

The Concept of Megacity: Addressing the Safety and Security Concerns

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Introduction

Megacity refers to a huge city with a population of approximately 10 million people. Approximately 55% of the global population lives in urban cities, while one in eight people currently reside in megacities. It is anticipated that 70% of the global population will reside in megacities by 2050. The management of megacities will also largely determine the progress concerned with Sustainable Development Goal (SDG) 11: make cities inclusive, safe, resilient and sustainable. The theory of Thomas Robert Malthus stated that the rise in population will have negative implications on the quality of life due to the shortage of resources. However, Malthus did not consider the concept of a megacity that may meet the demands of the increased population. This commentary will assess how megacities affect the global security landscape.

An Assessment of the Megacities

A megacity is usually comprised of a single metropolitan territory or at least two metropolitan stretches. Managing megacities is a complex process, and best practices are vital in terms of protecting these urban spaces. The top ten megacities produce approximately 20% of the world's Gross Domestic Product (GDP). If we revisit the year 1950, there were only two megacities in the world: Tokyo and New York. The world is currently comprised of 33 megacities. These facts clearly denote the growing significance of megacities. The megacities exist in the following nations: Japan, India, China, Brazil, Mexico, Egypt, India, Bangladesh, United States of America, Pakistan, Argentina, Turkey, Philippines, Nigeria, the Democratic Republic of the Congo, Russian Federation, France, Colombia, Indonesia, Peru and Thailand.

The megacities pose a wide range of issues and concerns. First of all, traffic congestion is a significant issue for megacities, and that is a huge challenge for the urban planning authority. More often, the authority has to create unconventional infrastructures. The perfect example would be the city freeway in Shanghai. Hence, the matter of concern is that such unconventional infrastructures may collapse, leading to significant losses.

The pre-emptive issue regarding megacities is the capacity to manage a high level of population. It is already difficult to manage an overwhelming number of people in the megacities, and it is expected to become a bigger challenge by 2025. According to United Nations Population Division and World Economic Forum, the top 15 megacities in the world will experience rapid

growth in the populace. Figure 1 below depicts the number associated with the growth in population by 2025.

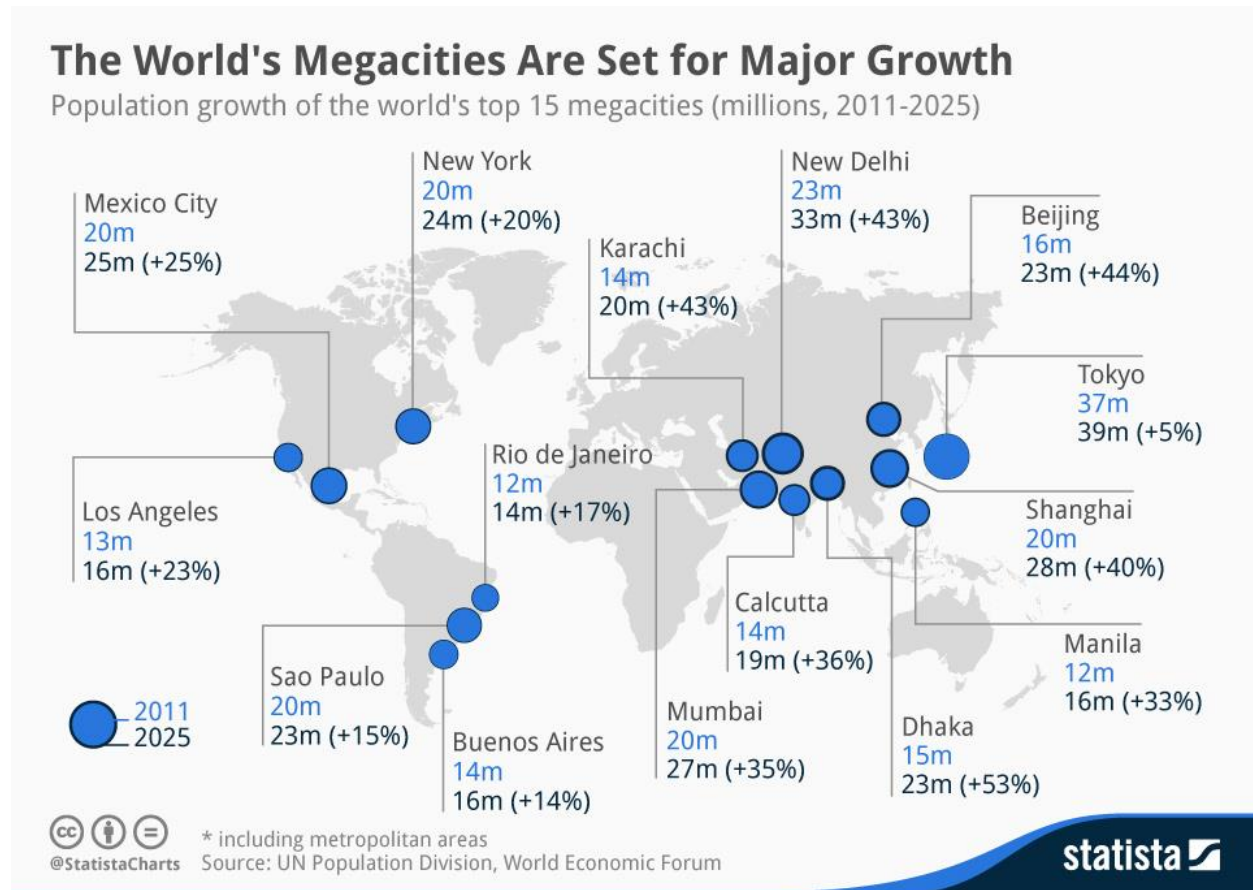


Figure 1: Population Growth of the World’s Top 15 Megacities (Source: United Nations Population Division and World Economic Forum)

The megacities are also largely exposed to the various forms of calamities. The two most common forms of calamities have mostly impacted the megacities: natural disasters and technogenic disasters. Natural disasters are triggered by natural events in the form of floods, earthquakes, hurricanes, cyclones etc. Technogenic disasters are also regarded as man-made disasters. Examples of technogenic disasters include fires, vehicle accidents, accidents in infrastructural facilities, explosions, chemical substances etc. There is a third form of disaster in some nations, and that is categorized as terrorism. The megacities need to take measures concerned with constant vigilance and caution in order to understand the ever-evolving threats posed by terrorism. Furthermore, the rise in population coupled with rapid urbanization has increased the level and magnitude of such disasters. Disaster trends have also indicated a pattern of more damage being done to the megacities. If we revisit the 1995 Kobe earthquake, it resulted in losses equivalent to at least US\$ 30 billion. Kobe is Japan's most significant port city after Yokohama, and the blow was a lot to bear for the nation. When a natural disaster hits the

megacity, the number of fatalities may be high. Most notably, the amount of damage done to the megacities also relies on the warning time. Therefore, megacities should have enough warning time in order to eradicate the threats posed by the disasters.

Megacities are different from smaller cities in several dimensions. Megacities need to ensure how to make the most out of the limited resources and it further needs to ensure that the basic services are available to the citizens in order to proceed with their daily lives. Although megacities are at times rich in terms of human capital and physical resources, they are unable to create an adequate response mechanism. The transportation facilities also determine the efficiency of an emergency evacuation during the crisis period. It can further be said that the public transportation system is also an overlooked aspect that often fails to comply with the standard emergency procedures.

Social forms of violence also significantly hamper the security of megacities. Megacities face the problem of increasing inequality as the rich get richer and the poor get poorer, and this may result in a clash between the rich and the poor leading to social unrest. There are also other forms of social violence that may be influenced by ethnic rivalry, political bias, religious bigotry, communal tensions etc.

The model of megacities largely depends on critical infrastructures. Critical infrastructure refers to the essential services required to survive in a city, and these services are vulnerable and interdependent. An accident can create issues for the power stations, water supply, transportation facilities and other critical infrastructures. If there are specific weaknesses in the critical infrastructural system, it will undermine the safety of the megacity residents. Hence, it will create maximum disruption in the provision of basic services.

The megacities are more vulnerable to the ravages of COVID-19 due to livelihoods concerned with a large segment of the population. It is difficult for megacities to respond to a public health emergency, and the COVID-19 pandemic has shown how it can affect the cities. The megacities also find it difficult to impose strict lockdowns. The pandemic affects the cities on four dimensions: environmental quality, socio-economic impacts, management & governance, and transportation & urban design. Therefore, it is vital for the megacities to create a strategy on how to improve their pandemic preparedness.

The inclusion of new megacities brings several challenges. As per the World Economic Forum, there will be ten new megacities by 2030. Figure 2 below shows the names of those cities. New cities will find it hard to manage their urban infrastructures. The assessment of urban infrastructures in megacities establishes the fact that they are interdependent and interrelated. Such infrastructures may become complex to operate due to the holistic decision-making process. Hence, the urban infrastructures may hamper the industrial efficiency and self-sufficiency of the emerging megacities.

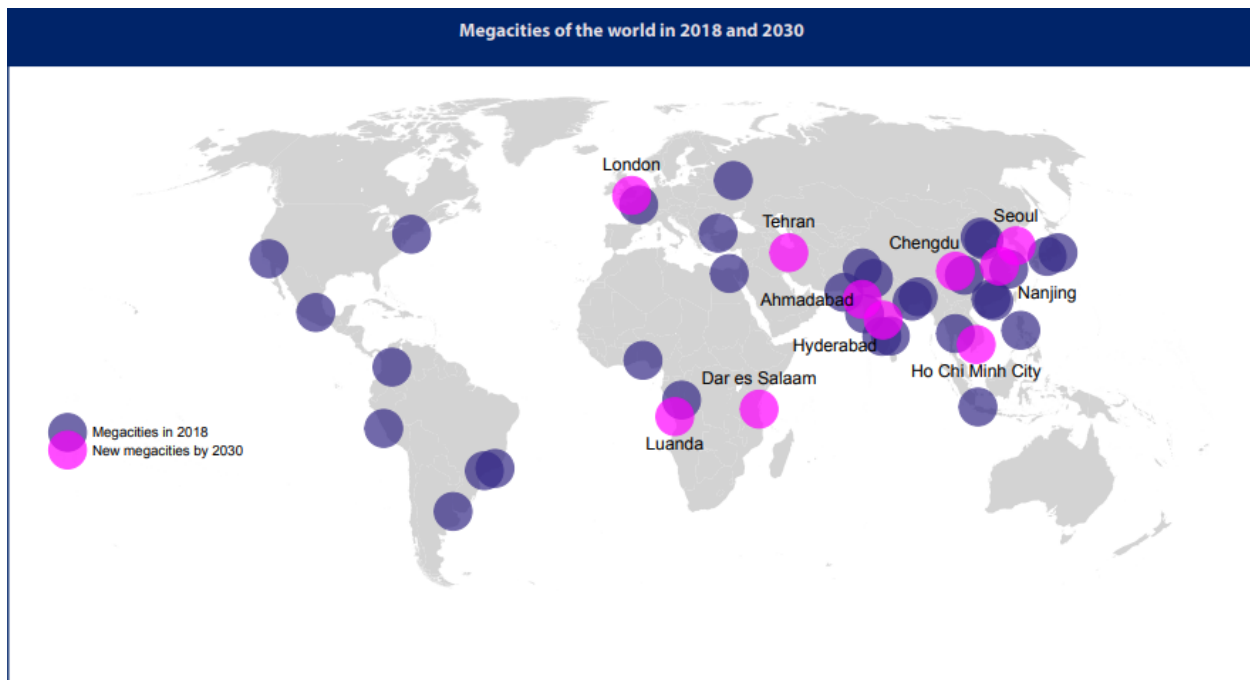


Figure 2: New Megacities by 2030 (World Economic Forum)

Areas of Improvement and Cooperation

There are multiple dimensions in order to improve the safety and security of megacities. Firstly, it is important to set a comprehensive definition of megacities. The definition of megacities is already a contestable aspect, and it is not adequate to define megacities only based on population. Other crucial factors such as the management of critical infrastructures can be incorporated in terms of defining megacities. Hence, there should be a change in the definition of megacities.

Due to recent technological innovations, megacities will be more dependent on smart city infrastructures. The authority should step up its cybersecurity measures in order to protect the megacities from the clutches of cyberattacks. For instance, Singapore and Tokyo heavily rely on technology-based solutions in order to provide essential services. The examples of such systems can be seen in the consumption of electricity; operating smart meters, sensors & cameras; and maintain security. If these systems are prone to cyberattacks, they will disrupt the provision of critical infrastructures. Hence, the megacities should always stay up to date in case of cybersecurity measures.

It is imperative to manage megacities like an ecosystem to build a fully integrated system. It will aid to improve the quality of life and enhance economic prosperity. This process will transform the core infrastructural sectors and help the critical infrastructures to meet the three benchmarks: quality, efficiency and affordability. It will further provide an improved lifestyle experience to the citizens with the mission to build inclusive, sustainable and resilient cities.

The urban infrastructural systems need to be modelled based on their capacity to deal with all forms of disasters. Such systems need to cope with various forms of a disaster scenario. Disaster awareness and disaster preparedness is the key to ensure the safety and security of the megacity residents. There should also be a trend to share crucial information between the megacities in order to improve the functioning of essential services.

An appropriate strategy must be developed to respond to emergencies. The strategy must lay out plans on how to reduce the vulnerabilities posed by unforeseen events. A sustainable strategy will decrease the costs and inconveniences concerned with responding to high-consequence events. It should also incorporate the key economic factors. The strategy must be communicated with the public to receive their utmost cooperation in resource utilization.

There should be an atmosphere for collaborative learning between megacities to achieve fruitful results. Each megacity is complex and unique in its own right, and hence, concerted efforts to learn across the spectrum will be mutually beneficial for all the stakeholders.

Conclusion

Megacities are here to stay, and the number of megacities must keep growing with time. While megacities play a significant role in managing the population growth worldwide, it also poses safety and security issues for the residents. As rapid urbanization has paved the way for residents to travel to megacities, it is necessary to build safer and more secure megacities for all.

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