ORF

IDC HERZLIYA

School of Sustainability
Founded by Israel Corp.,
ICL & ORL

ENVISIONING THE POST–PANDEMIC METROPOLIS

PERSPECTIVES AND LEARNINGS FROM MUMBAI AND TEL AVIV

Edited by

Sayli Udas-Mankikar, Nathan Marom, Dhaval Desai and Tamar Akov

ABOUT THE REPORT

On 6 April 2021, the Observer Research Foundation (ORF), Mumbai, India, and the School of Sustainability, Interdisciplinary Center (IDC), Herzliya, Israel, hosted a virtual conference titled "Envisioning the Post-Pandemic Metropolis: Perspectives and Learning From Mumbai, India, and Tel Aviv, Israel". The conference grew out of the sense that both metropolitan regions were on the front line of the response to the pandemic, which has forced them to innovate and implement new urban plans, and, as a result, had much to contribute to building a post-pandemic world.

The conference explored the physical, social and economic shifts brought about by COVID-19 through the experiences of Mumbai and Tel Aviv. Both metropolises have had to adapt to the COVID-19 pandemic-induced

health and socioeconomic crises and are creating new paradigms towards urban resilience, which may be growing out of local contexts but are nevertheless globally applicable.

The conference focused on four themes—health and technology, socioeconomic inclusion, the built-environment, and the climate emergency—that impact metropolitan resilience. Experts from India and Israel explored how post-pandemic metropolises, particularly Mumbai and Tel Aviv, are building back better, and creating more resilient and sustainable communities.

This report is a reproduction of the deliberations, with some insights, learnings and perspectives on the way ahead for all global cities, including two original pieces of writing (by Ramanath Jha and Nathan Marom).

SOCIAL INCLUSION AND PLANNING IN POST-PANDEMIC CITIES

Ramanath Jha
Distinguished Fellow, ORF Mumbai

It is over a year since the COVID-19 pandemic struck India. The national, state and local administrations worked hard to control the spread of the pandemic, and by December 2020, it looked like the worst was over. This was a remarkable achievement, particularly in dense cities, such as the 'megapolis' Mumbai.

But a second wave of the pandemic has gripped India once again. Maharashtra, the state with the largest urban population, is among the worst hit and has had to impose a statewide restrictions on many activities, but, in a welcome move, some economic activities involving informal workers have been allowed to continue.

Several measures taken to mitigate the impact of COVID-19 during the first wave, such as the lockdown, ended up being harsher on the poor who live in dense areas and are, as a result, more susceptible to the virus due to compromised hygiene. But in Mumbai, the middle class appears to have been the hardest hit[1] by COVID-19. Higher levels of immunity[2] among the poor seems to have worked in their favour.

---

[1] Dhwani Pandya and Ashutosh Joshi, "Covid has hit Mumbai's urban affluent the most", *The Print*, 24 April 2021, https://theprint.in/india/covid-has-hit-mumbais-urban-affluent-the-most/645090/

[2] Hannah Ellis-Peterson and Shaikh Azizur Rahman, "'We are very afraid': Scarmble to contain coronavirus in Mumbai slum", *The Guardian*, 7 April 2020, https://www.theguardian.com/world/2020/apr/07/we-are-very-afraid-scramble-contain-coronavirus-mumbai-slum-dharavi

Nevertheless, the forced loss of livelihood due to lockdowns and other pandemic-mitigation measures led many to the brink of survival. When the nationwide lockdown was announced last year, thousands of migrants left the cities on foot to return to their hometowns, some hundreds of kilometres away, in the absence of any relief initiatives.

The pandemic has also exposed many other urban vulnerabilities in terms of health, education, transportation, and hospitality. Cities, with the country's best health infrastructure, were fragile even before the onslaught of the pandemic. Existing medical and testing facilities were inadequate to combat the rampaging contagion. Schools and colleges were shut, and exams cancelled or postponed. Online schooling infrastructure was found wanting. Public transport capacities were reduced. Restaurants and non-essential shops were ordered shut or only allowed to do home deliveries. But these are not long-term solutions. COVID-19 has necessitated fresh strategies in these and other areas, which will need to be central to post-pandemic urban planning.

While the usual macro planning benchmarks—economic planning (central to the idea of urbanisation), environmental planning and quality of life—will continue to be important, the currently-weak social inclusion aspect will need to be strengthened. City planners must also prepare plans for normal times and for during health emergencies. Demography must take prominence in the future planning of cities. The pandemic has shown that the densities in Indian cities can be dangerous. The neglect of the poor in terms of housing (forcing to live in subhuman slum conditions) may also prove perilous in times of crises. Affordable housing and rental housing must be prioritised.

Cities must also realise that although significant, the formal economy is only a small part of the overall urban economy. Urban areas must mainstream the requirements of the informal economy in the planning process. A greater quantum of land allocation for the informal economy—small businesses, family-based enterprises, businesses supporting formal production and vendors—should be integrated in the planned city. One way to guarantee social inclusion is to prepare a set of inclusivity issues and check every city policy to ensure the issues have been factored in.

Cities must also have better public health facilities. Urban local bodies have invested greater amounts of money on physical infrastructure like roads and flyovers and little on primary healthcare, despite it being their obligatory responsibility to do so. This status quo must change. Cities must also make better use of technology in education and conceptualise fresh strategies to conduct examinations so that students do not lose out on opportunities.

The urban transport systems must also be strengthened. In the event of medical crises, trains and buses can operate on for long distances with the appropriate capacity. For shorter distances, bicycles could be the preferred option, while cars and other personalised vehicles should be discouraged.

Restaurants and retail shopping must be allowed where distancing can be maintained. Governments should incentivise and promote online shopping and home delivery services.

Pandemics do not permit cities to carry on business as usual. Cities are known as centres of innovation, talent and ingenuity. Now is the time to live up to this fame.

THE PANDEMIC AND THE METROPOLIS

Nathan Marom
Senior Lecturer, School of Sustainability, IDC Herzliya

The COVID-19 pandemic has fundamentally impacted cities and metropolitan regions; it has upheaved lives and livelihoods, transformed urban spaces, shifted social and economic structures, and disrupted policies, institutions, businesses, and politics. COVID-19 is inherently interlinked with urbanisation and with "urbanism as a way of life," which, as Louis Wirth remarked,[1] stretches from city centers, through suburbs, smaller towns and peri-urban areas all the way to rural hinterlands. From the probable origins of the virus in the peri-urban interfaces of human settlements and natural habitats, where rapid urbanisation disrupts biodiversity, through its "ground zero" in the Chinese megacity of Wuhan where the first mass lockdown of a vast metropolitan region took place, and its rapid worldwide dissemination via "gateway" global cities in the US and Europe, the pandemic spread through the urban sphere to almost every town, suburb, and rural area around the world. These aspects of COVID-19 have also created debates[2] on whether the pandemic signals the unexpected demise of large, dense cities and the revalidation of suburbanisation and sprawl, alongside a possible return to

---

[1]   Louis Wirth, ed., "Urbanism as a Way of Life," American Journal of Sociology (1938): 189-197, https://www.uc.edu/cdc/urban_database/fall03-readings/urbanism_as_a_way.pdf

[2] Shima Hamidi, Sadegh Sabouri and Reid Ewing, "Does Density Aggravate the COVID-19 Pandemic?" Journal of the American Planning Association vol. 86, issue 4 (2020), https://www.tandfonline.com/doi/full/10.1080/01944363.2020.1777891

rural and rustic living—or whether cities would once again prove their resilience[3] and reinvent themselves for the post-pandemic age. Yet, the pandemic and its effects are unlikely to reverse the powerful urbanisation trends of the 'urban century'. It will, however, influence urban spaces, communities, economies, and policies, and require rethinking old practices regarding density, sprawl, housing, transit, sustainability and more.

The unequal urban and social impacts of COVID-19

As the pandemic ravaged cities all over the world, the picture that emerged was of the uneven spread and impacts within metropolitan areas. It hit hardest the poorer, underserved communities and exposed to greater risk the essential workers who keep cities running. As more epidemiological data was collected, it became evident that COVID-19 could be seen as a "syndemic",[4] characterised by interactions between biological and social conditions that increase the vulnerability of older residents, people living in poverty, racial and ethnic minorities, migrants and the like. Moreover, such population often reside in neighbourhoods that suffer from inadequate housing conditions and air pollution. Communities that have long endured urban inequality and environmental injustice have suffered higher morbidity and

mortality rates.[5] This highlights the critical role that urban space plays in health inequities and how COVID-19 aligned with "preexisting conditions" of urban poverty and inequality.

Fragmented metropolitan governance and urban resilience

These uneven urban impacts of COVID-19 require focus on political institutions and governance arrangements that account for unequal power relations and political dependencies. Indeed, municipalities within the same metropolitan region—be it Mumbai or Tel Aviv—have had to deal with COVID-19 under different epidemiological conditions, with unequal resources and capacities. Most metropolitan regions involve substantial socio-economic, health, environmental, and political disparities between core cities, commuter suburbs, middle- and low-income satellite towns, and peri-urban and rural settlements. Without overarching metropolitan governance structures, the impacts of COVID-19 interact with these existing disparities complicates the possibility for coordinated responses. While national governments play a key role in countering pandemics, the relationship between localities and the state is also variegated, granting cities different degrees of access to government resources, creating different levels of trust and compliance.

---

[3] Richard Florida et al., "Cities in a Post-COVID World," Papers in Evolutionary Economic Geography (PEEG) 2041 (2020), https://ideas.repec.org/p/egu/wpaper/2041.html.

[4] Richard Horton, "Offline: COVID-19 is not a pandemic," The Lancet vol. 396, issue 10255 (26 September 2020), https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)32000-6/fulltext.

[5] "PHE Strategy 2020 to 2025," Public Health England, 10 September 2019, https://www.gov.uk/government/publications/phe-strategy-2020-to-2025.

In Israel, the urban-political character of cities and their trust (or lack thereof) of national authorities were the main variables[6] explaining COVID-19 incidence across localities, overshadowing physical density as its direct cause. For example, the oorthodox city Bene Beraq in the Tel Aviv metropolitan region (where most men shun mandatory military service) handed over its COVID-19 operations to the Israeli Defense Forces' Home Front Command; whereas the Tel Aviv-Jaffa municipality adapted its new resilience plan—designed through the 100 Resilient Cities network—and independently delivered a competent volunteering operation to support its vulnerable citizens. Such divergent responses in the context of fragmented metropolitan governance highlight the growing policy concerns with implementing urban resilience at scale in the face of challenges, chiefly the climate crisis.

Towards post-pandemic metropolitics

Against a burgeoning field of research on 'corona and the city'—which usually addresses the 'city' as a 'container' rather than an administrative construction—it is important to stress the obvious: the effects of COVID-19 do not stop within municipal boundaries. Rather, they spread through multiple scales, spaces, and publics—beginning with the local street as the space of everyday encounters, the neighborhood as community space, public spaces that enable political manifestations, urban space as an unequal social terrain and the city itself as key political actor (among others), all the way to the metropolitan region, an encompassing landscape of political cooperation and contention. Indeed, from a resilience perspective, the metropolitan region should therefore be given policy priority to the degree that it enfolds all the other scales and processes. A post-pandemic metropolis is likely to bring with it new social, economic, and political challenges but also encompass possibilities for new political agendas and enhanced resilience.

---

[6] Nir Barak, Udi Sommer and Nir Mualam, "Political Environment Aspects of COVID-19: Political Urban Attributes, Density and Compliance," SSRN (25 September 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3698311

הפניקס

RESETTING AND RECOVERING METROPOLITAN REGIONS

Metropolises around the globe host large populations in high densities. They create economic opportunities and innovation alongside a range of challenges and vulnerabilities. The COVID-19 pandemic has exposed multiple shortcomings in how metropolitan regions are planned and managed. Metropolises thus require renewed, adaptive and holistic approaches for resetting long-held paradigms, remediating present pressures, and building resilience for the future.

In this section, the chiefs of metropolitan planning in Mumbai and Tel Aviv list out the key priorities that metropolises need to address amid the pandemic, and to account for the larger goals of resilience and sustainability. They highlight new paradigms that can guide metropolises to ensure greater inclusivity and accountability.

EMBRACING GREEN MOBILITY IN POST-PANDEMIC MUMBAI

RA Rajeev
Metropolitan Commissioner, Mumbai
Metropolitan Regional Development Authority

There has been no greater disruptor than COVID-19. The COVID-19 pandemic has caused disruptions across the four sectoral pillars of the natural environment, public health, social inclusivity, and transport-realty trends. The second wave, which we were in denial of, has come with a vengeance.

The most discernable of changes brought about by the lockdown in 2020 were related to improvements in air and water quality. The restriction of vehicular movement resulted in a reduction of carbon emissions. Reduced cars on the roads meant better air quality for everyone. This is one positive aspect of the pandemic that we should capitalise on.

Yet, at the same time, the pandemic has adversely impacted public transportation. Mumbai is a public transport-oriented city, with up to 80 percent of the urban population dependent on public transport modes. Our transport systems, including the suburban rail, metro, monorail and even bus services, were curtailed. Social distancing measures and fear of contracting the virus resulted in a significant drop in the number of commuters. This led to a sharp increase in the sale of private cars and two-wheelers in the past year. This trend might impact public transport further, but we are not disheartened. We are doubling up our public transport infrastructure capacity where 120,000 people will be able to travel in the metro over the next four or five years. We are consciously working to resolve the challenges such as social distancing and hygiene.

The MMRDA is creating a 337-kilometer-long metro network, work for which is underway. We are also building the trans-harbour link, the longest sea bridge in the country, which will soon be ready. We are committed to the metro rail's multimodal integration with non-motorised transport like cycling and walking, the use of which grew during the pandemic.

The 'work from home' concept widely embraced by business entities during the lockdown has certain limitations. Therefore, urban planners are now exploring the concept of 'walk to work'. This entails creating shared workspaces at walking distances from homes. Mumbai is soon going to see several cycle tracks and walkable street networks, which are at various levels of planning and implementation. These will lend practical weight to a more prepared, safe, and environmentally friendly Mumbai metropolis.

The pandemic has affected the entire population regardless of their financial status. However, those on the lower economic tiers of urban

agglomerations have faced exclusion. Most people migrate to urban centres in pursuit of employment, but when they lose their jobs and livelihood, looking after them becomes the government's responsibility. The MMRDA took timely steps to look after the migrant workforce and ensure that they were provided regular meals and stipends. These decisions were necessary to prevent workforce loss and ensure work continued at the ongoing development projects in the city.

The biggest lesson learnt in terms of management and governance was switching to digital methods and adapting to an efficient work-from-home system. Pandemic management entailed shifting to online interfaces. In our experience, decision-making processes, project monitoring and execution improved using digital interfaces, whilst the gradual return to the workplace continued slowly with maximum precautions with respect to contact, hygiene and sanitation. This led to increased efficiency. The Smart Cities Mission

programme got a great impetus during the pandemic, as digital tools were used more effectively by most of the mission cities as part of their pandemic control strategy.

Urban local bodies must put maximum effort and investments specifically in the health sector to improve livability. For instance, we were tasked to construct a temporary 1,000-bed capacity hospital in 14-days, and we could achieve the target despite most manufacturing units and procurement offices being shut across the nation. Subsequently, we established another hospital of over 200 ICU beds with ventilators. The state government's decision to retain these hospitals has proven useful during the second wave. The MMRDA is primarily a physical infrastructure provider, and executing health facilities was a new experience. This has made us realise the importance of stakeholder consultation for fulfilling requirements beyond our core expertise. Citizens and NGOs played a key role on this front.

PREPARING FOR THE URBAN NEW NORMAL

Dalit Zilber
General Manager,
Israel Planning Administration

The COVID-19 crisis gripped Israel in early March 2020. Tight restrictions were put on public gatherings. Workforce in both public and private sector offices was reduced to 30 percent of the total. About a week later, the government declared a travel ban beyond 100 meters from one's home. Beginning April 2020, Israel was put under complete lockdown.

The rapid escalation of cases posed multiple challenges for Israel's planning system. We had to quickly rethink our strategy to cater to the immediate needs of the people. Ensuring the well-being of the frontline employees and their families was priority.

The pandemic has made us unlearn traditional concepts of spatial planning and development. It has forced us to rethink the way we have designed and used our cities, towns, regions and even individual homes.

Construction sector: The government accorded 'essential' status to the construction sector. It ensured that all planning committees and bureaus worked at full capacity. On 23 March, Israel's planning administration published protocols regulating national and district planning and facilitating discussions and decision-making through remote connections. The objective was to continue unhindered national infrastructure projects such as the light rail metro, power plants and the construction of thousands of planned housing units.

Deadlines for projects were extended and virtual deliberations among all planning institutions were formalised under a new law enacted by the Israeli parliament. This ensured that all parties received proper instructions and access to materials, and that the sudden change in work styles did not derail existing procedures. This facilitated coordination and decision-making across multidisciplinary institutions and allowed activities to continue seamlessly.

One of our biggest achievements was fast-tracking approvals for 100,000 housing units. Empty streets during the lockdown helped to speed up other infrastructure projects too, especially rail electrification and construction of light rail lines.

Setting new paradigms for spatial development: The lockdown halted most individual and social urban activities. During the early days of the pandemic, we initiated a multi-stakeholder campaign to identify the potential long-term impacts of the outbreak on spatial development of our cities. A nation-wide consultation forum comprising 100 participants, including representatives of central ministries, local authorities, private firms, NGOs and academia was established. The forum was given access to an online project management platform, where members shared their feedback and uploaded background research.

A comprehensive report prepared from these crowd-sourced inputs mapped opportunities and risks and identified priority action items. The process helped us identify issues pertaining to accessibility to open spaces and nature, improved walking and cycling infrastructure, teleworking, digitisation of services, localised production of goods, urban agriculture for food security, housing solutions for the elderly, and gain different perspectives on the future of the residential unit.

As people were locked up inside homes, the residential environment posed new challenges. The home became a space for multiple activities including work, study and recreation. The forum threw up innovative ideas visualising the residential indoor environment as a multi-use place, focusing on the five key aspects of structure, nature, community, economy and infrastructure. It stressed the need for flexibility and multifunctional solutions in the building layouts to accommodate the changing needs, green infrastructure and semipublic and semiprivate open spaces such as rooftops, balconies and gardens. It also highlighted the importance of integrating shared working spaces and local employment hubs within neighbourhoods.

Tackling the pandemic with 'tactical urbanism': Israel's Ministry of Transportation and the Planning Administration published comprehensive guidelines for local authorities. The guidelines enabled the authorities to explore and implement flexible, immediate, and reversible solutions in order to adapt to the changing nature of the urban fabric. They focused on creating more space for walking, exercising, cycling, playing and so on.

All these initiatives were developed as a response to the changing times. Yet in a way, the crisis acted as a catalyst for the processes that had been evolving for some time. It reinforced the importance of principles that were already present in some aspects of our work. For example, improving residents' access to services and commercial centres, and to open spaces and nature. It has highlighted the need for transparency in our work for the public and improving the quality of the living environment.

HEALTH, TECH AND PANDEMIC MANAGEMENT

Globally, urban public health systems were ripped open during the pandemic, exposing their pre-existing weaknesses. But this also provided an opportunity to boost the role that digital technologies can play in bridging gaps in the healthcare sector. E-health start-ups mushroomed exponentially amid lockdowns and social distancing protocols. While the private sector has seen a quick migration to online consultation, treatment, medical test booking and medicine delivery, India's public sector continues to struggle due to lack of data and infrastructure. Nevertheless, several cities included in government of India's 'Smart City Mission', such as Thane, Surat, Tiruppur, Salem and Patna, were able to quickly turn their control rooms into war rooms for COVID-19 tracking, tracing and immunisation.

In the Tel Aviv metropolitan region, the divergent impacts and responses to the pandemic by different municipalities and communities have exposed longstanding gaps in capabilities and attitudes. While national authorities (including the Israel Defence Forces) filled some of these gaps, cities had to step up and shape their unique strategies, experimenting with new approaches to information technologies, big data, and health tech.

Discussion Points

- How can municipal and metropolitan governments ensure the delivery of accessible, affordable, and convenient healthcare to every citizen?
- What role can the private sector play in the affordable health space on the back of hi-tech medical interventions?
- Can a comprehensive tech-led pandemic protocol be constructed for effective, inclusive management and response?

NGOS AS FORCE-MULTIPLIERS FOR STATE'S COVID-19 RESPONSE

Dr. Aparna Hegde
Associate Professor (Hon.), Urogynaecology,
Cama Hospital and Social Entrepreneur,
and Founder, ARMMAN

In Mumbai, where a large number of citizens live in informal settlements, the pandemic has posed grave health challenges. Dense conditions with lack of access to safe water, sanitation and open and green spaces exposed the entire population of the city's sprawling urban areas to the vagaries of the pandemic. The vulnerabilities were further accentuated in the case of pregnant women and children. Under lockdown, with many of these areas being declared containment zones, access to even basic healthcare became challenging.

Most of Armaan's programmes, primarily our voice calling services that inform women about care to be taken during pregnancy and infancy and the training of health workers, are technology driven. This helped us innovate quickly to create processes to provide timely and effective assistance. For example, at a time when the people could not travel to health facilities, we used our tech platform to coordinate with our existing network of 40 hospitals across the city and other local NGOs to ensure that health workers could reach those who needed help.

We also started a virtual clinic using our call centre platform. In normal times, the call centre is run by staff with basic knowledge on issues related to pregnancy and infant care. But during the lockdown, we got hundreds of calls seeking medical help. The callers did not know what to do and where to go, ambulances were not available easily and there was no public transport. To counter this challenge, we adopted a two-pronged strategy. The online virtual clinic was manned by gynaecologists and paediatricians in two shifts to give advice on a range of problems. Simultaneously, our regular call centre services and on-ground health workers provided help to around 67,000 women. They also helped arrange ambulances for those in need of emergency institutional care.

We complemented this effort by leveraging our existing collaboration with the government to train ASHA personnel through mobile academies. With the assistance of the government agencies involved in the training programme, we were able to reach out to health activists across the country to help them access the insurance scheme announced by the Indian government for them. We also conducted training on how health workers can care for themselves post lockdown and how they can help eliminate the social stigma associated with COVID-19 patients. We also prepared multilingual informative and educative content to be shared with one million health workers and rural doctors across the country.

Even as we did all this, we maintained our focus on the safety of pregnant women and children, two of Armman's primary target groups. The voice platforms periodically sent out easy-to-follow guidelines in multiple languages for pregnant women and new mothers on protecting themselves and their children's during the pandemic, including information on what to do if they get infected or live with a COVID-19 patient in home quarantine. Armman's voice platforms have also helped people register for COVID-19 vaccinations.

Cities in India generally do not have a robust primary healthcare system and lack a graded referral system. The government opened up large-scale quarantine centres and dedicated COVID-19 hospitals, but these emergency measures were found to be wanting in the absence of a proper referral system. We could help overcome these shortcomings by identifying who needed non-intensive institutional isolation and treatment, who needed to be quarantined at home, and who needed intensive care at the COVID-19 hospitals.

The existing networks of on-ground health workers, NGOs and hospitals helped us in overcoming these challenges, and we could integrate our response and provide timely relief to those who needed it.

COLLABORATIVE, "ALL-HAZARD" APPROACH DEFINED ISRAEL'S PANDEMIC RESPONSE

Colonel Ariel Blitz
Dan District Commander, Home Front Command, Israel Defense Forces

The pandemic posed a new set of challenges for the Israel Defence Forces' Home Front Command (HFC), which strategises and spearheads national disaster response. Early on, we realised that in dealing with the pandemic, we were not in charge. We had to play a supporting role. The challenge was to foster seamless integration-pooling capabilities and capacities at the national and local levels and the private sector, train volunteers, and win the trust of the people with precise information dissemination and prevention of fake news proliferation.

Dan district, comprising Tel Aviv and surrounding cities, is centrally located. With a population of 2.5 million spread over 37 municipal areas, it is the country's most densely populated region. Integrated planning and execution were thus accorded top priority. We undertook several initiatives in this regard:

- **National Corona Headquarters:** The National Corona Headquarters (NCH) was established as a command-and-control hub of all the relevant multidisciplinary and multidimensional agencies in the country—

defence forces, police, ministries, Health Management Organizations, municipalities and the private sector. The member agencies evaluated the impact of the pandemic from their individual perspectives, but eventually came up with unified national and district-wise strategies and solutions.

- **Quarantine hotels:** Quarantine hotels were set up in March 2020 in all densely populated areas. Technology played a critical role in identifying pandemic hotspots and contact tracing. As the peak approached, we had 25 fully-equipped quarantine hotels catering to thousands of people with proper isolation protocols.

- **COVID-19 test sites:** Early diagnosis was key to breaking the viral chain. We began with 19 large-scale dedicated testing sites, which were increased to over 65 within a month. This facilitated early detection and treatment. Advanced technological systems allowed these sites to give results in just 15 minutes at crowded places like airports.

- **Call centres:** Call centres were activated to disseminate timely and precise information about pandemic protocols. They were technologically equipped to collate accurate and precise information from government agencies and ministries so that all questions could be answered satisfactorily. They catered to a multilingual population. They sent out bulk SMS messages and made extensive use of social media platforms for timely information dissemination, taking special to reach out to people with special needs.

- **Fast app development:** The NCH roped in tech personnel to develop mobile apps to facilitate district-wise food distribution, assisted by 3,000 delivery vehicles. The apps gave specific information on how many food boxes had reached how many homes. All necessary information including map-assisted directions to the nearest testing site, hospital, quarantine hotel and availability of essentials were made available.

- **Information portal:** Based on the national database, the information portal allowed municipalities to gather and extract real-time data with pin-point accuracy. It had a comprehensive, yet easy to search and navigate dashboard giving data regarding supply chains and logistics. The portal was one-stop shop for any and all information pertaining to the pandemic effort.

- **Military support units:** Emergencies arising at the quarantine hotels and hospitals or any shortages faced by them were quickly resolved with prompt assistance by HFC's local military support units.

- **Local area liaison units:** The existing local area liaison units, which work with the local administrations in normal times, were accorded special status to bridge the

capabilities at the national level with those available at the local level. Their main task was to ensure smooth information flow between multiple agencies.

- **Training of epidemiological investigators:** Municipal staff and volunteers were trained to become outbreak investigators. They worked across Israel's language and cultural diversities. They reached out to all those who needed to be tested, helped those who needed home or hotel quarantining or hospitalisation, and maintained close contact with their families, friends and co-workers.

As a military command, this experience had several important learnings for large-scale public disaster management. Handling the pandemic response reinforced the importance of 360-degree planning to counter any threat—an earthquake, a missile attack or a pandemic. The response must be collaborative, with synergy across ministries, public and private agencies, and voluntary organisations. It must have an "all-hazard" approach with a unified interface. It should give timely, accurate and precise information and guidance to people, while preventing the proliferation of fake news. It must promptly and precisely address specific needs of the people through seamless and efficient multi-organisation cooperation backed by integrated planning and execution.

FORGING COOPERATION AMONG TRANSNATIONAL CITIES TO TACKLE GLOBAL URBAN CHALLENGES

Dr. Sameer Unhale
Joint Commissioner, Directorate of Municipal Administration, Government of Maharashtra

Metropolitan regions in the Global South have grown in recent decades. Mumbai is no different. The Mumbai metropolitan region is home to nearly 23 million people. It has nine municipal corporations with populations exceeding one million, nine municipal councils with populations below one million, and over a thousand villages. Often, the growth of city regions has been so rapid that geographic concepts from a few decades ago may no longer suffice to analyse, understand and comprehend the size and scale of metropolitan regions.

Technology, on the other hand, has advanced even more rapidly. The COVID-19 pandemic has further accelerated technology adoption in the regular functioning of cities and city governance.

The Tel Aviv-Jaffa municipal government earned global accolades for its DigiTel platform, the first such tech-based and citizen-oriented governance app in the world. Under the Thane Smart City programme, we collaborated with the Tel Aviv-Jaffa local government to develop a similar interactive, citizen-oriented digital platform for the Thane Municipal Corporation. The DigiThane platform, prepared in collaboration with Israel is an entire digital ecosystem providing seamless government-to-government, citizen-to-business and citizen-to-government interaction. The platform is not just an e-governance facilitator to enable citizens to pay taxes and lodge complaints, but also provides citizens with a chance to digitally experience the city. In the three years since its launch, the DigiThane platform has over 300,000 registered users, or about 60 percent of the city's total population.

During the 2020 lockdown, the DigiThane platform harnessed the power of technology and logged more than five million engagements. The app has greatly enhanced the ability of the municipal corporation to directly provide citizens with critical and real-time information in the times of crisis. By providing information related to the supply of essential commodities, details on accessing emergency services, or information for the informal workforce (such as street vendors), the digital platform went far beyond being just an e-governance tool. Several other essential e-commerce apps, including those pertaining pharmacy and food delivery, were integrated into the DigiThane platform. The integrated COVID-19 dashboard helped analyse critical, real-time data to help identify hotspots and containment zones, facilitating the deployment of resources. The platform also hosts an online COVID-19 self-assessment test, offers free online tele-consulting/video-consulting by doctors in association with the Indian Medical Council, and also features regular webinars on health and wellness.

The city administration set up a dedicated COVID-19 toll-free helpline to address public queries, including on the availability of essentials through the government's public distribution ration shops. The app also used the helpline's social media platforms to disseminate information on the latest COVID-19 protocols, rules, and regulations formulated at the local, state and national levels. Linking the app with social media multiplied its reach and efficacy. For example, when there was dire blood requirement, the DigiThane platform registered 150 donors within 20 minutes.

DigiThane is a classic example of transnational city-to-city engagement and how cities can help each other tackle shared challenges and achieve the new urban agenda formulated under the Sustainable Development Goals (SDGs). Cities have the potential to be the main protagonists in achieving the SDG 17—building international cooperation and understanding and collaboration. In the post-COVID-19 era, the focus will be on the resiliency of cities to return to their regular functioning. Cities can collaborate with each other meaningfully outside the scope of the wider challenges encountered by international relations and diplomacy.

My personal experience with the development of the DigiThane app in collaboration with Tel Aviv-Jaffa municipal government has proved that there is great potential for cooperation between and among cities, provided they are given that opportunity and broader policy direction to bilaterally explore collaborative avenues.

LEVERAGING URBAN DATA AND PUBLIC VIEWS AMONG CITIES TO TACKLE GLOBAL URBAN CHALLENGES

Eyal Feder-Levy
CEO & Co-Founder, ZenCity

Cities, given their complex character and densities, are difficult to manage. The pandemic threw up myriad challenges that were not possible for the government to handle alone. The government's efforts had to be supported by the participation of an informed and motivated community. It needed the people to trust the system and extend voluntary support to implement protocols pertaining to COVID-19-appropriate behaviour. Large sections of the society had to also be convinced to shed their vaccine hesitation and get inoculated in time.

ZenCity, a Tel Aviv-based private sector start-up, works with 200 local governments across four countries, including those of Chicago, Houston and Philadelphia in the US, and a host of other municipalities across Israel to provide city governance and communication systems. While Tel Aviv's DigiTel platform won international acclaim, we had to innovate using the latest technology and artificial intelligence to help cities prepare their pandemic response. Our primary responsibility was to create technological aids to build trust between government agencies at the local, state and federal levels and the communities. We prepared appropriate messaging tools so that both the government and people could make informed decisions around policy, messaging and targeted actions.

For managing cities, data is key. DigiTel disaggregates and analyses data to help governments make informed decisions, streamline functions and optimise service delivery. ZenCity works behind the scenes. It primarily collects and analyses data, and ensures dissemination of real-time feedback to a host of city agencies involved with managing public safety, waste management, cultural activities, transportation, education, sanitation and public works. Interactions with the mayors and other agencies made us realise that their biggest worries were about timely resolution of complaints, providing for the needs of the people, and ensuring efficient service delivery despite supply chain disruptions.

We applied a two-pronged strategy. First, we collected organic data from all the sources where people were regularly sharing their opinions or comments, including social media, the DigiTel app, and call centre records. Second, we measured the accuracy of that organic data with quick online surveys conducted among representative samples of the community. This consolidated but unstructured data was converted into clear trends and scored using

artificial intelligence to generate bottom-line reports. The reports conveyed with precision what was at the top of the mind of the population and helped the local governments prepare a graded response mechanism. For example, Winthrop, a small town in the Boston metro area in Massachusetts, was about to start work on a new central business district project when the pandemic hit. The project, which promised better economic prospects for the town, had been welcomed by the local community. However, just days before the start of the project, public sentiment turned negative. Investigation of the data and randomised surveys revealed that the people were furious about the decision of the local government to impose a 12-hour daily water cut to facilitate the smooth execution of the project work. Acting swiftly, the city engineers promptly changed the project timeline and reduced the water cut to two hours every day. Within just two days, the negative sentiment declined by 71 percent. The success of the corrective action taken on the basis of an informed decision helped timely project implementation and minimised the difficulties of the people.

ZenCity thus helped city governments and local communities manage priorities, prepare effective pandemic responses, address urgent needs and dispel misinformation. Many local governments relied solely on our data to even decide on economic stimulus packages for people whose livelihoods had been impacted by the lockdown. Our data services were used by governments to galvanise community response across Israel and in 20 cities in the US for successful implementation of mandates such as wearing of masks and social distancing. Data-driven decisions for converting community halls into vaccination centres and libraries into 24x7 public communication centres with broadband Wi-Fi facilities were implemented in dense and poor neighbourhoods. We also conducted quick surveys to gauge vaccine hesitancy among residents to help governments plan a graded vaccination rollout.

SESSION TAKEAWAYS

- Digitally networked public health workers, non-governmental organisations and a trained volunteer force working in tandem with hospitals and the state machinery must be activated to assist the poor and vulnerable communities
- Seamless integration and pooling of capabilities and capacities across the local, regional and national levels, including those of the private through an "all-hazard" approach, is a necessity to manage public crisis of the scale and magnitude of the COVID-19 pandemic
- The State must win the trust of the people with timely and precise information dissemination and prevent fake news proliferation
- Cities and larger metropolitan regions must contend with similar challenges irrespective of their size, scale and geographical location; transnational cooperation between cities can help each other tackle shared challenges and achieve the new urban agenda formulated under the Sustainable Development Goals
- Technology-driven and real-time data collection and analyses help the response mechanism prepare graded interventions and address the most immediate needs of the distressed.

ADVANCING SOCIAL INCLUSION AND EQUITY ACROSS THE METROPOLIS

With the pandemic further affecting aspects of access, capability and equity, metropolises will require greater people-centrism at all levels of service delivery, policy and decision-making processes. In Mumbai, reverse migration trends and the continuous demand for residential space have indicated the need to account for informality, homelessness and poverty, to ensure enhanced earning potentials and to provide better and more equitable access to urban-metropolitan infrastructures and services.

Similarly, in the Tel Aviv metropolitan region, socio-economic disparities between different groups played a significant part in the pandemic. There were challenges concerning vulnerable groups, such as the elderly, people living in poverty and overcrowded conditions, the ultra-Orthodox and Arab communities, migrants and asylum seekers. Thus, in both metropolises social inclusion is seen as a critical component for immediate pandemic intervention and future urban solutions.

Discussion Points

- What are some of the strategies through which inclusionary, high-quality spaces can be augmented for the marginalised in metropolises?
- How can inclusivity be supported through suitable financing and reinvigorated policies? How can gender and age equality be addressed through metropolitan planning and ancillary efforts?

AN ALL-INCLUSIVE APPROACH TO OVERCOME SOCIAL EXCLUSION

Sharon Blum Melamed
Head of Social Services Administration, Tel Aviv-Jaffa Municipality

The Tel Aviv Municipality has more than 500,000 citizens, including a sizeable community of expatriates. The social services administration of this local government is mandated with three main functions: (1) developing personal, group and community resilience; (2) promoting social justice; and (3) providing universal services to all residents, including the unofficial expat community.

In the early days of the pandemic, between mid-March and mid-June, we kept a close watch on the growth of the cases in Tel Aviv. Ensuring that all those who were falling prey to COVID-19 were given timely assistance in every possible way and the timely dissemination of precise information to the people were accorded top priority. The foreigners' community in the city, which did not have access to health insurance and other social security benefits, were especially vulnerable. To ensure that they were not excluded from the local government's pandemic response, we opened test centres catering exclusively to this vulnerable group. They were also provided home assistance. Our

city-wide efforts included distribution of cooked meals to all the poor families and to the elderly who were alone at home and mass distribution of frozen meals with the help of local volunteers and logistics support provided by the National Corona Headquarters operated under the overall command and control of the Israel Defence Forces' Home Front Command (HFC).

By the end of June, we helped in the establishment of the Corona Control Centre (CCC) in collaboration with the HFC, the Ministry of Health, local police and health care providers. The CCC's main focus was on the foreigner community in residential neighbourhoods that had seen a rapid rise in the number of cases largely owing to density and poor living conditions. The CCC catered to the entire population of Tel Aviv and Jaffa. We assisted those who were home quarantined and those who did not need hospitlisation but were isolated in the dedicated quarantine hotels. For those home quarantined, the social services administration coordinated for delivery of food and other essentials, including toys, in case the families had children. We also opened a corona hotline to give people information about COVID-19 protocols.

The Tel Aviv municipality simultaneously prepared for the post pandemic period and how to handle the pandemic's long-term societal impacts. The social services administration identified key opportunities to establish trust among people in the municipal administration as an able supporter in times of crises, ensure seamless sharing of resources among diverse

municipal functions, strengthen service delivery mechanisms, improve technology tools and internal synergy, ramp-up public health services and adapt to the future challenges. Simultaneously, we also identified the risks emerging from the long-term impacts of local and global economic slowdown and polarisation of social issues.

Based on the mapping of the opportunities and risks, the foremost priority was accorded to the creation of schemes to maximise employment and guarantee rights to housing and nutrition security of the marginalised communities. We also used technology to encourage communication and reduce societal loneliness by adopting a multi-age programme to deal with fatigue and other ill-effects of the lockdown. We simultaneously expanded and adapted methods to address increased cases of domestic violence, growing incidence of drug abuse among the youth and provide better care for people with special needs. We developed platforms for volunteer management and started volunteer leadership training programmes.

We thus prepared an action plan to ensure optimum use of the opportunities, while minimising the risks. Our efforts helped build the trust of the people in municipal administration. As a result, the number of applications for social welfare schemes and employment increased by 70 percent. Young people who had lost their jobs were quickly trained to take up volunteer work or pressed into service at the youth and community centres. New applications for financial assistance by members of the foreign community in the city increased from less than 100 in December 2019 to over 1,000 by December 2020. We also ensured that the delivery of food was maximised in all the impoverished areas of the city.

We also helped set up the Mayor's Housing Aid Fund to support foreigners' families with entitlement to rent assistance, Israeli families who were under the rent assistance programme but had seen a drop or stoppage of income, families whose house allotment was pending, and other groups impacted by the lockdown.

INCLUSION AND SOCIAL EQUITY MUST BE CENTRAL TO POST-PANDEMIC URBAN PLANNING

Dr Amita Bhide
Dean, School of Habitat Studies, Tata Institute of Social Sciences, Mumbai

The COVID-19 pandemic has brought to the fore the deep fault lines in Indian urbanism. It has exposed the inconsistencies, inequity and inequalities of cities. We must therefore evaluate urbnisation in terms of how we manage our cities and their exploding populations. The 2011 Census records that one in six urban residents in India lives in a slum. Issues of exclusion are not limited to slums; they also extend to several other dense areas generally inhabited by migrant workers. The pandemic increased instances of domestic violence, children dropping out of education because of lack of digital connectivity and the unaffordability of digital learning, largely experienced by these people.

In terms of the pandemic itself, the informal settlements in the city actually fared much better; the pandemic could be contained in these "hotspots" despite the congestion and poor quality of life. In Dharavi, where cases were feared to explode, the contagion was controlled within a few weeks. However, facts regarding mortality and morbidity within the other equally large informal settlements in Mumbai are not known.

Given this scenario, the labelling of the pandemic as a "disease of the middle class/rich" is a big fault line. With such misplaced conclusions, one cannot be convinced that the post pandemic metropolis in India will recognise social inclusion, with all its multiple dimensions, as the central issue in urban planning.

The first is the issue of definition. How do we define marginal? How do we define a slum? We have witnessed that the existing definitions grossly underestimate the phenomenon in its entirety. This has hampered our ability to form informed perspectives around different vulnerable groups. For example, the 2011 Census estimates that rate of migration is around 23 percent. Has this apparent and significant underestimation been caused because of the way a migrant is defined?

The second issue pertains to the estimation of a phenomenon and the understanding of its internal diversities. There are 2,600 slum settlements in Mumbai with huge diversities among them. While some have abysmal living conditions, others are much better off and nowhere close to the general perception of a slum. They appear to be well-constructed and have made innovative use of available space to build self-sufficient amenities.

The third inclusion issue stems from our selective knowledge. For example, when we define a slum, we think only in terms of housing. We conveniently ignore the plethora of other exclusions—such as the lack of access to safe water, sanitation, open and green spaces or clean air—that happen just by virtue of living in a slum. We also do not understand the aspects linked to the formation of communities and community organisations. Selective knowledge thus further distorts realities.

The fourth issue is of conflicting legislative decisions and policy implementation. For example, India has enacted a national law for street vendors. In Mumbai, however, its implementation has been kept in abeyance. Even though the national law is inclusionary, calling for the creation of hawker zones, the municipal laws view street vendors as a nuisance who should be penalised for encroachment and traffic obstruction.

The fifth issue is of governance. The 74th Constitutional Amendment, which paved the way for decentralisation of governance, remains largely unimplemented. The amendment put the onus of urban poverty redressal, social and economic development and welfare of underprivileged sections on municipal governments. Municipal administrations, however, do not have a cadre to handle the functions. Cities in India thus implement poverty reduction campaigns under Central government mandates, which are issued without considering the local contexts and nuances.

The sixth issue stems from our belief that the poor have no voice. Once they become beneficiaries of welfare schemes, they lose their right to speak out. For example, when the municipal corporation undertook efforts for nutrition security of slum dwellers during the lockdown, the food that was delivered was cold, sometimes not in adequate quantity. It would often get spoilt in transit as it was prepared in the early hours and reach the settlements in the late afternoon. But people could not complain. This was the only food available.

These peculiarities characterise the relationship between the city and its excluded citizens. These issues will have to be addressed to make social inclusion central to the post pandemic planning of a metropolis.

SOCIOECONOMIC EXCLUSION OF VULNERABLE COMMUNITIES HAS DIRE CONSEQUENCES

Dr Zoe Gutzeit
Director of Migrants Department, Physicians for Human Rights-Israel (PHRI)

During the pandemic, it was critical to attend to the immediate needs of the nearly 200,000 foreign nationals who have made Israel their home. In this regard, the way the Tel Aviv municipality took charge of various roles that one would normally expect the state of Israel to perform was indeed commendable. A large percentage of foreign nationals who reside in Israel are mainly asylum-seekers and other undocumented migrants. Approximately 50,000 of these people, who comprise of Israel's most vulnerable groups, reside in southern parts of Tel Aviv in poor living conditions. These stateless people do not have any official resident permits and are therefore not entitled to social services and rights enjoyed by Israeli nationals.

Israel has so far refrained from formulating any welfare policy for these communities. On the contrary, the health ministry has institutionalised their exclusion from the public healthcare services by transferring the responsibility to the private sector. Even these privileges exist for only those who are legally employed. Even before the COVID-19 outbreak, these people suffered from such exclusionary state policies.

During the pandemic, the lack of access to public health care services, crowded living conditions and language barrier raised concerns that many will not adhere to the government's protocols.

From a short-term perspective, the containment of the pandemic amongst this vulnerable section has largely been successful primarily because of the efforts of the Tel-Aviv municipality and NGOs. Yet, from a broader perspective, the health crisis is still looming large for these populations. While the need for pandemic control at least forced the authorities to acknowledge their presence and provide medical assistance, the lack of infrastructure hampered effective implementation. For instance, the health ministry call centres remained inaccessible to most foreign migrants due to language limitations and because it asked callers to enter a national ID number to avail of any service. In the absence of health insurance, testing and monitoring was also not possible to the desired degree. Those who were advised home isolation had to return to their crowded living conditions. NGOs were inundated with queries from these people who were totally clueless about the new protocols.

However, the government's change of attitude finally allowed specific measures for the migrant communities. For example, the health ministry released funds for translating all public announcements and proper dissemination of this material. The Tel Aviv municipality also created dedicated testing centres manned by lab technicians and medical personnel who were

conversant in multiple languages. The same method was also followed at all the quarantine hotels.

There is a limit to how much the city can do in the absence of a comprehensive, systemic solution. The capacity of municipal forces and NGOs to achieve sustainable results is extremely limited. Pandemic response strategies usually focused on the immediate health ramifications, but there is a need to think from a broader perspective and focus on the long-term socioeconomic inclusion of these communities.

Many foreign nationals became unemployed and were pushed further into penury and despair during the pandemic. The loss of jobs meant the loss of medical insurance cover as well. In several cases, foreign migrants with comorbidities were made eligible for emergency medical services only after they became critically ill. This not only compromised the health of the entire population, but also increased the burden on hospitals.

The pandemic has shown that Israel can no longer continue to rely on its private sector to ensure the health of foreign migrants. The exclusion of communities from welfare services comes at a high cost, as it requires the authorities to create expensive ad hoc solutions that are mostly ineffective. Tel Aviv was lucky as these ad hoc solutions could be swiftly embedded in existing mechanisms. Israel and the rest of the world now need to embed the lessons learned and foster inclusion within an overall systemic framework to establish a fair and inclusive national public health mechanism, rather than carry out patchwork policy adjustments.

SESSION TAKEAWAYS

- Any level of state response to crises management will remain weak if timely information and help, including food supplies and other essentials, do not reach the socioeconomically-excluded vulnerable communities
- Affordable and rental housing must be prioritised in the future development of cities so that the poor do not have to live in abysmal conditions in slums
- Lessons learned from the pandemic must be embedded in all planning strategies to foster inclusion within an overall systemic framework to establish a fair and inclusive urban society
- India must reexamine its definitions of 'urban poverty', 'migrants' and 'slum' if it is to establish an inclusive city for its poorer, underserved and marginalised communities
- Exclusion must be understood not just in terms of housing, or the lack thereof, but in terms of all issues—such as lack of access to safe water, sanitation, open and green spaces and clean air—to foster holistic strategies for the inclusion of the marginalised sections

CHALLENGES AND OPPORTUNITIES FOR THE BUILT ENVIRONMENT IN THE METROPOLIS

The association between the pandemic and urban conditions has reset many long-held planning paradigms. Lockdowns and social distancing requirements have imposed constraints, and opened creative opportunities in how we use urban public spaces and streets. They also renewed the need for green spaces and an appreciation for urban nature. At the same time, the pandemic fuelled the demand for lower density areas, leading to suburban metropolitan growth and a downward trend in promising real estate areas. The demand for affordable housing is on the rise. Remote working has encouraged satellite offices while creating large vacant commercial spaces seeking alternative uses. Online consumption has also led to reduced demand for retail spaces, while health concerns are calling for sensor-based technologies in built environments.

Discussion Points

- What new urban frameworks need to be drawn to allow people to feel secure in streets and public spaces, while commuting and in workspaces?
- What approaches should metropolitan and municipal governments adopt to help curtail housing affordability issues, while facing steep revenue declines?
- How can large chunks of vacant commercial spaces be reimagined and repurposed?

ISRAEL'S PROPERTY MARKET SET TO STABILISE POST PANDEMIC

Daniela Paz
Founder and CEO of Paz Group Real Estate Consulting

Israel's real estate industry is like a seismograph of situations. During the pandemic, purchases of new apartments declined in the first quarter of 2020, but sales picked up in the remainder of the year. This was similar to trends seen during the 2008 global financial crisis and the 2011 social protests across the country. This quick recovery of the real estate market could be attributed to the fact that the need for new residential apartments is growing constantly and rapidly. At present, Israel has 2.6 million apartments. The country needs to add 50,000 new residential units every year to keep up with the demand.

In the 1900s, Israel saw the mass immigration of one million people, and it had to urgently construct new residential units to accommodate this influx. While the unexpected additional demand could be managed, years of mass construction saw Israel strapped with an unsold residential housing inventory by 2008. However, despite the unused inventory, the prices of properties nearly doubled.

During the pandemic, the prices of residential units declined in Tier-I cities like Netanya, Tel Aviv and Rehovot. However, the peripheral

Tier-II cities like Haifa, Be'er Sheva, Nazareth, Tiberius and Jerusalem maintained the earlier demand and transaction value. The average price of apartments in Tel Aviv, Jerusalem and Haifa, the three major cities, decreased in the first two quarters of 2020, but they held steady in Be'er Sheva.

To understand these confusing trends, the Paz Group conducted a pan Israel online survey. It revealed that during the pandemic, people were looking for cheaper apartments primarily in the suburban areas. It also revealed that the demand for private houses with gardens and balconies had shot up. Apartments in locations closer to people's extended families were also much sought after. The demand for houses with an extra room also increased, as people started working from home. Thus, the residential real estate market in Israel experienced a momentary price drop, which recovered quickly.

In the commercial real estate market, the demand for offices providing services and high-tech solutions remained robust during the COVID-19 pandemic. However, as offices adopted the 'work from home' system, the commercial market, especially office spaces, soon registered a 10 percent vacancy. This also led to a 10 percent reduction in the cost of office spaces in Tel Aviv. The areas of Ra'anana, Hod Hasharon and Netanya saw only a marginal decline in prices, while peripheral cities like Be'er Sheva and Caesarea maintained the pre-pandemic transaction value.

While working from home has changed demand patterns, mass vaccination in Israel has made it possible for many employees to get back to the routine office culture. The way ahead could be optimum utilisation of shared workspaces. Nevertheless, a reduction in commercial property prices and rents cannot be ruled out. The pace of construction, which had slowed down in 2020, is picking up again and work has started on new commercial and residential projects. The prices of office properties will eventually rise, but it is still early to predict if they will return to the pre-pandemic levels.

For retail real estate, Tel Aviv is an apt example. While the malls were shut during the pandemic, the streets were put to creative use. The Tel Aviv municipality put out chairs and benches and many pop-up stalls came up in residential neighbourhoods. These included groceries, takeaway joints and shops selling clothes and other essentials. Although online shopping was popular during the lockdown, traditional retail is expected to make a comeback. In the future, we will likely have a mixture of stores and multi-channel commerce where physical and online stores will merge, creating a new retail space paradigm.

THE FUTURE OF URBAN PUBLIC TRANSPORT IS ON FOOT AND CYCLES

Shreya Gadepalli
South Asia Director, Institute for Transportation and Development Policy (ITDP)

Lockdowns, which kept people indoors and cars off the roads in most countries, proved to be a blessing for the urban environment. With road traffic coming to a trickle, urban citizens experienced the real benefits of clean air. The pandemic thus underscored the significance of non-motorised transport and walking as the preferred choice for city commutes, especially over shorter distances. Prioritising walking and cycling as the preferred mode of transport will therefore be important in the post pandemic metropolis. It will also remove prevailing gender inequities from urban transportation.

However, before discussing the changes that the pandemic will necessitate, it is important to consider the existing trends. The 2011 Census records that most Indians predominantly use walking, cycling and public transport for their commutes, in that order. Only a quarter of all trips in the city see the use of private motor vehicles. Cars constitute only 5 percent of the total modal share. Women, in general, and working women in particular, largely rely on walking and cycling. The question, therefore, that transport planners will have to answer is

how to make the most-used modes attractive, safe, reliable and convenient.

The Institute for Transportation and Development Policy (ITDP) conducted a pan-India survey in October 2020 to understand how urban travel behaviour will change post pandemic. The survey showed a 32-percent drop in people travelling for work and education; a similar drop was reflected in non-work and non-education trips. While city travel per se had reduced, people who were generally homebound did travel, but spent more time at their destinations. The cities therefore need to provide good transport options to serve the new travel behaviour, and also offer better, safer and more public places for the people, especially women, to visit.

The survey also indicated that cycling had increased by 65 percent and it was expected to boom further. Indeed, cycle sales increased by 400 percent across cities in 2020. Here, one needs to remember that women have less access to cycles than men and many women do not know how to ride a cycle. The other indicator from the survey that needed to be considered was a significant drop in the number of users of public transport—the predominant mode used by women—either out of fear of getting infected or just because the services were curtailed or shut. On the flipside, the pandemic also led to a significant increase in the use of personal vehicles. In such an evolving scenario, women will be the worst sufferers, as they will have much reduced access to public transport, while also having poor access to motorised or

non-motorised personal transport. So how do we make sure that people step out and gain mobility in a manner that benefits their mental and physical health? The survey showed that this was possible with the increased use of the bicycle. Bicycles are personal, green, healthy and affordable.

Riding on these trends, ITDP partnered with the Ministry of Housing and Urban Affairs to design two competitions—the 'Cycles for Change Challenge' in June 2020 and the 'Streets for People Challenge' in September 2020. Over 100 cities participated in each competition. The Cycles for Change aimed to make cycling safe and fun, while Streets for People aimed to enhance the walkable urbanism quotient of India's cities and make public places accessible to everyone. We encouraged the cities to embrace new approaches to transform by

suggesting quick, low-cost interventions instead of proposing big-ticket projects that take years to implement and may ultimately not serve the purpose. Cities used our 'test-learn-scale' method, beginning with 'testing' concepts like pop-up cycle lanes through pilots, learning from the experience and finally scaling up.

In the Streets for People Challenge, we helped cities launch their own design competitions at the local level. The idea was to get young, local designers to propose innovative ideas for creating public spaces that are quick and easy to implement. More than 1,600 designers signed up and 34 cities have already rolled out concepts using the 10 indicators of creating 'healthy streets,' which include making walking the preferred option with a fair share of space, and with things to see and do.

LEVERAGING CHANGING PUBLIC NEEDS TO MAXIMISE PUBLIC SPACES

Maya Crabtree
Head of Environment and Sustainability Domain, Forum 15 – The Israeli Forum of Self Government Cities

Israel is one of the 37 member countries of the Organisation of Economic Cooperation and Development (OECD). but its cities have a lot to share with India. Israel's cities have the highest natural growth rate of population amongst all OECD countries. Its cities are therefore always challenged to increase their capacities and capabilities in a restricted built area. Israel is also a leading country in life expectancy, requiring its dense cities to find a way to provide affordable yet good quality of life to the elderly population.

The COVID-19 pandemic accentuated the disparities among the growing elderly population. It also exposed other inequalities, just as it did in cities across the world. Issues like suburbanisation, which were growing for decades before COVID-19 hit, grew stronger during the pandemic. On the one hand, it led to social segregation, with some people unwilling to use public transport even after the lockdown and instead using private vehicles, lead to increased congestion. On the other hand, the closure of street shops and the shift to online shopping made people appreciate urban nature. People wanted to work closer to home, preferred to have facilities such as banks and educational institutions within their neighbourhoods. They also rediscovered the opportunities for recreation at public and open spaces such as parks and playgrounds. This led to new trends of shared work and leisure spaces. To capitalise on this trend, the municipal governments came up with solutions that further encouraged the use of shared spaces for diverse activities.

In cities like Tel Aviv and Jerusalem, "tactical chairs" placed by the local authorities in public spaces and streets drew many people out of their homes to just sit and enjoy the natural outdoors. Even the specially designed "dating capsules" gained popularity, especially among the youth. Roads designed for exclusive use of cars were converted into pedestrian areas. Cultural and religious events were also held outdoors in areas where social distancing norms could be followed. The Tel Aviv municipality opened public spaces and large open and enclosed car parks for birthday parties, public yoga sessions, and pop-up music events. This was replicated in malls and on open terraces, leading to a whole new approach to using public spaces across the city. The local authorities are now working on converting some of the private and lesser-used spaces for similar activities and are also advising private owners of properties with large open spaces to optimise their use.

Some of these welcome side-effects of the pandemic have highlighted the need for municipal bodies to work with the neighbourhood communities to reimagine the use of inclusive public open spaces and enhance their availability. The biggest lesson that municipal bodies have learnt from the pandemic is of 'sharing' and multiplying the use of all open public spaces. Cities have to be accessible at all times and to all populations. We need to build inclusive cities and COVID-19 has assisted us in inculcating these values in urban planning.

SESSION TAKEAWAYS

- Public places within neighbourhoods, including streets, parking spaces, gardens and open areas between malls and commercial buildings, can be enlivened with multiple activities, giving people the much-needed opportunity to enjoy the outdoors
- Cycling, which emerged as the most preferable and safe mode of transport in recent months, must be further encouraged with adequate planning and facilities in the global quest to boost non-motorised urban mobility. Similar efforts must also be made to ramp up sustainable, safe and inclusive public transport, especially buses
- Gender-based planning for open spaces is extremely critical and there needs to be a conscious effort to ensure that transport is inclusive and safe for women and vulnerable groups
- Governments at the national, state and municipal levels must maxmise the quick gains that can be achieved by participatory, low-cost interventions for sustainable mobility and inclusive and safe access to open spaces
- New trends in real estate are expected in the retail sector. While online shopping was the preferred mode during the pandemic, there is a possibility of looking at multi-channel commerce where both physical and online stores would merge

CLIMATE EMERGENCY AND METROPOLITAN RESILIENCY

The COVID-19 pandemic has presented an acute, global-scale challenge to metropolitan regions. As such, it is prudent to address it as a sign of things to come. The impacts the climate crisis will likely be felt at a much larger scale and will have far-reaching consequences for cities, necessitating an urgent complete rethinking on preparedness and resilience. With cities being subject to increasing intensities of extreme weather events and the pandemic further exacerbating resource scarcity, mitigating and adapting to climate change remains the most daunting challenges of our times.

Discussion Points

- What are the commonalities and differences between the COVID-19 crisis and the climate change crisis?
- What lessons from the urban-metropolitan responses to the pandemic can help cities in the climate adaptation and mitigation challenge?
- How can social inclusivity, spatial inventiveness, and technological innovations be incorporated across these challenges?

THE PANDEMIC HAS UNDERSCORED THE URGENCY FOR CITIES TO TACKLE CLIMATE CHANGE

Manisha Mhaiskar Patankar
Principal Secretary, Environment and Climate Change, Government of Maharashtra

The pandemic and climate change have intricate commonalities. They have both arisen out of severe environment degradation, specifically the reduction in global green cover. The pandemic is caused by the SaRS-CoV-2 variant, a zoonotic virus that has jumped from animals to human beings. This likely occurred because animals are losing their natural habitat due to an ever-expanding human footprint.

In the first 19 years of this century, there have been multiple outbreaks of zoonotic viruses, but the world did not take them seriously enough to equate them with environmental degradation. SARS, MERS, Zika and Ebola were all caused by zoonotic viruses, which research scientists say were transmitted because the host animal was endangered due to its loss of natural habitat. This is also the cause of climate change. The relentless expansion of the global human footprint without pausing to evaluate its sustainability has led to health and environmental crises.

It is also important to understand the differences between the COVID-19 pandemic and climate change. COVID-19 has had a direct, obvious and immediate impact on human life. People are falling sick, many are losing their lives, and medical facilities and equipment is in short supply. The global community reacted unprecedentedly—vaccines were soon discovered, and mass inoculation drives held around the world. This has never happened before in human history, and could only happen now because the pandemic got the attention it demanded. The situation is not the same with climate change. It still does not get the kind of global attention it deserves, perhaps because it is still seen as a concern of the future. While most countries were able to implement time-bound action plans to deal with COVID-19, staying committed to reverse the impact of climate change has proved a challenge.

Another difference is that the COVID-19 pandemic became a matter of equal priority for all countries, irrespective of their size and scale. But with climate action, countries have largely put economic development as a matter of immediate concern over environmental degradation. This has given rise to various differing voices at multilateral forums that set the agenda for climate action. Importantly, we must recognise and accept that climate change and its impacts are already here, and this is the last decade to cement a global climate action plan.

The Maharashtra government and Mumbai administration believe that there must be a balance between economic development and ecosystem sustainability. For the past 15 months, Maharashtra government is trying to achieve this balance by ensuring that that carbon sinks are not only preserved and protected, but are nurtured wherever possible. In Mumbai, the 800-acre eco-sensitive Aarey Colony green belt has been declared a forest. As a coastal city, forests, mangroves, wetlands and marshlands are the city's natural green lungs. The government has therefore accorded top priority to ensuring the sustainability of the city's fragile coastal and marine ecosystem. The forest department has undertaken several studies on the mangrove ecosystem, which are the natural buffers helping the city against the threat of rising sea levels.

Maharashtra's electric vehicles policy will be a game changer. It will reduce the impact of pollution in cities and ensure that the green cover is preserved, protected, nurtured and enhanced. While there is a slow and steady shift towards embracing renewable energy in Mumbai, the new metro lines will provide a more sustainable living for the citizens.

CITIES MUST TAKE THE LEAD ON CLIMATE CHANGE MITIGATION AND ADAPTATION

Yael Cohen Paran
*Former Knesset Member and Co-chair
of the Israeli Green Party*

The climate crisis can no longer be left to be dealt with by future generations. The world needs independent and strong local governments to overcome these challenges today. Strong local governments can create systems that work and function better, and help cities evolve better response mechanisms to manage other crises, including a future pandemic. For climate change, cities and local governments can play a crucial role in mitigation and adaptation strategies.

Unfortunately, in Israel, climate change has not been given much thought by successive governments. Therefore, policy planning either for mitigation or adaption for climate change remains poor.

The Israeli government needs to take serious action on climate change. There is no concerted effort being made to meet the commitment to increase the share of renewable energy to 30 percent of the country's energy needs by 2030. By the end of 2020, the country has not been able to increase the share of renewables to its energy mix by even 10 percent. The next 10 years, therefore, are crucial. Interestingly, cities in Israel have been much more cognisant of the threats posed by climate change. In 2008, a Joint Voluntary Treaty on greenhouse gas emissions reduction was signed at the city level, much before the national government was doing anything on this front. It was only in 2020 that the government made green building standards mandatory.

It is important for cities across the world to acknowledge the imminent dangers of climate change and create a comprehensive action agenda to safeguard natural resources and human capital. Issues such as clean energy and transitioning to cleaner transportation are seen by many cities as the mandate of the national government and not something they need to focus on. This must change. Cities and local governments have a central role in planning and building infrastructure and ensuring a range of public services that are integral and crucial to mitigating climate change.

National governments must help cities by establishing overarching guidelines and supporting frameworks. In Israel, the efforts and commitments shown by local authorities have been unable to yield the desired results primarily due to a lack of support from the national level. For example, there was no reference to climate change during the recent national elections. And the national response to the oil spill crisis on the country's beaches, among the biggest ecological disasters in decades, was lackadaisical. Local governments, on the other hand, have greater focus on green initiatives and that is a promising sign for cities.

CLIMATE CHANGE WILL COST FAR MORE THAN WHAT THE PANDEMIC HAS COST THE WORLD

Shruti Narayan
Director, South Asia, C-40

Mumbai and Tel Aviv are members of C-40, a global climate leadership group with 97 member cities that represent almost 70 percent of the global population. Both cities are thus committed to climate action at the political leadership level.

Cities are economic centres. They are very critical to nations from an economic perspective. They provide employment opportunities and therefore are prone to large-scale migration from rural or lesser developed areas across the country. The growth of urbanisation and expansion of cities to accommodate more and more people results in the degradation of natural resources, making them more vulnerable to climate change. The impact of climate change is already being felt through rising temperatures in equatorial countries, posing challenges for these states and beyond.

How can cities develop keeping in mind climate change and its costs? Cities certainly must act, but it cannot be in isolation. Climate action has to have an integrated approach with strong interaction and coordination between local, subnational and national governments. Nations, therefore, need to develop an 'ecosystem approach' across the entire federal structure and with all key stakeholders to prepare their climate agendas.

Forest fires, urban flooding, droughts and erratic monsoons are more intense common global occurrences, and existing city infrastructure are unable to manage these. Governments are spending millions to address these unprecedented challenges. But the true economic cost of climate change and associated events must be understood by how governments can divert this money to create integrated climate action plans for mitigation and adaptation. Governments must strive to balance its investments over repeatedly repairing the damage caused by climate change against making meaningful and result-oriented investments guided by sound climate action plans for mitigation and adaptation. It is thus important to explore green financing options that will have long-term benefits in this regard.

The other important aspect is resilience. It is the ability of cities to address and immediately react to certain things and come back to normal. People have moved from cities to places where there is better air quality, even giving up economic opportunities in the form of their careers. The COVID-19 pandemic impacted us at the global level, just as climate change has, and it is important we recognise this in our way forward.

CITY-LEVEL PARTNERSHIPS CAN BOOST INTERNATIONAL CLIMATE AGENDA

Udi Carmeli
Chief Planner, Tel Aviv-Jaffa Municipality

Municipal-level intervention was crucial during the COVID-19 pandemic and will be so to tackle climate change. Tel Aviv is a modernist city with many UNESCO-recognised World Heritage Sites. One of the main goals of modernist architecture was to deal with climate.

One cannot discuss climate change and related issues without talking about the built environment (the people's environment that supports human activity). There is a symbiotic relationship between people, buildings, environment, infrastructure, diseases and public spaces. They all belong to the same fabric and need to be addressed together. Changes will therefore need to be made in creating the built environment.

The COVID-19 pandemic has marked the beginning of change in the way we think and create our built environment, which includes built infrastructure and open public spaces.

Ideas that took decades to implement are now possible over just a few months due to the pandemic. The character of several areas was transformed—open areas became food distribution centres. Architects and town planners recreated urban open spaces within 100 meters of residential neighbourhood, and these spaces began to attract more people than beaches. Streets, the symbols of traffic jams and pollution, and car parks were converted into shopping arcades and used for outdoor eating. Malls were converted into community recreation centres. Parks were converted into open-air arenas for cultural activities. Town planners started to clean up these areas and put-up makeshift chairs to convert many of these public places into open urban living rooms. For instance, about 20 streets that were meant for traffic and parking were converted into open spaces accessible by people from all walks of life.

As part of the C-40, Tel Aviv has a big task ahead of it. It has created a comprehensive climate change action plan only last year. The urban heat island effect in Tel Aviv is felt most in areas where the most vulnerable population resides.

The crises of climate change and the pandemic are presenting a new opportunity for cooperation in metropolises. There are both similarities

and differences between the two crises. One has rapid effect and steep recovery, and the other has slow uptake but a larger amplitude for long term consequences. Cities as engines of economic growth and innovation are also the true engines for cooperation. Cities have the power to change and go beyond, where the nation is slow to reach. Thus, city planners and local politicians can move faster than the national government on these issues.

SESSION TAKEAWAYS

- Cities are at the centre of the pandemic and climate change. City-generated climate action plans will be critical to the future of metropolises
- The pandemic generated renewed interest in nature, boosting the environmental cause
- Integrated approach at the national, sub-national and municipal level with adequate political backing is crucial for successful climate change mitigation and adaptation efforts
- Transnational cooperation between cities on environment is critical to deal with climate change and global warming
- Identifying the right technologies to deal with climate change will ensure that developing countries like India are able to balance the need for economic development alongside environmental protection

THE WAY FORWARD

Sayli Udas-Mankikar, Nathan Marom, Dhaval Desai, Tamar Akov

The conference highlighted similarities in how two metropolitan regions, Mumbai and Tel Aviv, have confronted the pandemic, resetting modes of action and enhancing resilience through innovations and new paradigms. It also discussed critical differences and inequalities within each metropolitan region, and how some communities and localities had to cope with unique challenges. However, the situation in which we now find ourselves accentuates the different trajectories of the regions over a year into the pandemic.

After seeing through the first wave with remarkable success, India has suffered from a COVID-19 "tsunami" since April 2021. The country's healthcare system across all levels of government and the private sector has collapsed in the face of record-breaking daily infection numbers. Mumbai and several other cities have been placed under lockdown once again. At the same time, life has nearly returned to normal in Tel Aviv and most parts of Israel as most of the population is vaccinated. Businesses and schools have resumed, and masks are no longer required in outdoor spaces. This stark difference therefore requires that we highlight divergences and disparities at the inter-metropolitan and global scale.

Presently, Israel is the world leader in its vaccination campaign due to a host of reasons, including the effectiveness of its community health providers, the availability of long-term health data on all of its citizens, and the relatively small size of its population. These factors incentivised the large vaccine producers to prioritise Israel as a real-life laboratory. However, this phenomenal success must

come with a sense of responsibility and with a commitment to share not only medical data on the vaccine's effects, but also best practices and knowledge gained on the vaccination campaign's organisational, community and social dimensions. For example, Israel could quickly set up a vaccine knowledge corps to assist vaccination campaigns in other countries. Perhaps, and in keeping with the theme of the conference, this could also become part of a larger city-to-city learning and cooperation process on similar urban challenges that go much beyond the realm of pandemic control and vaccine delivery.

Yet what should be done with the global inequality regarding the very availability of vaccines? What responsibilities do the affluent nations and globally connected metropolises in the North, who will vaccinate the majority of their populations by the end of 2021, have towards the "majority world" in the South. Indeed, a world in which some countries have moved on to a post-pandemic reality, while many others are still facing high rates of morbidity and mortality, is not only unethical but also highly unsustainable. Not only can this give rise to new variants of the virus and lead to renewed pandemics, but it also undermines the global trust and cooperation that are required to face humanity's biggest crisis—the climate emergency. And while cities and metropolitan regions are not the only or even main actors here, they must also lead the charge for a more equitable post-pandemic majority-urban world, just as they have shown the way ahead on climate change and resilience through organisations such as C40 and ICLEI.

Tactical Urbanism as Engine for Innovation

The pandemic and the resultant lockdowns led to the emergence of spontaneous grassroots initiatives to adapt and innovate in Mumbai and Tel Aviv, and other metropolises. Tactical urbanism, sometimes referred to as guerrilla urbanism, includes temporary, informal usage or physical disruptions to the urban built environment, executed by individuals, groups and communities. Such initiatives converted cities into newly discovered 'playgrounds' for self-expression by improving and enhancing communal and public spaces. As a result, physical, mental and social spheres expanded, adding new, exciting and more inclusive dimensions to the city.

In numerous cities, art broke out of traditional museums and galleries to hang between buildings and above streets and along pavements. The roofs of corporate buildings and courtyards of public buildings became gyms, presenting an opportunity for more diverse set of people to participate. Parking lots and neighbourhood playgrounds turned into places of worship, blurring religious barriers. Music was played from balconies, in industrial zones and abandoned buildings, transforming 'leftover spaces' in the urban realm into new 'places to be'.

In the social sphere, informal initiatives to better connect people were created. Self-help collectives and volunteers supported vulnerable groups through information and communication technologies. Social hackers played a role in providing access to much needed services, such as mapping available medical supplies. New

multi-layered networks intertwined with official ones to aid residents and reduce isolation.

Within the uncertainty of the pandemic and in the post-COVID-19 era, cities must be flexible and react quickly to new realities. Makeshift adjustments with less bureaucratic processes can better provide for today's needs. Over the long-term, such changes can become new features of metropolises that advance wellness as well as knit communities together.

Holistic Urban Reengineering the Way Ahead

Mumbai, as we write this report, is steadily showing signs of the second wave receding and recovery is in sight. This recovery will need to be inclusive, resilient, and in sync with nature. The steps taken hereafter will have to be carefully calibrated and involve participatory and multi-level governance at the local, national and sub-national levels. As future plans are made, they will need to ensure that the systemic and governance cracks that were exposed during the pandemic are mended on a war footing, and entire governance structures should be rebuilt, if necessary.

The problems discussed in this report are critical to a post-pandemic metropolis—health, inclusive growth, the rapidly changing face of real estate, environment and climate change and the overarching role of new technology. A post-pandemic task force will be an important step ahead to assess the learnings from this crisis, and ensuring we have a smoother transition into what will be a "new normal" world.

ABOUT THE EDITORS

Sayli Udas-Mankikar is a Senior Fellow at ORF Mumbai.

Dr Nathan Marom is Senior Lecturer, School of Sustainability, IDC Herzliya.

Dhaval Desai is Senior Fellow and Vice President at ORF Mumbai

Tamar Akov is an adjunct faculty at the School of Sustainability, IDC Herzliya.