

Setting The Agenda For Tomorrow's Cities

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Cities must become
'DISASTER-PROOF'

Urbanisation has undoubtedly augmented the pace of economic development and prosperity in many nations. However, industrialization led urbanisation has caused multiple environmental stresses



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Government of Karnataka



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Joint Secretary (Smart Cities Mission Director),
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Government of India



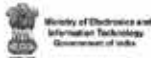
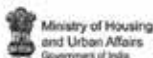
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City resilience & local governments

The advance preparation and planning to minimize human casualties during Cyclone Fani was hailed by all. However several commentators felt that the recovery after the event has fallen short of expectations. Power outages, failed telecom systems, water supply disruptions, and road blockages continued for several days after the cyclone struck. The prolonged power outages in the summer month of May, while causing great discomfort, also exacerbated health concerns. Recovering and getting back to normal had been slow and painful. That is what resilience is all about - the ability to respond to and recover quickly from external shocks and stresses.

Building resilience is key to creating sustainable and successful cities. Resilience is often directed at natural calamities such as heavy rains, floods, hurricanes and other climate events; but must also cover other events such as oil spills, terror strikes, extreme poor air quality, economic disruptions, and mass transit breakdowns. Local governments will remain key players with major responsibility to build greater resilience into urban settlements. There are several areas that local governments can focus on to achieve this objective. Primary could be assiduously building databases on the areas under their jurisdiction. Data could include the age, social and economic profiles of the population with a view to grading their vulnerability in times of specific events. Needless to say local governments are best equipped to do this because of their intimate knowledge of the local landscape. This data will prove invaluable while responding to natural disasters. Proper mapping of infrastructure assets particularly power, water and telecom will enable rate vulnerability levels of these systems and thereby build redundancy and alternate supply sources. Water supply is

a particularly valuable service especially during natural disasters. While identifying supply lines prone to damage, the effort can identify alternate sources which will likely survive.

Local governments can look at the issues of their cities through a resilience lens. Urban planning and land use for example, could build the principle of resilience in aspects such as density and sprawl, extent and design of open and green spaces, wetlands and water bodies, and river systems. The effective functioning of these systems could make all the difference between resilient cities and other cities – between how well some cities withstand, respond to, and recover from stresses and shocks; and some other cities that are not able to.

While the road to building resilience would differ from city to city, some approaches could run through all. One such key approach would be community involvement. It is necessary that local governments constantly solicit community participation in their efforts to build resilience. Members of the community, especially those that are vulnerable need to be aware of the dangers they face and specific actions and behaviour required on their part during specific events.

Local governments need to design their organisations in a way that supports all the above. A move in this direction is the appointment by some global cities of a Chief Resilience Officer. Alongside there is need to build capacity within local bodies across levels so that resilience becomes ingrained in the city's DNA. While we work hard to mitigate climate change related events and other man-made disasters, we must also learn to handle those we could not prevent.

This issue of Urban Update carries viewpoints of several urbanists on this subject of Urban Resilience. ■



Adequate growth in renewable energy would serve dual purpose - firstly, it would contribute towards achieving energy security to the nation and it would address the environmental concerns, which need to be tackled on a war-footing

M Venkaiah Naidu
Vice President of India



It is not as much about smart cities but about smart citizens. We need to listen to the citizens to know from first-hand what are their real concerns and come up with real solutions

Henri-Paul Normandin
Director of International Relations, Montreal



PIN POINT



Climate change cannot be stopped by the small island countries alone, it has to be stopped by the rest of the world and that this requires the political will for transformational policies in energy, mobility, industry and agriculture

António Guterres
Secretary General, UN



We need to ignite a bigger conversation centered around how to use AI and data to help find scalable solutions to the biggest challenges facing humanity

Anousheh Ansari
CEO, XPRIZE



BUZZ



Maitreyi Bordia Das
@DasMaitreyi
Manager, World Bank's Global Lead for Social Inclusion

#Cities know how to build infrastructure. They know their implementation challenges. But many admit to being at a loss on what to do about #socialinclusion



UN Development
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Over one million species are threatened with extinction due to human impact. We cannot achieve the #SDGs or create a #MoreEqualWorld unless we restore a healthy balance for biodiversity



Maimunah Mohd Sharif
@MaimunahSharif
Executive Director UN-Habitat

Today affordable and adequate housing is not guaranteed for more than 1 billion people. By 2030, this situation could become even worse, with 1.6 billion people suffering by not having affordable housing



Mike Hudema
@MikeHudema
Climate Campaigner Greenpeace Canada

Every minute a garbage truck of plastic is dumped into the seas. We catch seafood equivalent to the weight of China every year. We need to change course. There's no time to waste. There's no planet B

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Cities need to be well prepared to face any impending natural disaster as per their risk profile and exposure. The role of urban local bodies in making their services and infrastructure resilient is the need of the hour
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- 40** **Negligence to fire safety, a burning issue**
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Urbanisation has undoubtedly augmented the pace of economic development and prosperity in many nations. However, industrialization led urbanisation has caused multiple environmental stresses. These are compounded by the negative impacts of climate change, natural and man-made disasters. The major problem is: cities are not ready to face these issues in the absence of adequate knowledge, technological tools, money and skilled human resources to build urban resilience. Building city resilience has now become a pre-requisite for achieving sustainable development of cities everywhere

LEADERSPEAK

- 30** **Don't allow cities to become heat islands**
Indian cities need to formulate and implement heat protection policies to safeguard the lives and health of their citizens as the death toll caused by heat waves continue to rise. This year alone 36 people died in different parts of the country because of heat waves. The major problem of not having resources and capacity, and lack of data to assess and handle the issue must be addressed adequately at the local level. Municipalities can help the state governments in reaching out to citizens to make them aware of do's and don'ts

Sensitizing workshop for NMC officials on 'Equality & Diversity'

Team Equi-City

Equality and diversity is becoming more important in all aspects of our lives as we live in an increasingly diverse society and we need to respond appropriately and sensitively to the diversity. The population in the metropolitan cities is increasing day by day. People from different cultural and economical backgrounds migrate to these big cities, creating a diverse population base. Therefore, the diverse components of the cities should have an equal representation. Diversity and inclusion framework ensures that it recognises city's growing diversified population and that all citizens have the basic civic services equally accessible. The Constitution of India has several provisions which grant certain fundamental rights to its citizens, which includes 'Right to Equality'.

◆ Article 14 guarantees Equality before Law.

◆ Article 15 prohibits state from discrimination on the grounds of religion, race, caste, sex and place of birth.

◆ Article 16 empowers the state to make reservations with respect to appointment for posts in favour of backward classes of citizens if in the opinion of state such classes are under-privileged.

Reducing inequalities (SDG-10) is also one of the main Sustainable Development Goals. In order to reduce inequality, policies should be universal in principle, paying attention to the needs of disadvantaged and marginalised populations and inclusion has to be promoted actively.

Municipal governments must make equity and equality the cornerstone for the better performance from the workforce. Many cities provide community services to address needs and issues related to social diversity. Policies, programs and protocols promoting diversity benefit the city as

an organisation and as a community. With the above objective, the two day long interactive session was organised by the Equi-City team along with the All India Institute of Local Self-Government (AIILSG) on May 14 and 15, 2019 at IMA Hall, Nagpur, in order to sensitise officials. The main focus of the Sensitisation Workshop was to educate officials on the Equality and Diversity Framework while promoting and advocating for inclusive and harmonious workplace. In addition, the workshops focussed on handling diverse population within the city and address their concerns. Further, officials will be able to consider their own roles and responsibilities in creating a working environment which is free from discrimination and enables individuals and teams to reach their full potential.

The workshop was inaugurated by Ram Joshi, additional commissioner, in the presence of Aziz Sheikh, additional commissioner, Rajesh Mohite, deputy additional commissioner, Mahesh Dhamecha, assistant commissioner. Joshi said that there is a need to bring about equality in service provisions in all areas of Nagpur and provide equal levels of service to all sections of the society and motivated the Nagpur Municipal Corporation (NMC) officials towards creating a 'city with a soul' as the tagline suggested by the Equi-City. R S Thakare said that the NMC officials need to be sensitive towards citizens' problems and should not discriminate any section of the society on the basis of caste, religion, age, sex or disability. The workshop was conducted for Class I and Class II officers of various departments of NMC of which around 90 officials participated actively. The workshop consisted of three sessions – Equality & Diversity, Gender Diversity



Nagpur city officials attending workshop organised by Equi-City to understand the objectives of policies, programs and protocols promoting diversity to benefit the city as an organisation and as a community

and Social Inclusion.

Kapil Chandrayan, Consultant - Socio-economic Research, Strategic Communication & Stakeholder Engagement, was the speaker of first session- Equality & Diversity. He explained that the scientific studies have proven that there is a big role of softer entities such as equality, diversity in our day to day activities which shapes our personalities and our work efficiency. Equality and diversity broadly means providing people with equal opportunities. Equal opportunities are a legal obligation to protect against discrimination. In order to provide equal opportunities, three main points to be addressed are "Equality" which means equal rights and treatment to all individuals, "Diversity" which means difference from what is normal or expected and "Equity" means system of justice and fairness in which where there is an even-handed treatment of all the people. We need to develop a system which will acknowledge the diversity of people, understand their needs and then accordingly take steps and provide opportunities so that individuals can attain their maximum potential.

Adv. Padma Chandekar and Dr. Vasanti Deshpande were the speakers for the second session - Gender Equality. Chandekar has expertise in Women's Law and International Law, Human Rights and Social Equity and Dr. Vasanti Deshpande, Executive Director at "Varadaan", Indian Association for Promotion of Adoption & Child Welfare. They explained that the basic concept of gender equality is that male and female both are equal, both deserve equal respect and they should respect each other as well but the society has created very different norms and expectations for the behaviour and roles to be performed by men and women. This mind-set needs to be changed by continuous awareness and increasing sensitiveness towards the problems of women. The problems and issues faced by women not only affect women but the whole society is also directly and indirectly affected.



The workshop being inaugurated by the guests

Hence, there is need for sensitization on gender equality in our society.

The third session on Social Inclusion was taken by Suvarna Damle, Executive Director at "Prakriti", Resource Centre for Women and Development, Nagpur. Social inclusion is important as it develops a feeling of belongingness otherwise negativities are developed in person's mind which may result in sense of exclusion, depression and isolation. People lack opportunities to work, play, learn and develop social relationships with each other. Damle said that there are three points which help to have social inclusion - Sensitivity, Physical environment and Legal support. She urged officials that as an authority, we have responsibilities that we should attempt to create inclusive workplaces and must consider individual differences, needs and perceptions as well as focus on creating structures, systems and processes that make people feel valued and treated equitably.

This sensitization workshop thus sensitised NMC officials and created

an Equality Framework which will enable municipalities to assess their human resources structure from an equality and diversity perspective. The equality and diversity framework is non-discriminatory in nature providing equitable opportunities for each employee for merit based promotion, irrespective of community affiliations, and promote a community oriented approach. The framework also addresses equality at job segregation and salary. Equality and diversity around gender, race and ethnicity, disability, religion, sexuality, class and age leads to a better performance from the workforce.

In terms of local governance, the equality and diversity framework is a step ahead for better understanding of the Equality within the various departments of the local bodies. It develops more highly skilled and better decision-making workforce which will create a stronger and more sustainable civic authority and better outcomes for its citizens. ■



Rajiv Agarwal, Director General, AIIILSG delivering opening address at the South Asia Conference, Kathmandu, Nepal



AIIILSG conducted an interactive session on Energy Conservation in Bilaspur Smart City



AIIILSG launched Shikshan Ranjan Kendra in slum areas of Chennai, Delhi, Mumbai and Bangalore



Ravi Ranjan Guru, Deputy Director General, AIIILSG and Kumar Dhanajay, Consulting Editor, Urban Update attended 2019 UCLG ASPAC Executive Bureau Meeting at Yiwu, China

MCG to work paperless

The Municipal Corporation of Gurugram (MCG) on April 15, released its statement to digitise corporation's paper documents in the approach to develop its system completely paperless. Earlier in January 2019, the civic body's tax department had started moving its entire document on digital platforms. Corporation also declared to set a goal to become paperless from June 1, 2019. S S Rohilla, Public Relations Officer (PRO) of the MCG said, since April 1, cooperation has completely stopped accepting any files or documents in paper form. Work is on to digitise all files." To make a part of daily practices, the corporation has stopped accepting any paper file or document and uploaded 43,017 out of 75,400 files on their official account server.

BMC to plant 5k saplings

Bhubaneswar Municipal Corporation (BMC) has planned to increase the plantation of saplings to about 5,000 this year after the heavy loss due to cyclone Fani. Kapliendra Sethi, Environment Officer, BMC, said, "While the estimates are still in process, a tentative loss of ₹20 lakh has been incurred to the affected areas of BMC. Apart from BMC, other authorities will also be planting trees which include Bhubaneswar Development Authority (BDA), Odisha Forest Development Corporation (OFDC) and other private bodies." Bhubaneswar Development Authority (BDA) has decided to plant 23,500 saplings at 11 different sites across the city. The plantation will be taken up mostly in major city parks like Biju Patnaik Park, Indira Gandhi Park, Buddha Jayanti Park.



IIT Hyderabad launches 'M2Smart Project' testbed to develop low-carbon transport models

HYDERABAD: To develop low-carbon models for Indian transportation, the Indian Institute of Technology (IIT), Hyderabad on May 28, launched an 'M2Smart Project' testbed. IIT and Japanese researchers, officials from Greater Hyderabad Municipal Corporation (GHMC), Traffic Police, Ministry of Education, Culture, Sports, Science and Technology, and Japan Science and Technology Agency (JST) were present at the occasion. A practical handbook on low-carbon urban transportation for developing countries would be generated by the testbed. The handbook will be based on big data of Indian transportation and it will create traffic flow models from data analysis. Real-time traffic monitoring using cameras and Bluetooth and Wi-Fi sensors, speed detection system, conflict warning system using traffic signal lights and remote environment gas sensing on the IIT campus as well as on NH 65, are some of the key components of the traffic management system. The testbed system was deployed on IIT Hyderabad campus and along a stretch of 3 km on NH-65. Electric rickshaws running on the campus are used to understand the driving cycle of e-vehicles. This will help to implement the V2X technology. The 'M2Smart Project' is India and Japan's joint research project under the Science and Technology Research Partnership for Sustainable Development Program.

NDMC approves decongestion plan for Delhi markets

NEW DELHI: North Delhi Municipal Corporation (NDMC) approved a "management plan" for busy markets like Sadar Bazar and Kamala Nagar in a house meeting on May 30, 2019, which entails them to reduce traffic congestion in these shopping hubs and increase parking charges on the road to support the move. The civic body has already implemented such a scheme in Karol Bagh. The corporation has planned to expand the scheme in other areas to make the markets pedestrian-friendly and to promote the use of public transport.

The civic body pedestrianised Ajmal Khan Road and regularised parking and traffic, in Karol Bagh. It also increased

street parking rates to discourage private vehicles. However, civic officials said that this does not mean that parking charges will be increased in other markets. This can be done only after making 'Area Parking Plan' and detailed talks with the merchants' associations. "Decongestion is our main focus we have to implement these schemes with the support of merchants. We are discussing it with merchants' associations and finding out where it can be implemented," said Varsha Joshi, Commissioner NDMC.

Things have reached an "advanced stage", in Kamala Nagar while in the Sadar Bazar, discussions with traders will start in the next few weeks.

Himachal to set up SDRF



BK Agarwal, Chief Secretary of Himachal Pradesh, announced that the state is preparing to set up its independent disaster response force while chairing the 9th meeting of the State Executive Committee (SEC) on May 30, 2019. The force would be patterned after the central National Disaster Response Force (NDRF) and would be tasked to generate a quick, effective response to any disaster in the state. The chief secretary mentioned that the State Disaster Response Force (SDRF) would be acting under the supervision of the Department of Revenue – Disaster Management. SDRF stations would be set up in Mandi, Arki and Mubarakpur.

Bengaluru traffic police all set for monsoon

The traffic police in Bengaluru have formed 44 special teams across the city to smoothen traffic movement during any rain-related eventuality. P Harishekar, Additional Commissioner of Police (Traffic), at a meeting said that special teams were formed at each police station level. The teams will be provided with various equipment such as motorised saw, ropes, choppers, buckets, and heavy-duty torchlights to clear roads blocked by fallen trees and attend to flooding in their areas of operation. The traffic police teams have been asked to form WhatsApp groups with local and state officials for better management of the situation.

India's largest STP to come up at Okhla by 2022

NEW DELHI: At a cost of ₹1,161 crore, India's largest sewage treatment plant (STP) will come up at Okhla in Delhi. The Delhi Jal Board (DJB) said on May 29, 2019, that the establishment of the plant has been given to Suez Group based out of France and the project work is likely to be completed by June 2022.

Dinesh Mohaniya, DJB vice-chairperson said that, when functional, this plant with a capacity of 56.4 million litres per day will complete the Yamuna Action Plan III, which was prepared to clean the river. "Now, untreated wastes are being dumped into the Yamuna. The treated water of the plant will be redirected to Yamuna, which will help to clean the river. DJB will also lay sewer lines to increase existing capacity, he said. The plant will remove 41,200 kg of organic pollutants and 61,600 kg of solid load per day. According to the DJB, this will help in reducing the pollutants in

the Yamuna. This plant will cover about 40 lakh residents of Chandni Chowk, Daryaganj, NDMC areas, Nizamuddin, Okhla, Badarpur, Kalkaji, Malviya Nagar, Katwaria Sarai, Lajpat Nagar, Greater Kailash and South Delhi – from Munirka to Badarpur – among others. In addition, the Jal Board has decided to revive an ash pond of Rajghat Power Plant at 42 acres of lake at a cost of ₹36.51 crore. For this, treated water from STP will be used on Delhi Gate (15 MGD capacity). Currently, treated water is shed in the Yamuna.

Since the closure of the Rajghat Power Plant, the ash pond is not used and the work of revival is estimated to be completed in 18 months. After the ash pond has become operational, it will reduce the organic load pollutant flowing in the Yamuna by 675 kg.

DJB also approved the construction of 14 mini sewage treatment plants under the

Najafgarh Drain Zone, along with laying of internal sewage system in group of colonies Somesh Vihar, Jhuljhuli and Dichaon Kalan, covering a population of around eight lakh. Mohania said that the water of these plants will be used to revitalise 56 water bodies of the area.



Haryana to augment STPs to improve Yamuna's water quality

SONEPAT: In a bid to curb the contamination of Yamuna, the Central Pollution Control Board (CPCB) has directed the Haryana government to expand the sewage treatment plants (STPs) in the industrial cities of Yamunanagar, Panipat and Sonapat districts. These districts have been identified as the primary contributors in the contamination of the river as industrial and domestic discharges from them are being discharged in the lake without proper treatment.

S P Singh Parihar, CPCB chairman has written to the engineer in chief of the public health engineering department that augmenting the capacity of STPs and installing a proper sewage system at Yamunanagar and Sonapat is required, whereas the sewage system of Panipat city requires 100 per cent utilisation of existing treatment facility. CPCB made the following direction to the state after a report was submitted by the NGT appointed Yamuna Pollution Control Monitoring Committee. A joint team of the CPCB and the Central Council for Industrial Research (CSIR)- National Environmental Engineering Research Institute (NEERI) had probed the river water quality at different locations in the three aforementioned districts. Along with these districts, the team also inspected the river water quality at Wazirabad in Delhi. It also visited the ditch drain, drain no. 8 in Sonapat and drain no. 2 in Panipat on December 24, 26 and 27, 2018. The public health engineering department has been instructed to submit a compliance report and a time bound action plan within a month, retroactive from May 1.



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MCA to use plastic waste for road construction

The Municipal Corporation Ambala (MCA) has planned to use plastic and polythene waste in the construction of roads in Ambala City and Ambala Cantonment, in order to deal with plastic and polythene waste. Besides, it has also started issuing challans to bulk polythene bag users. Satinder Siwach, Joint Commissioner said, "Following directions from the Directorate of Urban Local Bodies, the corporation has planned to use plastic waste and polythene bags in road construction. Under the project, plastic and polythene bags will be segregated from other waste for the proposed use." He further added that cloth and jute bags were also distributed in general markets, educational institutes and offices during the campaign.

BBMP departments work to achieve clean city roads

Departments under Bruhat Bengaluru Mahanagara Palike (BBMP) and other agencies are working together in coordination with each other to clean and maintain the aesthetics of the city roads. Waste like dry leaves, mixed waste, parts of vehicles involved in accidents, construction debris, and even dust can be seen on side of roads as each agency or civic department passes the responsibility on to the other. The new circular released by N Manjunath Prasad, BBMP Commissioner, clearly details about the responsibility to clear the discarded materials. The circular issued following the directions of T M Vijay Bhaskar, Chief Secretary clearly details out the action to be taken, said officials.

JMC initiates waste segregation campaign

JAIPUR: Jaipur Municipal Corporation (JMC) introduced a new initiative for segregation of waste at source in eight wards of the city on May 20. The initiative faced a few challenges due to lack of awareness among people regarding wet and dry waste. The JMC officials said that the door-to-door collection agency was instructed to collect wet and dry waste separately in different chambers, dumping however was not segregated. Previously, the corporation began the collection of dry and wet garbage separately in the SFS Colony, Mansarovar, on a trial basis. On May 20, the segregated collection was introduced in eight wards – 21, 24, 43, 40, 45, 61, 84 and 87.

According to Kavita Chaudhary, deputy commissioner (health), one ward was selected from each zone for door-to-door garbage collection with monitoring by zone deputy commissioners. She further added that the corporation is currently focusing on the forthcoming Swachh Survekshan survey. These two are the major areas which need more attention. Dr Anand Sonawane, project director, BVG India Limited, said, "The waste collection done on May 20, was same as we do daily, although we have started an awareness drive to tell people how to keep separate dustbins for dry and wet waste so that we can collect segregated waste from them. The drive initiative can only be successful if people are aware about waste segregation, we have started telling people but the process may take a week or so, he added.

To make aware people JMC officials said nearly 858 cleanliness workers will be deployed soon for an awareness campaign among residents. The JMC has taken the segregated waste collection initiative eyeing the Swachh Survekshan survey where the civic body dropped down five positions in 2019 in comparison to 2018. Jaipur city bagged 44th position in the Swachh Survekshan 2019.

GCC deploys beach cleaning machines

CHENNAI: In a bid to keep beaches clean, the Greater Chennai Corporation (GCC) has deployed beach cleaning machines. With this move the corporation is expecting to improve tourism along the city's beaches. G Prakash, Commissioner of GCC has directed civic officials to use the cleaning machines for cleaning more beaches in southern part of the city. An official said, "We have started using beach cleaning machines at Palavakkam beach, Tiruvalluvar beach and other stretches. We start work at 6 am every day". Till now the cleaning machines were being used only at the Marina beach and Elliot's beach, but the officials said that they have also started to clean beaches near Dooming Kuppam, Nochi Kuppam and Srinivasapuram.

The corporation started this drive as a pilot project after the procurement of eight additional beach-cleaning machines. A total of 10 beach cleaning machines are being used for conservancy operations at the city's beaches.

To maintain the cleanliness of the beaches the civic body has installed



bins at more than 50 locations to prevent littering, public toilets at six locations and seating arrangements at 15 locations. A few months ago, the civic body developed first-aid kiosks, new toilets and tourist infrastructure along the Marina beach with funding from the Central government. But most of the toilets along the beaches are not cleaned properly, said tourists. The fishermen associations welcomed the move and said that they will be cooperating with the civic body to keep the beaches clean. However, K Bharathi, a representative of fishermen said, "The civic body should also get Coastal Regulation Zone (CRZ) clearance before implementing infrastructure projects, including metro rail, road and markets".

Hong Kong-Zhuhai bridge

AN ENGINEERING MARVEL

THE CHINESE HAVE built the world's longest sea bridge "Hong Kong-Zhuhai bridge" covering 55 km over Pearl River Delta. The bridge connects Hong Kong to the Chinese city of Zhuhai. It is engineered in a fashion to withstand earthquakes and seasonal typhoons. Also, as a safety measure there are 'yawn cameras' installed on the bridge which raise an alarm to alert the driver if he yawns three-four times within 20 seconds. The bridge has a seven kilometer stretch that plunges 44 meters underwater via two artificial islands.



SDMC initiates waste segregation drive



The South Delhi Municipal Corporation (SDMC) initiated a campaign to encourage the people living in its three model wards, namely RK Puram, Andrews Ganj and Janakpuri South, to segregate waste at source on May 19. The campaign was initiated in compliance with a March 2019, order of NGT, which instructed the civic bodies to select three wards in their jurisdiction which were to be converted into model wards. The garbage generators will have to pay notified user charges. The user fee for daily garbage collection ranges from ₹50-₹5,000 per month, and the fine for non-segregation at source ranges from ₹200-₹10,000.

GHMC to eradicate all open garbage pits

Greater Hyderabad Municipal Corporation (GHMC) to remove all open garbage pits. M Dana Kishore, GHMC Commissioner, while addressing a review meeting consisting zonal commissioners, officials of various wings said that the civic body would work more efficiently on implementing sanitation work in the city. He guaranteed that in the next 10 days, all the open garbage pits would be removed. He added that there would be constant collection of trash from commercial areas; 15 tons of plastic will be collected from each circle and for clearing debris from roads, nalas and water bodies, a C&D vehicle will be allocated to each ward.

MCG conducts awareness drive on World Environment Day

GURUGRAM: This World Environment Day, the Municipal Corporation of Gurugram (MCG) organised 'Beat Air Pollution' campaign to aware citizens about the air pollution. A month-long awareness campaign will be conducted with the collaboration of various schools, colleges and non-profit organisations (NGOs) of the Gurugram city.

Yashpal Yadav, Commissioner MCG, conducted a meeting on May 29, to discuss modalities of the campaign and to instruct guidelines of the campaign to various MCG officials. MCG will also conduct various waste management workshops for their staff to make them aware about such solutions to beat pollution, so that they may present examples for others. Talking to media Yadav said, "There will be daily activities and drives that will be conducted as a part of it."

According to a senior official from MCG, the motive to conduct such a campaign is to create awareness among citizens not only about their role to control pollution but also to make them aware about the process to beat air pollution, such as curbing waste burning, encouraging decentralised segregation and waste management.

A key source of air pollution in the city is garbage burning, which is triggered by poor management of waste. Plenty of clean-up drives with citizen volunteers are also being organised for the month of June. We hope that citizens will see themselves as equal stakeholders in the problem.

A worldwide pollution tracking company, IQ Air Visual and Greenpeace, an NGO, released a report which claimed that Gurugram had received highest annual concentration of PM 2.5 in the world in 2018, with daily levels averaging out at 135.8 µg/m³, more than 13 times the limit of 10 µg/m³ recommended by the World Health Organisation (WHO).

World Environment Day onwards, car free Mondays in Dharwad for govt officials

DHARWAD: The district administration and the judiciary of Dharwad has decided to implement new methods and rules for encouraging public for environment protection and conservation to celebrate World Environment Day on June 5. The decisions to implement new eco plans were taken at a meeting on celebrating World Environment Day at the district administration recently.

According to new plans, the judges and government officials will walk, peddle or use public transport on Mondays and this programme will be launched in the district on June 5. Chairing the meeting, M Deepa, Deputy Commissioner, Hubballi Dharwad Municipal Corporation (HDMC) said that all officials, including the deputy commissioner, zilla panchayat chief executive officer, those in the district administration, taluk and gram panchayats, and the legal fraternity, including judges, will not use their government vehicles on Mondays. They

will either come on bicycle or use public transport to reach their offices.

Apart from this, the district administration jointly with zilla panchayat and the judiciary will launch a new scheme of planting one lakh saplings on the environment day, to create awareness and concern of people towards environment protection.

The deputy commissioner also said that starting from June 5, special drives are going to be conducted to stop the use of single-use plastic bags in hotels, restaurants and stores.

Senior Civil Judge R S Chinnanwar welcomed the initiative to avoid using vehicles one day a week. Judges and judicial staff will either use bicycles or use public transportation to reach their offices. Prashant Kumar Mishra, Commissioner, HDMC said that the corporation officials would join this initiative by not using vehicles on Mondays and HDMC would plant 30,000 saplings in the city limits.

World Bank approves finances for Andhra Pradesh Health Project

NEW DELHI: The World Bank board of executive directors on May 15, approved finances of the Andhra Pradesh Health Systems Strengthening Project. The World Bank and the Central and State government signed the loan agreement for amount of \$328 million. The loan from the International Bank for Reconstruction and Development (IBRD) has a six-year grace period, and a maturity of 29 years and 6 months.

The project aims to improve the quality and responsiveness of public healthcare services in Community Health Centres and Primary Health Centres across all the 13 districts in the state of Andhra Pradesh benefitting around 53 million



people. In addition, the project will also help in screening and management of non-communicable diseases and strengthen maternal and child healthcare services at these centres. The project has three major components, the first component “Improve Quality of Care” aims on improving the quality of care in Community Health Centres (CHCs) and Primary Health Centres (PHCs). The second component “Improve Responsiveness of Public Health Services” aims at making public health services more user friendly and responsive according to people’s feedback. The third component “Increase Access to an Expanded Package of Primary Health Services” aims on expanding the package of services provided at PHCs and sub-centres to include non-communicable disease (NCD) screening, risk-stratification and management in addition to strengthening the existing Maternal and Child Health (MCH) services.

Kangra gets its first earthquake detector

Himachal’s Kangra district receives its first earthquake alarm system. The new seismic sensing technology was developed by the Indian Institute of Remote Sensing in collaboration with the Central University of Himachal Pradesh (CUHP). The sensor calculates the total electron content anomaly (TEC) in the earth which will trigger an alarm when the content rises above the standard value, is accompanied by two navigation satellite systems (GNSS) at Nurpur and Jiya in Kangra district. Himachal faced 15 earthquakes between August 2011 and July 2013 and the new sensing technology will be implemented to make the region more resilient against the recurring natural calamity.

HP installs CCTV cameras for improved surveillance

Himachal Pradesh state police department got a boost in their vigilance abilities as the entire state is now equipped with 28,656 CCTV cameras. The government persuaded local business establishments, hotels, industries and other institutions to install the cameras to keep a watch on the activities by capturing movement in and around the establishment. The maximum cameras are operational in Baddi police district, comprising the Baddi-Barotiwala-Nalagarh industrial hub bordering Punjab and Haryana. 129 police stations across the state were also equipped with 5 such cameras. 198 automatic number plate recorder (ANPR) cameras have been installed at the 99 inter-state and sensitive locations for recording the incoming and outgoing movement of the vehicles.

‘African countries need to reform their urban planning laws’

NAIROBI: United Nations has urged the various African governments to revise their existing urban planning laws so that they adequately reflect the development on ground. “It is unfortunate that most country’s urban planning laws are non-existent as what exists were done in the colonial era,” said Robert Lewis-Lettington, Unit leader, Urban legislation at the UN habitat. He also highlighted that most African countries do not have a strong urban planning system in place, revealing the fact that land use compliance is high at 85 per cent in urban central business districts and low at 38 per cent in the city peripheries. After sampling 18 countries in the region, only South Africa’s Johannesburg has attained full implementation of the required plans while important parts of the planning system are non-functional in majority of the countries. “Most cities in this region should evaluate the number of plans required by law against the number of planners available to prepare and maintain them to increase potency of the planning system,” said Lewis-Lettington. The inspection revealed a severe shortage of professional city planners in most of Africa. On an average, 36 professional planners are employed in the African cities with the exception of Lagos, Nigeria, where 613 are employed. “To overcome staffing capacity constraints, cities should match their degrees of autonomy and privileges to a set of performance indicators which should include budget management performance and service delivery performance,” the UN official suggested at UN Habitat Assembly in Nairobi.

E-bus service to connect Jammu Railway Station to Katra

An all new electric bus service connecting the Jammu Railway Station to Katra was introduced by the Jammu and Kashmir State Road Transport Corporation on May 27, 2019. Around 40 new e buses were commissioned by the state transport corporation. The planned route of the bus journey will take an estimated 2 hours with a single stoppage mid-way. The buses are equipped with several features like CCTV cameras, panic button on every seat and emergency doors, to enhance the passengers' safety levels. The bus service was inaugurated by K Skandan, advisor to the Governor of J & K.

Gurugram metro's new extension to be operational by 2025



Manohar Lal Khattar, Chief Minister of Haryana, approved a detailed project report (DPR) for Gurugram metro on May 27. The new 31.1 km metro link will be constituted of 26 new stations and will be operational by 2025. According to the official release, the total estimated cost of the project is expected to be ₹5,126 crore. The proposed metro link will start at Huda City Center, pass via Subhash Chowk, Sector 10, Sector 23, Palam Vihar and Udyog Vihar and then connect with the Cyber city metro station. "Civil works for the project are expected to commence in June next year, and the metro will be commissioned by June 2025", said V Uma Shankar, GMDA CEO.

Contaminated stream water badly affects people's health in Solan

SOLAN: Multiple cases of jaundice have surfaced at Shoolini University near Solan. According to sources, the local stream, which serves as the primary source of drinking water for the university, was contaminated with sewage. The health authorities have instructed the university to disband the current faulty drinking water.

Dr NK Gupta, Medical Officer, Health, said that the university had been directed to take all preventive measures such as the use of bottled water and cleaning of water distribution tanks to ensure that the disease did not spread further. He said that the water samples from the campus as well as pollutants of a sewage treatment plant had been drawn and sent to a Pune-based National Virology Lab for analysis. Sumit Sood, Executive Engineer, said that the university had already been directed to maintain the optimum level of residual chlorine of 0.2 ppm in water supplied to staff and students and sanitise all existing sources of water as a preventive step. The university had also been served a notice previously in March, directing them to abandon the lift water supply scheme being operated by its authorities from Solan khud. On a probe by a team of officials of Irrigation and Public Health (IPH) department back in March, it was found that water quality of the stream was deteriorating due to sewage discharge from the university.

18 states, 2 UTs to submit action plan to CPCB on treated wastewater use

NEW DELHI: The National Green Tribunal (NGT) has directed 18 states and 2 Union Territories to submit an action plan which ensures the use of treated waste water to reduce reliance on the already depleting ground water resources of India on May 14. The bench, headed by Justice Adarsh Kumar Goel, NGT Chairperson, has given the states and UTs a time of 3 months to submit a detailed action plan to the Central Pollution Control Board (CPCB). If they are unable to meet the deadline without a valid reason, the green panel would mark the states/UTs as defaulters for the violations of the directions given by the bench. The direction was issued by the NGT while hearing a plea filed by Mahesh Chandra Saxena, who claims to work for an NGO in the field of

ground water conservation. The states' plans might include a monitoring system for proper coordination with the local bodies and this will be the responsibility of the chief secretaries of all the states and UTs. "It is well known that absence of a plan for reuse of treated water affects recharge of ground water and also results in fresh water being used for various purposes for which the treated water could have been used alternatively. Proper plans for reuse of waste water can add to the availability of potable water. This being a substantial question of environment, direction is issued to the states and UTs which have not yet submitted their action plans, to do so latest by June 30, failing which the tribunal may have to consider taking coercive measures, including compensation for loss to the environment," the NGT bench said.

According to a status report issued by the CPCB, the states which are yet to submit action plans are Arunachal Pradesh, Assam, Bihar, Dadar and Nagar Haveli, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Meghalaya, Mizoram, Nagaland, Punjab, Pondicherry, Rajasthan, Sikkim, Tamil Nadu, Telangana, Uttar Pradesh and Uttarakhand.



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EFI organises beach clean-up drive in Chennai



The 12th beach clean-up drive 'Planeteers 2019' organised by the Environment Foundation of India (EFI) was joined by hundreds of volunteers of different age groups to clean up the beaches in the southern parts of Chennai on May 2. T Arun Krishnamurthy, founder of EFI, said that the initiative was held to celebrate the World Environment Day, on June 5. Nearly 5,000 volunteers cleared garbage from a stretch of more than 10 km along the Bay of Bengal covering Besant Nagar, Kottivakkam, Palavakkam, Thiruvanmiyur and Neelankarai. The collected waste consisted of both degradable and non-degradable garbage.

TNPCCB snaps industrial units for discharging effluents into water bodies

The Tamil Nadu State Pollution Control Board (TNPCCB) snaps industrial units discharging untreated effluents into water bodies in Hosur, an industrial city in the state of Tamil Nadu. Immediate action was taken by cutting down the power supply, after the unit was found to be discharging untreated industrial waste into a lake nearby. The board noticed that a few industrial units in Hosur were discharging untreated effluents into Bedarapalli lake. Following this, S Prabhakar, Collector, directed the board to hold routine inspections to crack down on units violating environment guidelines. The officials are asked to act strictly against the units.

AMC imposes penalty on those burning garbage in open

AGRA: Agra Municipal Corporation (AMC), in three days, has collected fines up to ₹18,000 from individuals and organisations for burning of municipal solid waste (MSW) in open and causing air pollution in the city. Apart from this, notices have been issued to a dozen property owners and institutions, which include two private schools. FIRs will also be registered against polluters.

In the past three days, AMC imposed a fine of ₹5,000 on three organisations and a fine of ₹1,000 each on three individuals for open burning of garbage.

In order to curb burning of municipal solid waste, the local police with the district civil body started a campaign against it on May 14, 2019. This campaign is not only compelling people to be aware of the dangers of burning solid waste, but is also registering police cases against individuals and organisations burning bulk waste in the open. It was also decided to impose a fine of ₹25,000 as a penalty on bulk polluters.



Rajiv Rathi, AMC executive engineer (environment) said, "In case a person is caught burning garbage under any circumstances, on the spot penalty of ₹5,000 will be imposed. A penalty of ₹25,000 will be charged for bulk waste burning on public or private spaces. Now, we will also be filing FIRs against those who fail to pay the penalty. This may result in imprisonment of the offender."

In the case of the burning of garbage, on the basis of a formal complaint of the civic body, the police will file a case under section 133 (removal of public nuisance) of CrPC and section 188 of IPC (disobedience to public order for public servant).

Segregate waste properly or loose license: PMC to street vendors

PUNE: The Pune Municipal Corporation (PMC) has instructed the road side vendors to segregate garbage generated during business hours, failing to do so can lead to their licenses being cancelled. For over 21,000 licensed hawkers in the city, the civic body has made segregation of waste and to keep separate garbage bins for both wet and dry waste as mandatory. According to officials, if any vendor found violating the rule, first they will be fined, second time violation will lead to cancellation of their license.

Madhav Jagtap, head of anti-encroachment department, PMC, said, "The initiative aims at maintaining roadside cleanliness and hygiene. Hawkers across the city will have to use two separate bins. Besides the vendors dealing with food, those in other trades have to abide by the garbage rules. He also said that head office and ward units of corporation will take action against offenders and staff of PMC health and anti-encroachment department would coordinate the drive.

An official of PMC said, "The civic body will first create awareness about the drive. The PMC will then slap a fine of ₹180 on a vendor for not abiding by the garbage segregation rules. If any hawker refuses to follow the orders, stricter actions will follow. Confiscation or cancellation of the licenses will be done in the extreme cases."

To help in waste segregation, the corporation has made necessary arrangements to lift garbage and vendors can avail the facility in morning and evening hours. The civic body has also established 288 hawking zones for vendors and 190 zones have been finalised for garbage disposal in the corporation limits.



UNICEF lauds India's 'Swachh Bharat Mission'

NEW DELHI: A United Nations International Children's Emergency Fund (UNICEF) study released on June 5, highlighted the success of the 'Swachh Bharat Mission' which has served as the Indian government's primary initiative to improve the health and sanitation across the country. The study has indicated a substantial reduction in ground water contamination in many villages, while another study conducted by the Bill and Melinda Gates Foundation said that the mission mobilised around ₹23,000 crores for generating more awareness on sanitation in rural areas.

The UNICEF study was based on ground reports from three states — Bihar, Odisha and West Bengal. The groundwater samples extracted from several villages from the aforementioned states suggested that

the villages which were not open defecation free (ODF) were 11.25 times more likely to have their groundwater sources contaminated with fecal matter when compared to ODF villages.

The study further marked soil contamination to be 1.13 times more likely in non-ODF villages as compared to ODF villages. Similarly, non-ODF villages are 1.48 times more likely to have their food contaminated and 2.68 times more likely to have household drinking water contaminated compared to ODF villages.

Both of these reports were released on the World Environment Day and representatives of both the institutions praised the political will of the Indian government for pursuing such an ambitious mission, who had pledged to make India ODF when they came into power in 2014. In his inaugural speech

at Independence Day in 2014, Narendra Modi, Prime Minister of India spoke in detail about sanitation and the need to build toilets, which ultimately led to the framing of the 'Swachh Bharat Mission'.

A World Health Organisation (WHO) study conducted in 2018 claimed that approximately 3 lakh lives would be annually saved once 100 per cent ODF is achieved.

Prakash Javadekar, Minister of Environment claimed that 'Swachh Bharat Mission' has turned into a people's movement. "People made whistle gangs to taunt anyone who would sit in the field. Thousands of women started using toilets. Earlier toilets were made, but not used. We will go forward to provide more toilets as poor people want to aspire," he said.

The National Annual Rural Sanitation Survey 2018-19, the largest independent sanitation survey in the country and conducted by an independent verification agency, with a sample size that covers 6136 villages, 92040 households, and 5782 schools, 5803 Anganwadi centers, 1015 public toilets and 6055 public spaces, making it the most representative sanitation survey in the country, marked a total usage of rural toilets at 93.4 per cent, and toilet usage om rural India at 96.5 per cent.

Among the three states, Bihar is the worst in terms of food and drinking water contamination in its non-ODF villages. The study says in such villages of Bihar, 66.7 per cent of food sources are contaminated with fecal matter. The corresponding figures for Odisha and Bengal were at 57.1 per cent and 47.1 per cent, respectively.

The findings are indicative of substantial reductions in ground water contamination which may potentially be attributed to the improvement in sanitation and hygiene practices as a direct result of the adoption of the 'Swachh Bharat Mission', as well as support systems such as regular monitoring and behavior change messaging, which have all been critical aspects of the 'Swachh Bharat Mission'.

Noida to get multi-level car park



The work on the three underground parking lots coming up in Noida is nearing completion. The parking lots will offer parking space to more than 1,300 cars, said Noida Authority officials on May 17. Multi-storey parking lots worth ₹141.23 crore, will come up in Sector 1, 2 and 3, which are facing traffic congestion issues, said a senior official. The Sector 1 facility will have space for 534 cars in an area of 17,160 sqm and is scheduled to get completed by this year end, said Rajeev Tyagi, Noida Authority's General Manager. "Work is also underway for a ₹61.82 crore parking in Sector 2 which will have space for 565 cars in an area of 18,273 sqm," he added.

Thiruvananthapuram corporation to provide 50,000 bins to residents

The Corporation of Thiruvananthapuram is all set to provide 50,000 more kitchen bins to the city households. Around 15,000 kitchen bins have already been distributed to the city residents. The bins are being provided by the corporation free of cost to the residents for processing of waste at subsidised rate of ₹60, for a packet of 10 kiloliters which is 50 per cent the original rate. The user of bins can either carry out the periodic maintenance of bins by themselves or can ask the service providers for the same at a monthly charge of ₹200. The bins costing ₹1,800 per unit will remain under ownership of the local body.

65 industrial units in Haryana face action for illegal groundwater drawing

PANIPAT: The Central Pollution Control Board (CPCB) instructed the Haryana State Pollution Control Board (HSPCB) to act against 65 industrial units operating in Panipat, Sonapat and Faridabad for drawing groundwater without a no-objection certificate (NOC). The order issued by the CPCB directs the HSPCB to take necessary action against 47 out of 55 units in Panipat, 13 of 34 in Sonapat and five of eight in Faridabad as these have not even applied for obtaining the NOC for drawing groundwater under Section 18 (1)(b) of the Water Prevention and Control of Pollution Act, 1974, as per the Central Ground Water Board (CGWB) report. The defaulter units can expect imposition of deterrent environmental compensation within 15 days. The fine would be retroactive from the day when the illegal practice begun.

The CPCB also required the HSPCB to verify the compliance of the Water Act of 1974 in 8 other industrial units of Panipat and Sonapat and 38 units in Faridabad within 15 days.

The NGT in 2018 had constituted joint committees of the CPCB, CGWA and the district administrations to probe two specific complaints of rampant industrial pollution in the cities of Panipat, Sonapat and Faridabad. The industrial effluents were ultimately contaminating the groundwater in the region.

Following the committee's direction, the CPCB had asked the HSPCB and the CGWB to file an action taken report by April 30. On the basis of the ATR provided by the CGWB and the interim report by the HSPCB, the CPCB has issued directions to the HSPCB for compliance.

78 leather tanneries to be sealed in Unnao, Banthar

KANPUR: National Green Tribunal (NGT) ordered the sealing of 78 tanneries in Unnao and Banthar on May 29. A joint report by a team of Central Pollution Control Board (CPCB) and Uttar Pradesh Pollution Control Board (UPPCB) was submitted to the NGT, based on which the tribunal passed



its verdict. The team had conducted a probe on the samples collected from the tanneries from May 20-24 which indicated that they were flouting pollution control norms. Examination of the samples displayed presence of chromium above the set standard which was over 2 mg/litre. In Kanpur itself, 260 tanneries had already been shut down in compliance with the Tribune's orders and around 700 are still operational, with over 4 lakh people working in the leather industry in Kanpur. The untreated waste effluents emitted by such factories are polluting Ganga, as the waste is directly disposed into the river. Kanpur Tannery Association, however, claim that they have been operating under the directions of the state government and NGT. Also, Taj Alam, president of the UP Leather Association, said, "Even if all 700-odd tanneries are shut down, effluents will still continue to pollute the Ganga as the problem does not end with us. We discharge merely 15 to 20 per cent effluents, while the rest is untreated domestic sewage. Apart from the leather industry, as many as 30,000 small and medium enterprises consisting of battery plants, chemical and detergent units, dyeing units, textile mills and metallurgical units are situated on various small towns on the banks of the Ganga. It is only the leather business which is being targeted."

'CLIMATEGIRI': Children call for a climate emergency on World Environment Day's eve

Team UrbanUpdate

NEW DELHI: On June 4, in Delhi's scorching heat, approximately 250 children from various schools gathered at Jantar Mantar in a bid to raise awareness on the pressing issue of climate change, which according to the kids has become so severe that it would be apt to declare it as a "climate emergency". The children incorporated many performances like skits, dance routines, beatboxing and a solo guitar performance along with the frequent use of slogans like, 'Don't waste fossil fuels, don't be fossil fools', 'Planet nahi toh future nahi' and 'We are missing a lesson... so we can teach you', to gather the attention of the masses to their cause.

The change is growing severe day by day as the frequency of natural calamities such as tropical storms,

floods and severe draughts has been steadily increasing and the generation today seemed to be in no mood to tolerate the lax attitude shown by adults towards the subject of global warming. "The heat is already far from tolerable," according to Vishal, a 17-year-old school student, who believes events like these give children a platform to talk about the impending climate crisis, as it will be affecting them to a greater extent in the coming years. "We live in the capital region of our prospering nation, yet it is one of the most polluted cities in the world and we aim to change it," he added.

'You'll die of old age... We'll die of climate change', was the strong message conveyed by the children, who campaigned despite the harsh weather, which exceeded 42 degrees centigrade. The event, dubbed as 'Climategiri', was inspired by a protest of a 16-year old climate activist

from Sweden, Greta Thunberg, who called for a global movement of students.

Children between the ages of 10-17 years coming from various schools protesting the same issue came forth at the event, most of them holding slogans to put out their messages. 10-year old Anjali rightly identified plastic as one of the biggest threats to environment and called for a ban on its use.

Anisha, a student of NP Co-ed Senior Secondary School said, "I want to save my present and my future. I won't refer to this as a climate change as I believe that the climate has already changed. It is imperative that we act today before the situation worsens."

The event was executed under the watchful eyes of Brother Steve Rocha, the national convener of the 'Nine is Mine' campaign. The campaign believes that "Child rights abuses anywhere are a concern for children everywhere... (sic)" and is based around the objective of putting the children of the country first by ensuring a total share of 9 per cent of the GDP for them, 6 per cent for education and 3 per cent for healthcare.

Brother Steve believes that the ordinary people are responsible for keeping the governments accountable for the fulfilment of the Sustainable Development Goals (SDGs).

"We prefer calling this a celebration. We're still celebrating the earth at the moment even though we have only 11 years to celebrate because after that the damage dealt by climate change would be irrevocable.

It is okay for us to ignore the call for climate action, but for children it is a matter of life and death," said Brother Steve when asked about the motivation for the protest. Under the 'Nine is Mine' initiative, the children have undertaken the task to fulfil the SDGs 2, 3 and 4, all of which directly or indirectly concern them.





5th Smart Cities India Expo 2019 ends on a high note

NEW DELHI: The three-day expo was a congregation of innovators & imaginers, academia, policy makers & city administrators, government representatives, business delegates, etc. that came to expand their markets, and explore new technologies and solutions in the fields of smart cities, water management, solar, transport and infrastructure. The expo saw a record number of visitors and substantial sales across all disciplines exhibited at the expo. The event offered something for everyone - trade delegations moved fruitfully from booth to booth; ideas exchanged among compatriots; business was discussed; and more.

The 5th Smart Cities India expo, jointly-organised by India Trade Promotion Organisation (ITPO) and Exhibitions India Group, was inaugurated by Durga Shanker Mishra, Secretary, Ministry of Housing and Urban Affairs, Government of India, at Pragati Maidan, New Delhi on May 22.

The fourth smart cities awards, conducted by Exhibitions India Group on the last day of the expo, received 236 nominations across 17 categories. A jury of 11 eminent members having vast experience and knowledge on the subject of smart cities across various categories such as water, education, infrastructure, etc., selected the winners. The awards were presented to 17 winners, while certificates of merit were presented in five categories. Among the winners were

New Delhi Municipal Council Smart City Ltd. for e-waste collection; Smart City Ahmedabad Development Ltd. for Intelligent Transit Management System - Automatic Fare Collection System; Smart City Ahmedabad Development Ltd. for Safe and Secure Ahmedabad project; Diesel Loco Modernisation Works Patiala for New Electric Locomotive - WAP7; Southern Power Distribution Company of Telangana Ltd. for solar rooftops, etc. The complete list of the awardees is displayed at the smart city expo's website. Talking about their experience at the 5th Smart Cities India Expo 2019, Bharat Kaushal, Managing Director, Hitachi India, said, "Cities are complex organisms of people, governments, businesses and organisations, which require holistic solutions that address the needs of all stakeholders. The 5th Smart Cities India expo functions as an integrated platform for us to showcase Hitachi's technological prowess in the Smart City space, displaying our diversified social innovation business solutions and our commitment towards enhancing the lives of citizens digitally."

Samson Khaou, Managing Director (India), Dassault Systèmes, said, "By 2030, India's urban population will increase to more than 800 million, and over the next decade, cities will account for more than 70 per cent of the country's GDP. We have witnessed a push from the State governments to

modernise infrastructure and build smart cities that involves building and renovating facilities, as well as construction of roads and highways. This will require significant collaboration and efficient monitoring. In addition, urban planners, architects and engineering & construction firms will leverage our 3DEXPERIENCE platform to deliver 'more by using less' in order to create a sustainable city that improves the life of the citizens."

Sharing his views about the exhibition, Prem Behl, Chairman, Exhibitions India Group, said, "It has been action-packed three days for us and the response has been overwhelming. From the first-ever Smart Cities India expo, we have grown to emerge as one of the most popular trade shows in South Asia that showcases all facets of a smart city. Today, we cover multiple technologies that shape modern cities.

Our intent is to provide a platform to all verticals associated with the Smart Cities to create state-of-the-art infrastructure, capable of providing a holistic experience to the citizens dwelling in the urban habitats. Our focus will now shift to preparing for next year with the vision to give our partners, clients and visitors an experience that would be as business productive, intriguing and enriching. We have already lined up a few surprises that will be unveiled at the 6th Smart Cities India 2020 expo."

AIILSG builds vertical garden to mark World Environment Day

NEW DELHI: The All India Institute of Local Self-Government, New Delhi center carried out Go Green Campaign for one month to mark this year's World Environment Day. The main objective for this year's event was "Do something drastic, cut the plastic!"

The campaign kicked off a month before the Environment Day. A total of 16 volunteers worked diligently to make the AIILSG campus a green campus. AIILSG adopted gardeners as Green Drivers for this campaign. Volunteers carried out several green drives which included cleaning of campus premises, waste management, collection of printing paper, awareness

drives among employees, etc.

Volunteers with support from Green Drivers collected plastic bottles from staff members and used them to build vertical gardens in the campus. As part of the initiative, the degradable waste were segregated to make compost unit.

On the concluding day of the event on June 6, Ravi Ranjan Guru, Deputy Director General, AIILSG, highlighted the importance and the stringent need to preserve and conserve the environment. He appreciated the initiatives taken by the team and encouraged all staff members to continue such initiatives for making our environment clean.



- ◆ Tea bags used in the campus are now collected and used as fertilizers in the campus
- ◆ To minimize paper wastage, staff is encouraged to use double sided/ bouquet printing
- ◆ Plastic pots were replaced with ceramic pots which are environment-friendly
- ◆ Plastic drinking water bottles were discarded and glass bottles were distributed





Cities must become **'DISASTER-PROOF'**

Cities and communities in India are going to face unprecedented challenges as sea level further rises and the negative impacts of climate change start inflicting stresses on people and industries in urban habitats. The unplanned development and population sprawl in disaster-prone areas are increasing people's vulnerability. When the poor move to cities, many times they cannot afford available formal housing facilities thus they opt for informal and unregularised settlements which are often situated in areas highly vulnerable to climate and disaster risks. The accidents causing loss to human lives and property at such places are regular.

Urbanization will intensify the concentration of people thus making more people vulnerable to impending disasters. Cities need to be ready to find out solutions to these problems to ensure a safe and secure future for all citizens. Making cities disaster ready is like buying medical insurance as the manner in which climate change-induced disasters are manifesting themselves on human lives and communities, a single mega-disaster can wipe out decades of hard-won development gains, as happened with the 2015 Nepal earthquake. Many countries around the globe have lifted hundreds of thousands of people out of poverty but such reoccurrence of disaster hitting the poor will trap them in a vicious cycle of poverty forever and the efforts of governments over

the years could go down the drain.

City leaders and policymakers will have to look beyond the response and focus on capacitating officials and citizens at the local level in addition to creating a framework for the safer built environment that is in sync with local environmental conditions. There is no denying that cities lack financial and technical resources at the local level which is holding municipalities back in addressing resilience component.

According to a report by World Bank, the global need for urban infrastructure investment amounts to over \$4.5 trillion per year, of which an estimated premium of 9%-27% is required to make this infrastructure low-emissions and climate resilient. Many developing nations face another challenge that is the quality of their built environment.

It indicates that cities need to rethink their approach to address resilience. The higher tiers of governments, state and the central government in the case of India, need to complement their efforts through financial aid and empowering corporations through requisite capacity building programs.

Rising temperature

It is no news that the world is becoming hotter by the day. The increasing temperature is inflicting serious damage to the environment and impacting the lives of people living in disaster-prone areas. Municipal Corporations have a narrowing window of opportunity to make the right choices and ameliorate risks. The key reasons

include the lack of technical and financial resources, non-availability of the skilled workforce, and poor access to knowledge tools. Empowering local governments is essential for improving the resilience of city governments in dealing with disaster, mitigate risks and expedite the post-disaster recovery process.

Central and state governments have a key leadership role to help provide the tools, funding, resources, and policy frameworks that can guide more resilient choices in urban operations and assist urban local bodies in adopting technologies and policies for strengthening the resilience of their respective cities.

Local bodies are also facing constraints in accessing funds to tackle climate change. In this area, urban local bodies will have to go the extra mile and collaborate with international organisation and agencies having expertise, tools and resources.

Regulation and resilience

Most Indian cities do not have any concrete policy frameworks that suit their local conditions to address issues related to enhancing urban resilience. Since people will continue to move to cities in search of better economic opportunities, the cities will need to create housing facilities and other infrastructure facilities for them. Several reports suggest that more than one billion new dwelling units will be constructed by 2050 and, in low- and middle-income countries alone, building stocks will double in the next

Urbanisation has undoubtedly augmented the pace of economic development and prosperity in many nations. However, industrialization led urbanisation has caused multiple environmental stresses. These are compounded by the negative impacts of climate change, natural and man-made disasters. The major problem is: cities are not ready to face these issues in the absence of adequate knowledge, technological tools, money and skilled human resources to build urban resilience. Building city resilience has now become a pre-requisite for achieving sustainable development of cities everywhere



Abhishek Pandey
Editor

Significance of Sendai Framework

The Sendai Framework is a 15-year (2015-30), voluntary, non-binding agreement which recognizes that the State has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local government, the private sector and others. It aims for the following outcome: The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries. The Seven Global Targets

- ◆ Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rate in the decade 2020-2030 compared to the period 2005-2015.
- ◆ Substantially reduce the number of affected people globally by 2030, aiming to lower average global figure per 100,000 in the decade 2020 -2030 compared to the period 2005-2015.
- ◆ (c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.
- ◆ Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
- ◆ Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.
- ◆ Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by 2030.
- ◆ Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the

people by 2030.

The Four Priorities for Action according to the Sendai Framework for Disaster Risk Reduction.

Priority 1. Understanding disaster risk

Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be used for risk assessment, prevention, mitigation, preparedness and response.

Priority 2. Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at the national, regional and global levels is very important for prevention, mitigation, preparedness, response, recovery, and rehabilitation. It fosters collaboration and partnership.

Priority 3. Investing in disaster risk reduction for resilience

Public and private investment in disaster risk prevention

k for cities

and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment.

Priority 4. Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction

The growth of disaster risk means there is a need to strengthen disaster preparedness for response, take action in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels. The recovery, rehabilitation and reconstruction phase is a critical opportunity to build back better, including through integrating disaster risk reduction into development measures.

CITIES NEED TO ENSURE THAT THE NEW INFRASTRUCTURE THAT IS COMING UP IS SAFE NOT ONLY FROM STRUCTURAL COLLAPSE AND FIRE BUT ALSO FROM ACUTE DISASTER RISKS. THERE ARE A FEW INITIATIVES AT THE INTERNATIONAL LEVEL TO ADDRESS THIS CHALLENGE BUT THERE IS HARDLY ANY CONCERTED EFFORT AT THE LOCAL LEVEL. THERE ARE NO EFFECTIVE BUILDING REGULATORY FRAMEWORKS AT THE MUNICIPALITY LEVEL. MOST OF THE CITIES ARE ONLY EQUIPPED WITH TOOLS AND KNOWLEDGE TO INITIATE POST-DISASTER RESPONSES. THERE IS AN URGENT NEED TO SHIFT FOCUS FROM MANAGING DISASTER RESPONSE TO REDUCING UNDERLYING RISKS

15-20 years. Most of this requirement will come from the cities which have a weak capacity to build resilient infrastructure.

It is also important to note that more than 80 per cent of lives lost in disasters came from low and middle-income countries. The studies suggest that the impact of disasters on GDP in poorly prepared countries is 20 times higher than in countries which have some kind of resilience programs for promoting a safe built environment. It is important to note that India loses 1.2 million houses to natural disasters every year.

Cities need to ensure the new infrastructure that is coming up is safe not only from structural collapse and fire but also from acute disaster risks. There are a few initiatives at the international level to address this challenge but there is hardly any concerted effort at the local level. There are no effective building regulatory frameworks at the municipality level. Most of the cities are only equipped with tools and knowledge to initiate post-disaster responses. There is an urgent need to shift focus from managing disaster response to reducing underlying risks.

By implementing building regulation and supporting active compliance, the proposed program can serve to accelerate the application of current

scientific and engineering knowledge to a safer built environment. To this end, the program seeks to leverage good-practice in building code regulation into effective chronic and disaster risk reduction strategies, thereby setting developing countries on track toward effective reform and long-term resilience.

Recently, the city of Toronto launched its first resilience strategy that presents a vision to help residents deal with shocks, stresses and the unexpected. The city had received several suggestions from its residents for formulating the resilience strategy and the city government has acknowledged them and even published a few postcards in the report.

Toronto is the second Canadian city after Montreal to release such a strategy. Montreal released its strategy nearly a year ago. Elliott Cappell, Chief Resilience Officer of Toronto addressed the media during the release and said, “the city is becoming “hotter, wetter, wilder,” inequality is growing in Toronto and the city needs a plan. Our growing risks and vulnerabilities are interconnected, as those who are most vulnerable, in many cases, are also at the highest risk.

This resilience strategy helps us to address these urgent and growing challenges.” This is true for any other city in the world. ■

Don't allow cities to become heat islands

Indian cities need to formulate and implement heat protection policies to safeguard the lives and health of their citizens as the death toll caused by heat waves continue to rise. This year alone 36 people died in different parts of the country because of heat waves. The major problem of not having resources and capacity, and lack of data to assess and handle the issue must be addressed adequately at the local level. Municipalities can help the state governments in reaching out to citizens to make them aware of do's and don'ts



Ranjit S Chavan
President, AIILSG

Heat Waves are increasingly becoming a matter of concern among the stakeholder dealing with natural disasters. Heat waves are known to be “Silent killers” amongst the natural disasters of hydro-meteorological origin. The impact of heat waves may not be visible at large scale like when an earthquake or cyclone hits but the increasing death toll tells a different tale.

In India, heat waves have killed 36 people this year alone. CNN reported that intense heat has scorched the country for more than 30 consecutive days, primarily in northern and central India. Temperatures reached 48 degrees Celsius in New Delhi on June 10 -- the highest ever recorded in the capital in June. The situation is grim not only in India but also in other cities of the world. According to a recent study published by Science Advances, most of the cities in the USA, Europe, Africa and Asia will witness in the rise of temperature thus more casualties are in offing if we do mend our ways and limit further temperature rise.

According to a report by National Institute of Disaster Management (NIDM), the 2010 Indian heat wave can be considered a wakeup call that inter-governmental agency action, preparedness and community outreach become imperative to prevent loss of life due to such extreme events. In India,

2014 surpassed 2010 as the warmest year in a global temperature record that stretches back to 1880s. The 10 warmest years on record have all occurred since 1997, a reflection of planetary warming that scientists predict is a consequence of anthropogenic emissions and poses profound long term risk to civilization.

Addressing the issue of heat waves and climate change requires both rapid mitigation of carbon emissions and widespread adoption of urban

climate adaptation strategies at all levels—personal, business and government levels.

Mitigating risks

According to the definition published by National Disaster Management Authority (NDMA), Heat Wave need not be considered till the maximum temperature of a station reaches at least 40 degree Celsius for plains and at least 30 degree Celsius for hilly regions.



Such situations are becoming more intense and frequent worldwide due to climate change. Even the hill stations like Shimla, Nainital and Dharamshala are witnessing temperature above 30 degree Celsius on a regular basis. It is having a devastating impact on human health thereby increasing the number of heat wave casualties. Studies suggest that heatwaves increase the incidence of illness and death — particularly among vulnerable population groups such as older people, people with a pre-existing medical condition and people with a disability.

There are a few cities in India which have developed fool-proof plans to address the situation and mitigate the losses. Ahmedabad is one of the few cities which had prepared and implemented the Heat Action Plan after heat waves in 2010 resulted in more than 1,300 deaths. The State Disaster Management Plan of Andhra Pradesh, Telangana and Odisha also mentions Heat Waves under disaster category and keeps monitoring the situation during the months of March-June.

When Odisha faced an extraordinary

heat wave situation in 1998 and 2042 persons lost their lives, the government took cognizance of it and ran extensive awareness campaigns to make citizens aware of the situation and thus managed to minimize the losses to under 100 despite temperature rising in the state. The state has also improved its warning system through various available tools. Once the heat wave warning is issued, the state also makes drinking water supply arrangements, reschedules timing in educational institutions and working hours, especially of those doing physical labour, undertakes veterinary measures, calibrates bus timings, etc. These small steps have helped them in reducing the number of casualties. All the cities which are facing similar situation can learn from the experiences of Odisha, Telangana and Andhra Pradesh.

Ahmedabad Model

Urban Local Bodies can support their local community and vulnerable population groups to adapt to heat waves. Ahmedabad has set an example with its detailed heat action plan that was first prepared in 2013 by the

Amdavad Municipal Corporation with help from national and international experts and learning from global best practices on early warning systems and heat adaptation. The plan was again updated in 2015. The plan can be used by other corporations too as a case study to formulate their immediate and longer-term actions and improve preparedness, information-sharing, and response coordination to reduce the health impacts of extreme heat on vulnerable populations.

The Heat Action Plan of Ahmedabad aims to provide a framework for the implementation, coordination, and evaluation of extreme heat response activities in the city that reduce the negative health impacts of extreme heat. The primary objective is to alert those populations most at risk of heat-related illness that extreme heat conditions either exist or are imminent and to take appropriate precautions. Extreme heat planning includes— identifying vulnerable populations and the health risks specific to each group; developing effective strategies, agency coordination, and response planning to shape a Heat Action Plan that addresses heat-health risks; Implementing the Heat Action Plan and activating heat alerts; and Evaluating and updating the Heat Action Plan regularly.

In summer 2016, the NDMA launched a series of initiatives to mitigate the deadly impact of heat waves, including opening shelters for homeless people, adjusting state government working hours to avoid extreme hot weather, establishing drinking water kiosks, and painting roofs white to reduce heat absorption. As a result, the country has seen a dramatic drop in deaths from heat waves in recent years. In 2015, more than 2,400 people died in a heat wave. The following year, a heat wave killed 250 people. This indicates that formulation and implementation of national policy on heat waves are also required to make ill-equipped municipal corporations aware about the seriousness of the issues and handhold them on how to mitigate the risks associated with heat waves. ■



URBAN LOCAL BODIES CAN SUPPORT THEIR LOCAL COMMUNITY AND VULNERABLE POPULATION GROUPS TO ADAPT TO HEAT WAVES. AHMEDABAD CITY HAS SET AN EXAMPLE WITH ITS DETAILED HEAT ACTION PLAN THAT WAS FIRST PREPARED IN 2013 BY THE AMDAVAD MUNICIPAL CORPORATION WITH HELP FROM NATIONAL AND INTERNATIONAL EXPERTS AND LEARNING FROM GLOBAL BEST PRACTICES ON EARLY WARNING SYSTEMS AND HEAT ADAPTATION

Playing with fire, Drowning in water



Kumar Dhananjay
Consulting Editor

A fire engulfed a coaching centre in Gujarat's Surat, killing at least 22 people. Visuals from the spot showed several students falling off the windows trying to escape thick smoke. The Chief Minister of the state has ordered an inquiry and has announced an ex-gratia amount of ₹4 lakh for the kin of the deceased.

As per news sources several others were also injured in a fire at a coaching centre in Sarthana area of Surat in Gujarat. The coaching centre was located on the third and fourth floors of the Takshashila Complex. Students, mostly teenagers, died "either due to suffocation or jumping off from the complex". The government ordered an inquiry. The Deputy CM said, "We have ordered a detailed inquiry into the incident. We will not spare those found guilty."

It is a grim reminder of our repeated failures and perpetual state of unpreparedness when it comes to mitigating disasters. The images from Surat were quite similar to the Carlton Towers fire that broke out in Bengaluru in 2010. Helpless victims jumped off windows for survival while others perished, charred beyond recognition.

There have been numerous fire

accidents in the past few years. In 2018 alone, ten lives were lost in a fire explosion in a cracker factory in Warangal; 6 died in a fire in ESIC Mumbai Hospital and yet another massive blaze in a Lucknow hotel claimed 5 lives. Then a massive fire that broke out in the Technic Plus One building in Mumbai killed 4 and another 17 lives met with a similar fate in Haryana after a fire engulfed a firecracker unit in Bawana. As per the latest data published by the National Crime Records Bureau (NCRB) in 2015, 48 Indians are killed in a fire accident every day. The numbers are more daunting for women, as fire accidents in residential areas are higher.

Another man-made disaster is flooding of our cities. If there is a heavy downpour for a couple of hours, and if there is incessant rain for a few days then the city becomes a sea. Mumbai, Chennai and Gurugram are some examples. Just recall the Chennai floods of 2015 and Mumbai floods of July 2005 and in the one in Gurugram; it's the same story everywhere. It was a deluge in Mumbai and Chennai. In 2005, Mumbai received 944 mm of rain in 24 hours while the Chennai rains in 2015 broke the record of a hundred years. In both the cases a huge number of lives were lost and property worth billions of dollars destroyed. Was it nature's fury that caused it? Certainly not!

Problem area

What is the problem area? It is a fact that cities have grown tremendously in the last couple of decades and urbanization has taken place at a furious pace. What

may have been a tank, lake, canal or river 20 years ago is today the site of multi-storeyed residential and industrial structures. According to a study done after the Chennai floods it was found that at that time alone there were more than 150,000 illegal structures in the city. More than 300 tanks, canals and lakes have disappeared. An information technology park in Chennai was flooded because it is located at a place where waters from two separate lakes converge and flow into a neighbouring creek. Many of the city's info-tech facilities are built on marshlands, water-bodies and water courses. The city's famous automobile manufacturing hubs are located in the catchment areas of lakes.

Excessive use of plastic

Another big problem is use of plastic that chokes the drainage system of



the city. Both Chennai and Mumbai suffered because of that. Mumbai received rainfall of 944 mm, a 100-year high, in a span of 24 hours.

The rain continued and at least 1,000 people lost their lives and 14,000 homes were destroyed. One of the reasons for the huge distress was that the drainages were completely choked by plastic waste and no water was able to drain out. Similar was the case in Chennai.

VK Sharma, Senior Professor of Disaster Management at the Indian Institute of Public Administration (IIPA) said the cities need a proper system of garbage collection and sewage disposal and regular cleaning of drains. "It is true that poor drainage and sewage system is the real cause of urban flooding. There is also migration to cities which often leads to land encroachment and exerts pressure on the existing civic infrastructure."

He further says "the urban planning has to have a long-term perspective and infrastructure should keep pace with growth of population. He said rain water harvesting should be made mandatory.

There is also the need of fixing accountability of government officials and municipal authorities if drains are not properly cleaned. Strict penalties should be imposed on people throwing garbage in the open."

The disconnect

The disconnect with nature is also manifest in the failure of planners, builders, administrators and even common people to fathom the sheer power of natural events. Most of the cities have grown without a plan and with no regard to water flows, and without anticipating extreme weather events. Santosh Kumar, a professor

at the National Institute of Disaster Management with expertise in disaster risk reduction and policy planning, says that climate change was also a factor in cities getting excessive rainfall. He says "Urban flooding occurs when water flows into an urban region faster than it can be absorbed into the soil. Earlier, a city received such amount of rainfall in two to three weeks".

The fact is that cities today do not have spaces to absorb the excess water or to store it. Rapid urbanisation, industrialisation and population growth have also contributed to drainage systems getting congested. These drains are not able to take the pressure of huge water accumulated due to heavy rain, leading to waterlogging. Prof Kumar adds "steps should be taken to improve garbage disposal and ensure that plastics do not find their way to drains. Urban ecosystems comprising marshlands, wetlands, lakes and rivers have steadily deteriorated."

Wetlands and mangroves need to be looked at as vital infrastructure assets, as they help reduce the impact of torrential rains by absorbing water. It is essential to protect them. In addition, one must segregate the waste and should refrain from dumping it in storm-water drains and waterways. Be it fire or other man-made disasters like the Chennai or Mumbai floods, we all remember horrific images of boats being used in the city to rescue people. Why is it that even after so many incidents, we are still so unprepared to deal with them? Forget about small towns, even big cities face similar crises.

As in the case of Surat, it was found that fire brigade did not have ladders to reach third and fourth floor where these students were stuck. True, fire or flood cannot be predicted but awareness has to be created on how to deal with it. Unfortunately, we first create a situation which is bad, but worse is that we do not know how to deal with it. It cannot be business as usual.

We need to pull up our socks before it is too late. ■



Natural disasters, man-made tragedies

As we wonder why disasters strike us with such regularity and take away so much that is precious to us, there is need to look inwards rather than skywards



V Vijaykumar
Senior Advisor, AILSG

There were reports that some cruise ships were operating in the Mandovi River in Goa close to the Arabian Sea despite warnings of rough weather along the coast due to Cyclone Vayu this month. In other instances, it is common to see

fishermen clearly disregarding warning signs put out by authorities during times of ocean based climate threats.

Cities large and small all over are struck at regular intervals with disasters, some natural, many man-made. These often result in large casualties in terms of human lives and destroy valuable property including entire homes. Naturally, the poor, the weak, the elderly, women and children are most vulnerable and suffer disproportionately. These not only suffer the most during the traumatic event but those that survive also expend significantly higher energy, time and effort in rebuilding their lives and those

of their near and dear ones. It is indeed sad and often heart-rending. In the end all of us look skywards and wonder why the gods have been so unkind to us.

We are responsible too

But what of our own acts of commission and omission? As in the case above of the cruise ships and the fishermen, in case there were to be a mishap, the tragedy would only be because someone did not pay heed to warnings or disregarded advice of the authorities. As we go around our daily lives, we can see every now and then instances of gross disregard for systems, procedures and safety protocols. Take for instance fire hazards. Rules and safety procedures say that the emergency fire exit in buildings shall be well identified with signs, the stairways/passages shall be absolutely clear with no obstructions, etc. Yet one can see even in sensitive public buildings such as hospitals that fire/emergency exits are not well identified, the fire exit staircases are stacked with cartons and other material and worse, the door of the fire exit is often locked/latched. Therefore, in the



unfortunate event of a fire, people have no escape route – something that is necessary. In addition, fires in public buildings are often started and spread due to unauthorised/incorrect storage of combustible material. Fire-fighting systems, mandatory in many buildings and often installed, are rarely tested for functionality. So when the need arises, these simply do not work. One can find examples of such shameful lapses while reading reports of fire related calamities. Or take the case of water related tragedies. It is prudent and often mandatory for leisure boating operators to strap on life-saving jackets on those travelling in the boat. But this mandate is characterised more by its breach than its observance. While the casual attitude of the operator is to be primarily blamed, it is heartbreaking to see that even those paying and using the boat ride do not bother to ask for a life vest for their own safety. It takes a drowning tragedy for us to realise our folly and say ‘what if only he had worn a life vest?’ As the monsoon sets in during the next few weeks, we will find several travel destinations chock-a-block with visitors, especially during weekends. In spite of the memories of some unfortunate tragic events of previous years, there is no improvement in the behaviour of the visitors who take undue risks, violate the law and totally disregard the advice of police and other authorities. In recent years, there are repeated instances of people getting grievously injured or falling off cliffs while attempting ‘selfies’.

Many of our hill cities and towns are susceptible to landslides. Such events, often small and less headline grabbing occur frequently. While the natural topography of the place combined with its vulnerable location prevents us from completely avoiding these events, there are nonetheless several standards especially with respect to building specifications and regulations, preservation of natural ecosystems, etc. which will enable minimize damage during landslides and earthquakes. However, these regulations are flouted with impunity due to the greed of a few thereby putting lives at risk.

TAKE FOR INSTANCE FIRE HAZARDS. RULES AND SAFETY PROCEDURES SAY THAT THE EMERGENCY FIRE EXIT IN BUILDINGS SHALL BE WELL IDENTIFIED WITH SIGNS, THE STAIRWAYS/PASSAGES SHALL BE ABSOLUTELY CLEAR WITH NO OBSTRUCTIONS, ETC. YET ONE CAN SEE EVEN IN SENSITIVE PUBLIC BUILDINGS SUCH AS HOSPITALS THAT FIRE/EMERGENCY EXITS ARE NOT WELL IDENTIFIED, THE FIRE EXIT STAIRCASES ARE STACKED WITH CARTONS AND OTHER MATERIAL AND WORSE, THE DOOR OF THE FIRE EXIT IS OFTEN LOCKED/LATCHED.

Let's learn to comply

As we can see in the above instances, many disasters need not have happened at all, just with a little care and caution on our part. In other cases, when a disaster is imminent, citizens need to comply with instructions of the authorities in charge. Signaling the importance of this former US President Obama in his hurricane preparedness address in 2016 said, “One of the things that we have learned over the course of the last seven and a half years is that government plays a vital role, but it is every citizen’s responsibility to be prepared for a disaster. And that means taking proactive steps, like having an evacuation plan, having a fully stocked disaster supply kit. If your local authorities ask you to evacuate, you have to do it. Don’t wait.”

As we can see around us, today we are much better equipped to deal with all kinds of disasters. The NDRF for example is a specialised dedicated force set up in 2006 for effective disaster response. The force comprising about 14,000 persons has been providing noteworthy response during disasters in India and neighbouring countries. The force is well-trained and armed with equipment to address a wide range to emergencies. During non-action times, members of the force engage with citizens working to build their awareness and preparedness for times of any emergency. In spite of

various such initiatives approach of citizens towards preventing disasters and responding suitably remains sub-optimal.

The question then is why we do not follow procedures when these have been put in place to prevent hardship, pain and potential tragedy in the event of accidents. Sometimes it is simply lack of knowledge or inadequate awareness of the risks, of the suggested safeguards, and of the rationale for these. Sometimes, as in the case of blocked fire exits in buildings, it is the greed of the owners or operators of the building or facility. There is an attempt to use every bit of space by deploying it in income earning activity. The patrons’ safety and well-being does not matter. This same greed also results in ‘cutting corners’ by avoiding expenditure on fire-extinguishers, life vests, their maintenance, replacement, and so on. Then there is this attitude ‘nothing will happen to me’ (as in the case of road safety violations); until something does happen. All these call into focus the need for compliance. Compliance of safety procedures and recovery protocols is an essential part of urban resilience.

And for those who worry about the cost of compliance, please recall the words of former US Deputy Attorney General Paul McNulty. He said, “If you think compliance is expensive – try non-compliance”. ■

Wind from the sea is changing, cities need to change

Cities need to be well prepared to face any impending natural disaster as per their risk profile and exposure. The role of urban local bodies in making their services and infrastructure resilient is the need of the hour



Ranjan K Panda
Convenor, Combat Climate Change Network, India

When the first warning of cyclone Fani was heard by my friend who lives in Bhubaneswar, for him it was like ‘no worries, that’s another coastal cyclone.’ The smart city dweller, living in a concrete building with secured power supply and water supply, had been tuned to such a sense of secured life that he had forgotten a basic fact: Odisha’s capital city is also a coastal city, just 68 kilometres from Puri where the cyclone had its landfall. Another friend, who was visiting the city at that time on a business trip and was staying in a hotel, had nothing to worry as there was no warning for visitors to vacate hotels unlike those who were staying in Puri. The Odisha government, which has earned praises from world over for its efficient pre-cyclone rescue operations, had asked all visitors to Puri to vacate the city and hotels by the evening of May 2. The extremely severe cyclonic storm was to hit the coasts somewhere near Puri the next day afternoon.

Bhubaneswar had no such warning. The city expected some turbulent wind and rains but no one expected the kind of damage it actually suffered. The cyclone’s trajectory post-landfall was unprecedented and surprised all. Not only it made a landfall before time but also it moved inward with gusting wind speed of about 200 kilometres per hour (kmph) to devastate Bhubaneswar and almost entire coastal Odisha in a way not seen in the past twenty years. Odisha government has pegged the

losses at somewhere around ₹10,000 crore. While the economy of the state has received a huge jolt, the ecology of the capital city and coastal Odisha has gone back by at least three decades if one does the calculation of time the new trees will take to grow.

Odisha’s evacuation record, a global example

The Super Cyclone of 1999, that was instrumental, along with the Gujarat earthquake of 2001, in formation of a new disaster management regime in the country, caused the death of more than 10,000 people and took the state back by decades with the extent of damages it caused. Lessons from that catastrophic disaster have strengthened Odisha’s preparedness efforts and the human casualty has been reduced to almost zero. Increased efficiency of technology in predicting the cyclones and improved coordination between different authorities within the state government, and also between the State and Centre have all reduced the human casualty drastically. Officially, the human death toll of Fani was 64. Not zero, but comparing that with some of the hurricanes that have hit advanced nations can tell us what a significant effort the Odisha government has put in to reduce death tolls. In Hurricane Katrina, that made landfall in southeast Louisiana and Florida on August 29, 2005, more than 1,800 people died as a result of storm across the Gulf Coast. Some researchers still doubt these figures though and consider the real number of dead persons to be much

higher. 12 years after, category 5 storm Maria caused 2,975 deaths.

Predictions about cyclone formations and movements have drastically improved in India. However, the increase in the ocean and land temperature is making them more intense and unpredictable by the day. Met predictions kept changing and Odisha practically got only two days to evacuate people. More than a million people were shifted to cyclone shelters and other places. That’s a commendable job and Odisha earned praises from the UN and many other agencies and governments, rightly so.

Changing climate, unpredictable cyclones

On April 25, 2019 when the India Meteorological Department (IMD) reported about the formation of a well-marked low-pressure area centered over East Equatorial Indian Ocean & adjoining southeast Bay of Bengal, there was no clue of it coming the Odisha way. The IMD had predicted then that this was very likely to move north-westwards along & off east coast of Sri Lanka near north Tamil Nadu coast on April 30. The next day it concentrated into a depression and then moved onto become a deep depression by April 27, turning into a Cyclonic Storm the same day. It was named Fani. The IMD predicted this cyclonic storm would turn into a severe cyclonic storm in the next one day and would very likely move north-westwards off Sri Lanka coast during next three days to reach north Tamil Nadu and south Andhra

Pradesh coasts on April 30. It's only on the April 28, that the IMD predicted likelihood of light to moderate rainfall at a few places over the districts of south coastal and adjoining districts of interior Odisha on May 2. Heavy rainfall was predicted for the same date only for one or two places in the southern districts of Odisha and increased intensity of rainfall on the next day in coastal Odisha.

It's after that the Odisha government officials analysed forecast of international met agencies along with that of IMD's. The cyclone's movement was changing fast and on April 30, it converted from a Severe Cyclonic Storm to Very Severe Cyclonic Storm. Odisha started preparing its actions and by the night of 30th, the IMD had issued predictions that the landfall of the cyclone – that had already converted into an Extremely Severe Cyclonic Storm by then – would be somewhere in Odisha coast on the evening of May 3. The prediction was later preponed to sometime around noon but finally the landfall occurred much earlier than noon time on May 3, near Puri. Government sources reported that Fani made landfall at about 8.30 AM on May 3, between Satapada and Puri as an Extremely Severe Cyclonic Storm. As reported by the IMD, the maximum sustained surface wind speed of 170-180 kmph gusting to 205 kmph was observed during landfall. This continued for six hours after the landfall and decreased thereafter. The Doppler radar image at Paradeep shows that the cyclone completely made landfall at 9.42 AM on May 3, 2019.

Building climate smart cities
Technology to predict cyclones is improving drastically, but cyclones are getting more unpredictable by the day. The IMD officials, based on their scientific observations, said that Cyclone Fani was the longest-lived cyclone in the Bay of Bengal ever observed. The elongated time period of the storm went on for eleven days in the sea and land put together. What is more rare, Fani is only the second



severe cyclone in the last 118 years to form in the Bay of Bengal in the month of April and cross over to the Indian mainland. The earlier one was Nargis that devastated Myanmar in 2008. In between 1891-2017, only 14 severe tropical cyclones were formed in April over the Bay of Bengal and only one storm crossed the Indian mainland.

Cyclones such as Fani are intensifying too fast just before landing and the wind trajectory after landfall too is getting unprecedented. That's exactly what happened this time and my friend in Bhubaneswar and all others in the city were completely taken by surprise. The smart city went out of power, water, mobile network and internet connectivity as the cyclone hit it with a gusting speed of near about 200 kmph after making landfall at Puri. My friend in the hotel could not move out for days as the roads were all blocked by fallen and uprooted trees. The city was completely devastated and has lost vast chunks of its greenery. Basic amenities took at least 7 days to be restored in some parts, and for others things came back to normalcy in about a month's time. The poor in the city are still struggling to gather their pieces. Tropical cyclones are going to increase in their intensity due to climate change. Many scientific studies predict that the number of tropical cyclones may decrease if we can limit the global warming to 1.5 Degree C or even 2 Degree C. However, most of them project an increase in intensity of these cyclones. That a 2 Degree C global

warming scenario can increase the intensity of such cyclones by 10 percent is a generally consistent finding in many studies. The IPCC Special Report too warns that the intensity of storms is likely to increase and more of the highest category cyclones will occur. With only 17 per cent of the Indian east coast, Odisha is affected by nearly 35 per cent of all cyclonic and severe cyclonic storms that have crossed the east coast and associated storm surges that have often inundated large tracts of coastal districts. So, the Bhubaneswar city-dwellers can no longer ignore the destruction of coastal green corridors such as the mangrove forests. They can't either leave all responsibility to the urban local bodies and government. They have to work with the city authorities on a climate resilient plan and also support the communities – both urban and rural – in the areas adjacent to the coasts in building their resilience. Bhubaneswar needs to understand that a lost mangrove corridor in Puri is an increased risk for the capital city; an addition to coal fired power plants in the state or anywhere in the world will increase the intensity of cyclones; and, destruction of natural biodiversity rich forests in distant villages and everywhere will increase their vulnerability to climate change impacts. Cities can't and must not grow as isolated islands of concrete jungles.■

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[The views expressed are the author's own. They do not purport to reflect the views of Urban Update.]



NCRMP

A saviour against cyclones

India is highly vulnerable to natural calamities especially cyclones. In the past decades, many lives have been lost and properties worth billions of dollars perished. Government of India, in order to tackle the disaster, initiated a lifesaving project National Cyclone Risk Mitigation Project (NCRMP) which focuses on importance of preparedness, in order to reduce the vulnerability of coastal communities

Shania James
Editorial Assistant

India has a long history of devastating cyclones, categorising it as one of the worst affected regions in the world. It has a long coastline of 7,516 km, which is exposed to nearly 10 per cent of the world's tropical cyclones. Majority of cyclones in India have their genesis over the Bay of Bengal and usually strike the East coast of India.

According to United Nations estimates, across the world cyclones have triggered an average 11,000 deaths per year over the last two decades. The worst and the deadliest cyclone India ever witnessed was 'Great Orissa Cyclone of 1999'. This cyclone killed 9,000-10,000 people when it made its landfall on October 19, 1999 with 155 mph winds and a storm surge of 26 feet. The storm was classified as a 'Super Cyclonic Storm' that affected the North Indian Ocean and Bay of Bengal.

In 2010, after a gap of ten years the south-eastern part of India was hit by two 'severe' cyclones within a gap of a few months; The first being 'Cyclone Laila' which entered along the coast of the Bay of Bengal. Sixty-Five people died in Andhra Pradesh and Tamil Nadu in India and in Sri Lanka. The cost of damage was estimated to be USD 117.49 million.

National Cyclone Risk Mitigation Project (NCRMP)

In 2010, the Government of India initiated the National Cyclone Risk Mitigation Project (NCRMP) to help Odisha and Andhra Pradesh respond better to cyclones. National Disaster Management Authority (NDMA) under the Ministry of Home Affairs (MHA) implemented the Project in coordination with State Governments and the National Institute for Disaster Management (NIDM).

The NCRMP-I was initiated in Odisha and Andhra Pradesh at a cost of ₹1,499 crore. Mitigation measures were taken in coastal areas, such as multi-purpose cyclone shelters for disaster affected poor and needy people. A

network of roads and bridges was laid for people to easily escape before any cyclone made a landfall and early warning dissemination systems were also introduced.

These measures helped to reduce cyclonic risks. The results were visible when cyclone 'Phailin' struck Odisha and Andhra Pradesh in 2013. Only two people died in Odisha and 10 in Andhra Pradesh. When the cyclone 'Hudhud' in 2014 struck these two states, loss suffered in terms of human and animal lives was minimal. However, the total loss of ₹26,000 crore was reported due to 'Phailin' and ₹21,000 crore due to 'Hudhud'.

These cyclones caused immense damage to the electrical infrastructure that fell flat on the ground. Agricultural and horticultural lands were flooded and roofs of houses were blown away. Properties of railways, airports, steel plants and ports were damaged significantly. Therefore, the Government of India decided to further initiate mitigation and risk reduction measures to tackle such losses. Mechanisms of taking electrical infrastructure underground, assisting people to have cemented roofs resistant to wind speed of up to 300 km per hour and many more such steps were undertaken. Government also initiated some compulsory measures for buildings, raising of coastal shelter belts of trees to protect coastal agriculture and horticulture from strong winds; conserving and planting of mangroves for protection from coastal erosion

were made part of the NCRMP-I. ₹ 835 crore was additionally allocated for the purpose.

NCRMP-II with all the components of Phase I with an outlay of ₹2,400 crore was initiated in 2015 and is under implementation in Gujarat, Goa, Karnataka, Kerala, Maharashtra and West Bengal. Tamil Nadu and Puducherry are covered with the support of the World Bank.

In spite of these measures, the losses sustained due to subsequent cyclones have been huge. Due to Cyclone 'Gaja' that struck Tamil Nadu in 2018, the death toll touched 45. About 1.20 lakh houses were damaged and 88,000 hectares of agricultural land were affected.

Cyclone 'Fani' A success story

However, this year NCRMP proved relatively successful. Fani, a rare summer cyclone in the Bay of Bengal hit eastern India on May 3, 2019. According to the India Meteorological Department (IMD), it was one of the toughest cyclones to have hit India in the last 20 years. However, the most affected state, Odisha, was successful in keeping the loss of life and numbers of affected people to a minimum. Odisha's disaster management has established itself as one of the most effective disaster resilience stories in India in recent times. NCRMP and forecasting by IMD has worked as a successful disaster risk reduction strategy in Odisha.

Thirteen days before cyclone 'Fani' hit the Odisha coast, IMD gave an early warning that the low pressure in the Bay of Bengal and the Equatorial Indian Ocean could swell into a massive storm. It gave ample time to the state to start preparing for the impending disaster.

Odisha's preparedness and measures can be taken as one of the greatest examples. As IMD forecasted and alerted the citizens of Odisha at an early stage, necessary evacuation and preparedness measures were taken on time, which led to a minimal loss of life and infrastructure. On June 11, IMD alerted Gujarat to deal with Cyclone 'Vayu'. More than 3 lakh people were evacuated on time. Fortunately this cyclone changed its course and not much damage was done to the coastal areas of Gujarat.

If we compare the preparedness from the year 1999 to 2019, India has shown a rapid progress in its response to the threat of cyclones. NCRMP projects have had a major positive impact on the community as a whole. It has helped them to be better prepared to face the challenges of cyclones and to reduce their adverse effect on the community. However, it is always important that policies and technology must be constantly updated. Learning from other cyclone prone countries is necessary. NCRMP itself has integrated its learning lessons from Bangladesh. In 2007, Bangladesh was prepared for the cyclone at the early stage by building a robust Early Warning Dissemination System (EWDS) benefiting 1.5 million people. Effective disaster preparedness can considerably reduce the deaths and overall impact of such events. Moreover, because the developing world frequently has to deal with cyclones, India is getting better at preparing for them and reducing risk. Early warning systems and reinforced shelters can help protect lives during a cyclone; they cannot stop the damage to crops, homes and infrastructure, such as roads. Economic and livelihood losses remain high but preparedness will help to rebuild it within a short period. ■

THE GOVERNMENT OF INDIA INITIATED THE NATIONAL CYCLONE RISK MITIGATION PROJECT (NCRMP) TO HELP ODISHA AND ANDHRA PRADESH RESPOND BETTER TO CYCLONES. NATIONAL DISASTER MANAGEMENT AUTHORITY (NDMA) UNDER THE MINISTRY OF HOME AFFAIRS (MHA) IMPLEMENTED THE PROJECT IN COORDINATION WITH STATE GOVERNMENTS AND THE NATIONAL INSTITUTE FOR DISASTER MANAGEMENT (NIDM)

Negligence to fire safety

A burning issue

Accidental fires are one of the biggest threats to urban life in India. According to National Crime Records Bureau data 2015, fire accidents alone have claimed the lives of more than 3 lakh people in India during the period of 2001-14. The data suggest, around 59 people die daily due to fire mishaps, making it the greatest amongst any other natural calamity or disaster in terms of death toll. The issues need urgent attention and implementation of better fire safety measures should ensue at all levels

Akshit Pushkarna
Editorial Intern

With the rapid growth in infrastructure, India has witnessed a steep rise in the construction of buildings especially high rise buildings (taller than 15 m). It is often seen and reported that many of these constructions often fail to comply with the fire safety norms established by the National Building Code of India and hence are more susceptible to fire mishaps. The most recent of such major accidents occurred in Surat on May 24, 2019. The devastating fire occurred in a commercial complex called Takshashila

Arcade due to a short circuit and spread by inflammable plastic, which according to reports was extensively used in the walls and roofs of the classes in direct violation of fire safety norms. Around 70 students were entrapped in the building as the building had no proper fire safety measures in place. Unfortunately, out of 70, 22 students ended up losing their lives.

Flouting fire safety norms is not, however, a recent phenomenon in India as made evident by cases like the Delhi's Uphaar cinema fire (1997) and AMRI Hospital (Kolkata) fire of 2011, both of which dealt huge losses.

Delhi's Uphaar cinema fire (1997)

In one of the greatest fire related tragedies Delhi has faced, a major fire

blazed Uphaar cinema with 59 people killed in it and seriously injured 103 people. Upon investigation, it was discovered that the fire broke out due to loose connections in the electric circuitry of the theatre and the fatalities of the incident grew due to the ignorance towards proper fire safety measures.

The fire safety norm violations included: No functional public announcement system as no announcements were made when the fire broke out; No emergency lights, foot lights, exit lights (The cinema hall was in pitch darkness when the fire broke out); Blocked gangways (the hall had made unauthorized extensions and additions to seats); Blocked exits (many exit doors – including the one leading to the terrace – and gates were locked); Unauthorized use of premises (shops were being run from spaces supposed to be empty).

In the wake of the tragedy, the families of the victims joined hands together and formed the Association of the Victims of Uphaar Tragedy (AVUT). The purpose of the organization is to make India prepared for such incidents. They regularly organize seminars, debates, workshops, etc. to highlight the lack of basic safety measures in public spaces especially in educational institutions, multiplexes & malls in an effort to prevent the occurrence of such incidences in the future.

2011 AMRI Hospital fire

On December 9, 2011, a private hospital caught a major fire due to a short circuit in the basement. The fire was propagated by some inflammable material which were stored in the basement of the building, flouting a major fire safety norm. 160 patients were being treated at the hospital at the time of the incident, out of which 89 died in the accident. Also, the arrival of the fire brigade was delayed and the incident has become the most devastating, in terms of the loss of



life, India has seen in its recent history.

Lack of proper safety measures

In an effort to reduce the outbreak of Surat like incidents, authorities all over India have geared up their efforts to curb such accidents in the future. Upon inspections of high buildings in various states, gross lack of fire preparedness was found. Buildings were found lacking in fire safety measures such as the upkeep of fire extinguishers, emergency exit doors, fire exit routes and their markings and assembly areas, and construction complying with fire safety norms. Ignorance towards basic safety procedures such as evacuation drills and use of flammable materials in cladding and partitions walls also was an underlying theme in the general lax attitude towards fire safety norms. Densification of areas, non-compliance of fire safety norms while construction—which leads to local traffic congestion or on-street parking that constricts fire tender movement or delays their access to the affected area can also be held accountable for inadequate disaster preparedness.

Most of the lacking factors mentioned in the above segment are required according to the norms set by the National Building Code. Hence, regular inspections to enforce the fire safety norms is essential in order to avoid the unpredictable occurrences of fires.

Post the incidents of the 2018 fire in Delhi's Arpit Hotel and the more recent Surat fire, many building owners had been questioned for not following safety norms. They pointed out that the builders were responsible for measures such as smoke detector systems, sprinkler systems, public address systems and emergency staircases. Most of the establishments are equipped with these provisions but negligence and lack of upkeep and inappropriate installations make them semi-operational, which is inapt in dealing with the rampant fires which end up consuming the entire construction.

States are independently charged with the penalty imposition on defaulters.

The Delhi Fire Prevention and Fire Safety Act, 1986, states "Contravention of any of the provisions of the Bill will be punishable with imprisonment for a term which may extend to six months, or with fine up to Rs 50,000, or with both. In the case of continuing offences, the offender will be liable for punishment of fine up to Rs 3000 daily for which the offence is continued. It is to be noted that Delhi didn't have any set punishment for the flouting of norms till 1986; it may be deduced that the existing penalty is quite outdated. As lives are at risk due to violations of the safety norms, more serious actions against violators must be taken. Moreover, most experts agree that a standardized punishment for violators across the nation must be established.

The first responders

Even if the fire safety measures installed in a building are ideal, chances are that a raging fire could still overpower them and spread none the less. Urban Local Bodies are tasked with the administration of the fire services. However, the means of fighting fires are lacking throughout the nation and hence the fire departments are often less effective in their operation. The 2010 incident in Bangalore's high rise Carlton Tower where 9 people died and several were injured is a case in point. All of the people who died in the incident jumped off the building to save their lives. The firemen who rushed to the incident through dense traffic had no chutes, no cushions, and no equipment to disperse the smoke like the smoke extractor or high pressure water pumps, reported the Bangalore Mirror. The same was also evident during the rescue operation in Surat where the fire brigade was not equipped with life-saving nets or long rescue ladders.

A 2016 report published by the Comptroller and Auditor General (CAG) of India, found gross deficits in the functioning of Delhi Fire Service (DFS). In its draft report, CAG said that the DFS is ill-equipped to deal with fire emergencies as it has only six rescue vehicles and one solitary ambulance

against the required 19 rescue vehicles. Similar trends have been observed in other cities as well.

Another concern shared by many fire departments is the lack of manpower. During the summers, fire departments deal with a surge in the number of calls even as the department tackles shortage in manpower and infrastructure.

New Advancements in the field of fire fighting

On an international level, tremendous advancements have been made in the field of firefighting. Better technology has enabled scientists and engineers across the world to develop more efficient means to fight menacing fires, some of which are mentioned below-

Sound Wave Fire Extinguisher

Two engineering students at George Mason University, USA, have harnessed sound energy to douse fires. Their chemical-free, water-free extinguisher employs sound waves to separate burning fuel from oxygen. Fire dies out without oxygen, so using the sound wave extinguisher on a small fire snuffs it out.

Water Mist System

This system improves on the typical sprinkler systems, and is reckoned to be a major part of the future of firefighting. Instead of deploying large droplets of water, water mist systems send out a fine mist that smothers a fire. Since the droplets are smaller, the mist systems create more of them.

Birdi-Fire & Carbon Monoxide Detector

The system monitors air quality, from high pollen counts to the presence of carbon monoxide. The in-house monitor reports to the user's smartphone and can call first responders via landline. Birdi is recognized for its ability to catch fast and slow burning fires quickly.

Video Image Smoke Detection

VISD technology detects smoke and flames visually. It can pinpoint the place where smoke begins. A computer analyzes whether images from cameras show evidence of smoke or flames. Once either is detected, a signal is sent to the alarm system. It can read the brightness, contrast, motion, and color of the smoke to assess the fire. ■

Kumar Dhananjay
Consulting Editor

Someone once said “You can either travel or read, but either your body or soul must be on the way”. I think the important thing during a travel is about what you learn along the way in that journey and to remain focused on what you see on the way before you get to the destination. Long before Shanghai become an international trading spot, it used to lead a quieter life by the water. As a major administrative, shipping and trading city, Shanghai grew in importance in the 19th Century due to trade and recognition of its

favorable port location and economic potential. Following the British victory over China in the first opium war, the city was one of the port cities forced open to foreign trade.

The subsequent international treaties allowed the establishment of Shanghai International Settlement and the French Concession. Shanghai started flourishing as a main centre of economic activity between China and other parts of the world. Its influence declined after the Second World War with the Chinese Communist Party takeover of mainland China in 1949. After Deng Xiaoping introduced economic reforms in 1990s, an intense redevelopment of the city began that witnessed return of finance and foreign investment to the city. It has since re-emerged as a hub for international

trade and finance and the home of the Shanghai Stock Exchange, one of the world's largest by market capitalization. Today it is aptly described as China's Showpiece to the world and that of its booming economy. It's renowned for its Luziaji skyline and museums and historic buildings along the Bund.

Shanghai today

China's foremost business and financial centre, it appears to have thrown itself headfirst into the future with soaring superstructures, opulent shopping malls and the world's fastest commercial train zipping back and forth from Shanghai Pudong International Airport. Take your eyes away from the skyline though, and you'll find a different Shanghai. But to experience real Shanghai culture, take

Shanghai, China's 'City on



a walk along traditional lanes, narrow residential lanes peculiar to Shanghai and you will get to know the real Shanghai.

Shanghai culture

Visiting Shanghai is a true East-meets-West experience. You find Buddhist temples, classical gardens and the Old City offer a taste of traditional Chinese culture. No doubt periods of European and American occupation have transformed China's 'City on the Sea' into an international metropolis. The Bund, Shanghai's busy waterfront on the Huangpu River, is lined with historic buildings of numerous architectural styles that include Art Deco, Renaissance Revival and Neo-Classical. Western influence is apparent in areas such as the former

French Concession whose tree-lined boulevards, bijou bistros and hip boutiques give the area a distinctly Parisian character.

The Bund

It is very difficult to see any city when you are visiting it for just a couple of days and certainly not a city of the size of Shanghai where there is much to see. One has to plan carefully what you certainly want to see. But some things are simply unmissable - like the Bund. Divided along the river Huangpu, this is mesmerizing and a major tourist attraction. While the east side is largely the financial district, the west side of it will give you the feel of old Shanghai with old buildings largely maintained under state patronage with no changes being allowed in them.

One feels so excited by the bustling and busy city life here and also shocked by those fantastic tall buildings and large mansions. The moment it gets dark, the Bund on both sides is lit up and is a memorable site. The old heritage structures are not high rises. You will find red flags over these beautifully lit up buildings. This is where people gather in the evening to have fun time. You can stand at the banks of the river and watch the Shanghai Towers, Oriental Pearl Tower and other iconic buildings.

The west side of the Bund witnesses more activity than the east. It is bustling with people eating and drinking and is much more affordable than the East. There are many small shops from where you can buy eateries and drinks. If you want to see the east side you need to take a boat to cross over. It costs just two RMB. Good thing is that public transport is quite reasonably priced. It's terminal to terminal for just two RMB. But it takes hours to see the area and one must go during the day. This side is full of swanky restaurants which are expensive, the big malls where you find all the brands of the world. There are tourist buses which take you around for a good fee.

And in case you wish to enter and see any place, you will find the ticket prices

equivalent to 1300 rupees going all the way up to 2500 per person. And also if you are fine with walking around and looking up the modern architecture paradise, it is possible that you will end up literally with pain in the neck at the end of a wonderful hour long walk along the river with beautifully crafted gardens all along the line.

If you want to enjoy a fifty-minute cruise in the river it will cost around rupees 1400 per person so one could instead consider a boat ride from one side to the other and back for just rupees 50.

Old Shanghai

Behind these high rises also lives old Shanghai that one must not miss. Walking in to explore where the old life style lives in Shanghai lanes or alleys is indeed interesting. One gets a feel of old Shanghai's traditional way of life, its culture, the authentic local life style. These lanes are tiny but full of life.

The names vary from one place to another, one-time period to another, one ethnic group to another. The lanes are called 'Longtang' in Chinese. One finds a stylistic stone arch at the entrance of most of the lanes. These lanes are the backbone of the city. They are actual witnesses of the fall and rise of the city. These lanes are more than a hundred years old. Their condition is poor compared to new Shanghai. Those who can afford it are moving out but there are others who continue to live the history. It's fun to be strolling down these lanes and to watch traditional Shanghai life.

All the life here is so peaceful. And every one here seems to be enjoying his life. But overall life is extremely organized in Shanghai. You come out of those narrow lanes and you find these huge roads with equal space for pedestrians and cycle tracks.

Take a stroll down and you will find children playing on these walkways and at some places even dance classes being held without disturbing anyone. If I have another chance to come to Shanghai, I will certainly not miss it. ■



The UNINHABITABLE EARTH

Life after warming

The shallowness of climate change is a fairy tale, perhaps as pernicious as the one that says it isn't happening at all, and if your anxiety about it is dominated by fears of sea-level rise, you are barely scratching the surface of what terrors are possible, even within the lifetime of a teenager today

"It's worse, much worse, than you think," begins Wallace-Wells' new book, the latest statement on the climate calamity we find ourselves confronted with. This compendium of scary statistics sets out how rising temperatures will touch every aspect of all our lives. The aim is to strike fear deep into readers' hearts and shake us out of our collective apathy.

"We have burned more fossil fuels since the UN established the Intergovernmental Panel on Climate Change than in all of the centuries before. So we have done more damage knowingly than we ever managed in

ignorance. That is a horrifying fact. It also means we are engineering our own devastation practically in real time," writes the Wallace-Wells, deputy editor of New York magazine.

Wallace-Wells wrote a landmark article on climate change looking at worse case scenarios for global warming. He has now elaborated on this in a lengthy book expounding the living nightmare that lies ahead of us if we do not dramatically change our course.

While his conclusions reflect IPCC warnings – that we have 12 years left to cut emissions by half if we are to have any hope of avoiding catastrophic climate change – his prose is, thankfully, far more compelling.

In the opening of the book, he sets out to dispel popular myths about climate change. The first is that climate change is slow, unfolding over centuries and we have time to time to find solutions. We do not. "We're now speeding blindly on a course to more

than 4 degrees of warming by the year 2100, having brought the planet to the brink of catastrophe within the lifetime of a single generation," he writes.

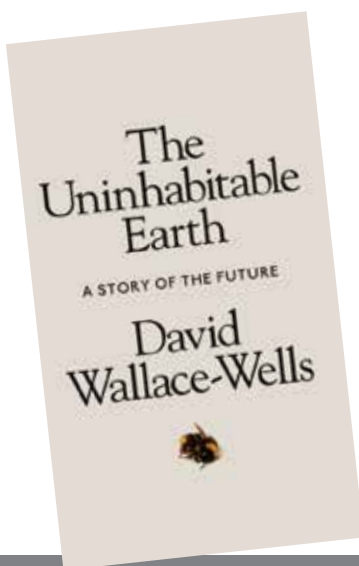
The second is the scope of the problem. Climate change isn't an issue of arctic ice and sea level rise, of imperiled polar bears and floods displacing people in far off places (or at least far off to the developed country audience he is writing for). It means starvation, displacement, war, cities under water and major droughts and disease in our lifetime. We are just beginning to learn how much bigger the problem is.

Already at 1.1 degrees of warming now, we are already seeing a rash of extreme weather and natural disasters and loosing wildlife at such a rate we are experiencing what many scientists call a "sixth extinction".

But there's much further to go. Such calamities mark the end of normal, as climate change tips Earth beyond the conditions that allowed us to evolve in the first place.

At 2 degrees the ice sheets will collapse, major cities in the equatorial band will become uninhabitable and heat waves will kill thousands every summer even in the northern latitudes. At 3 degrees, southern Europe would be in permanent drought while hundreds of coastal cities including Miami, Dhaka, Shanghai and Hong Kong would be under water. At 4 degrees the planet's tropical forests are transformed into a fire-dominated savanna, global damages reach over USD 600 trillion, conflict and warfare double and so on.

As the author emphasizes, this is not a story of the future (although, strangely enough, that is the subtitle of the book). Much of the horror is already with us – drought and water scarcity in South Asia, Day Zero in Cape Town, increasingly violent storms and hurricanes, deadly toxic air across much of Asia, microplastics in the ocean, our food chains and our own



Book

The uninhabitable earth

Author

David Wallace-Wells

Publisher

Allen Lane

Pages

320

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799/-





bodies. If we do nothing about carbon emissions whole regions will become unlivable by any standards we have today by the end of the century.

Numbers numb

While the prose is elegant, the dizzying barrage of statistics and probabilities threatens to numb even the most engaged reader.

“If you have made it this far, you are a brave readers. Any of these twelve chapters contains, by rights, enough horror to induce a panic attack in even the most optimistic of those considering it,” admits Wallace-Wells.

Wallace-Wells, however, remains surprisingly upbeat. If humans are responsible for the problem they must be capable of undoing it, he surmises.

The second part of the book is more whimsical, exploring how climate change will transform every aspect of our lives, society, pop culture, technology, mental health, our political systems, the way we imagine our future and make sense of the world.

Wells calls himself “an end of history kid” – an American who grew up with the firm belief that history marks progress – and that history was marching towards a liberal democracy with every generation deserving a better quality of life than the last. But now with climate change, the 21st century is likely to be a major step backward for the wellbeing of humanity.

What emerges from the ashes?

Is it moral to have children in these

conditions? asks Wallace Wells, who had a daughter during the period he wrote the book. How will “widespread alarm shape our ethnical impulses towards each other” and what “new politics will emerge from those impulses” are among the more profound questions being posed by climate change, he muses.

But this is not a book of solutions. Wallace-Wells dismisses the power of individual choices. Choosing to eat vegan burgers, or sip out of reusable straws will not make much difference. Vote for leaders who understand the scale of the crisis and make climate change their main priority, he urges. If you are worried about inequality, war, job creation, mobilise to put pressure on leaders to make changes of the scale we need.

But what new kind of politics will evolve after the promise of growth recedes? Again, Wallace-Wells is evasive. As the need for cooperation becomes more urgent, we are unbuilding alliances, retreating into tribalism and nationalism and away from collective responsibility.

For Wells, China holds all the cards on climate change. How fast China transforms its industry, agriculture and consumer preferences – as well as the shape of its Belt and Road Initiative through which it has positioned itself as a major provider of the infrastructure industry, energy of the development world – will determine the climate shape of the 21st century. As will the course taken by other major economies such as India, Nigeria and South Africa.

He hopes China’s “quasi authoritarian” model will be more effective than liberal democracies. He finds solace in the green rhetoric of Xi Jinping and the positive progress China is making on renewables and imagines that the country will take on something more than narrowly national powers over climate policy, which other countries can fall into line behind.

This may seem naïve, given the painful stuttering of China’s transition away from fossil fuels, and the rise of regressive climate policies among the “strongmen” leaders of today – from Bolsanaro in Brazil to Trump in the United States.

Other sources of hope are emerging, as young activists show no reticence in calling out potential doom. We have seen growing momentum behind the school climate strikes worldwide and the rise of the Extinction Rebellion movement, calling for the UK government to declare a state of emergency. The rhetoric around the young US Representative Alexandria Ocasio-Cortez’s Green New Deal is also catching on. These movements bring home the intergenerational injustice of our crisis, with young people left to pick up the pieces after decades of stalled action.

As we stare down the possibility of complete social collapse, I hope there is a sea change taking place, and that can we make it move fast enough. ■

(Courtesy: The Thirdpole. The article was first published in thirdpole.net.)

Is Delhi earthquake ready?



Ashok Wankhade
Managing Editor

The national capital of India is in an earthquake prone region and the city's preparedness for disaster needs serious attention. Earthquakes like in Bhuj that rocked Gujarat in 2001, 'Gorakha' earthquake which shocked Nepal in 2015 are evident enough for the government of Delhi to pull up its socks and strictly monitor the implementation of various guidelines and instructions on earthquake resilience

The Indian subcontinent is divided into four seismic zones – zone 2, zone 3, zone 4 and zone 5. Delhi is situated on top of few active seismic fault lines lying in the sensitive seismic zone 4 region. Fault lines are fractures on the Earth's crust marking the edges of tectonic plates, regions lying nearby such lines are prone to earthquakes which occurs due to friction in these plates. Mahendragarh fault line, Moradabad fault line, Delhi-Haridwar ridge zone, and Sohna fault line are the closest from the capital.

The threat of quake for the capital is not only because it lies in the zone 4 region, but is even more as it lies adjacent to zone 5 – the Himalayan region which is even more sensitive to seismic disturbances. Therefore, earthquakes of magnitude 7 or above can easily occur in the zone 5 region which can lead the impact of the quake significantly affecting zone 4 regions.

Delhi's preparedness for earthquakes in question

The Delhi government in 2005 approved the US-aid project for retrofitting buildings and heritage sites as a preventive measure for earthquakes, but the Common Wealth Games were announced and the attention of the authorities turned entirely in a different direction leaving the project incomplete.

Just like any other city Delhi too have guidelines mentioned in the city's building byelaws regarding structural safety, also Indian Standard (IS) Code of National Building Code (NBC) details out construction of earthquake resistant buildings. But, a harsh truth from the experts' observations reveals that if a severe earthquake hits the capital, 80 per cent of the buildings will not be able to withstand the calamity. The statement seems to reflect the ground reality of the city as majority of buildings constructed do not comply with the norms.

As per a study released by Assocham in 2016, Delhi NCR have the residential segment constituted three-fourth of the total high-risk stock and falls under the high damage risk zone. With government decisions to allow floor area ratio of 400 per cent in the transit routes in Delhi, there will be surge of 40 story and higher buildings in the city similar to high rise buildings coming up in Noida and Greater Noida which further enhances the chances of destruction and loss.

The report brings forward some of critical areas which need immediate attention:

- ◆ To spread awareness on earthquakes and mitigation

measures in public through campaigns, print and digital media platforms.

- ◆ To make people understand about the structural mitigation measures.
- ◆ To implement penalties for non-compliance of guidelines issued by regulatory bodies and national building codes.
- ◆ To strictly work on the qualitative output from the workforce, especially structural engineers which are responsible for earthquake resistance of buildings.
- ◆ To come up with schemes and subsidies for people and organisations for introducing latest technological solutions or measures to implement seismic upgrades making buildings more earthquake resistant.
- ◆ To provide proper formal training to professionals working for earthquake resistant construction practices.

Japan: A country to learn from

As a country that witness earthquakes on a more frequent note than other countries, Japan has developed effective measures for disaster management in a holistic manner.

It has installed hundreds of seismometers throughout the country, which senses the shockwaves early and raises an emergency alarm in personal phones of every citizen and buy few extra minutes for the country to bring its transportation at halt and evacuate buildings. In Japan, not only schools but local fire departments also take up groups of students and expose them to earthquake simulation machines making them aware about the actual scenario. The island country also uses various construction measures to make buildings earthquake proof with deep foundation and massive shock absorbers to weaken the spread of seismic energy, base of the building is constructed in a manner that it moves semi-independently which in turn reduces shaking of the main building, and so on.

India must look forward to a country like Japan to improve the existing guidelines and measures followed. The government of Delhi should put in efforts to implement the NDMA guidelines effectively and enhance the disaster management of the city. Investing in private or government firms with potential to bring up technological precautionary measures to empower the disaster response of the city can be an effective way for better resilience. More than 2.5 crore people residing in the city are at risk having their lives on edge with a natural calamity that can neither be prevented nor can be estimated with assurance, the most we can do is be prepared. ■



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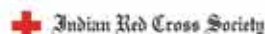


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