

# UrbanUpdate

Volume VI, Issue IV

AUGUST 2019

+ **Collapse of residential building in Dongri, Mumbai: Lessons for cities**



## How Nations Are **BUILDING CITIES**

Since inception, nations are building cities and relying on them to boost trade, economy and provide fertile ground for cultures, art forms and literature to bloom. Cities have always been the hubs of innovation and have a significant role to play in improving the living conditions of humans. And, in the long run, cities have built nations or one may say provided firm ground for nation-building. This article gives a sneak peek into urban affairs of different nations

+ **Delhi revives depleting wetlands**



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No. 6, F-Block, Bandra Kurla Complex, TPS Road-12, Bandra-East, Mumbai-400051, Maharashtra  
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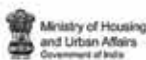


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**Ranjit Chavan**  
President-AILSG

**Rajiv Agarwal**  
Editor-In-Chief  
Director General-AILSG

**Ashok Wankhade**  
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**Abhishek Pandey**  
Editor

**Ravi Ranjan Guru**  
Executive Editor

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Consulting Editor

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**Prateek Singh**  
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**Meenakshi Rajput**  
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## Address

Urban Update (All India Institute of Local Self-Government)  
Sardar Patel Bhavan, 22-23, Institutional Area, D Block  
Pankha Road, Janakpuri, Delhi-110058

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# Effective policymaking for equitable cities

Rajiv Agarwal | Editor-In-Chief | dg@aailsg.org

**B**y 2050, 70% of mankind will reside in cities up from 55% today. Urbanisation brings about economic and social development at a rapid pace and benefits large sections of population across socio-economic strata. This is enabled by, among others, the efficient distribution of resources including land and human capital. Urbanisation thus has the potential to lift millions more out of poverty with improved outcomes in the areas of education, public health and livelihoods. However, the process of urbanisation in most developing countries is accompanied by a host of negative externalities including poor air quality, congestion, lack of affordable housing and service delivery deficits. Therefore the phenomenon has often come to be viewed as a big challenge, even a hazard, eclipsing the opportunity it presents and its potential for rapid and equitable distribution of prosperity. This is mainly due to the absence of appropriate policy frameworks and approaches to harness the potential of urbanisation and channelise it towards sustainable development.

Policymakers and urbanists thus need to formulate and articulate suitable policy frameworks that can set the direction and drive appropriate action on the ground in order to secure desired outcomes.

Among the more important aspects is affordable housing. Migrants are often left with little option other than to settle in informal dwellings or slums; more so in our larger metros. SDG 11.1 calls for action here - "By 2030, Ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums". Pursuit of this goal can enable bring about results in other areas such as improved education, better health outcomes, livelihoods and thus poverty

alleviation too. Therefore affordable housing becomes a central theme of a just and equitable society; this requires finely crafted policy frameworks.

PMAY - Housing for All is a policy initiative in the direction of affordable housing. There are now large numbers of such projects in our cities. However, these projects must also meet the test of accessibility. Remotely located housing, even if affordable, may not be preferred if access to livelihood options, education, etc. is difficult. These are essential for the disadvantaged populations; they migrate to cities for this purpose in the first place. Affordable housing policies could also examine rental models which may offer flexibility to access better livelihood and educational options in the city, even across cities, and thus faster progress. These are complex and call for ingenuous policymaking.

Other challenges plaguing our cities include waste management, deteriorating air quality, water stress and mobility. Of late, we are seeing action on the policy front with respect to electric mobility. Measures include subsidies for purchase of vehicles, tax breaks on interest paid on loans for electric vehicle purchases, and a lower GST regime. Mobility related policies impact several aspects including access to livelihood options, congestion, road safety and air quality. Therefore in addition to electric mobility, policies must also address public transport (affordable mass transit and bus travel), intermediate public transport, shared mobility, walkability, transit oriented development, etc.

This issue of Urban Update looks at the issue of National Urban Policymaking including the experiences of other countries. Do write in with your views and suggestions. ■



We believe obviously India's tradition has been 'Nari tu narayani'. Swami Vivekananda had said "There is no chance for welfare of the world unless the condition of women is improved". We believe we can make progress with greater woman participation

**Nirmala Sitharaman**  
Finance Minister, Government of India



We have a Sustainable Development Goal [Life on Land] which encourages the preservation of biodiversity and of all species including, in particularly, those that are endangered. So, it's always a good sign if endangered species (Tiger) are protected

**Farhan Haq**  
Deputy Spokesman for UN Secretary General



## PIN POINT



Europe experienced an intense heatwave. Although it's difficult to directly attribute this to climate change, such events are expected to become more common as the planet continues to warm under increasing greenhouse gas concentrations

**Jean-Noël Thépaut**  
Head of Copernicus Climate Change Service



The pace of consumption, waste and environmental change has so stretched the planet's capacity that our contemporary lifestyle, unsustainable as it is, can only precipitate catastrophes

**Pope Francis**  
Head, Catholic Church & Sovereign of The Vatican City



## BUZZ



**Amitabh Kant**  
CEO, NITI Aayog  
@amitabhk87

India has game plan for electric vehicles. Our objective is to clean up cities, reduce imports, and utilise the sun and its energy for driving electric vehicles. EVs must be charged by renewable power



**WaterAid Canada**  
@WaterAidCanada

A lack of #cleanwater and #sanitation put females at risk of harassment & gender-based violence when they have to travel long distances for water, use shared toilets or practice open defecation



**United Nations Development Programme**  
@UNDP

A staggering 92B tonnes of raw material is extracted each year. We're taking more than what nature can provide. New #SDGReport says we're not on track to consume sustainably. Switching to #CircularEconomy is vital for all life on Earth



**Ministry of Housing and Urban Affairs**  
@MoHUA\_India

Online Building Permission System implemented in 1,705 towns/cities including 439 #AMRUT cities. As a result, India's rank has improved from 181 in Ease of Doing Business Report (DBR) 2018 to 52 in 2019 in the construction permit indicator

# Inside

Volume 6, Issue 4

August 2019

<b>6</b>	Pin Point	<b>15</b>	City Image
<b>8</b>	Equi-City	<b>44</b>	Book Review
<b>10</b>	AIIISG Diary	<b>46</b>	Urban Agenda
<b>11</b>	NewsScan		

## ARTICLES

**32** Core urban challenges for the ensuing five years

**34** Indian disaster management policies need greater reforms

The Indian subcontinent, every year, witness a significant loss of life and property due to disasters. Although the authorities are trying to be more vigilant about the upcoming disasters and respond more proactively, efforts are needed to further improve the situation as the loss caused is still huge. This questions our preparation for disaster mitigation. Therefore, India needs to strengthen the existing policies to prevent further damage and Japan could be a lighthouse to help us

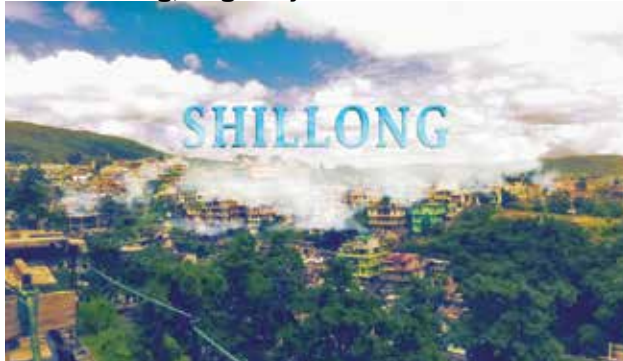
**36** Delhi revives depleting wetlands

Wetlands are essential for groundwater recharge, collection of essential nutrients from water runoffs, and prevention of soil erosion. Despite such importance, wetlands in India are depleting. The depletion of wetlands poses a threat of water scarcity across the nation. Delhi Jal Board, Irrigation and Flood Control Department and other authorities came up with a solution to recharge groundwater by reviving wetlands and transforming them into natural STPs

**38** Collapse of residential building in Dongri, Mumbai: Lessons for cities

## VELO-CITY

**42** Shillong, Meghalaya the abode in the clouds



**33**



## COVER STORY

**26** How nations are building cities

Since inception, nations are building cities and relying on them to boost trade, economy and provide fertile ground for cultures, art forms and literature to bloom. History tells us that cities have always been the hubs of innovation and have a significant role to play in improving the living conditions of human beings. And, in the long run, cities have built nations or one may say provided firm ground for nation-building. In this article, we take a sneak peek into urban affairs of different nations

## LEADERSPEAK

**30** Public transport is panacea for urban mobility woes

With economic liberalisation and growing income in the country, lifestyle of urban citizens changed over a period of time. Its impact had also been seen on citizens' mobility patterns. This change has resulted in congestion on roads and increasing air pollution. Most of the big cities function in finite spaces and building new roads or introducing new alternatives is not always possible to address mobility issues. Many cities of the world have addressed these issues with policy interventions and novel solutions; Indian cities can surely learn from them to reform mobility policies and their transport systems to optimize urban space



# Urban awareness campaigns on sanitation in Nagpur

Team Equi-City

In India, rapid urbanisation and increasing population have been reasons for a major strain on the existing infrastructure.

It has affected the capability of the government to supply fresh drinking water, and effective sanitation measures. Major concern is that more than 40 per cent rural population does not have proper sanitation facilities in India. Sanitation is the most significant preventive measure to ameliorate the societal and economic wellbeing in India. Contaminated water causes many waterborne infections like diarrhea, and also functions as a carrier for vectors such as mosquitoes spreading epidemics.

Access to secure drinking water and good sanitation are vital for family welfare. It results in control of enteric diseases, and boosts child health. A healthy child has better learning and retaining ability. Girls avoid going to school where there are no proper sanitation standards. Proper sanitation (sewage and garbage disposal as well as hand washing and personal hygiene) is the easiest and most efficient means to prevent outbreaks of disease. Inadequate sanitation has dire effects on public health, children's education and growth, women's safety and the fight against poverty. Many diseases like stunted growth of children, infant deaths, and diarrhea are preventable if we provide good sanitation. Sanitation can improve the existing status of Indian citizen and it will improve economic wellbeing and longevity.

## Sanitation campaign July 4, 2019

The Equi-City team conducted a sanitation campaign on July 4, 2019. The objective of the campaign was to promote sanitation among people and to generate awareness about Swachh Survekshan 2019 in the city, mainly targeting the labourers, shopkeepers and slum dwellers by distributing pamphlets and discussing it with groups of people. The campaign took place at various locations in Nehru Nagar Zone and Hanuman Nagar Zone. The locations were chosen mainly on the basis of the crowd present on road and surrounding areas.

The campaign started early in the morning on Gyaneshvari Nagar Chowk where Shekhar Giradkar of the Equi-City team led the campaign and started interacting with people to enlighten them about the benefits of having good sanitation at home and outside the home. Most of the public participation at the location was from labourers waiting for work in the morning. Labourers and

shopkeepers participated actively and took part in the discussions.

After the Gyaneshvari Nagar Chowk the team travelled to the next position which was Sakkaardara Chowk. The team witnessed active participation here too. At Sakkaardara Chowk labourers discussed about the problems they are facing in their surroundings. A large number of people were critical about the solid waste management of the Nagpur Municipal Corporation (NMC) and demanded garbage buckets from NMC.

The Equi-City team also visited Sakkaardara slums and talked to people and it was observed that people were much concerned about sanitation and participated actively with the team in the campaign. Masses at this location discussed the sanitation problems with the Equi-City team members. Residents of Sakkaardara slums and nearby shopkeepers gave valuable comments regarding the situation of garbage segregation and aggregation. Most people in the slums were interested in



Equi-City Team conducting sanitation campaign at Sakkaardara Chowk



following segregated waste collection, but did not have separate bins for them. Many of them complained about the garbage collection, as the garbage was not collected regularly hence people were forced to throw garbage on the road. This was a major problem in the area. The open dumping in the Sakkaardara slums was not only inducing disease, but also blocking the drains which resulted in water logging during rains.

The drive was a huge success with proactive participation of people in big numbers. The thoughts and valuable comments shared by the locals were sufficient to understand the situation. This movement gave an insight to the Equi-City team about the challenges people are confronting. The campaign was much appreciated by the people and the idea of it encouraged them to keep their surroundings clean.

## Sanitation campaign July 12, 2019

The team conducted another sanitation campaign on July 12, 2019. The objective of the campaign was to promote the sanitation among people and to generate awareness about Swachh Survekshan 2019 in the Nagpur city, mainly targeting the sanitation workers in Zone 9, Ashinagar by distributing pamphlets and discussing it with groups of people. The campaign took place at Dr Babasaheb Ambedkar Hospital & Research Centre.

The campaign started in the morning at Dr Babasaheb Ambedkar Hospital & Research Centre where Shekhar Giradkar of Equi-City team led the campaign along with Anusuya Kale, Sharad Palliwal, Dr Sumita Mukheraji and Gauri Pandit from Swachh Association. Jamulkar, Sanitary Inspector and Dhanraj Rangari, Zone Officer also joined the campaign. They started interacting with people to enlighten them about the benefits of having good sanitation at home and outside home.

As sanitation workers they are very valuable to society as they do all waste collection door to door. All the



At Dr Babasaheb Ambedkar Hospital & Research Centre Equi-City team spreading awareness on sanitation



sanitation workers were being asked for the type of garbage collection they were doing and it was noticed that almost everyone knew about the segregation of the waste and the way to do it. They were informed about the garbage they can collect separately and sell later for some extra cash. Most of them were well aware about the proper segregation of the waste and were even putting waste to use as fertilizer and doing cultivation at their houses. It was an enlightening session at Dr Babasaheb Ambedkar Hospital & Research Centre as they were introduced to a new way to

dispose e-waste too to earn more.

The campaign was a huge success considering the participation level of sanitation workers. The opinions and valuable comments were helpful to understand their perspective. The campaign provided the team an experience of issues which are being faced by the sanitation workers. This campaign gave an insight to the Equi-City team about the issues and challenges people are facing. The campaign was much appreciated by the people and encouraged them to keep their surroundings clean. ■



Ranjit S Chavan, President, AIILSG, at the Global Taskforce of Local Regional Governments held at New York on July 15-16, 2019



Federation of Sri Lankan Government signed an MoU with AIILSG on capacity building programs for developing smart city plans for Sri Lankan cities



Vijaya Rahatkar, chairperson, Maharashtra Women Commission and national president of BJP Mahila Morcha, visited Ranchi Mega Skill Center



Two days integrated sensitisation programme for Himachal Pradesh elected representatives in Bhopal





## Gurugram launches “Panch liter pani” promoting water conservation

Under the Jal Shakti Abhiyan, the Gurgaon administration launched a campaign called “Panch Liter Pani”, urging everyone to conserve five liters of water every day. A website [www.gurujal.org](http://www.gurujal.org) and a helpline number 18001801817 for the citizens of Gurugram to send their suggestions or complaints regarding water conservation and misuse was also released. Citizens who conserve water themselves can then tag their knows to encourage them to do the same. Jal Sabhas were also organised in 203 villages.

## KMC to impose fines for wasting water



On July 22, Karnal Municipal Corporation (KMC) has passed a resolution to penalise people wasting water. A fine of ₹1000 for the first time offenders; ₹ 2000 for the second time and ₹5000 for the third time will be imposed. People washing cars with pipes and wasting water in other ways would be liable to pay the fine. The decision came in light of a recent report published by Haryana’s Groundwater cell which highlighted that the water table of the Karnal block witnessed a decline of 12.87m in the last 44 years. The water table stood at 5.9m in 1974, had fallen to 11.69 m in June 2004 and now stands at 18.77m in June 2018. Two crore liters of water is wasted in the city every day, leading to further depletion.

# India bags 52<sup>nd</sup> position in GII

NEW DELHI: India saw a five position improvement in the Global Innovation Index (GII), which is an index of the world’s most innovative economies. The index is published annually by Cornell University, European Institute of Business Administration (INSEAD) and the UN World Intellectual Property Organisation (WIPO) and GII Knowledge Partners. India maintained its position as the top exporter of IT services. India’s three top metropolises, Delhi, Mumbai and Bengaluru, were also featured in the world’s top 100 science and technology clusters. Switzerland topped the rankings again, followed by Sweden, the US, the Netherlands, the UK, Finland, Denmark, Singapore, Germany and Israel holding the top 10 positions respectively. “The GII shows us that countries that prioritise innovation in their policies have seen significant increases in their rankings. The rise in the GII by economic powerhouses like China and India have transformed the geography of innovation and this reflects deliberate policy action to promote innovation”, said Francis Gurry, WIPO director general. India maintained its top place in the Central and Southern Asia region.

India has improved its position in labour productivity growth, knowledge and technology outputs, intellectual property related variables. It also witnessed improvement in institutions, human capital and research, and market sophistication indicators. But, logistics performance and women employment were some issues the country still faces. Ramesh Abhishek, Department for Promotion of Industry and Internal Trade (DPIIT) secretary said that the government is working to improve its intellectual property rights (IPR) regime.

## Now, traffic violators can pay challans online

NEW DELHI: Delhi Traffic Police launched an e-challan and e-payment system on July 19, to facilitate traffic violators by providing them with an alternate option of paying their challans online. The e-challan system launched with 1,000 hand-held devices and android-based operating system with fully integrated software will help the citizens to login securely at their convenience and settle violation notices with proof of payment in their daily routine.

Amulya Patnaik, Delhi Police Commissioner, along with Taj Hassan, Special CP (Traffic) and Neeta Verma, DG National Informatics Centre (NIC), launched the e-challan system and



e-payment gateway. With the new system, the authorities are expecting to see an improvement in prosecution and better implementation of road safety standards in Delhi.

The devices are GPS enabled so that they track locations of challan officers and violators which would help in credible prosecution. The camera violation app is also connected to the e-challan system, so that the data is updated regularly and sent to NIC on real-time basis. This will help in giving the history of a vehicle and its driver to the official, a senior police officer said. The system is developed by the NIC after observing key operational and legal inputs from Delhi Police. The NIC conducted mandatory audit and safety checks for the system of payments via the electronic modes. The project has been commissioned for three years to begin with and extension if needed, the officer said. The system is capable of accepting digilocker-compliant documents which will help the public with hassle-free interaction, as the authenticity of the document will be pre-verified.



## Smart public toilets to come up in Warangal



The Warangal district administration decided to build smart public toilets under public private partnership (PPP) mode. The district administration has decided to give the responsibility of building the toilets to the Administrative Staff College of India (ASCI). Prashanth Jeevan Patil, district collector, said that these toilets would be built on government owned land under the Smart Cities Mission. The collector had directed municipal officials to take measurement of 20×20 feet of land near Bhadrakali temple parking area, Hanamkonda bus station, NIT guest house and R&B SE office for construction of the public toilets. He also instructed to demolish non-functioning and broken public toilets and build new ones.

## E-buses to ply on Chennai roads on trial basis

Chennai will soon have its first two electric buses plying on its roads on trial basis. The buses will ply on city roads as soon as their routes are decided. M R Vijayabhaskar, Minister of Transport, announced it in the Assembly. He said that Ashok Leyland had planned to roll out two buses for the Metropolitan Transport Corporation (MTC) at its own cost. As per the company, the buses which will ply on Chennai roads on trial basis will be air conditioned. One e-bus would come with the battery-swap technology, and the other bus will have fast-changing technology installed.

# Nepal flooded; over 113 lost their lives

KATHMANDU: On Sunday, July 28, Nepalese officials reported that floods and landslides due to incessant rainfall in Nepal have claimed lives of more than 113 people and 38 are reported to be missing.

Central and southern Nepal have been flooded for almost a month. At least 113 people were killed and 67 others injured in the rain induced disasters in this monsoon, Nepalese Home Ministry officials said.

At least 38 people were reported missing in the latest incidents of landslide and floods across Nepal. More than 65 districts of Nepal were affected by the disaster. To tackle with the severity of the situation, the Nepalese government requested the intervention from external international agencies in order to prevent water-borne diseases and to ensure proper health services to the tens of thousands of people affected.

“More than 200 houses are destroyed while hundreds of other homes are completely under water,” the



government said. About 3,500 people have been rescued and housed in school and community buildings, said Punnya Dhakal, an official.

Earlier this July, a massive landslide near Kathmandu buried an entire village and killed 156 people. Further, it blocked the Sunkoshi river forming a dangerous buildup of water which hence prompted the authorities in Bihar to evacuate thousands because of flood fears.

The floods and landslides caused large scale destruction to property, especially in the eastern parts of the country, and the Nepalese officials estimated the amount required to rehabilitate the effected infrastructure of the country to cost around ₹220 million.

# Fireman, firefighting robot rescue 84 MTNL officials from burning building

MUMBAI: On July 22, a massive fire broke out in the third and fourth floor of Mumbai's Mahanagar Telephone Nigam Limited (MTNL), located in Bandra west at around 3 pm. According to Vishwanath Mahadeshwar, Mayor, Brihanmumbai Municipal Corporation (BMC), preliminary investigations have showed that the fire was caused by a short circuit. The fire was categorized as Level-4 in severity. A team of 175 firefighters and 40 laborers led a timely organised rescue operation and rescued all of the 84 people trapped on the rooftop of the building. Two fire brigade personnel, who were exposed to the smoke billowing out of the building, were shifted to nearby hospital for treatment. As many as 14 fire engines, seven water tankers, three turntable ladders, 14 ambulances and a firefighting robot was rushed to the MTNL building. The robot, which was recently procured by the department, is capable of releasing 3,800 liters of water in just a matter of minutes. It can also trace the exact source of the fire and can enter small spaces to extinguish flames. Rescue operations continued till late in the evening and the firefighters managed to rescue every person stranded on the rooftop by 6:45 pm.

“The entire building was smoke logged, making firefighting operations very challenging. All people who were trapped on the rooftop were evacuated using our turntable ladders,” he said. He also highlighted that the fire was extinguished from a total of seven points around the building. He said that their reinforcements could not reach the spot because of the vehicles parked on approach road leading to the building. “Managing the crowd was another challenge.”



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## Pay with plastic for a meal in Chhattisgarh

India's first garbage café launched in Ambikapur, Chhattisgarh, on July 19. The Ambikapur Municipal Corporation will provide food to the poor and homeless in return for plastic waste. Fetching 1 kg of plastic waste will provide a full meal, while those collecting 500g will be served breakfast. The plastic collected by the corporation will be used to construct roads. Besides offering food, there is also a definitive plan to also provide shelter to over 100 homeless people in the city. Ajay Tirkey, Mayor, Ambikapur, said that the café would be set up at the city's main bus stand. Café scheme is being linked to the cleanliness campaign.

## 25 tonnes banned plastic items seized in Salem



25 tonnes of single-use plastic items were seized by Salem Corporation officials, on July 24, from private plastic manufacturing unit functioning at Sivathapuram Katur in Suramangalam Zone and a fine of ₹10 lakh was charged on the owner of unit apart from sealing it. The raid was conducted by a team led by R Sadheesh, Commissioner, Salem Corporation, and K Parthiban, city health officer along with other officials who found the banned plastic items being manufactured in the plastic manufacturing unit. On January 1, 2019, the State banned the use and manufacturing of single-use plastic and five monitoring teams were formed to inspect and seize ban plastic in the city.

# Mumbai records cleanest air in 4 years

MUMBAI: Attributing to the incessant rainfall the city has received this monsoon, Mumbai observed its cleanest air day of 2019 on July 23. According to the Indian Meteorological Department (IMD), surface visibility increased up to 10 km from the average 5-6 km in the city due to lower air pollution levels.

Air Quality Index (AQI) which is the pollutant measuring indicator used in India was at 21, which is categorised as 'good' for the PM2.5 pollutants — fine particles that can stay in the air for days or weeks and are small enough to invade even the narrowest of airways leading into the body.

This is the third-lowest recorded AQI since the System of Air Quality Weather Forecasting and Research (SAFAR) started monitoring pollution levels from June 2015.

Gufran Beig, project director, SAFAR said that active monsoon conditions led to increase in moisture in Mumbai's air. High moisture levels increase the pollutant-carrying capacity of the air. Fast winds originating from the ocean (westerly winds) further led to an overall dispersion of pollutants.

PM2.5 concentrations, at 12 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) against the safe limit of  $60\mu\text{g}/\text{m}^3$ , was also recorded lowest for this year for 24 hours. For July 24 and 25, the concentration rose to  $14\mu\text{g}/\text{m}^3$ . "With wind speed ranging at a maximum of 30kmph in Mumbai combined with high moisture levels, pollutants can't settle close to the surface. Isolated light showers further enhanced the dispersion process between July 22 and 23 to westerly winds, allowing clear conditions over Mumbai. On July 24, a significant rise in rain activity also helped clear more pollutants from Mumbai's air. AQI is likely to remain low as long as showers continue in the city," said Gufran Beig.

# Delhi releases ₹500 crore to develop, regularise unauthorised colonies

NEW DELHI: Delhi Government's Urban Development Department released ₹500 crore to the Department of Irrigation and Flood Control to implement the basic developmental projects for the betterment of the unauthorised colonies in the capital. The state government has also said that the work of providing basic amenities to the said colonies like sewers, drains, roads and lanes will also be provided soon, adding that water distribution lines are being laid by the Delhi Jal Board. Total budget allocation for development of the illegal colonies of Delhi in the current financial year is ₹1,500 crore. Of this amount, ₹500 crore had been previously released to the Department of Irrigation and Flood Control for the development works.

The Centre laid down certain guidelines for regularisation and development of the colonies. The CM of Delhi, directed his ministers to immediately accept all conditions laid down by the Centre



related to the proposed regularisation of unauthorised colonies in the capital. The directions to this effect were issued during a meeting of Cabinet, on July 20.

"It is not the time for blame game. Even a minute's delay will not be tolerated. It has been decades since the residents of unauthorised colonies have been waiting to lead life with dignity. We have to cooperate with the Centre on this very important issue to every extent possible," CM said at the meeting.



# SMART BENCHES

## Next step towards smart public spaces

DUBLIN, THE CAPITAL CITY of Ireland is bringing the future of smart technology to our streets and parks, from Balbriggan to the Docklands, the smart benches are a visible expression of Dublin Smart City. Powered by solar panels, the bench offers wireless mobile phone charging facility, and sockets for charging electric bikes. The bench is installed with sensors that will collect data on temperature, humidity, energy production and how much energy it consumes which can later be collected by authorities.



## Palampur to get its first garbage treatment plant



Palampur's Kangra district is all set for the installation of the district's first sewage treatment plant as Virender Kanwar, Rural Development Minister, Himachal Pradesh, laid the foundation for the plant on July 28. A budget of over ₹1 crore is allocated for the development of the same. The land was donated by a local resident to the authorities for the setting up of the plant. Kanwar said that the plant would also be set up on the lines of Aima panchayat which had emerged as a model for other panchayats in the state. He also mentioned that all possible help to Ghuggar panchayat had been offered to them by the state.

## Kondagaon tops Niti Aayog's development rankings

Kondagaon district in Chhattisgarh topped the rankings of aspirational districts by the Niti Aayog. Fatehpur district in Uttar Pradesh and Pakur district in Jharkhand were ranked as second and third respectively. Dhaulpur in Rajasthan and Chitrakoot in Uttar Pradesh stood at fourth and fifth positions in the districts program. The rankings measured the increasing progress made by over 100 aspirational districts in May 2019 across six developmental areas, which include health and nutrition, education, agriculture and water resources, financial inclusion, skill development, and basic infrastructure.

# Steel pickling units are prohibited in capital's residential areas: NGT

NEW DELHI: The National Green Tribunal (NGT), observing the Master Plan Delhi (MPD) 2021, said that the steel pickling units cannot operate in the residential areas as the Master Plan 2021 listed them under the list of prohibited activities. The tribunal, therefore, dismissed review pleas moved by the Government of Delhi and the industries found violating the norms.

The NGT gave the directions in response to a plea seeking execution of a previous NGT order that directed the Delhi Pollution Control Committee (DPCC) to take action against steel pickling units operating in residential areas across the capital. A bench headed

by Justice Adarsh Kumar Goel, NGT Chairperson, said that there was no study warranting amendment of the master plan. The area was polluted and hazardous waste in huge amounts had already been generated which was not being disposed of scientifically.

The NGT, to assess the environmental damage caused since June 2008, directed an expert panel comprising representatives of the Central Pollution Control Board (CPCB), National Environmental Engineering Research Institute (NEERI) and IIT Roorkee.

"Even if MPD-2021 is amended later, there is no right to cause pollution by an industry in view of statutory provisions... On this basis, the regulatory authorities are to take action for recovering compensation after identifying the polluters... Compensation may be assessed following the formula evolved by the CPCB," the bench said. The NGT directed the committee to furnish a report by October 31 and asked the chief secretary of Delhi to suggest alternative monitoring methods for the purpose.



## NASA develops technique to identify deteriorating infrastructure from space

LOS ANGELES: NASA scientists recently developed a new technique for evaluating satellite data that can disclose delicate structural changes, according to a release of NASA's Jet Propulsion Laboratory (JPL). According to JPL, even the subtle changes that are not visible to the naked eye, may indicate a deteriorating condition of a bridge. A team of scientists from NASA, the University of Bath in England and the Italian Space Agency used synthetic aperture radar measurements from several different satellites and reference points to map structural changes in the Morandi bridge in Genoa, Italy, from 2003 to the point of its collapse in August 2018, which killed dozens of people.

Using a new process, they were able to identify millimeter-size changes to the bridge over time that would not have been detected by the standard processing approaches applied to space borne synthetic aperture radar observations. They also noted that numerous parts of the bridge showed a more substantial increase in structural changes between March 2017 and August 2018 – a hidden warning that at least part of the bridge may have become structurally unsound was released according to JPL. Pietro Milillo, scientist, JPL radar said, "We couldn't have forecasted this particular collapse because standard assessment techniques available at the time couldn't detect what we can see now. But going forward, this technique, combined with techniques already in use, has the potential to do a lot of good."



# MoHUA drafted Model Tenancy Act to regularise rental housing

NEW DELHI: In a bid to balance the interests of both landlords and tenants, the Ministry of Housing and Urban Affairs (MoHUA) came up with the Model Tenancy Act (MTA), 2019. As per the Ministry, the newly drafted MTA will help to enhance the overall legal framework in terms of rental housing across the country and may also push the involvement of private sector in this segment.

According to the new MTA 2019, in case of residential properties the security deposit is capped to a maximum of two months' rent and in case of nonresidential property a minimum of one month's rent. The drafted act also include penalty to be imposed for failure to vacate a residential unit. The landlord is entitled to get a double the rent as a compensation for two months and if the tenant does not vacate after the tenancy has been terminated by order, notice or as per the agreement then the landlord is liable to get four times of the monthly rent. Also, the

rent cannot be hiked in the middle of the tenure. If in case the landlord needs to increase the rent, then he/she needs to give a prior notice of at least three months before implementing the revised rent. Further detailing about the act and the process Mishra said, rent law is basically a state subject. All the states have either 60s, 70s or 80s' rent laws. These laws majorly focus on protecting the rights of tenants and not much is mentioned about landlords. Therefore, the Government of India, in a bid to create a more equitable law drafted the MTA. Once, the Union Cabinet approves the MTA then we will direct the states to either implement the MTA or amend their existing laws in line with the MTA.

The draft MTA will also promote growth of rental housing and investment in the sector and promote entrepreneurial opportunities and innovative mechanism of sharing of space. This MTA will be applicable prospectively and will not affect the

existing tenancies. MTA stipulates a robust grievance redressal mechanism comprising of Rent Authority, Rent Court and Rent Tribunal.

After coming into force of this Act, no person shall let or take on rent any premises except by an agreement in writing. The Model Act provides for its applicability for the whole of the State that is urban as well as rural areas in the State. Within two months of executing rental agreement both landowner and tenant are required to intimate to the Rent Authority about the agreement and within seven days a unique identification number will be issued by the Rent Authority to the both the parties. A digital platform will be set up in the local vernacular language of the State for submitting tenancy agreement and other documents.

The copy of the draft Model Tenancy Act, 2019 has been uploaded on the website of this Ministry (<http://mohua.gov.in/>) for seeking comments from the public and other stakeholders. A copy of the draft Act has also been shared with the States/UTs for seeking their views/comments. Once finalized the Model Act will be shared with the States/ Union Territory (UTs) for adoption.

As per Census 2011, nearly 1.1 crore houses were lying vacant in the country and making these houses available on rent will complement the vision of 'Housing for All' by 2022. The existing rent control laws are restricting the growth of rental housing and discourage the owners from renting out their vacant houses due to fear of repossession. One of the potential measures to unlock the vacant house is to bringing transparency and accountability in the existing system of renting of premises and to balance the interests of both the property owner and tenant in a judicious manner.





## 25L litres of water transported to Chennai via water train



In light of the ongoing water crisis in Tamil Nadu, the authorities transported 25 lakh liters of water to Chennai via train. The water, which was extracted from a south Indian river was transported from a railway station at Jolarpettai, over 217km from the city on July 12, 2019. The train reached Villivakkam station in Chennai where state ministers received it. The train provided much needed relief to the city. Chennai has become virtually dry because of mismanagement of water resources and lack of adequate rainfall and this pushed the authorities to take the unconventional route to quench the city's water requirement.

## HP plants over 25 lakh saplings in 5-day drive

Himachal Pradesh Forest Department conducted a five-day plantation drive across the state and successfully planted 25,35,441 saplings at a total of 727 sites. A spokesperson for the department mentioned that over 1 lakh people from various walks of life, including students, youth clubs, mahila mandals and NGOs, were involved in the drive. The Chamba forest circle recorded the highest number of saplings (3,85,875) planted. Followed by Nurpur where 1,88,467 saplings were planted. Govind Singh Thakur, State's Forest Minister, commended the efforts and thanked people for making the drive a success.

## HP to implement measures for state's readiness for earthquakes

SHIMLA: Seeing that Himachal Pradesh lies in seismic zone IV and V, making it exceptionally vulnerable to earthquakes, an Earthquake Early Warning (EEW) system will be installed in the state, said Onkar Chand Sharma, principal secretary, Revenue and Disaster Management. The decision was taken by the principal secretary in a meeting, held on July 20, where the development of the system was discussed. Dr Kamal, associate professor, IIT Roorkee, Prof A K Mahajan, dean, School of Earth & Environment Sciences, Central University of Himachal Pradesh, Kangra, Dr Manmohan Singh, director, India Meteorological Department, Shimla, were present at the meeting. IIT Roorkee which had installed a similar system of detection in Uttarakhand, have sent a proposal to the State Government regarding the establishment of the same. Sharma said that the state might install earthquake sensors in different parts which would detect earthquake activities in real time. The warning might be communicated to the public by a network of sirens.

Himachal Pradesh State Disaster Management Authority (HPSDMA) is preparing to develop an online database of retired engineers, architects and technocrats from various departments, up for public access. The citizens can use the services of the officials for guidance to safer construction in urban and rural areas. Sharma declared it at a meeting on techno-legal regime for construction activities. The meeting also agreed upon screening for structural and fire safety norms in all the constructions of the state.



## NDHM plans new system to track citizen's health

NEW DELHI: A National Digital Health Mission (NDHM) panel plans for Aadhaar like data mapping system to track citizen's health with an intention to include 'digital health' under public infrastructure, as per a Business Standard report. J Satyanarayana, who previously chaired the Unique Identification Authority of India (UIDAI), authored the report. The proposal suggests the new database draw inspiration from the Centre's ongoing digital data push – Aadhaar. The proposed system is initiated as the principal health data platform for patients and healthcare providers. The platform would be a unification of the UIDAI, the GST network, the National Payments Corporation of India and public and private healthcare and insurance companies/stakeholders, it added. The draft proposal includes standards laid out for the framework and data analytic principles for the platform. The same has

been opened for public viewing on the Ministry of Health and Family Welfare (MoFHW) website. The platform can be accessed with phones and devices used by citizens and can log into the data with a Unique Health identifier. As per the paper, the platform would be interoperable from patients to providers, with data hosted on 'The Health Cloud' – similar to the Ministry of Electronics and Information Technology's community cloud; a 'Health Locker' – which would serve as a record folder with consent; and health analytics. With the help of embedded Geographical Information System (GIS), the platform can direct the users to the nearest hospital and build region-based data for government agencies to plan and monitor health requirements. To tackle the issue of data privacy, the plan includes a 'consent manager', which would allow individuals to choose the data they would like to share and its purpose.



# Political Forum for Sustainable Development launches green industry, green finance platforms

NEW YORK: At the High-Level Political Forum for Sustainable Development in New York, some of the world's largest organisations came together and launched two new knowledge platforms – the Green Industry Platform and the Green Finance Platform on July 16. These platforms will provide the financial and private sectors with the latest research, data, guidance, and tools from leading experts and institutions to help green their operations.

Recent reports showed the global decline of nature and called for unprecedented action to reach climate goals marked out in the Paris Agreement. This brings up the need for practical and targeted knowledge to support the transition to inclusive green economies is more urgent than ever. The Green Growth Knowledge Platform (GGKP) hosts a wealth of existing knowledge to support greener business, finance, and policy, from the return on investment on renewable energy, investments to green bonds, sustainable infrastructure, green standards and regulations, and

more. Everything from global-scale assessments on flows of sustainable finance to highly specialised guidance notes on “turning waste into gold” in the bio-energy sector in Africa are present on the platform.

“These are especially exciting times for the Green Growth Knowledge Partnership (GGKP), already the world's largest dedicated repository of green growth resources, case studies, and national documents,” said Ban Ki-moon, former Secretary-General of the United Nations and current President and Chair of the Global Green Growth Institute. The two new green platforms will build on the existing Green Growth Knowledge Platform, which offers the latest guidelines to support green policymaking at the national level. Users can browse for various categories such as by sector, country, region, or cross-cutting theme, including gender, jobs, climate change, circular economy, and natural capital.

The Green Industry Platform will work as a guide for the small and medium-sized enterprises (SMEs) providing them with technical

knowledge to green their input materials, end products, and operations, as well as evidence that this will improve their bottom lines.

Li Yong, Director General of United Nations Industrial Development Organization (UNIDO), welcoming the launch of the platforms, said, “UNIDO welcomes the expansion of the GGKP to its new focus on industry through the Green Industry Platform, introduced in parallel with the Green Finance Platform. The Green Industry Platform is evolving to become a critical tool SMEs to engage in global efforts towards inclusive and sustainable industrial development.”

The Green Finance Platform will provide a one-stop shop for the latest financial sector innovations banks, insurance, and investment firms to start, scale, and measure their contribution to a green economic transition. It will feature new tools for businesses and investors to assess natural capital risks and opportunities; guiding principles on responsible banking, insurance, and finance; and global reports on aligning the financial system with sustainable development.

Ángel Gurría, Secretary-General of the OECD, said, “Combating climate change and encouraging green growth requires all communities and sectors to work together based on sound research and timely information and data”.

Moving ahead, the partnership will work to connect the policy, finance, and business communities together in a neutral space to incentivise, finance, and put into operation green and inclusive practices.

The GGKP is led by the Global Green Growth Institute (GGGI), the Organisation for Economic Co-operation and Development (OECD), the United Nations Environment Programme (UNEP), UNIDO and the World Bank.

The GGKP benefits from strategic funding from Switzerland, Germany, the Partnership for Action on Green Economy (PAGE) initiative, the MAVA Foundation, and GGGI as well as programmatic funding from the Netherlands.

## Jhiri dump yard to be an eco-park soon

Ranchi Municipal Corporation (RMC) accepted the proposal of an eco-park on a part of Jhiri dump yard with an intention to decrease environmental hazards to people living nearby, clear dumping land and improve soil quality, which has deteriorated drastically. Ranchi's Jhiri, is one of the biggest dump yards in Jharkhand, spread across 41 acres of land where more than 600 tonnes of garbage is dumped daily since past two decades. The concept is to accumulate garbage spread across the landfill through capping work and develop a park on it. Grass would be sown, varieties of flowers and trees suitable for such land would be planted.

## Chandigarh to declare Sukhna lake as wetland



Chandigarh administration announced that the Sukhna Lake would soon be declared as a wetland under the Wetlands (Conservation and Management) Rules, 2017, and hence the authority would soon be monitoring the construction activities around the spot accordingly. According to the Construction and Demolition Waste Management Rules, 2016, discharge of the untreated waste, effluents from industries, cities, towns, villages and other human settlements, dumping construction debris and any construction of permanent nature within 50 meters from the wetland will be prohibited. Poaching or any such activity in the wetland area would also result in strict action.

## 'Lungs may age faster due to air pollution'

NEW DELHI: A study done by UK Biobank of over 300,000 people published on July 9, states that contact to outdoor air pollution is interrelated to reduced lung function and a bigger risk of developing chronic obstructive pulmonary disease (COPD). COPD is a condition that causes inflammation in the lungs and narrow downs the airways, making breathing difficult. COPD is the third leading cause of death worldwide, and the number of global COPD deaths are expected to increase over the next 10 years, according to the Global Burden of Disease (GBD) project. Anna Hansell, a professor at the University of Leicester said, "There are surprisingly few studies that look at how air pollution affects lung health."

The researchers examined particulate matter (PM10), fine particulate matter (PM2.5) and nitrogen dioxide (NO2), which are formed by burning fossil fuels

from car and other vehicle exhausts, power plants and industrial emissions.

Multiple tests were conducted to see how long-term exposure to higher levels of the different air pollutants was linked to changes to participants' lung function. The sample participants' age, sex, body mass index (BMI), household income, education level, smoking status, and passive exposure to smoke were accounted for in the analyses.

When the researchers assessed COPD prevalence, they found that among participants living in areas with PM2.5 concentrations above World Health Organisation (WHO) annual average guidelines of ten micrograms per cubic meter, COPD prevalence was four times higher than among people who were exposed to passive smoking at home, and prevalence was half that of people who have ever been a smoker.

## GMCBL launches app based e-scooty scheme for last mile connectivity

GURUGRAM: In a bid to resolve Gurugram's last mile connectivity issue, the Gurugram Metropolitan City Bus Limited (GMCBL) launched an app based public electric bike sharing services. The service will allow daily commuters who avail public mode of transportation to rent e-bikes or e-scooters from the app, MobyCy, to commute between various bus stations, metro stations etc. Commuters will be able to hire battery-powered scooters and e-bikes from bus shelters at Huda City Centre, Iffco Chowk, Sushant Lok, along Golf Course Road and Sohna Road. Akash Gupta, founder of MobyCy, the e-scooter company, highlighted that 500 scooters and e-bikes have been deployed at the said stations. "We are planning to scale it up to 5,000 over the next year," Gupta added. Commuters will have to scan a QR code in order to unlock the vehicle. Upon completion, the e-bikes can be parked in MobyCy designated parking points shown on app. Currently, MobyCy provides over 2,000 rides every day in four cities, with a fleet of over 2,000 bikes. "The e-scooters will be a big benefit to people for whom last-mile

connectivity is still an issue. We encourage people to take advantage of this new option," said Arun Sharma, general manager, GMCBL. The commuters will have to pay ₹2 per minute ride or can avail a day plan at ₹149. The monthly subscription plan will cost ₹499 for two half hours rides a day.





# 'Global warming won't escalate with reduction in air pollution'



LONDON: A study conducted by researchers at the University of Reading in United Kingdom (UK) in association with the University of Tartu in Estonia has discovered that, contrary to popular belief, global warming won't escalate with the reduction in air pollution.

Scientists have long worried that air pollution, while having a devastating impact on human health, may paradoxically have been acting as a 'brake' on the heating of the atmosphere, said researchers at the University of Reading in the UK.

According to the scientists, the assumption is backed up by the fact that pollution particles help clouds to form with more water droplets, meaning they reflect more of the Sun's energy back into the space. This, however, hasn't been backed up by the research till now and the extent to which pollution inadvertently helps to cool the planet has not been clear.

However, a new research published in the journal *Nature* indicates that pollution affects different clouds in different ways. While some clouds get thicker, others become thinner,

meaning pollution is less likely to disperse more than half of greenhouse gas warming.

The findings offer greater hope that current plans to curb global warming by moving to cleaner sources of energy may still work without leading to an unexpected extra source of heating.

"Until now, it was assumed that thicker clouds form when water droplets condense around the particles in polluted air, delaying rainfall, and allowing clouds to reflect more sunlight back into space," said Velle Toll, lead author of the study, now at the University of Tartu in Estonia.

"To test this, we studied satellite data from clouds near sources of pollution. In fact, there was little change in average water content across all the polluted clouds we found, showing that pollution makes little difference overall to many types of clouds. Some clouds got thicker, but other areas thinned out," Toll said.

"Our study provides more evidence that cutting emissions of greenhouse gases and air pollution is a win-win situation for the health of people's lungs and for preventing the worst

impacts of climate change," Toll added.

The research is based upon observations made by the team of scientist who surveyed the world for clouds formed over areas well known for being polluted using near-infrared satellite images. Clouds affected by pollution appear 'brighter' in these images, said the researchers.

They were able to identify hundreds of such polluted clouds around the world, produced by tiny pollution particles from sources like volcanoes, cities, ships, factories and wildfires.

"The fear that reducing air pollution could lead to a spike in global warming has been a lingering concern for climate scientists," said Nicolas Bellouin, study's co-author from the University of Reading. The study assures that polluted air has a limited ability to prevent the atmosphere from heating up, in addition to being bad for people's health.

"There is now one less excuse for us not to cut emissions of both air pollution and greenhouse gases, or we will continue to see temperature rises that put people and the natural world in danger," Bellouin said.

## MCG to launch illegal borewell sealing drive

In a meeting of the Municipal Corporation of Gurugram (MCG) held on July 17, a decision was taken to seal all the illegal borewells via an enforcement drive. Findings indicated the rapid depletion of the ground water of the city, which prompted the authorities to take this course. The drive, which is to be conducted in the next few days, would enforce the Centre's 'Jal Shakti Abhiyan' in the city. Four teams with officials of the District Town and Country Planning (DTCP) and the Gurugram Metropolitan Development Authority (GMDA) were formed on July 17 to check the condition of the rainwater harvesting systems at residential societies in the city.

## VMC to conduct awareness program on rainwater harvesting

The Vijayawada Municipal Corporation (VMC) has formed special teams to make people aware about the importance of rainwater harvesting (RWH). V Prasanna Venkatesh, municipal commissioner directed the town planning wing to make it mandatory for the builders to include RWH pits and onsite waste treatment plant in their building plan in order to get occupancy certificates (OCs). The civic chief directed the officials to make a list of buildings that already have RWH system and their present status. With around 2.05 lakh properties registered in the city, the officials expect that at least 60 per cent of them are equipped with RWH pits. During the special drive, officials will make the residents aware about the importance of RWH mechanism and will set a deadline for the instalment.

# 'EVs would be future of Indian mobility'

NEW DELHI: Economic Survey 2019, presented in Parliament on July 5, projects the country's gross domestic product (GDP) to grow at a rate of seven per cent in the fiscal year 2019-20, against a five-year low of 6.8 per cent the previous year. The growth can be attributed to political stability aiding a pick-up in demand and investments. India would need to grow at 8 per cent annually to become a \$5 trillion economy by fiscal year 2025, the survey assessed.

The estimate is the same to the Reserve Bank of India's (RBI) reading, which lowered its forecast by 20 basis points from 7.2 per cent in June. India continues to be the fastest growing major economy

in the world, ranking third in terms of size after U S and China.

The investment rate, meanwhile, is predicted to pick up following an improvement in consumer demand and bank lending. Oil prices staying well below their 2018 peak is also positive for consumption, which accounts for about 60 per cent of GDP, the survey said.

Consumer inflation (rate of increase of prices) was contained within 4 per cent and it has shown a downward trend since FY 2016. The Index of Industrial Production, an indicator of growth across key industries, registered a rise in FY 2017 and FY 2018, but has dipped in FY 2019.

The survey predicted that the national Total Fertility Rate (TFR) would be lower than the replacement rate by 2021. The TFR for India as a whole is 2.3, currently. Rural areas have a TFR of 2.5, while urban areas are comparatively lower at 1.8.

The survey also noted that electric vehicles would be the future of mobility in India and highlighted that the country can emerge as a manufacturing hub of EVs with favorable policy support.



# BMC revokes water cut from Mumbai

MUMBAI: Seeing the increased water stock due to heavy rainfall received by the city this season, Brihanmumbai Municipal Corporation (BMC) decided to withdraw 10 per cent water cut which it had imposed on the city due to the continuously declining water levels of its seven supply lakes. The ban has been revoked on July 20. The decision was taken after Yogesh Sagar, Minister of State for Urban Development department, asked the civic body to do so. Yogesh Sagar said that the water cut was necessitated as the water stocks in the lakes had reduced, but now with just one month of adequate rainfall the water stocks have increased considerably.

The water levels of all the seven lakes that supply water to the city have substantially increased during this monsoon season. Mumbai requires 14.47 lakh million liters of water to last it an entire year. The lakes have recorded a water stock of 7.43 lakh million liters which is 51 per cent of their capacity with room of increase as Monsoon is expected to still go on for the next two months. "We have water to last around 152 days. Both Bhatsa and Vaitarna systems have significant stock. The decision for the rest of the year will be finalised on October 1," a senior civic officer said.

Officials from the hydraulic engineering department said, "After a good amount of rainfall on July 15, we reviewed the situation. We found about 48 per cent of water in the lakes, which is satisfactory. Also, two more months of monsoon remain and we are hopeful of getting enough rain, which may fulfil requirements. Hence, we have decided to withdraw the water cut." Last week, Tulsi lake overflowed and Tansa lake was close to overflowing.

# Safe Smart City Conference brought out the essentiality of ICCCs on city's security

The Safe Smart City Conference was held, on July 19, at the Hotel Lalit in Delhi. The major theme of the conference was to discuss on the methodologies that could be employed to develop safe smart cities by utilising resources at Integrated Command and Control Centre (ICCC). The Conference witnessed participation of several speakers and delegates from many government and private organisations working in the domain

NEW DELHI: The conference began with SrinivasanKowligi, Partner – SmartCities, Ernest and Young, sharing his thoughts on the development of smart cities in India. He explained the idea of smart cities is to do more for less for the citizens. Swaying into the challenges smart cities face now, he said, “We need smart people, that is, behavioral changes of citizens is necessary. People have to be more responsible.” Careful examination of urban movement is essential to identify the needs of the citizens. Integrated command and control centers (ICCCs) need to be the analysts for the city decision makers for smooth operation in the future.

Avni Gupta, deputy director (Smart Cities Division), Ministry of Housing and Urban Affairs (MoHUA), highlighted the progress made by the ministry's Smart Cities Mission.

Emphasising on how development could be gauged in a smart city, she said that the concept is subjective to the city we are talking about. Some cities might require better skill development project and some might require a boost to the heritage sites of the city. To overcome this hurdle, the ministry has developed some tools to assess the progress of the mission. Ease of Living index is one such example which gauges people's satisfaction with their cities.

Shailesh Kumar Aggarwal, executive director, BMTPC, spoke on disaster mitigation management in India. Increasing urbanisation and expansion of cities in vulnerable areas has led to a higher loss of life and property at the time of natural disasters. The government launched Disaster Management Act, 2005, which sees zero tolerance towards loss of life from such calamities and ensures a proactive approach to disaster mitigation management, said Shailesh. He further discussed the third edition of vulnerability atlas of India, which was released by the PM in 2019.

JK Sharma, Lt General, discussed about the initiatives that the government had undertaken to better manage the KumbhMela, saying that it was a shining example of how public events and spaces can be better managed. Later in the day, a panel discussion was also organised to brainstorm on the benefits and the limitations of the ICCCs under smart cities. The convener Ajay Gupta, Global Head, Smart city- Tech Mahindra, said that these centers are the brains of smart cities as they are the center of the decision making in a city. CdrJasbir Singh, Mahindra Defence, said that the ICCCs are essential for maintaining

a high level of security in a city. He further detailed on the problems faced in implementing these centers in India.

Sandeep Sinha, Director, MitKat Advisory, said that the centralisation of the command is essential as urbanisation continues to grow, which is exactly what ICCC is tasked with. These centers give us a great deal of data fusion, which give us the leverage to take efficient decisions for the city, which will definitely prevent disasters like 26/11 in future.

Vishal Gupta from Ajeevi Smart City Technologies said that the implementation of smart cities by itself isn't enough, continuous guiding is essential for the initiative to grow. This guidance can be adequately provided through the ICCCs. Educating the associated departments is necessary.

“If any city is smart, it must be safe,” said MahipTejaswi, CEO, Smart City Gwalior, who defined the smart cities as a city with exceptionally low environmental problems, crimes, accidents, etc. “We are looking to develop ways to ensure a sound infrastructure in the city so that the above could be a reality,” he added.

DavinderKasal, Head of Security, HCL, said that ICCCs are essential to efficiently analyze the severity of vulnerabilities of the city, prioritise them and manage them accordingly.

The moderator concluded the session by saying that the ICCCs will continue to evolve but the scope of optimization is vast as of now.

The conference ended on a high note with laying down essential points on the completion of the existing smart city projects and developing robust ICCC for better city management.





# ‘A quarter of world facing water shortage’

WASHINGTON: World Resources Institute (WRI) has released its flagship report ‘Aqueduct Water Risk Atlas’ which reviews the water stress, drought risk and riverine flood risk of various countries of the world and then ranks them according to the findings. Water stress refers to the share of available renewable surface and groundwater that is withdrawn, and has been calculated by a model that has used data from 1960-2014. When demand rivals supply, even small dry shocks – which are set to increase due to climate change – can produce dire consequences, researchers said. This report has observed that 17 countries, which house a quarter of the world’s population, are facing extremely severe water stress and are inching closer to “day zero” like conditions, where the

taps will run dry.

India is ranked 13th of these 17 countries facing “extremely high” water stress which is poor considering that India has more than three times the combined population of the other 16 nations. Qatar, Israel, Lebanon, Iran, Jordan, Libya, Kuwait, Saudi Arabia, Eritrea, UAE, San Marino, Bahrain, India, Pakistan, Turkmenistan, Oman and Botswana make up the list of 17 countries. Pakistan, placed just below India, is the only other South Asian country in the top 20 countries in terms of water stress. “In addition to rivers, lakes and streams, India’s groundwater resources are severely overdrawn, largely to provide water for irrigation. Groundwater tables in some northern aquifers declined at a rate of more than 8 centimeters per year

from 1990-2014,” the authors of the study wrote. “The recent water crisis in Chennai gained global attention, but various areas in India are experiencing chronic water stress as well,” former Indian water secretary Shashi Shekhar said, adding that the tool could help authorities identify and prioritise risks.

The report also highlights the sub-regional situation for India. North Indian states Jammu & Kashmir, Punjab, Haryana, Uttarakhand, Madhya Pradesh, Gujarat, Rajasthan and Uttar Pradesh face extremely high (greater than 80 per cent) water shortage. Chandigarh faces the highest threat of water extinction.

Meanwhile, the situation in South Indian states is also serious as nearly all the south Indian states face high water stress (between 40-80 per cent) but North eastern states face low water stress levels (<10 per cent).

“Water stress is the biggest crisis no one is talking about. Its consequences are in plain sight in the form of food insecurity, conflict and migration, and financial instability,” said Andrew Steer, CEO of WRI. Officials from WRI further highlighted that irrigated agriculture, industries and municipalities in the above nations withdraw more than 80 per cent of the available water supply on an average every year. Such narrow gaps between supply and demand can leave countries highly vulnerable to fluctuations like drought or increased water withdrawals, they added.

The report made apparent that the crisis is looming at a greater extent over Middle East and North African, as these countries hold 12 positions at the top of the list. Even countries with low average water stress can have dire hotspots, the report found. While the US ranks 71st on the list, New Mexico state faces water stress at par with the UAE.





Under the Tokyo Medal Project, the committee has gathered over 50,000 tons of electronic waste including more than 6 million cell phones in an effort to make the Games more sustainable

# Tokyo Olympics to award medals made out of recycled materials

TOKYO: The Tokyo Olympic organisers unveiled the medals for the Tokyo Olympics 2020 on July 24. The medals for the upcoming Olympic Games will be made up of recycled materials and not real metals.

In preparation to implement this sustainable innovation by the organizing committee a project named – Tokyo 2020 Medal Project was launched. The Japanese people, between April 2017 and March 2019, donated their old electronics such as mobile phones, laptops, tablets, handheld games and more to the initiative, which was spearheaded by the Tokyo Organising Committee of the Olympic and Paralympic Games. According to the official website of the Olympic Games, yellow colored boxes for collection were placed in post offices and on street corners throughout the country.

Since early 2017, under the Tokyo 2020 Medal Project, the committee has gathered over 50,000 tons of electronic waste including more than 6 million cell phones in an effort to make the Games more sustainable. The committee sought to collect around 70 pounds of gold, 7,700 pounds of silver, and 4,850 pounds of bronze all from various donated electronic waste to make approximately 5,000 medals for the next year's Games. According to the official website of Olympic Games, the collected electronic waste was then

dismantled and melted down by highly trained workers.

This is not the first time that the Olympics' organisers has planned to use recycled materials for its prizes. Earlier, during the 2016 Rio Olympic Games, nearly 30 percent of the silver and bronze medals were derived from recyclables. Although, the officials organising Tokyo Olympics 2020 marks the Tokyo 2020 Medal Project as unique in its scale as it is the first time that citizens of a country have been proactively involved in donating the old electronic devices used to make the medals.

On one hand the Tokyo 2020 Medal Project was underway and on the other hand the committee was on feet to hunt talented artist to design the Olympic and Paralympic medals. In a search to find the best designer, a nation-wide competition for both professional designers and students studying design was organised.

The committee received more than 400 entries, out of which Junichi Kawanishi, director of the Japan Sign Design Association and the Osaka Design Society was awarded the honor by the selection panel. The winning design by Kawanishi, in the front, featured the Tokyo Olympic 2020 emblem—a chequered ring in the “ichimatumoyo” pattern, which became popular during Japan's Edo period—the name of the upcoming

games (“Tokyo 2020”) and the Olympic's enduring five-rings logo. On the other side was Nike, the Greek goddess of victory, in front of the Panatheniac stadium.

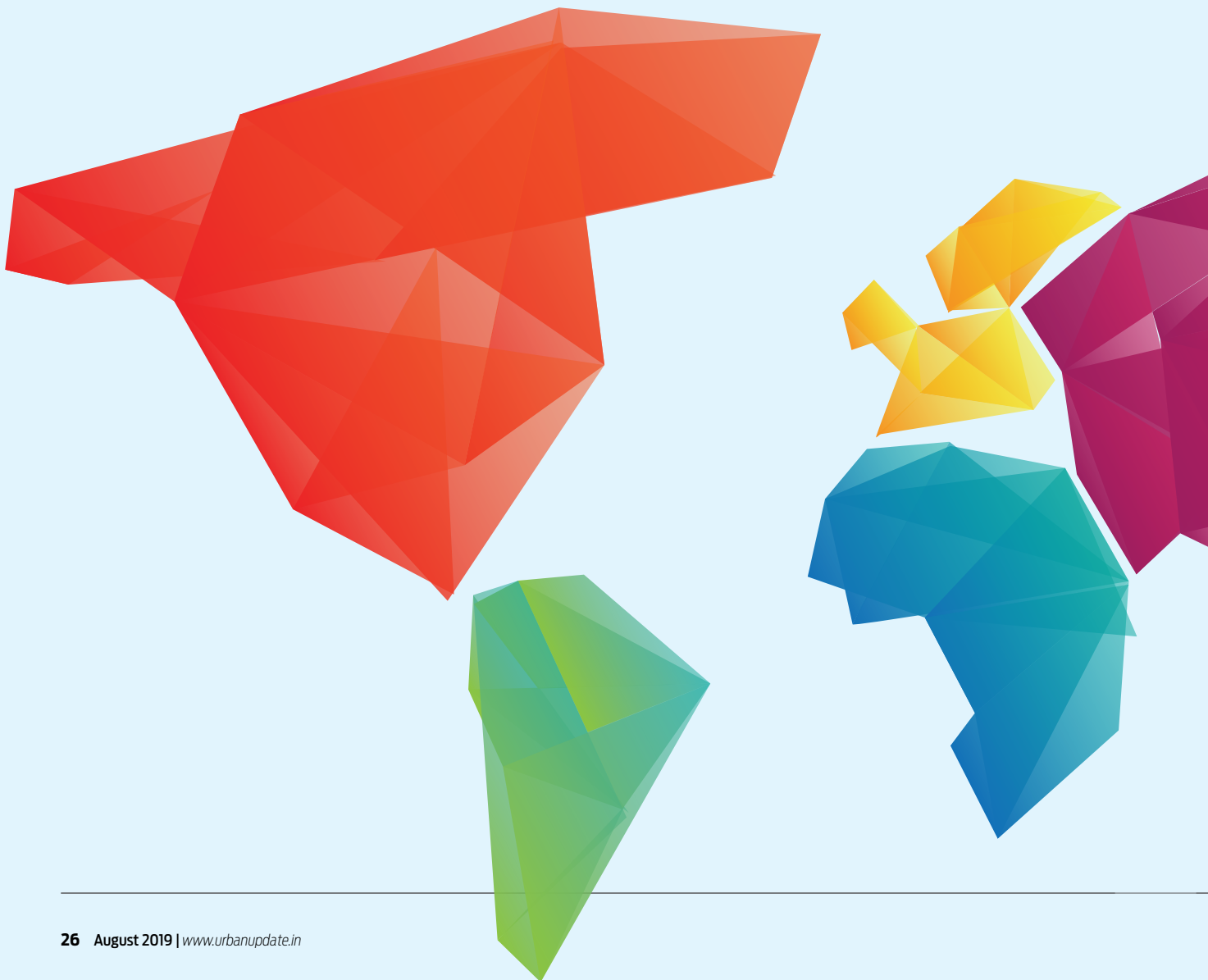
The selection panel said, “The medals resemble rough stones that have been polished and which now shine, with ‘light’ and ‘brilliance’ their overall themes. The medals collect and reflect myriad patterns of light, symbolising the energy of the athletes and those who support them; their design is intended to symbolise diversity and represent a world where people who compete in sports and work hard are honored. The brilliance of the medals' reflections signifies the warm glow of friendship depicted by people all over the world holding hands.”

Ryohei Miyata, who chaired the board that chose Kawanishi's design, said that the medals showcased Japanese metal moulding techniques. The medals will come on ribbons that use traditional Japanese chequered patterns and graphics that symbolises kimono layering techniques.

In accordance with that theme of friendship, four robotic versions of mascots ‘Miratowa’ for the Olympics and ‘Someity’ for the Paralympics will greet visitors at venues and shake their hands. The mascots were crowdsourced, too, chosen by more than 16,000 of the country's elementary-school children.

# How nations are **BUILDING CITIES**

Since inception, nations are building cities and relying on them to boost trade, economy and provide fertile ground for cultures, art forms and literature to bloom. Cities have hardly disappointed. History tells us that cities have always been the hubs of innovation and have a significant role to play in improving the living conditions of human beings. And, in the long run, cities have built nations or one may say provided firm ground for nation-building. In this article, we take a sneak peek into urban affairs of different nations







**Abhishek Pandey**  
Editor

**M**ost of the world's prosperous and largest cities are in the world's largest economies. This is another evidence of the link between economic wealth of nations and cities. Can you think of the United States of America without New York and Chicago? The United Kingdom without London; China without Beijing and Shanghai; and Japan without Tokyo? Similarly, India's growth story will be

completely different sans Mumbai, Delhi and Bengaluru.

Large functional urban regions have their advantages. These are generally self-contained in that they generate a big share of demand for what they produce. Many linkages required for successful business operation remain available in metropolitan regions. Business houses get benefits from each other's complementary roles hence urban centres become more productive than any rural region in which many layers work in isolation at long distances.

No country has achieved and sustained economic growth without the growth of their cities. Cities account for anywhere between 60 and 90 per cent of GDP of almost every nation. Cities are the driving force of national economies. According to an UN-Habitat report titled 'Economic Role of Cities', cities generate more than 80 per cent of global GDP today. Of which the top 100 largest cities could account for

35 per cent of global GDP; the top 600 cities a r e

expected to generate 62 per cent of global GDP by 2025; the top 1,000 cities could account for 68 per cent of global GDP and the top 2,000 could account for 75 per cent of global GDP.

This makes the role of cities very important for everything a nation aspires to do. Cities are indeed engines of growth, prosperity. It becomes very important for nations to give adequate attention to all the components responsible for building and sustaining a city. Because when cities fail, nations falter and stumble on their path to prosperity.

Cities in different countries are plagued with different issues and they have developed some successful models which are

worth looking at because those simple models can resolve complex urban issues elsewhere too. Some models have failed too but they also provide us with an important lesson on what does not work in cities. Whether it is livable cities of Australia or forest cities in China or smart cities of India, they all have a story to tell, a script to write for a better urban future.

## China's Forest City

In these times when many countries are struggling to sustain their urban forests and trees as builders and many other players are eying expensive urban lands, China is building its own Forest City, Liuzhou Forest City, in northern China's mountainous province-Guangxi. This is commissioned by Liuzhou Municipality Urban Planning and designed by Stefano Boeri Architects, famous for Milan's Vertical Forest, or Bosco Verticale in Italian.

The city will be built on an area of about 175 hectares next to Liujiang Lake. The city that will house over 30,000 people will be an organized unit of buildings, streets, trees and plants. And, in this city, trees and plants will not be only for decoration purposes but will be a primary part. The inhabitants will be able to enjoy all kinds of urban services amidst a forest. The construction of this city is expected to be completed by 2020.

The project plan claims that it will be nearly impossible to distinguish the urban centre from the green area that surrounds it when observed from above. It further adds: "Liuzhou Forest City will be the first zero impact, autonomous urban agglomeration. As underlined by Stefano Boeri Architects, the city will have all the characteristics of a fully self-sufficient settlement from an energy standpoint: geothermal energy will be used for temperature regulation inside the buildings and an integrated solar panel system will be installed on the roofs; the connections between the new centre and the city of Liuzhou will be guaranteed by an electric train railway."

Such projects in existing cities

can become the lungs of cities and address the problem of air pollution, increasing temperature, etc. without affecting the productivity of a city. The forest city project of China is expected to absorb 57 tonnes of CO<sub>2</sub> and particulate matter, and produce 900 tonnes of oxygen every year, as well as reducing average temperatures. This single project has proposed to plant 40,000 trees and approximately one million plants of more than a hundred different species that will be placed in streets and buildings. There are many redevelopment works underway in Indian cities too under various missions of the Government of India and our planners can follow this kind of city development model for addressing environmental issues.

The fundamental concept behind the theme advanced by Boeri and his team are those of urban forestry and the protection of biodiversity in large cities. Some of the key aspects of his approach include restraint on the use of cement, blocking the expansion of cities by enclosing them in forests, safeguarding forests and biodiversity within cities to reduce pollution, and finally making nature an essential component of architecture. In a report, he says, “Cities produce nearly 70 per cent of carbon dioxide emissions, the cause behind phenomena such as the greenhouse effect, the melting of ice

caps and sea-level rise, whilst forests and oceans are the main enemies of CO<sub>2</sub>, absorbing approximately 35 per cent of the amount emitted. Bringing forests within cities or creating forest cities means fighting the enemy on its turf, and transforming carbon dioxide into a fertiliser to feed plants”.

### Barcelona: Leader among Smart Cities

Barcelona is among the few cities that started the smart city revolution. The city along with a select few other global cities such as Singapore, Vienna, San Francisco, and Copenhagen has been a pioneer player in smart urban planning and integration of technology in urban services.

The city has taken advantage of technological advancements in almost every urban service for the benefit of residents. The city has used smart sensors, big data analytics in parking and transportation, trash collection and waste management, air quality, and water supply. For this, the city has its own Chief Technology Officer who continues to utilize the new inventions for improving civic services.

According to details available on its official website, the city has also developed data infrastructure consisting of three components: Sentilo, an open-source data collection and sensor platform; CityOS, another

open-source platform that analyzes the data; and a user interface level of service apps to enable easier access to the data – all the data. The city also makes the data available to citizens and private companies but the citizens decide the proper access and issues related to privacy. Making data available to people has enabled them to come up with solutions to their day-to-day problems.

The city is also working to make its citizenry smart and digitally literate. Barcelona Digital City website also has sections such as FabLabs which focus on imparting digital education in children; VinclesBCN for helping senior citizens to learn digital technology; Decidim provides an experimental, “open, secure and free” platform to crowd-source ideas and test their viability. If the citizens have approved the idea then the city take the idea to the implementation level.

Not just with digital intervention, the city has also rolled out some simple yet powerful policies to improve quality of life of its citizens. Superblocks is one of those ideas. The concept was developed by Salvador Rueda, director of the Urban Ecology Agency of Barcelona. The city released its Mobility Plan in 2014 in which “organization of the city’s urban pattern in superblocks and other calming measures” was the first mainline action for making city’s mobility safe, sustainable, equitable and efficient.

The plan read: the implementation of the different phases of the Plan of Superblocks in the city of Barcelona will allow to reorganize the mobility networks and, in turn, increase the proportion of public space dedicated to the citizen. With the full implementation of the Plan, the pedestrian areas will go from the current 74.5 hectares to 750 hectares where pedestrians and bicycles will have priority. The inner streets will win urban quality by incorporating improvements in accessibility, reducing noise and pollution and enhancing road safety, with the possibility of increasing urban green spaces and recreational uses and activities in the streets, etc.

**NOT JUST WITH DIGITAL INTERVENTION, THE CITY HAS ALSO ROLLED OUT SOME SIMPLE YET POWERFUL POLICIES TO IMPROVE THE QUALITY OF LIFE OF ITS CITIZENS. SUPERBLOCKS IS ONE OF THOSE IDEAS. THE CONCEPT WAS DEVELOPED BY SALVADOR RUEDA, DIRECTOR OF THE URBAN ECOLOGY AGENCY OF BARCELONA. THE CITY RELEASED ITS MOBILITY PLAN IN 2014 IN WHICH “ORGANIZATION OF THE CITY’S URBAN PATTERN IN SUPERBLOCKS AND OTHER CALMING MEASURES” WAS THE FIRST MAINLINE ACTION FOR MAKING CITY’S MOBILITY SAFE, SUSTAINABLE, EQUITABLE AND EFFICIENT**





*Superblock pattern implemented in development of Barcelona City*

Salvador Rueda, in an interview to Cities of the Future, explains, “A Superblock is defined by a grid of nine blocks where the main mobility happens on the roads around the outside of the Superblock, and the roads within the Superblock are for local transit only. The one-way system inside the Superblock makes it impossible to cut through to the other side of the Superblock. That gives neighbours access to their garages and parking spaces but keeps the Superblock clear of through traffic.” The maximum speed on the roads within the Superblock is limited to 20 km/h. By restricting car traffic within each Superblock, neighbourhoods have become less polluted and noisy, and the streets are freed up for children, pedestrians, and small businesses.

### Some other good examples

Australian cities have been among the most livable cities of the world for years

together in many indices. They have also been promoting walkability in their cities for quite a long time. When Indian cities are trying to become smart by optimizing and making basic civic services available, many global cities have moved forward with making 311 services online that address non-emergency services.

Indian cities also need to make complaint redressal mechanism robust. When the government has been introducing new taxes and people are managing ways to pay, people will not mind paying extra charges for the services they require. People should be able to register their complaints such as noise complaints, pothole repair, animal menace, water leakage, defunct street light, waterlogging, disease control, and other services. Indian cities should also think of a model similar to 311 in the USA. Now with the advancement in technology, WhatsApp or Social Media platforms

can also address the problem. Many small councils may not find it feasible to implement such projects but cash-rich corporations like BMC can take the lead.

Chicago and Boston in America have taken the lead by providing a wealth of 311 open data that allows programmers to create innovative apps that keep citizens up-to-date and help city workers provide faster, better services. The city of Denver has built a Peak Academy to train its employees on innovation. London has initiated a crowdsourcing program for public works. Many such ideas are floating in the urban domain. Many of them can be initiated locally and some of them need policy reforms in which the central government can play an important role. It is also the time that cities begin demanding such reforms based on their needs. The bottom-up approach in policy reforms can bring visible changes in our cities. ■



# Public transport is panacea for urban mobility woes

With economic liberalisation and growing income in the country, lifestyle of urban citizens changed over a period of time. Its impact had also been seen on citizens' mobility patterns. This change has resulted in congestion on roads and increasing air pollution. Most of the big cities function in finite spaces and building new roads or introducing new alternatives is not always possible to address mobility issues. Many cities of the world have addressed these issues with policy interventions and novel solutions; Indian cities can surely learn from them to reform mobility policies and their transport systems to optimize urban space



**Ranjit S Chavan**  
President, AILSG

**C**ities are sprawling to accommodate increasing inflow of population and this has added burden on local corporations or transport undertakings to expand the area of their respective transport services. With expensive housing options within city limits, a large part of the urban population is now living in suburbs. They commute long

distances for work in personal vehicles either because of non-availability or inconvenient mobility alternatives at their disposal.

Urban centres are buzzing with upscale shopping malls, international food chains, multiplexes, etc. People are no longer shopping only in weekly markets or in neighbourhood markets; they are travelling longer distances for shopping and leisure, not just for

work. In these trips, people do not lend themselves willingly to public transport. The reason being lack of convenience and reliability of public transport in most of our cities. However, the swanky and punctual Delhi Metro is one of the exceptions. That is why the Delhi Metro is among the finest examples of mass transit systems. Despite this, the wealthy and upper-middle class do not prefer metro



also because of non-availability of quick and efficient last mile connectivity options. Urban mobility is a complex problem and needs multi-pronged solution model.

## Fallout of increasing cars in cities

There are serious implications on quality of life and economic productivity of cities when they fail to manage urban transport systems and people become increasingly dependent on personal vehicles in absence of strong, economical, convenient and robust public transport system. A report 'Modern and efficient public transport system' published under STEER Program of the EU suggests that for a trip between home and work the private car takes up between 10 and 30 times more space than public transport, and five times more than the bicycle. The increasing dependence on private transport results in congestion, lost productivity, worsening pollution and a terrible quality of life. This situation also forces government to widen roads and build new ones to accommodate the increasing fleet of private cars. According to Transforming Mobility

report by Niti Aayog, congestion in the four biggest metros causes annual economic losses of over \$22 billion.

Policies for controlling car usage in cities need to be strengthened. Many cities including Singapore and European cities like London have congestion charges. Such charges have shown results in shifting of mobility patterns. These cities have for sure implemented such stringent policies but the good point to note is that they provided some of the best mobility alternatives to their residents and did not leave them in the lurch. Studies suggest that the London congestion charge immediately cut traffic in the demarcated area by 20%, helped speed up buses, and improved revenues.

The second area that needs attention is parking facility and the charges. In India, parking is almost always free at market places and office spaces because people find a way to park on streets or sidewalks. And, if there are charges, they are nominal. When urban local bodies are planning policies on parking, they should not just take into consideration the capital and operational expenditure of running parking facilities but they should also consider external costs

such as pollutant emissions, noise, accidents and congestion since the car driver bears only a minimal share of the cost he imposes on the community. These issues must be discussed in detail while bringing about mobility reforms. We should also be looking at No Vehicle Zone policy of European Cities. Often, the corporation succumbs to local pressure but these issues should be advocated for larger public discourse. We can start with a couple of No Vehicle zones in each city.

## The image problem of public transport options

When we speak of policies for restricting car use in cities, the initiatives must go hand in hand with measures aimed at providing alternatives to private vehicle users. When we look at public transport options in Indian cities, the image of overcrowded local trains of Mumbai, and dilapidated buses with broken glass panes run by city corporations come to mind. However, the situation has changed in many cities after the central government pumped in money through JnNURM but the fundamental issue of convenience and ease of travelling has not been addressed yet. There are several operational issues which commuters face. When India is digitizing at such a fast pace why can't our buses be tracked online and commuters be informed about the timing of next bus enroute. The frequency of buses in cities should also be worked upon on the basis of supply and demand. They need to use contactless fare payments using suitable cards, since buying tickets is also a barrier.

The bottom line is that the success of any public transport network depends on how easy and efficient it is to use. People expect the service to be reliable, well integrated and supported by convenient last mile connectivity. Our buses and local trains need a makeover and I don't think that there are financial constraints. If we can spend hundreds of crores in building metro lines, we can surely think of improving the design and build quality of existing options. ■

**THERE ARE SERIOUS IMPLICATIONS ON QUALITY OF LIFE AND ECONOMIC PRODUCTIVITY OF CITIES WHEN THEY FAIL TO MANAGE URBAN TRANSPORT SYSTEMS AND PEOPLE BECOME INCREASINGLY DEPENDENT ON PERSONAL VEHICLES. A REPORT 'MODERN AND EFFICIENT PUBLIC TRANSPORT SYSTEM' BY EUROPEAN UNION SUGGESTS THAT FOR A TRIP BETWEEN HOME AND WORK THE PRIVATE CAR TAKES UP BETWEEN 10 AND 30 TIMES MORE SPACE THAN PUBLIC TRANSPORT, AND 5 TIMES MORE THAN A BICYCLE. THE INCREASING DEPENDENCE ON PRIVATE TRANSPORT RESULTS IN CONGESTION, LOST PRODUCTIVITY, WORSENING POLLUTION AND A TERRIBLE QUALITY OF LIFE**

# Core urban challenges for the ensuing five years



**Sudhir Krishna**

Former Secretary (UD), GoI

India is urbanising rapidly. While Census 2011 had indicated the urban population to be around 377 million, the United Nations Department of Economic & Social Affairs (UNDESA), World Urbanisation Prospects - 2018 Revision has estimated this to have grown to 461 million by 2018 and expected to touch 877 million mark by 2050. In comparison, China's urban population in 2018 was estimated to be 837 million and is expected to reach 1,092 million by 2050. In fact, for the period 2018-2050, the addition to urban population in India would be 416 million, which would be the highest for any country including China. Rapid pace of urbanisation would continue to pose many challenges for the urban planners and managers and call for quick and sustainable solutions.

## Challenge No. 1: The growth of small and medium towns

The challenge: Urban migration is happening faster in the small and medium towns (SMTs) than in the mega and other Class-I cities. During the decade 2001-2011, the number of mega cities, that is, cities with over 1 crore population, remained constant at three. However, the number of other Class-I cities, with population between 1 lakh and 1 crore, grew from 391 to 465, that is by 18.9 per cent, whereas

the number of the small and medium towns, with population less than one lakh, grew from 4,720 to 7,428, which works out to 57.4 per cent. Smaller towns grew at relatively faster pace, in number. Details are in Table-1.

Until the year 2014, there used to be programmes like IDSSMT and UIDSSMT for extending financial support for the SMTs. However, now only the Class-I cities have got the support under major programmes such as the Smart Cities Mission and the AMRUT, and there are no significant programmes from the MoHUA to

support the SMTs. This is leading to highly chaotic growth of the SMTs.

The solution: A new Urban Mission should be launched to provide a sound support to the SMTs for planned growth.

## Challenge No. 2: The unmitigated existence of slums

The challenge: Nearly 17.4% of urban Indian households lived in a slum in 2011. The population of slum dwellers increased from 52.37 million in 2001 to 65.49 million in 2011 and the number

## Growth in the number and population of cities & towns 2001-2011

Class of towns	Definition	No of Towns			Population			% share in Total Urban Population	
		2001	2011	Decadal Growth Rate (%)	2001 (Million)	2011 (Million)	Decadal Growth Rate (%)		
Mega cities (Delhi, Kolkata, Mumbai)	>1 crore	3	3	0	42.5	48.8	14.8	14.9	12.9
Other Class I cities	Between 1 lakh & 1 crore	391	465	18.9	153.8	216.1	40.5	53.8	57.3
Class II	50k to <100k	496	605	22.0	27.8	41.3	48.7	9.7	11.0
Class III	20K to <50k	1388	1905	37.2	35.2	58.2	65.5	12.2	15.4
Class IV	10k to <20k	1561	2233	43.0	19.5	31.9	63.8	6.8	8.5
Class V	5k to <10k	1041	2187	110.1	6.7	15.9	138.7	2.4	4.2
Class VI	<5k	234	498	112.8	0.7	2.0	180.1	0.2	0.5
Class II to VI	<100k	4720	7428	57.4	89.8	149.2	66.3	31.4	39.6
Total Urban Population		5161	7933	53.7	286.1	377.1	31.8	100.0	100.0

Source: Census 2001 & 2011.



of towns which reported slum dwellers increased from 1,743 to 2,613 during the same period. Out of 4,041 statutory towns and cities in the country, as many as 2,613 had existence of slum, as in 2011. As per Census 2001 & 2011, the decadal growth of slum population during 2001-2011 was 25.1 per cent.

Even though any subsequent authentic data on would become available only after completion of the Census 2021, all indications are that Decadal Growth Rate (%) there has been no worthwhile reduction in the slums or the slum population. This is happening despite the government sanctioning over 70 lakh houses for the weaker sections of the urban population under the Pradhan Mantri Awas Yojana (PMAY) during the last five years alone. Apparently, majority of slum dwellers who partake the allotment of subsidised houses, continue to live in the slums. Another possibility is that once a slum dweller family moves out, a new family moves in.

The solution: A quick survey of the allottees of the PMAY (Urban) should be undertaken and the allottees guided and facilitated to shift into the allotted houses. Simultaneously, the slum units so vacated should be demolished and the slum area redeveloped as per the approved Master Plan of the city.

### Challenge No. 3: Safe drinking water

The challenge: The Central and State governments put together have been spending thousands of crores of rupees for water supply projects annually under JnNURM, AMRUT, Smart Cities



Mission and many other programmes. Still, most cities continue to remain vulnerable to scarcity of drinking water, particularly in summers. We have seen the example of Chennai in the summer of 2019, but numerous other cities, at least in some parts, face similar situation. The solution: Recycling and reuse of wastewater hold the key to resolution of the water woes of the cities. Use of fresh water should be restricted to direct consumption for drinking, cooking, bathing and washing. Construction sector, industries and horticulture should be mandated to use recycled wastewater only. Even households should be guided and assisted to use recycled wastewater for flushing of toilets. Alongside, supply of fresh water should be subject to metering, coupled with a progressive tariff structure, at the household levels, to encourage economy in water usage.

### Challenge No. 4: Happiness

The challenge: The concept of measuring the level of happiness of the citizens of a country was introduced

by Bhutan and caught the attention of many countries and even the United Nations General Assembly (UNGA). Based on a 2011 initiative of the UNGA, the UN Sustainable Development Solutions Network has undertaken to assess the relative rankings of national happiness of the citizens of the various countries based on sample survey of the residents' ratings of their own lives. The Happiness Index of each of the 156 countries is computed based on six key variables that have been found to support well-being: income, healthy life expectancy, social support, freedom, trust and generosity. It is interesting to note that in countries like Finland, and even Pakistan, the happiness index has shown improvement, whereas it has shown a steady decline in case of India. Of course, even Bhutan, the originator of the concept, itself has shown a decline, and so has China, but the level of India was very low in 2013-2015, being 118 and has now reached a level of 140 out of 156 countries, nearly at the bottom of the ranking ladder.

The solution: There is no doubt that Government plays an important role in enhancing the feeling of happiness among the people. The income disparity in India being high, the rise in national GDP or even in the per capita GDP may not help in making people at large happy about their finances. Policies need to focus on reduction of income inequities. The other factors impacting the feeling of happiness, namely, life expectancy, social support, freedom, trust and generosity, need government intervention as well as social awareness and involvement of all the citizens. ■

Country	Report 2016 (2013 -2015 Averaged)	Report 2017 (2014-2016 Averaged)	Report 2018 (2015-2017 Averaged)	Report 2019 (2016-2018 Averaged)
Finland	5	5	1	1
USA	13	14	18	19
Pakistan	92	80	75	67
China	83	79	86	93
Bhutan	84	97	97	95
India	118	122	133	140

Source: For 2019 Report, World Happiness Report 2019; for earlier years, [https://en.wikipedia.org/wiki/World\\_Happiness\\_Report](https://en.wikipedia.org/wiki/World_Happiness_Report) (accessed 12th August 2019)

# Indian disaster management policies need greater reforms

The Indian subcontinent, every year, witness a significant loss of life and property due to disasters. Although the authorities are trying to be more vigilant about the upcoming disasters and respond more proactively, efforts are needed to further improve the situation as the loss caused is still huge. As per a report by Centre for Research on the Epidemiology of Disasters (CRED) released in January 2019, in India alone 1388 deaths were reported and 23,900,348 people were affected in 2018. This questions our preparation for disaster mitigation. Therefore, India needs to strengthen the existing policies to prevent further damage and Japan could be a lighthouse to help us strengthen our disaster management policy framework and its efficient and timely execution

**Adarsh Som**

Senior Reporter

**M**onsoon has arrived in the Indian subcontinent pouring with all its might causing damage to property and life throughout the country, reflecting our under-preparedness for disasters. As per the data from Assam Disaster Management Authority more than 200 people died and 400 villages in 28 districts of Assam were affected by floods. Similar is the situation in Bihar where the death toll reached 123 with over 8.1 million

people affected in 12 districts. In October last year, Cyclone 'Titli' killed eight in the state of Andhra Pradesh and caused huge damage to property. Odisha successfully prevented loss of any life. But, to retain 'no life loss', governments of states need to fasten their seatbelts and focus on improving the disaster management policies and their timely execution.

Despite the fact that floods, cyclones and landslides are frequent in India and every year cause significant damage to property and life, the authorities fail to implement disaster mitigation measures in an appropriate manner. Probably, lack of strong policy framework and loopholes in its

implementation is the reason.

Geo-climatic conditions and socio-economic vulnerability of India makes it one of the most disaster prone countries. According to a report by National Institute of Disaster Management (NIDM) and Forest Research Institute (FRI), – 59 per cent area is prone to earthquakes, 28 per cent to droughts, 25 per cent to landslides, 12 per cent to floods, 8 per cent to cyclones and 50 per cent of the forest area is prone to forest fires. A World Bank report released in 2017 noted that the impact of extreme natural disasters was equivalent to \$520 billion of global loss in annual consumption and forces some 26 million people into poverty each year. There is a need for countries around the world to step-up appropriate disaster mitigation measures to minimize the loss of property and life. India has a dedicated disaster management force at central and state levels, as well as effective disaster management policies. However, delayed response, inappropriate implementation of the plans and policies, and inadequate technological capacity for accurate prediction and measurement of the disaster result in large scale damage. Therefore, the country needs to look at examples for better implementation



*Heavy rainfall and landslide damaged road in Uttarakhand*

of the policies. And, there is a lot to learn from the Japanese expertise in emergency preparedness and response at national and local levels.

### Japanese expertise to learn from

Japan has always been susceptible to typhoons. The country is home to more than 100 active volcanoes and around 20 per cent of the world's earthquakes of magnitude over six. However, even after being highly vulnerable to such calamities, the number of deaths has always been on the lower end of the table as compared to the other countries. It is evident that the country has efficiently implemented disaster mitigation policies and course of action, and a country like India, prone to many natural disasters, must look to Japan to improve its disaster mitigation strategies and implement effective policies.

Japan is arguably a world leader in disaster management. The country has some effective policy initiatives to manage disasters such as Hyogo Framework for Action (2005-2015), Sendai Framework for Disaster Risk Reduction (2015-2030) and the concept of 'Build Back Better'. The island country has developed some of the most advanced earthquake early warning systems. Also, the roadmap prepared with policies includes role of public, private and educational bodies. Emergency drills organised by public and private organisations, awareness among people on various safety measures for disasters and a strong emphasis given to disaster management training in schools, make saving lives successful during disasters.

Japan boasts of sophisticated tsunami warning systems which are quite accurate in measuring the height, speed, location, and arrival time of the tsunami. Also, the system regularly monitors seismic activity along the coasts. The country has taken various protective measures against tsunamis. Along the east coast, where tsunamis are frequent, the authorities have built floodgates and tsunami walls to prevent

## Typhoon Noru – A lighthouse example

Japan was hit by Typhoon Noru on July 8, 2017. The typhoon with winds moving at a speed of over 120 kmph made the landfall bringing heavy rains to the Kinki and Hokuriku regions resulting in flooding. As per a report released by the Japan Times, the Japanese government issued evacuation orders to tens of thousands of people in Shikoku and 280 flights were cancelled. After the typhoon made landfall, two deaths were reported and since then no further casualties were reported. According to Fire and Disaster Management, three people were injured in the neighboring Miyazaki Prefecture.

Japan's preparation, sophisticated equipment for measuring and predicting disasters, and strong disaster management policies coupled with effective implementation of the disaster management plan brought down death toll and loss to property.

Japan, even after being smaller in geographical area and population as compared to India, is way ahead in disaster management and mitigation. The island country can act as a lighthouse for the Indian subcontinent for improving our disaster management policy framework, disaster response, and measures for disaster risk reduction. Also, there is an urgent need to educate and make aware the citizens across the nation, especially those residing in disaster prone areas, about safety measures to be followed at the time of disasters. It must be mandatory for schools, colleges, societies, and public and private organizations to conduct regular safety drills and sessions on disaster management and safety.

flooding. The country's excellence lies in its policy framework and disaster mitigation measures implemented. Japan has a Basic Disaster Management Plan which is the master plan and a basis for execution of disaster risk reduction activities in the island country. At various levels, from the Government to municipal corporations or civic authorities, different plans are

drafted as per their duties based on the master plan. Disaster Management Operational Plan is the plan formed by the Government and Local Disaster Management Plan is what the civic authorities develop. The division of labor on the basis of capacity for implementing disaster risk reduction measures makes the functioning of the authorities easier and effective. ■



# Delhi revives depleting wetlands

Wetlands are essential for groundwater recharge, collection of essential nutrients from water runoffs, and prevention of soil erosion. Despite such importance, wetlands in India are depleting. The depletion of wetlands poses a threat of water scarcity across the nation. However, some cities are taking this issue seriously. Delhi Jal Board, Irrigation and Flood Control Department and other authorities in the national capital came up with a feasible solution to recharge ground water by reviving wetlands and transforming them into natural STPs

**Akshit Pushkarna**  
Editorial Intern

**D**elhi has seen unprecedented expansion and this gradual rise in population has led to an even greater burden on the natural resources of the city. The gap in the city's water demand and supply resulted in people resorting to groundwater extraction using borewells. A Central Groundwater Board (CGWB) report stated that the groundwater levels in more than 15 per cent of Delhi's areas are now alarming, below 40 meters. With minimal focus on replenishing groundwater levels, Delhi is on the verge of a severe water crisis..

In order to avoid this, Delhi Jal Board (DJB), on December 24, 2018, announced that the water authority would be rejuvenating 159 natural wetlands across the city.

## Why are wetlands the way forward

Wetlands worldwide have a reputation of being "Nature's Kidneys" as they essentially remove polluting nutrients and sediments from surface and groundwater. These natural structures, when spread out, reduce soil erosion. Another interesting observation one can make is how wetlands are essentially mini-ecosystems on their own. Plants and aquatic life thrives in abundance in these settings and these species are instrumental in purifying the water which then recharges the groundwater reserves. As sediment,

excess nutrients and chemicals flow off the land and wetlands filter the runoff before it reaches open water. Nutrients are stored and absorbed by plants or microorganisms. Groundwater recharge occurs through mineral soils found primarily around the edges of wetlands. Wetlands demonstrate high water volume restoration rate, which means that a smaller wetland can affect a greater area. Researchers have discovered groundwater recharge of up to 20 per cent of wetland volume per season.

## Current state of Wetlands

Wetlands are threatened to a great extent, according to World Wildlife Fund India (WWF-I), who report that loss of vegetation, salinization, excessive inundation, water pollution, invasive species, excessive development and road building, have all damaged the country's wetlands. For the national capital, the Delhi Climate Action Plan, published in 2009, identified 621 wetlands and most of them have dried up by 2009 and are now beyond revival. 159 of these pre-existing wetlands were identified by Delhi Jal Board (DJB) and, in December 2018, the board rolled out a ₹376 crore plan to rejuvenate these in a bid to "aid groundwater recharge and boost water reserves of the city", according to Arvind Kejriwal, Chief Minister and DJB chairperson.

Another measure that the government is planning to take is to convert the area around the lakes to public spaces. The total area of waterbodies will be 350 acres, holding 1,581 million liters. "Apart from rainwater, treated



water from STPs will be polished using natural wetlands and other methods to maintain the water levels in the waterbodies throughout the year. The step will improve depleting groundwater levels of Delhi apart from making Delhi sustainable for water supply. Excess water from the ground will be taken out to augment Delhi water supply wherever required," read a statement released by the Chief Minister.

The first of such natural sewage treatment plants (STPs), which would treat sewage water chemical-free and then supply the treated water to the wetland was set up in Bawana district near the Ghoga wetland in June, 2019. The natural STPs will be maintained by the Irrigation and Flood Control (I & FC) Department. A similar establishment had been made in Rajokri in late 2018, but it was at a smaller level.

## Bawana's natural STP

The plant derives sewage from the Ghoga drains, treats it and then uses the treated water to rejuvenate the Ghoga wetland. Authorities are reckoning that the pilot project has turned out to be a success and the state government is planning to add at least 16 more STPs

## THE DELHI CLIMATE ACTION PLAN, PUBLISHED IN 2009, IDENTIFIED 621 WETLANDS AND MOST OF THEM HAVE DRIED UP BY 2009 AND ARE NOW BEYOND REVIVAL. 159 OF THESE PRE-EXISTING WETLANDS WERE IDENTIFIED BY DELHI JAL BOARD AND, IN DECEMBER 2018, DJB ROLLED OUT A ₹376 CRORE PLAN TO REJUVENATE THESE IN A BID TO AID GROUNDWATER RECHARGE AND BOOST WATER RESERVES

in the city to treat the unchecked waste water of the city.

### ◆ Operation

The STP is 300 meters long and 5 meters wide. Sewage is routed from Ghoga drain and is led into a sedimentation tank where it is stagnated for some time for effective sedimentation of larger solid particles. As the sewage flows through it slowly, the heavy solid

waste particles gradually sink to the bottom. This phase of the treatment is called the Primary Phase.

For the Secondary treatment, the waste water is further directed to multiple chambers where water flows through beds of pebbles of various sizes. Four chambers, separated by screens, house various types of flowers and small microbes which utilize minute organic impurities that cannot

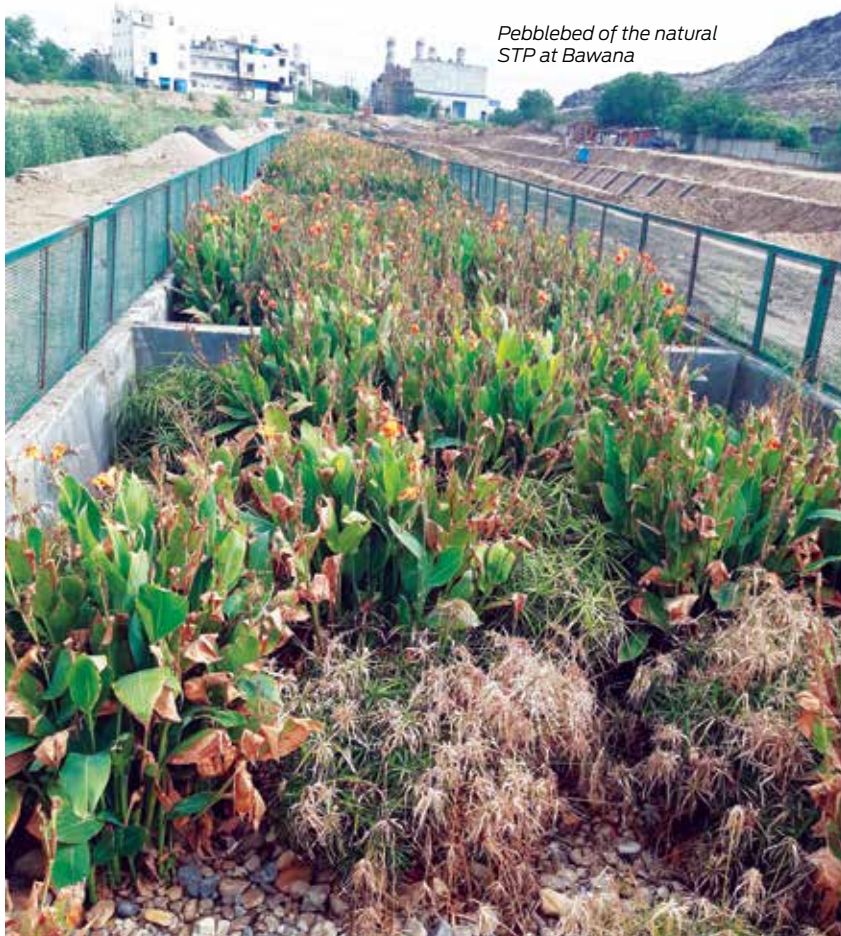
be separated from the sludge by movement on the pebbles as food, converting them into carbon dioxide, water, and energy for their own growth and reproduction. The treated water is then redirected to the Ghoga wetland, which is adjacent to the STP.

### ◆ Usability of the Natural STP

Setting up and maintenance cost of such plants is comparatively lower than the traditional STPs. Mechanical devices are not used in these treatments, thus reducing the maintenance cost. The only limiting factor is the availability and the cost of land to place the treatment plants. Another aspect that requires improvement is the operational capability of the plant. The plant in Bawana can only treat 10 lakh liters of waste water, which is approximately the waste generated by 50 households in a single day. But, the STP has been successful in cleaning out the sewage of Bawana, which has been highly polluted due to industrial waste, to a sufficient degree. “While the biochemical oxygen demand (BOD) levels in a normal drain are around 220 mg/l, here it is 332 mg/l, indicating industrial waste. After the treatment, the BOD levels in the outlet water is 31 mg/l,” said a DJB official.

## Conclusion

Depleting of wetlands by encroachment or ignorance is evident all over India. Delhi gives a sliver of hope in the present scheme of things. The project may not be on a large scale but small cities and towns can surely take advantage of such a system because of low expenditure involved in setting up and in maintenance. Jairam Ramesh, former environment minister, stressed on its significance this year in the Rajya Sabha and said, “There is loss of wetland across the country due to various man made factors like excessive hydrological alterations, unregulated construction and haphazard urbanisation which further cause underground water depletion”. He added “despite judicial intervention, wetlands have received no due protection.” ■



*Pebblebed of the natural STP at Bawana*

# Collapse of residential building in Dongri, Mumbai: Lessons for cities

**Sudhir Krishna**

Former Secretary (UD), GoI

**F**ourteen people were killed and many more trapped after a decades-old four-storey building collapsed in South Mumbai's crowded Dongri neighbourhood in the morning of 16th July 2019. The crowded locality with narrow and winding lanes made it difficult for the National Disaster Response Force (NDRF) and the local relief agencies to track and rescue the trapped persons, which were feared to be around forty in number and included children as well. The rescue work was getting hampered also owing to the rains as well as the stream of dignitaries who made it a point to visit the place to get first hand information and offer advice to the rescue staff. The frustration of the people with the authorities was palpable and understandable. However, the response of the authorities saw a situation of passing the buck of responsibilities and blame-game among the authorities and the political parties.

## Earlier incidents

For Mumbai, this is not the first such major mishap. On April 4, 2013, as many as 74 people were killed in a building collapse in Thane city, near Mumbai. Those killed included 18 children. Besides this, nearly 60 people were reported to have been injured in the collapse. On 27th September 2013, a five-storey building had collapsed in Mazgaon area of Mumbai, and 61 people had died and 32 others were injured in the disaster. In September 2017, 33 people had died when a five-storey building collapsed

in South Mumbai's Bhendi Bazaar area. The building had already been categorised as dilapidated and was due for demolition. Nearly 20 people were injured, including those part of the rescue operations. In December 2018, an under-construction building collapsed in Mumbai's Goregaon area near the famous Azad Maidan, killing three people and injuring eight. Most of the people injured and killed were labourers who were working at the construction site.

The incidents of this nature, but often with fewer casualties, happen elsewhere in the country from time to time, but get noticed mostly in local newspapers only. The discussions usually hover around rescue operations and determination of responsibility for the mishap. The issue of identifying the root cause for the calamity, which are almost invariably man-made, escape serious examination and determined action for a sustainable framework for the future. As a result, the mishaps continue to occur.

## Reasons for collapse of buildings

On the whole, the general reasons observed for collapse of the buildings are weak structures dilapidated often due to aging, unauthorised and unsafe addition of floors or other alterations in existing buildings, usually in slums or similar congested localities, unauthorised use of residential buildings for commercial purposes etc. At times, natural calamities like earthquakes too cause such havoc.

## Case study of Mumbai

Greater Mumbai is the largest city in India and the Brihanmumbai Municipal Corporation (BMC) is among the oldest ones. The BMC is also the richest

municipality in the country. While Mumbai has gotten flak for the series of building collapses, we need to review the governance system for handling the dilapidated buildings in the City. In fact, the case study of Mumbai offers an interesting story that could be useful for all cities in designing suitable legal and administrative arrangements for handling the issue of unsafe buildings.

## The Mumbai Building Repairs and Reconstruction Board

The Bombay Rents, Hotel and Lodging House Rates Control Act 1947, popularly known as the Bombay Rent Act, had provided that the rent at which a property was last let as on September 1, 1940, would be frozen, except where there was a prior agreement between the tenant and the landlord for periodic revisions of rent. As a result, a stage was reached in most cases where rents were no longer sufficient to cover even the taxes payable for the rented properties and the landlords stopped effecting repairs to the tenanted properties leading to rapid deterioration of the buildings. Realizing the gravity of the matter, the State Legislature enacted "the Mumbai Building Repairs and Reconstruction Board Act, 1969" The Act provided for constitution of the Mumbai Building Repairs and Reconstruction Board (MBRRB) to carry out structural repairs to the old buildings to make them safe for habitation. The Act also provided for wholesale redevelopment; in case structural repairs could not improve the condition of the building, then the MBRRB could pull down the dilapidated structure and raise a new structure thereupon. The Act also empowered the BMC to impose and collect a cess on the dilapidated



buildings so as to raise resources for reconstruction/redevelopment. These buildings came to be called 'cessed buildings'. Subsequently, this Act was repealed and its salient features were incorporated in Chapter VII of the Maharashtra Housing and Area Development Act, 1976 and the MBRRB was made an adjunct organisation of the overarching MHADA Authority (MHADA) created under the Act.

### The cessed buildings

The cessed building were categorised according to the year of construction and the details in the year 1969 and as of March 2008 are as follows:

### Number of cessed buildings in Mumbai

Sr No	Category of buildings	Year of Construction	Number of cessed buildings	Number of cessed buildings as of March 2008
1.	"A"	Prior to September 1940	16,502	13360
2.	"B"	Between 1.9.1940 to 31.12.1950	1,489	1474
3.	"C"	1.1.1951 to 30.9.1969	1,651	1270
<b>TOTAL</b>			<b>19,642</b>	<b>16104</b>

Source: <https://mhada.gov.in/en/mbrr-board> (accessed 17th July 2019)

The number of the cessed buildings has not declined significantly since 2008, as a study by the Mumbai Transport Support Unit indicated that only 7% of the total number of cessed buildings in the city have been reconstructed since 1999. A report by the Comptroller & Auditor General of India observed in 2013 that out of the 19,642 cess buildings identified, the MBRRB had so far reconstructed/redeveloped only 1,482 of them. Structural repairs of 3,187 buildings though identified were not sanctioned due to fund constraints .

The cess is to be collected by the BMC and transferred to the MBRRB along with a matching contribution from the State Government and supplementary contributions from the BMC and the MHADA Authority. However there have been serious delays in transfer of funds to the MBRRB and over the years. The C&AG report of 2013 cited before had noted that as at

the end of March 2012, the arrears in collection of cess and short remittances by BMC and the state government to the MBRRB was Rs. 907.81 crore. A more recent statement from MBRRB officials indicated that the total arrears receivable by it from the BMC and the state government stood at Rs. 2,394 crore.” This has been a major reason for continuation of the existence of the dilapidated old buildings that are collapsing one after the other.

### Multiplicity of agencies

The framework for addressing the issue of repairs and reconstruction of the dilapidated cessed buildings

reconstruction of dilapidated buildings under Chapter VII of the MHAD Act, Section 102 of this Act also empowers the BMC to perform the same functions. This brings out the overlap in the first instance.

Then there is the MHADA, which has an overarching role for development of the major urban agglomerations of the state such as Aurangabad, Nagpur, Nashik, Pune, etc. The overall annual budget of MHADA for 2019-20 is Rs 8,259 crore. Of this, the share for its Mumbai Board is of the order of Rs 2,221 crore, which is almost 20 times the budget of MBRRB. However, MHADA does not share any accountability for the stressed dilapidated buildings that have not been getting due care and attention in the mega city of Mumbai.

The redevelopment and reconstruction of the dilapidated buildings such as the cessed buildings is not a mere civil construction activity. It is, in fact, a multidimensional task with impact on large number of individuals, areas and institutions. It is high time the responsibility for redevelopment and reconstruction of the dilapidated buildings is assigned wholly to the BMC. The MBRRB could be retained as a specialised agency for handling this task, but it should be brought under the folds of the BMC. This would facilitate the administrative integration of involvement of the elected representatives as well as of the zonal deputy commissioners and other officers of the BMC into management of the issues relating to reconstruction and redevelopment of the dilapidated buildings. It would also facilitate faster flow of the cess funds and other financial and technical resources from the BMC for the MBRRB activities.

Another agency that works for congested areas of Greater Mumbai is the Mumbai Slum Improvement Board (MSIB) formed by the Govt. of Maharashtra in November 1992. The mission of the MSIB is to improve the environmental living of the slum dwellers of the Mumbai City & Suburbs District. The MSIB functions under the control of the MHADA.

Even though the MBRRB is the agency especially created and empowered for





It is obvious that numerous agencies, such as the BMC, MHADA, MBRRB and MSIB are operating for handling the issue of conversion of the dilapidated buildings into safe structures. This multiplicity needs to be streamlined. It may be appreciated that of these four agencies, it is the BMC that is most suited to handle the subject. This is so because of a variety of factors. One, it is the BMC that is tasked to identify the dilapidated buildings and impose a cess for repairs, reconstruction or redevelopment of the same. Secondly,

the human resources, in the taxation as well as the engineering departments are far superior vis-à-vis MBRRB/MHADA. Thirdly, the BMC is an elected constitutional entity and the elected representatives (Councillors) can facilitate in identification of the issues in a highly effective manner. Fourthly, the BMC not only collects the cess, which is transferred to the MBRRB along with a matching contribution from the government, the BMC also provides additional financial contribution to the MBRRB for the

purpose. Lastly, the BMC functions for integrated management of all localities in the city.

### Neighbourhood plans

The dilapidated buildings are usually located in the form of clusters in certain localities and not as isolated structures hither and thither. The task of redevelopment of such set of buildings would be greatly facilitated if a “Neighbourhood plan” based approach is adopted. This approach should include redevelopment of not





only the dilapidated buildings but also the associated civic infrastructure and services of the entire neighbourhood. Such neighbourhood plans can be best prepared by BMC. Furthermore, BMC would be in the most advantageous position to prepare realistic projects for such neighbourhoods and also for integrating the same with other ongoing projects. Involvement of the elected municipal councillors would provide further reliability to such projects, besides making the same cost-effective.

### Structural audit of old buildings

The Bureau of Indian Standards (BIS) has also formulated to ensure safety of buildings for various eventualities including natural calamities, fire, etc. It is imperative that these Standards should not only be adopted in various operational manuals of the municipalities. The Model Building Byelaws (MBBL) for the municipalities, prepared and notified by the Ministry of Housing & Urban Affairs in 2016, have provided that every building that

is over 50 years old, should be subject to structural audit by registered structural safety engineers. These provisions have been duly incorporated in the building byelaws of various municipalities. However, most municipalities are not implementing this provision of MBBL effectively. As a result, the old buildings are not audited for structural safety.

The issue of structural safety of old buildings would also arise in case of retrofitting, additions or alterations to an existing structure. Unfortunately, this aspect is not receiving adequate attention in the civic regulations. Even where the byelaws/regulations of a municipality provide for such an audit, the same does not get enforced, as people proceed with the alteration without securing approval from the municipality.

This becomes a major potential cause for collapse of the old buildings. Such situations are to be handled through improved vigilance and enforcement by the local body.

### In conclusion

Housing is a fundamental need for every human being and it is good news that hardly any Indian family is now without a shelter. However, all shelters may not be structurally safe and it would be the bounded duty of the local body concerned to ensure the same. This requires policy level interventions at the level of state governments as well as management level actions at the level of the local bodies. Governments need to ensure that the multiplicity of agencies for regulating the issue of structural safety. Seeing the experience of recent past, the Municipality seems to be the most appropriate agency to handle this matter.

The municipality on its part should be equipped with adequate staff, finances and decision making powers to undertake surveys of dilapidated buildings and repairs or redevelopment of the same. With such arrangements in position, we may expect a significant reduction in the occurrence of the cases of collapse of old and dilapidated buildings that are currently becoming increasingly common. ■



# SHILLONG, MEGHALAYA

## THE ABODE IN THE CLOUDS



**Kumar Dhananjay**  
Consulting Editor

**S**hillong, as we all know, had been the capital of the whole of Assam Province that was created during the British Rule. It remained the capital of undivided Assam until the formation of the state of Meghalaya in 1972. The capital of Assam was then shifted to Dispur, a part of Guwahati, and Shillong remained capital city, now of Meghalaya.

Located around hundred kilometres from Guwahati airport, the entire journey by road is an exciting one. The moment you cross Assam border it seems nature descends on you and puts its best face forward. All along the road the scenic beauty is there to behold in all its great splendour. The hills gradually start merging. Along the route one finds small dhabas and joints which serve really tasty food. Fifteen kilometres short of Shillong is Uiam Lake. As one drives past it, one experiences the mercury dropping and there is a distinct chill in the air.

**TODAY SHILLONG HAS SOME OF THE BEST SCHOOLS, COLLEGES, UNIVERSITIES AND HOSPITALS. THE OTHER NOTABLE THING IS THAT THE CITY IS EXTREMELY CLEAN; INCLUDING THE MOST CROWDED AREA OF THE CITY. IT CERTAINLY IS TODAY ONE OF THE MOST HAPPENING PLACES IN THE NORTH-EAST**

### Scotland of the East

It is said that the climate was one of the main reasons that brought Britishers to this part long back. Once fondly called 'Scotland of the East' it was acquired by the British in 1862 from twenty five principalities ruled by Khasi kings. The city was planned carefully both for resident and English rulers as it functioned as district headquarters. As its location is strategic, military authorities also set up a cantonment in Upper Shillong. Then started the arrival of Europeans, businessmen, tea planters, etc. who came and settled here. Before India become independent this area full of forest hills and lush green fields was known as Assam Province. But later seven states were carved out, known as the seven sisters. Meghalaya means the abode of clouds, and was formed by carving out two districts from the state of Assam namely the United Khasi Hills and Jaintia Hills, and the Garo Hills in January 1972. Before attaining full statehood, Meghalaya was given semi-autonomous status in 1970; the tribal people make up the majority of Meghalaya's population.

The Khasis are the largest group in Meghalaya, followed by the Garos and others like the Jaintias, the Koch, the Boros, Hajong, Kukis, Mikir, and Nepalis. There is also a sizable population of mainland Hindus and

Sikhs. In independent India as the capital of undivided Assam the city saw exponential growth. Today it has some of the best schools, colleges, universities and hospitals. The other notable thing is that the city is extremely clean; including the most crowded area of the city. It certainly is today one of the most happening places in the North-East.

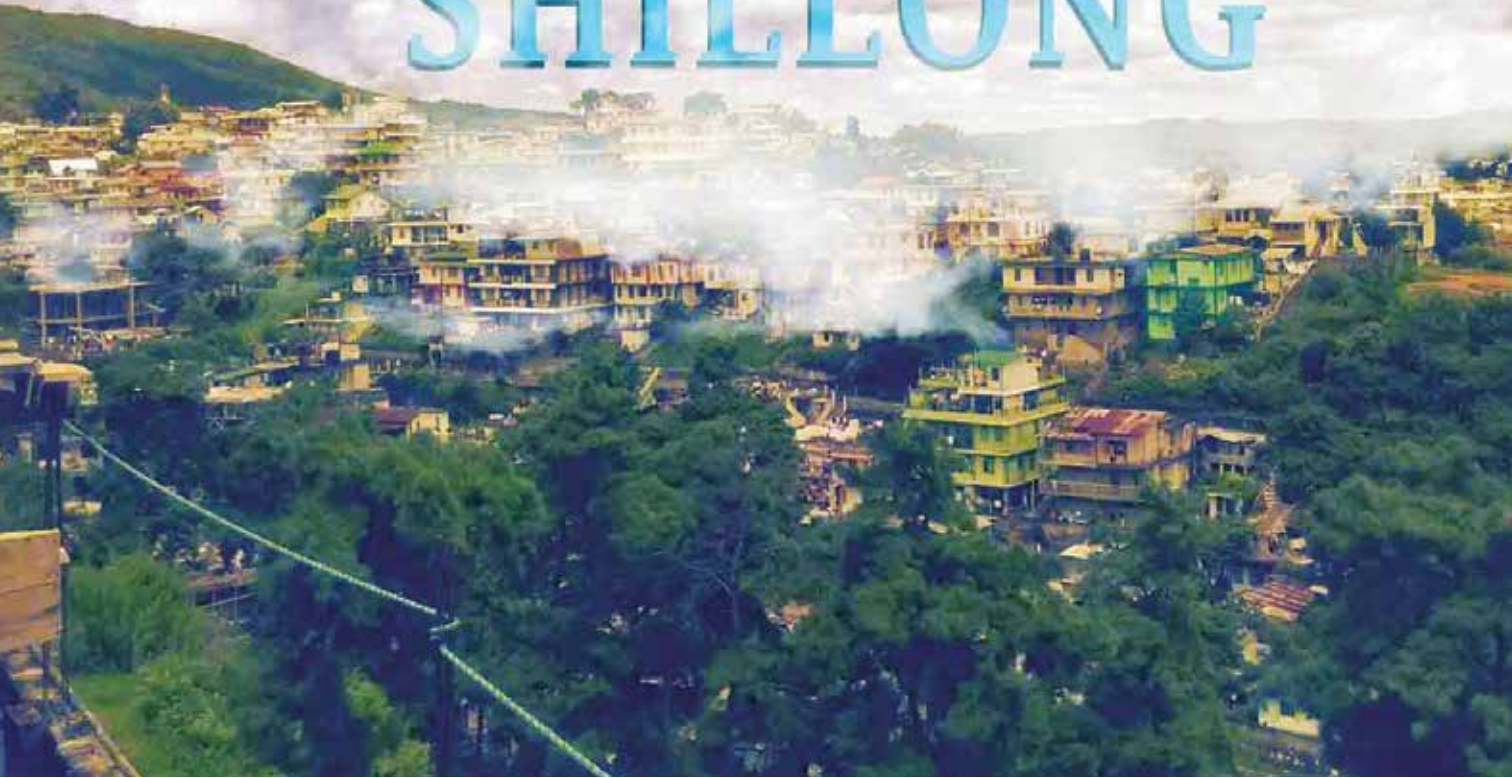
### The Police Bazar

There is plenty to look forward to while one is in Shillong. It's a walkable city but other transportation modes are also available. Taxis plying within the city charge you nominally and are also available on shared basis. Transportation is simple, hassle and haggle free unlike Delhi and other metros. But as I said it's a walkable city; you can explore it on foot as well. Police Bazar or PB as it is popularly called is a must visit. It is strategically located from where visitors find it easy to reach tourists spots. The street is packed with eateries, and restaurants offering a variety of food to satisfy your taste buds. It has a wide range of brands and chain stores. Here 'Iewduh' or local weekly market is held. Weekly markets have colourful stalls selling a wide range of local produce such as handmade knives, cotton bags, shawls, bamboo cutlery and other bamboo products at very competitive rates. There is a Government Emporium too near PB.

### Shillong Peak

Ten kilometres from the city is Shillong Peak, a picnic spot. It is located at a height of 6433 ft. above sea level. It is the highest point in the State and gives you a panoramic view of the countryside. The point also gives an opportunity to view the city's spread

# SHILLONG



from a bird's eye view. Just one rider is that the area is under the control of armed forces so one needs to take a permit to enter. But that is easily given. A walk in Ward Lake is a delightful experience. It is an artificial lake with a beautiful garden and boating facilities. The lush green carpet invites you to stretch yourself on the ground. If you are a bird watcher then it's a place of great interest for you. The other places of interest in Shillong include the Lady Hydari Park, a kilometre long park with a mini zoo, Shillong Golf Course, which is one of the largest golf courses (the world's wettest too). While the Shillong Golf Course is scenic and enjoyable, it is rather challenging too.

## Cherrapunjee: wade through the sky

A visit to Shillong is incomplete without a drive to Cherrapunjee. It's located about sixty kilometres from the

city. The drive itself is so exciting that on a rainy day one is actually wading through the clouds. It possibly is the only place in India which has just one season - Monsoon. It's also famous for its living bridges - a local technique for growing roots of trees into large bridges. The entire process takes five to ten years and these bridges last hundreds of years. If you happen to visit Cherrapunjee between May and September you can see very heavy downpour. The entire region from Shillong to Cherrapunjee is sparsely populated. The roads are almost free of traffic.

## Mawjymbuin Caves

On your way back, you must head for Mawsynram, a small village located at a distance of around 15 kilometres. This village is visited by scores of tourists every year. Here, a walk inside the Mawjymbuin Caves is an experience in

itself. Mawjymbuin Caves are famous for stalagmite whose shape is similar to that of Shiva lingam. Right outside the caves there are eateries and souvenir shops. Though North Indian food is available one must try Khasi food here.

## Elephant Falls

One of the most popular destinations, Elephant Fall is about 12 kilometres from the city. It is located in the Upper Shillong area. One has to climb down 120 steps to reach the falls also known as three step falls. There are two other waterfalls in the same region.

As a footnote, if you are interested in liquors, the prices in Meghalaya are considerably low because of low rate of taxation compared to other states. But on Sundays liquor shops remain shut as per government orders.

Even bars are not opened. But if you are enterprising you can still get a drink but for a price. ■

# A nice historical peep into geography



**Abhilash Khandekar**

Sr Journalist

**T**here is a general perception that a sizeable number of people in our society do not much like to read history as a subject as it is considered a dry topic full of statistics and dates and so on. However, geography could be relatively more interesting especially for those who like to travel and have the understanding of places far and near. But when an intelligent fusion of history and geography happens and is presented in a very highly absorbing manner by an economist, what you get is a handy book like the one I am now introducing to the readers of the Urban Update. Author Sanyal, an untrained geographer but a trained banker, has been writing on economic and environmental issues, besides urban affairs. This is his second book.

While the title of the book may suggest that it talks about the environment, or to be precise, about seven rivers, it's not really so. The book is about the brief ancient history of India's geography and covers a range of topics which are quite engaging for the lay reader. Neither very old, nor a very new book, it has been doing well because I have personally seen it in a number of personal collections of my acquaintances and friends in various cities over the last few years.

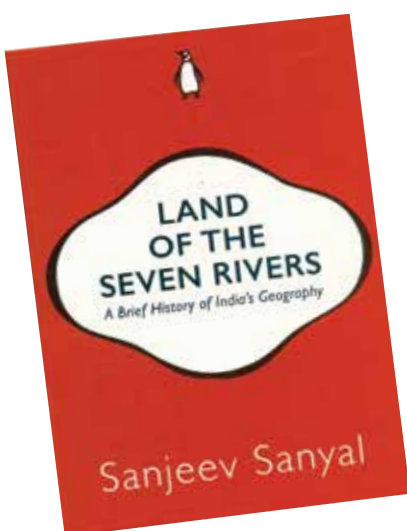
Well, what is best about his style of writing is that the content covers a truly vast historical perspective captured in a compact book making it unputdownable; that is my honest opinion of the book. It is spread over eight chapters and they do not appear to be linked to each other but in reality, they are! After a few chapters-and you don't need to read it sequentially to grasp the entire content-you realise the subtle continuity among them. Most history books, barring novels, normally follow some sort of chronology and take readers along that. Sanyal's style is informal, shares loads of knowledge, and it's racy.

Sanayal begins by saying "my love

of old maps and wildlife, my studies of urban habitats and my many travels through India and South-East Asia began to slowly fit together into a mosaic". So his brilliant mosaic paints a rather colourful picture of India's geography since some 750 million years ago and shows how India has grown over the years and what all this country has seen in terms of changes-political, social, geographic and economic. From the plate tectonics to Gir lions and Muslim and British Rule in India to the knowledge in the four Vedas and then the evolving urban history (Gondwana to Gurgaon) mentioning highways and cities, he has remarkably woven the vast and broad narrative to tell the readers a fascinating story of India, after he physically explored many a historical site himself.

For the readers of Urban Update, I would like to focus more on the urban component of this book which the author hops on and off in different chapters while simultaneously dealing with other issues and developments. Like, in the chapter the Age of Lions, he has this to offer to the readers: "By the time the Mauryan Empire was established, the second cycle of India's urbanisation had been underway for a millennium. Taxila in the north-west was not just a vibrant city but an important intellectual hub. In the east, Tamralipti was established as a major port; it is likely that Emperor Ashoka sent his son Mahindra on a mission to Sri Lanka from there. The site is located across the river from Kolkata and is not far from the port of Haldia. The name Tamralipta means 'full of copper' and may have originally been linked to export of copper goods. The port evolved into an important international trading hub in subsequent centuries.

The imperial capital of Pataliputra, of course, was the most important city in the empire. Megasthenes, the Macedonian Ambassador to



## Book

Land of the Seven Rivers

## Author

Sanjeev Sanyal

## Publisher

Penguin

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332

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Chandragupta, tells us that Pataliputra was surrounded by massive wooden palisades with 64 gates and 570 watch-towers. The city was shaped like a parallelogram 14.5 km in length and 2.5 km in breadth. Even if one does not take the numbers literally, Sanayal writes, “they imply a very large city. Towerbases and stockades found from excavations corroborate this”.

Megasthenes is quoted by the author again as saying that he had seen all the cities of the east, including Susa and Ecbatana (both located in Iran), but Pataliputra was the greatest city in the world. Unfortunately, further excavations in later days of the 20th century have become increasingly difficult as the growth of modern Patna has now covered the entire ancient site.

What was it like in a Mauryan city? Kautilya's Arthashastra has a long list of municipal laws that give us a good insight into the civic concerns of the times. For instance, there were traffic rules stating that bullock carts were not allowed to move without a driver; reckless driving was punished. Arthashastra also contains, according to the book, instructions for waste-disposal, building codes, maintenance of public spaces like parks and elaborate rules against encroachment into a neighbour's property. More curiously, there were rules (and fines) for urinating or defecating near a water reservoir, a temple or a royal palace.

Author Sanayal wonders why today's Indian cities do not enforce the ancient example. But I must make it clear for the readers here that this book was written before the Narendra Modi era and the massive cleanliness drive that was launched across India in 2015-16 to make cities and villages clean. How clean have they become may be debatable but a laudable political effort had surely been launched from the top. Yet, what he says about the Mauryan period is important in today's times when large Indian cities appear to be in a shambles and victims of lawlessness.

There are some important old maps provided in the book which definitely add value to the already rich text.

Reading a geographic map in a given old context is also an art, I feel.

In the course of discussing the history and urban life during the Mauryan times, the author refers to two important imperial highways of the time-Taxila to Port of Tamralipti in Bengal, once known as Uttara Path that had already existed for a thousand years. The other one was Dakshina Path, the trajectory of which had shifted somewhat eastwards since the Iron Age. Underlining their importance, he says they had helped the economy flourish. He refers to towns like Vidisha, Paithan (Aurangabad in Maharashtra) and Ujjain from where the shifted highway may have passed through in the Iron Age.

Elsewhere, the author takes us to Dholavira, situated on an island in the strange salt-marsh landscape of the Rann of Kutch. Sanjeev Sanayal considers it to be one of the best examples of a large Harappan urban centre and describes the unique features of the city which had a big citadel, among other things. He adds that excavations proved that there were slums in those days also but the urban authorities of Dholavira, an otherwise well planned city, expanded the city limits to accommodate slums and imposed Harappan municipal orders on them for better living conditions. And this was, mind you, 2600 BC around the year the region received the worst-ever earthquake.

The author, while talking about early cities and urban settlements, also touches upon rivers such as Ghaggar, Saraswati (long extinct now), Sutlej, Yamuna and of course Ganga and Indus in different contexts and concludes that the tectonic shifts affected the river course over the centuries. Ghaggar was reported to have dried up during the Harappan times and as per the author many “carefully managed cities” around the rivers then, witnessed migration and disintegration due to the rivers drying up.

Towards the end of the book the author writes “The history of India's geography and civilisation reminds us

of the insignificance of each generation in the vastness of time. The greatest of India's monarchs and thinkers too felt it. So they left their stories and thoughts in ballads, folk-tales, epics and inscriptions. Even if these memories are not always literally true, what matters is that they carry on the essence of India's civilisation. On the island of Mauritius, the descendants of Indian immigrants have transferred their memories of the river Ganga to a lake, Ganga Talao that they now hold as sacred. A very long time ago, their distant ancestors would have similarly transferred the memory of the Saraswati to the Ganga.

In the same chapter “The Contours of Modern India” there is an interesting observation that links the past to the present. It goes like this ‘We live in a time of massive change-mass urbanisation, climate change, globalisation, and a shifting global order. India has seen all this before, but the human inability to learn from the past is sometimes astounding.’ I write these lines in Varanasi, the author informs, ‘as I watch the evening ‘aarati’ on the ancient ghats along the Ganga. The priests chant glories of the great river and seek her blessings, but the river is clearly dying from the assaults of human interference and thoughtless civil engineering. Perhaps the Harappans chanted hymns extolling the glories of the Saraswati as they impotently watched the river dry up. Perhaps they desperately invoked Indra to break the dams and let the waters flow again’.

Geography is just not about the physical terrain, but also about the meaning that we attribute to it. Thus, the Saraswati flows, invisibly, at Allahabad...there ends the book. Leaving us wondering all over again what have we done to our rich past, the glorious civilisation and free flowing rivers. ■

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*[The author is a senior journalist and writes about politics, environment and urban issues. He can be contacted on Twitter @Abhikhandekar1 and on his mail kabhilash59@gmail.com]*

# Sweden leading the way in renewable energy sector



**Ashok Wankhade**  
Managing Editor

The world looks forward to renewable energy as a solution to mitigate effects of climate change. Leading multilateral organisations like United Nations, World Bank, and more have emphasised on adoption of renewable energy to fulfill countries' energy requirements and reduce the carbon footprint, greenhouse gas emissions and intensity of climate change effects. Sweden is one country that has taken a lead in generating renewable energy by adopting effective green policies

**C**limate change is no longer an environmental threat in future, it is impacting environment today. Every country is now pushing up their efforts to implement eco-friendly and sustainable practices in their functioning to control their emissions. And one of such good practices is adoption of renewable energy. Renewable energy solutions have proven its significance in mitigating climate change. Due to heavy dependence on fossil fuels in industries, greenhouse emissions have increased drastically and this has been one of the major reasons behind climate change. Therefore, adoption of renewable energy can turn out as a supportive step towards Paris Agreement and also towards Sustainable Development Goals (SDGs).

In the renewable energy segment, Sweden is a leading player. In 1990, the country had 33 per cent of power share of the total power consumption from renewable sources. Whereas, in 2016 the same went ahead with 54 per cent share of renewable energy. Sweden worked to develop renewable energy to the extent that in 2012 the country achieved its 50 per cent renewable energy goal which was set for the year 2020. And, now it has set a target to achieve 100 per cent renewable energy production by 2040.

Sweden's effective policy framework on energy consumption has structured the functioning of the nation in a sustainable and environment-friendlier manner. The Government of Sweden has been taking solid steps to promote green energy. And, one such example is providing green electricity certification. To qualify for the green electricity certification, the electricity must be sourced from wind, solar, geo-thermal or wave power, biofuels, or small scale hydroelectric plants. Power companies and electricity retailers are required to buy a proportion of green electricity

as a part of their normal supply, whereas, the power producers will receive certification for the renewable electricity they generate.

Sweden has also fine-tuned its energy sector in an efficient manner. According to International Energy Agency (IEA), an average American releases four times as much carbon dioxide per year into the atmosphere as the average Swede. The reason behind low levels of emissions in Sweden is 80 per cent of the power generation in the country is from nuclear and hydropower sources. Presently, Sweden has three nuclear power plants feeding a significant amount of power to the nation with its eight nuclear reactors that are operational for commercial use. Wind as a source contributes around 11 per cent of the energy and thermal power plants, most of which are powered by biofuels, accounts for nine per cent of the power.

The European country also boasts of being a world leader in generating energy from waste. Around 49 per cent of household waste is recycled and almost 50 per cent of the waste is incinerated in the waste to energy plants for generating power.

Norway and Sweden, in 2012, came together in a joint agreement to increase the production of renewable energy by 28.4 terrawatt hours by 2020. Markus Selin, analyst at the Swedish Energy Agency, told the World Economic Forum, "After the decision on the increase in ambition was reached, a lot of investment decisions have been taken and many wind turbines are set to be completed in the upcoming years".

The European country stands out as an example to many developing and even developed countries in the renewable energy segment. And, steps taken by Sweden to counter effects of climate change clearly shows the path to other countries to achieve Paris Agreement goals and United Nations' SDGs. ■

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Setting The Agenda For Tomorrow's Cities



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railways



1,000 E-buses are  
not sufficient,  
states plan to  
increase the

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