Concept Note

Special Centre for Disaster Research at Jawaharlal Nehru University Organizes an International Conference on Disaster Resilient Smart Cities 4-6 December, 2019

Revisiting the Smart City Discourse for Disaster Preparedness:

A global discourse on 'Smart Cities' is gripping research institutions, universities and international funding organizations since the Hon'ble Prime Minister of India Shri Narendra Modi launched India's *100 smart cities mission*, with a vision to promote cities, which will provide core infrastructure, sustainable environment application of *smart solutions* on 25th June 2015. The governance of the world expects to overcome many shortcomings of public service delivery, citizen safety, energy requirements, traffic jams, health scares and concerns of infrastructural designs. The concept carries different yardsticks to the policy makers of different countries. However, a near agreement on a definitional frontier identifies four pillars of comprehensive development, ie; institutional, physical, social and economic infrastructure. There is no clear mention of the fact that a really meaningful smart city is a city which is free of disasters or is prepared in advance to address disasters such as fire, floods, hurricanes, tornadoes, landslides, bomb blasts, nuclear accidents, epidemics and animal population management. Institutions which respond to these alerts are trained, use sophisticated appropriate technology, respond with speed and sensitive to the value of human and non-human life in the city.

Facts are clear on the report that cities would be the greatest centre of concern across the world by 2020 as more than 70% of its population would be inhabiting urban areas. This number had already crossed 50% or 3.3 billion by 2008 and is projected to explode to 5 billion by 2030. Since this is happening much faster than the policies which eradicate poverty, hunger and destitution, much of the new urban habitats would be composed of the deprived and city's unwanted population. The urban population of developing countries of Asia-Africa-Latin America would constitute more than 81% of the total population of towns and cities across the world. The UN estimates that by 2030 more than 43 mega cities with a population exceeding 10 million would be a reality. The report 'State of World Population 2007: Unleashing the Potential of Urban Growth' warns that this decisive shift from rural to urban growth would change the balance which has lasted for millennia and bring an enormous challenge of service delivery and governance to national governments. Therefore the report alerts that nations should be aware of the fact that 'this unprecedented wave of urbanization offers potential opportunities or dismal failures' or a thin choice between a utopia or dystopia. Quoting Prof. Carlos Moreno in his book for Netexplo, the sociologist Bernard Cathelat writes, "If the 19th

century was the century of empires and 20th century the century of nations, the 21st century is without doubt, the century of cities."

Smart city is not to be understood simply as an exhibition of glittering skyscrapers with stinking, unhealthy, unreached and bleached slum populations carpeting its feet. Many scholars consider an overpowering political dimension to a smart city discourse which highlight its capacity to sustain democratic empowerment of citizens so that they are participative in disaster resilience building as partners to governance. Drawing out of micro-level research literature of social sciences the undue technological implantation has been questioned. According to the European Commission, smart city mission would generate a market of 1 trillion euros in 2020.The new Netexplo work of Prof. Bernard Cathelat released by UNESCO indicated "For cities this is the key investment..it is good for the economy because it attracts companies and creates high value added jobs.." Further information on 'Smart City, Smart Business'I'UsineDigitale by Nicholas Clinckx (2014) guides further that this market which is currently thought to represent between 6-8 billion dollars could reach to 20 to 40 billion dollars by 2020 and some estimates also mention it to be around 100 billion dollars for the next decade. In USA a New York Times editorial warned of the growing influence of Wall Street financiers in Detroit, and possibly other cities as well. Their Securities and Exchange Commission had not completed rules, while the Commodity Futures Trading Commission's rules were so weak as to virtually invite the banks to exploit municipalities. It also found the undue influence of economic elites as cadres of Wall Street brokers sold city officials on a plan to build a new sports arena, civic center, and marina using municipal bonds which took effect in 2004, but later by 2008 the city sank into serious economic crisis.(Investigative reporting of *Drew Reed author of @ This Big City, is an online media producer and community activist specialising in sustainable transportation).*

A book published in 2015 by Daniel Araya "Smart Cities as Democratic Ecologies" has highlighted many dilemmas embedded within the concept and have to be addressed as the policy advances. A smart city is undoubtedly a green city which employs green technologies for sustainability and good health. This leads to many technology driven changes to democracy and civic engagement. The author writes, *"In conjunction with issues related to power grids, transportation networks and urban sustainability, there is a growing need to examine the potential of 'smart cities' as 'democratic ecologies' for citizen empowerment and user-driven innovation. What is the potential of 'smart cities' to become platforms for bottom-up civic engagement in the context of next generation communication, data sharing, and application development? What are the consequences of layering public spaces with computationally mediated technologies? Foucault's notion of the panopticon, a metaphor for a surveillance society, suggests that smart technologies deployed in the design of 'smart cities' should be evaluated in terms of the ways in which they enable, or curtail, new urban literacies and emergent social practices."*

India has to attend to the greatest existentialist challenge as three of its cities would fall in the top eleven most populated cities of the world. Mumbai (2nd with 25.97 population), Delhi (3rd with 25.83 population) and Kolkata (11th with 18.54 population) sharing a population of 70.34m. out of a total of 254.69m. However, the threat of dystopia comes from the fact that the percentage rate of population growth in Mumbai, Delhi and Kolkata is threatfully 2.32,3.48 and 1.74 as compared to Tokyo (1st with 37.28 population),Mexico(5th with 21.81 pop.) and USA (9th with 20.43 pop.) where the percentage growth rate is much lower at 0.34, 0.90 and 0.66 only. This suggests that extremely dangerous future scenario exists for the government of India in terms of governance and city management. The government has to prepare itself with planning, funding and appropriate technology to find solutions to a major disaster waiting to

happen in cities in the form of traffic jams, urban sprawls, fire, water and food scarcity and toxification, urban health epidemics, electronic waste and CFCs increase due to airconditioning and scraping off the green spaces in cities.

Would Smart Cities be simply Money Guzzlers or Disaster Sensitive?

Funding for the smart city may not really go for disaster preparedness. Experts at UNESCO Smart City Accelerator Meet at Paris during April suggested PPP as the only way to generate funds for the smart city. World Bank estimates show that the capacity of public sector to fund this form of development is highly limited and may not exceed 20-25% of the required 3.3 trillion dollars for smart cities. This in itself diverts public and non-profit government responsibility to a minimum. The private sector which could fund to the extent of 60% and international development finance institutions like the World Bank, European Investment Bank or the Asian Development Bank could possibly fund 20% of the smart city expenditure notwithstanding the 70% financing would be coming through debts. These emerging complications can be resolved by establishing a good logic by the NDMA to seek a share of the funds for disaster preparedness. China has already invested 1.3 trillion Yuan in its 3600 smart city projects but again disaster is a marginal reference. How to bring disaster management to the core of financing demands would require the Disaster Management Authorities to work in close coordination with the Ministry of Environment, Forest and Climate Change as well as the Ministry of Housing & Urban Affairs. So far the disaster management authorities are an island in themselves. Their work ought to be mainstreamed in the law and governance authorities.

Experience From Across the World:

Major Changes in the direction of Disaster Resilience affects the Governance of cities;

Singapore looks at it as an opportunity for a smart nation as it aims to achieve convenience, enterprise efficacy and new jobs and skills besides enabling a lean, agile and future ready government. Sao Paulo in Brazil has a different story to share. Marianna Sampaio the deputy secretary of Innovation Technology from this city highlighted the big wedge which exists between the reality and the imaginary smart city concept. The tech parks, start ups and the digitization further increase exclusion beyond the capacity of city governance to handle. Sociologist Bernard Cathelat warning against a trend towards gentrification analyzed that these new smart cities in contrast to their older counterparts appear more socially selective and non-inclusive. This is due to an unavoidable fact that globalized economy being the goal, smart cities are designed to attract new digital technology, Artificial Intelligence solutions, Internet of Things, Big Data Managers, Robotics and Smart Mobility solutions which would bring a convergence of new breed international professionals, executives, business leaders and most qualified cosmopolitan population who would speak and live an entirely new language, jargon and life styles. The historically perceived ‘unsmart, ugly and dirty’ population would be further thrown outside the developmental grid. This would be counterproductive to the objective of community resilience building in disaster management. Ironically, even though all experts indicate solutions to escape disasters in a smart city plan but none has a hold on either the findings of Hyogo Declaration or the Sendai Objectives to be achieved by 2030. Even some of the ground realities embedded in the Sustainable Development Goals take a backseat in front of passionate technologists promoting their digital innovations craving to be implanted and marketed. This is visible in the fact that Carlo Ratti, an exceptional transport solution researcher

from MIT in his presentation at Paris Netexplo Network said, *'smart city in India, first and foremost means smart citizens'*. So, till citizens are smart, India cannot initiate a smart city. It is also a great disjunct that the countries where smart cities are an indispensable survival requirement are going missing from UNESCO's concerns on the table. Ironically, China, Africa and Europe dominate this debate.

South Asian and Middle Eastern governments have devoted substantial resources and have made significant strides in developing early warning systems (EWS). The Indian Meteorological Department (IMD) — the key institution for issuing EWS in floods and cyclones — has developed a multi-stage cyclone warning system. India has also made advances in the development and deployment of the aircraft meteorological data relay system, the cloud motion vectors (CMVs) and the very high-resolution radiometer (VHRR) payload onboard INSAT–2E to provide water vapor channel data.The United Arab Emirates (UAE), too, has introduced sophisticated, well-coordinated mobile early warning systems. The country's National Emergency, Crisis and Disasters Management Authority (NCEMA) has a unified electronic system to send warning messages to the public through telecommunications networks. The integrated functioning, efficiency in simplicity, and speed has greatly benefited the Abu Dhabi police, which depends on EWS for managing many concerns of governance and safety. The 2009 Jeddah floods — one of Saudi Arabia's most catastrophic disasters — remain fresh in the consciousness of Saudi officials and the public alike. Like Nepal, Saudi government was also found ill-prepared to respond to swarms of small earthquakes that struck Harrat Lunayyir in the northwest part of the country. Many of these concerns ought to be brought centre stage in the smart city discourse across the world.(*From Amita Singh's published research in Middle East Journal USA*)

The Key Issues in building Disaster Resilience in Smart City Discourse

So what is to be set right in a smart city plan for cities in India and rest of the world? Some key issues have been identified as follows;

1. **Smart Disaster Management Machinery**: Disaster Management Network, Legal framework, Meteorological Organizations, Geo-physical monitoring stations, Remote Sensing authorities. Training, response mechanism, sensitivity to duty, transparency, information dissemination, coordination, respect for life.
2. **Smart Technology Solutions**: digital innovations in traffic, Early Warning Systems, Artificial Intelligence and Robotics in city alert and rescue operations.
3. **Smart Service Delivery**: basic human needs such as water, health, education, common service centres, Local Governance & Telecommunication network to receive alerts, Artificial Intelligence and Robotics in city alert and rescue operations.
4. **Crime Management:** Enlightened policing, corruption-free Police Stations, anti-trafficking stations, cyber cells of police to handle human and non-human distress calls, ethics and integrity of city administration.
5. **Social and community preparedness**: Shelter homes, hospitals for human and non-human populations, policies for animal birth control, a trained and coordinated city governance to manage food, water, timely rescue, machine operation training to remove fallen trees, man-animal conflicts, water and food scarcity.

Paper Abstracts & How to participate?

1. This conference will have only invited papers from top experts across the world's smart city networks. Please send a list of your work in this field as we may miss out some good work and brilliant experts we still do not know about.
2. Those interested in presenting their upcoming work and studies , who wish to seek knowledge based opinion and inputs are requested to send abstracts in 1000 words with a title, objectives, central idea, description of the study and direction which it expects to achieve.
3. PhD scholars who have recently completed their work on disaster resilience of smart cities or are about to submit their thesis are welcome to send their abstracts as in point 2 above.

Last date for submission of abstracts/writeups: 31st October

Financial Support and Accommodation:

Only collaborators (Netexplo University Network, UNAB, ICSSR, NIDM) and invited foreign experts are offered full support and accommodation. Other individual participants may get accommodation support and partial travel funding depending upon available resources and the value inputs of their work to the conference theme. This information on the amount of support may be sent by the end of September. An administrative coordination team may look into the support requirements of participants.

Registration:

A registration amount of Rs.1000/- per person may be charged from all who wish to attend the three day conference. This would include Conference Kit, food and access to all special expert sessions etc.

Last date for registration: 31st October.

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