNNURM

JNNURM was the first massive urban development programme of the country and has established the foundation for large-scale central assistance to the urban sector. It was launched as a reform-driven and fast-track programme to catalyse planned development of identified cities. The programme has been operating in mission mode by facilitating large-scale investments in the urban sector and policy and institutional reforms, leading to sustainable socio-economic growth in cities. The mission has sought to achieve this by integrating the development of infrastructure services and accelerating the flow of investment into urban infrastructure; through planned development, redevelopment and renewal of cities, inner-city areas, peri-urban areas, outgrowths, and urban corridors; and through universal service delivery for the urban poor. A number of urban projects were sanctioned under JNNURM during 2005–2014, and central assistance of approximately 48,000 crore INR was committed during this period through the mission.

According to recent research evidence, more children are in need of shelter and sanitation than are deprived of food, education and healthcare. In India today, one urban program—the Basic Services to the Urban Poor (BSUP) under JNNURM, had a potential to address issues in children’s physical environments and make the lives of children living in urban slums better, safer and healthier. The dream of creating better cities for children was almost unattainable in India as ULBs had no real power over city development processes. JNNURM for the first time empowered the ULBs to fast track planned urban development to create more equitable cities. Two sub-missions called Urban Infrastructure and Governance (UIG) and Basic Services to the Urban Poor (BSUP) were implemented in 65 mission cities whereas two sub-schemes called Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) and Integrated Housing and Slum Development Programme (IHSDP) are designed for non-mission cities. Ministry of Urban Development (MoUD) is responsible for submission of UIG and sub-scheme UIDSSMT while Ministry of Housing and Urban Poverty Alleviation (MoHUPA) is the nodal agency for BSUP and IHSDP.

Addressing the concerns of urban children was not

a policy focus of JNNURM. However it did have the potential, given its emphasis on improving living conditions of people living in poverty and concern for creating inclusive and equitable cities through participatory processes, to create better living environments for children particularly through the slum improvement projects. In particular, sub-mission BSUP is in fact a unique and superior policy than previous policies and programs attempting slum development as it promoted integrated community development. The positive aspects of BSUP were:

- An integrated approach to slum development through community participation.
- Recognizing that slum development requires not only improved houses and basic infrastructure but also improved local environments and new community facilities.
- Convergence of health, education and social security with housing to improve standard of living.

b) New Schemes

The Indian government, working with international experts, have set out a vision to build 100 Smart Cities. Government of India launched Smart Cities Mission to identify and roll out smart cities in order to drive economic growth, strengthen governance as well as enhance the quality of life for people. The upcoming smart cities will harness technology to enable local development and improve the social, physical and economic infrastructure of cities. To kick-start the transformation of cities, India Smart Cities Challenge was launched to shortlist 20 cities that will receive funding from the central government for upgrading to smart cities. Apart from this, the government is partnering with countries such as France, Germany, Spain and Singapore to leverage their expertise for making Indian cities smart. Other schemes such as Atal Mission for Urban Rejuvenation and Transformation (AMRUT) and Housing for All have been drafted in a way that gives due consideration to the needs of society’s most vulnerable.

AMRUT scheme intends to rejuvenate cities by improving the green cover and open spaces, as well as assuring water supply and sewerage connection in each household. Also, the scheme will mitigate pollution by encouraging people to switch to public

transport and construct facilities for non-motorized transport such as cycling and walking. Housing for All or *Pradhan Mantri Awas Yojana* scheme was launched with the sole purpose of providing a roof on each head by the year 2022. The magnanimous scheme will specifically target women, economically weaker sections of society as well as scheduled tribes and casts. As part of the scheme, over two crore houses will be constructed all over India to address the housing needs of the vulnerable sections of society. These two schemes are designed to uplift the urban poor and improve their standard of living by taking care of their fundamental needs.

While the government has taken big strides in improving the lives of the urban poor, the private sector must also start contributing. If companies can place equally important value on profit, planet and people, they could be change enablers. It makes good business sense. After all, some of India's most vulnerable people also happen to be one of the biggest market segments.

If this is to happen, the government will also have to create an enabling environment, where businesses are incentivized to invest in urban infrastructure and services. After all, a nation can truly progress if all the stakeholders, including government, businesses and citizens, join hands to collectively work for the betterment of society at large. Ambitious schemes such as Smart Cities, AMRUT and Housing for All are colossal steps for the betterment of citizens, especially the urban poor. I strongly believe that once primary needs of the bottom of the pyramid are taken care of they will be empowered to contribute significantly to the country's economic progress.

10. THE GAPS – MISSING SOFT COMPONENTS

While tremendous progress has been made on the 'hardware' front in terms of developing city infrastructure, not enough attention has been paid to the 'software' of these cities, especially for its young citizens. Children in urban India, especially those from disadvantaged sections—slum as well as street children, orphans, and people with disabilities are susceptible to scenarios such as ill-health, poor access to water and sanitation, inadequate education, urban disasters and child protection and safety concerns.

The opportunity that urbanisation presents lies in

designing the right governance structures, investing adequately to facilitate this growth and ensure inclusive growth. A child friendly city is one that has a system of local governance, is committed to fulfilling children rights, which includes influencing decisions about the city, expressing their opinion, participating in social life, receiving basic services, walking and playing safely, living in an unpolluted environment and being an equal citizen. Major urban development schemes in India do not adequately take into account issues related to children's health, education, growth, safety and participation. The focus may need to be on smaller urban centres where most of the urban population is concentrated (68 per cent of India's urban population lives not in metros but in towns with a population of less than 100,000). I believe that any successful reaping of the demographic dividend will require focus on the following key areas:

a) Urban Governance

In recent years, the government has recognised the importance of urban areas and has implemented various programmes that address the systemic challenges of urban governance such as the need for municipal reforms and better financial health of urban local bodies along with the problems of poverty, livelihood and housing. A review of these programmes reveals that it does not include specific need of child, especially the deprived one. In particular, lack of funds for basic services (water supply, solid waste management, and street lighting), civil works (parks and playgrounds, slum improvement and construction of primary schools) and prevention of food adulteration have a direct implication on their growth and development. Thus, urban schemes need to ensure that a sufficient budget is allocated for children. There is also a need to replicate child-friendly programmes through child participation in the governance process, build their capacities, redesign long-term development plans through a child lens and prioritise budgeting and expenditure on issues identified by children or that are important for them.

b) Healthcare

In India, one primary healthcare facility located within an urban area caters to a much higher population when compared to the standard norm of one centre per 50,000 persons. Also, there is an imbalanced focus on curative care, and a near

total neglect of preventive as well as promotive care. Childhood mortality indicators among the urban poor are higher as compared to the overall urban averages - versus 51.9 for U5MR, 54.6 versus 41.7 for IMR, and 36.8 versus 28.7 for NNMR. Moreover, infant mortality rate is still an area of concern, varying widely across cities, ranging from 28 per 1,000 live births in Chennai to 63 per 1,000 live births in Meerut. One of the key challenges facing urban poor is their limited capacity to spend on healthcare. Overcrowded government hospitals often force them to seek treatment from unlicensed and untrained, yet more affordable private providers. Providing healthcare right from the pre-natal up to the adolescence stage is vital in order to ensure healthy growth and quality life of children. From the providers' perspective, service delivery in slums is an enormous challenge given the large and sometimes mobile population.

c) Nutrition

The problem of under-nutrition in children is of a serious magnitude in urban India. In India, 32.7 per cent of urban children under-five years of age are underweight and 39.6 per cent are stunted. The difference in prevalence rates is evident in the wealth index, six out of 10 children under five years is stunted in the lowest wealth index as compared to 2.5 out of 10 children in the highest wealth index. Also, 21.5 per cent of new-borns in the country have LBW. The other emerging problem of urban India is the rising incidence of obesity, especially among middle and upper middle class urban children. Research by the Diabetes Foundation reports the prevalence of overweight children (14 to 18 years) in the private schools of Delhi is between 29 and 32 per cent. Physical development and proper nutrition of children are essential for the positive development of cities as they form the future workforce stimulating economic growth. India is still grappling with the problem of providing adequate nourishment to its young citizens.

d) Water and Sanitation

According to the 2011 Census, around one in five households in urban areas do not have a household toilet and depend on shared facilities. Nearly 12 per cent of urban households defecate in the open and another 8 per cent use public or shared toilets. In

terms of urban sanitation, while India has about 11 per cent of the world's urban population, it accounts for nearly half of the global population defecating in open. On the other hand, only 26.6 per cent urban households are reported to have access to safe drinking water within their dwelling premises. Approximately 443 million school days are lost as a result of water and sanitation related disease. WASH has a direct impact on the health and education of children. Stunting and underweight prevalence in 48 per cent of malnourished children in India is linked to the absence of access and use of sanitation and hygiene facilities. Attendance and retention rates of girls studying in the middle and higher classes are affected the most by the absence of separate and functional sanitation facilities and their poor upkeep. The physical environment in which the urban-deprived children live and their access to basic services such as water and sanitation has a direct impact on their health. Factors such as open defecation, lack of proper faecal disposal and management along with insufficient and poor quality water supply leads to the spread of diseases such as diarrhoea, typhoid, cholera and malaria.

e) Education

Schooling of children has to deal with the elusive triangle of access, equity and quality. While approximately 27.4 per cent of children in the age group of 7 to 18 years reside in urban areas, only 17 per cent of schools are located in urban areas. There are a total of 1.52 million schools in India out of which 14.9 per cent are located in urban areas. Migrations of children with their families further add to the problem as language poses a major barrier to education. As schools only admit children for a brief period each year, parents face a tough time getting their children admitted. As a result, a large number of children remain out of the education system. How well India is able to harness the intellectual capital of its youth is dependent on the access and quality of education that it provides to its children.

f) Child Protection

The growth of cities gives rise to several child protection issues. There was a 24 per cent increase in crimes against children between 2010 and 2011 and a further 52.5 per cent increase from 2012 to 2013. The million+ cities are major contributors to

urban crime. Major crimes against children include trafficking, kidnapping, rape and infanticide. The girl child is especially affected due to the proliferation of sex work in cities. Highly urbanised states such as Delhi and Maharashtra are third and fourth in the list of states where most of these crimes take place. In a country such as India, where it is lucrative for employers to employ child workers since it is cheap and labour laws are poorly implemented, the number of urban child workers is huge, though still less than that in rural areas. Small industrial workshops, small and medium-scale hazardous industries, service establishments, and informal businesses such as rag picking, porter and vendor jobs are where child workers are concentrated. A large number of children work as domestic help, suffering abuse and exploitation at the hands of their employers, usually away from the public eye. A higher-than-average crime rate clearly means that children in the cities are not only victims to such violence but are in the danger of becoming a part of organised crime rackets, especially when faced with circumstances such as disruption in schooling, dysfunctional family, lack of parental care and exposure to substance abuse.

g) Urban Resilience and Disaster Management

Natural disasters and extreme climatic conditions have a different impact on children than they have on adults and pose a serious threat to a child's survival and well-being. It has been discussed in details in section 9 above.

11. CLIMATE ACTION – GOOD PRACTICES FROM ACROSS THE GLOBE

- a) **Jakarta's flood reduction through city planning:** Nearly 80 per cent of the public green space in congested Jakarta has been lost to development in the past 40 years. To reverse the trend and ease severe flooding, the Indonesian capital plans to build 3,000 child-friendly parks by 2022 in high-density areas. The green space could lessen the duration of floods by absorbing storm run-off.
- b) **Kenya's government schemes:** The Government of Kenya has established a National Climate Change Coordination Unit in the Office of the

Prime Minister. A National Climate Change Response Strategy was prepared in 2010. The Arid Lands Resource Management Programme (ALRMP), which operates out of the Office of the Prime Minister, includes significant work on food security, education, health and sustainable natural resource management in the research locations with intended benefits for child survival and development. Other major Government initiatives exist across Kenya to address the impacts of extreme drought on children. Children are also considered in the current draft disaster management policy.

- c) **Children's Public Service Announcements on climate change in Philippines:** With the impact of climate change felt increasingly in the Philippines, youth participating in the CBA project came up with creative ways of communicating climate change messages to their fellow Filipinos. In one village, young people produced Public Service Announcements (PSAs) that made waves in their communities. In this project, PSA describes the use of video and audio by children and young people to communicate to their peers and the wider community what they have learned about climate change. Designing PSAs helps to build the confidence of the participants. It also builds their understanding about communication more generally and gives them methods to create change around issues that are important to them, helping to foster resilience beyond the project. These important skills can be used in the future to influence community and regional leaders, as well as their own immediate friends and family.
- d) **Raising climate change awareness through music in Philippines:** When given the opportunity to act as engaged and empowered members of a community, children have the innovation, creativity and vision to actively participate in awareness-raising, planning and decision-making around climate change. Empowering children to initiate this conversation was a key priority of the CBA project in Aurora province. The project, in collaboration with the child-led radio program Boses ng Kabataan (Voice of the Youth)* launched a jingle-making contest on climate change in June 2013 with the theme: Developing child advocates for climate

change resilience. Schools in the Philippines use music to aid in the learning process and to foster self-expression among children and youth, forming an integral part of alternative education models. Music is also used to educate and inform the general public on issues affecting them and act as a strong advocacy tool for awareness campaigns and social mobilisations. The combination of music and climate change advocacy in the context of the project, facilitated an innovative and engaging new opportunity for children to raise their voices in their community about the issues most affecting them.

12. CONCLUSION

India has seen explosive urban population growth in recent years. The country has witnessed a five-fold growth in less than 60 years. If the trend of urban growth continues the way it is, it is expected that about 60 crore population of India would be part of the urban population. Now looking at the present scenario of the 37.7 crore Indian urban population, about 32 per cent (12.0 crore) are children below 18 years of age and around 10 per cent (3.65 crore) are children below six years.

Cities and urban areas represent multi-sectoral complex systems of inter-connected services, demands

on which are ever increasing at fast pace. Everyday they face growing number of issues which drive risks including creation of new risks and there are vulnerable sections including children who have weaker and lower coping capacities and mechanisms at their command. What is urgently needed is overall vision with creative and innovative strategies and policies to address each of these issues in an integrated, comprehensive and holistic manner to address each of these issues in cities of all sizes and profile to make them more resilient and liveable with special focus on children, given their higher vulnerabilities and lower coping mechanisms.

Given the above scenario, where lies the hope? It certainly lies with the children at the centre of both problems and the solutions as well.

Children by inherent orientation, attitude and approach are tech-savvy, adaptive and more resilient by nature. As Nelson Mandela said, '*the children and youth of today are leaders of tomorrow*'. Given leadership opportunities they will find creative, innovative and disruptive solutions amidst the complex web of issues far beyond the imagination of the earlier and present generations to usher in better, brighter, friendlier and happier tomorrow for their and future generations.

Author: Anil K. Sinha, IAS (rtd.), Sr. Advisor, Mentor & Consultant
Hazard Risk Management, Climate Change Adaptation & Sustainable Development,
Former Vice Chairman- Bihar State Disaster Management Authority.

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For further information, please contact:

Gorakhpur Environmental Action Group (GEAG)

Delhi Office:

A-187, First Floor Shivalik, Malviya
Nagar, New Delhi 110017,
Phone: +91 11-41667754,
Email: geagdelhi@geagindia.org

Gorakhpur Office:

HIG First Phase 1/4,
Siddharthpuram, Tara Mandal,
Gorakhpur, Uttar Pradesh 273001
Phone: +91 551 2230004
Fax: +91 551 2230005
Email: geagdelhi@geagindia.org

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