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Security Vulnerability of Urban Areas

Introduction

Urbanization has become one of the most rapid growing trends of the 21st century, with approximately 55 percent of the global population living in urban areas.¹ The United Nations World Cities reported in 2016 that two-thirds of the world's population will live in urban cities by 2050.² This trend will lead to about 41 megacities in 2030, or cities with populations greater than 10 million people.³ These megacities are mainly located in poorly developed or developing Member States, which often lack the resources to develop the infrastructure and services necessary to meet this population influx.⁴ A continued increase in this trend will result in a subsequent rise in socio-economic inequalities and risk of conflict and instability between city centers and residential neighborhoods.⁵ Today “more than half of the world’s violent armed conflicts are taking place in cities,” impacting around 50 million people.⁶ These conflicts are likely to continue as competition over natural resources, climate change, population growth, and sectarian and religious tensions rise, leading to bigger disputes with larger impacts on urban centers, where a significant portion of the population of Member States tends to live.⁷

History of Megacities and Urbanization

Exactly what constitutes a city or urban space is a matter of debate between anthropologists and historians. Generally, a city is the result of urbanization, which is the process by which groups of people begin to permanently live in relatively small, concentrated areas.⁸ The first instances of cities, per this definition, begin to appear in the aptly named “fertile crescent” in the Middle East around 12,000 years ago.⁹ This new form of social organization was prompted by the domestication of crops and animals for human consumption, a turning point in human history known as the Agrarian Revolution.¹⁰ In other words, cities could now house populations that didn’t need to sustain themselves by farming and could focus on pursuing other professions.¹¹ In this way, complex societies began to develop in urban areas.

¹ Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE,” NATO PA, October 20, 2020, <https://www.nato-pa.int/document/2020-revised-report-urban-warfare-michel-kleisbauer-040-stctts-20-e-rev1>. (Accessed March 7, 2021).

² Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE.”

³ Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE.”

⁴ Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE.”

⁵ Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE.”

⁶ Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE.”

⁷ Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE.”

⁸ “Urbanization,” *Encyclopedia Britannica*, September 6, 2019, <https://www.britannica.com/topic/urbanization>. (Accessed March 7, 2021).

⁹ Joshua J. Mark, “The Ancient City,” *World History Encyclopedia*, April 5, 2014, <https://www.ancient.eu/city/>. (Accessed March 7, 2021).

¹⁰ Mark, “The Ancient City.”

¹¹ Stephen Barthel, et al., “History of Urbanization and the Missing Ecology” from *Urbanization, Biodiversity, and Ecosystem Services: Challenges and Opportunities*, ed. Thomas Elmqvist et al. (New York: Springer Dordrecht Heidelberg, 2013), 13-30.

For most of human history, cities were the centers of culture and administration but never were home to a large portion of the total population.¹² No city would have a population of one million people until the 8th century in Chang'an, today in the People's Republic of China.¹³ This would begin to change because of the Industrial Revolution, and by 1800 roughly three percent of the world's population lived in urban areas.¹⁴ Factories worked most efficiently close to raw markets and an ample labor source, and thus port cities began to grow rapidly.¹⁵ London became the most populous city in the world by the mid-19th century with a population of 2.3 million people, a number that would triple by the turn of the 20th century.¹⁶

Industrialization sparked a period of urbanization that necessitated an urban reformation in Europe and North America.¹⁷ Cities before had been the result of centuries of largely unregulated and unplanned building, and as such often suffered from congestion, pollution, and disease.¹⁸ These issues were solved utilizing numerous solutions including infrastructure projects like widening boulevards and building sewers, mandating building codes, introducing zoning laws, building residential housing, and constructing light rail transportation systems.¹⁹ As imperialism spread from Europe, many of these developments were brought to colonial cities, and new cities became meticulously planned and built to support urban industrial growth, like New Dehli.²⁰ This caused a massive urban population boom, and by 1950 30 percent of the world's population lived in cities.²¹

Urbanization once again experienced a period of increased and new development years after the end of World War II.²² In Europe and North America, suburbanization was the new phase of urbanization, especially as automobiles became more affordable and commuting to the city center for work became more practical.²³ Much of Europe developed suburban centers called "new towns" that surrounded major city centers.²⁴ This was also a period of decolonization, and many Member States in Africa, Asia, and Latin America struggled to overcome the destabilization that followed years of exploitation.²⁵ This period of destabilization featured civil wars, coups, economic depression, and corrupt governments in some places, which drove a further increase in urban populations as people sought the security and opportunities offered by cities.²⁶ Often coming from rural areas and with little money to support themselves when they arrived, many were forced to live in poor, densely populated communities living in rundown or ramshackle buildings, sometimes without proper sanitation systems or electricity, sometimes referred to as slums.²⁷ These neighborhoods could, and still can, be found in many parts of the developing world on the outskirts of cities,

¹² Susan S. Fainstein, "Urban planning," *Encyclopedia Britannica*, April 2, 2020, <https://www.britannica.com/topic/urban-planning>. (Accessed March 7, 2021).

¹³ Tertius Chandler, *Four Thousand Years of Urban Growth: An Historical Census*, (Lewiston, NY: The Edwin Mellen Press, 1987). (Accessed March 7, 2021).

¹⁴ Editors of Encyclopaedia Britannica, "Urbanization," *Encyclopedia Britannica*, September 6, 2019, <https://www.britannica.com/topic/urbanization>. (Accessed March 7, 2021).

¹⁵ Tertius Chandler, *Four Thousand Years of Urban Growth: An Historical Census*, (Lewiston, NY: The Edwin Mellen Press, 1987). (Accessed March 7, 2021).

¹⁶ Chandler, *Four Thousand Years*.

¹⁷ Susan S. Fainstein, "Urban planning," *Encyclopedia Britannica*, April 2, 2020, <https://www.britannica.com/topic/urban-planning>. (Accessed March 7, 2021).

¹⁸ Fainstein, "Urban planning."

¹⁹ Fainstein, "Urban planning."

²⁰ Stephen Barthel, et al., "History of Urbanization and the Missing Ecology" from *Urbanization, Biodiversity, and Ecosystem Services: Challenges and Opportunities*, ed. Thomas Elmqvist et al. (New York: Springer Dordrecht Heidelberg, 2013), 13-30.

²¹ "Urbanization," *Encyclopedia Britannica*, September 6, 2019, <https://www.britannica.com/topic/urbanization>. (Accessed March 7, 2021).

²² *World Urbanization Prospects: The 2018 Revision*, United Nations Department of Economic and Social Affairs, 2019, <https://population.un.org/wup/Publications/Files/WUP2018-Report.pdf>. (Accessed March 7, 2021).

²³ Susan S. Fainstein, "Urban planning," *Encyclopedia Britannica*, April 2, 2020, <https://www.britannica.com/topic/urban-planning>. (Accessed March 7, 2021).

²⁴ Fainstein, "Urban planning."

²⁵ Stephen Barthel, et al., "History of Urbanization and the Missing Ecology," from *Urbanization, Biodiversity, and Ecosystem Services: Challenges and Opportunities*, ed. Thomas Elmqvist et al. (New York: Springer Dordrecht Heidelberg, 2013), 13-30.

²⁶ Barthel, et al., "History of Urbanization and the Missing Ecology."

²⁷ *World Urbanization Prospects: The 2018 Revision*, United Nations Department of Economic and Social Affairs, 2019, <https://population.un.org/wup/Publications/Files/WUP2018-Report.pdf>. (Accessed March 7, 2021).

and by 2000, 807 million people lived in slums.²⁸ These two modern urbanization developments, urban sprawl and slum expansion, have helped give rise to megacities. As of 2021 there are 33 megacities in the world, housing a combined population of 529 million people.²⁹ These cities have unique challenges that stem from their massive populations, such as overcrowding, infrastructure degradation, pollution, and law enforcement.³⁰ The UN estimates that the urban population of the world surpassed the rural population in 2007.³¹ Most of this urban population was concentrated in Western Europe, the Americas, Australia, Japan, and the Middle East, with lower concentrations in Eastern Europe, North Africa, East Asia, and South America.³² Most of the rural-majority Member States are in sub-Saharan Africa, South Asia, and Latin America, however urban populations there have been expanding rapidly in the 21st century.³³ In fact, these regions are estimated to have comparatively higher rates of urbanization since 1950 than their counterparts in the developed world.³⁴

Threats of Urbanization

As populations continue to be driven to cities and these cities continue to grow, the amount of problems and issues also grows. These problems usually take the form of environmental degradation, socioeconomic issues, poverty, and security threats. Poor water and air quality, lack of clean water supplies, waste-disposal issues, and extreme energy usage are exacerbated by megacities' populations.³⁵ Megacities are more prone to experience higher-than-average poverty rates, as local governments are unequipped to provide services for all.³⁶ Further, air pollution creates a significant environmental threat, due to concentrated energy usage and higher levels of automobile exhaust that creates elevated lead levels in the air.³⁷ Additional health hazards, such as living situations that create a higher risk of physical or mental injury, often result from a lack of critical infrastructure, particularly regarding waste management.³⁸

Further, megacities are faced with additional concerns regarding natural disasters. Megacities must be prepared to combat environmental hazards, such as flash flooding, that are a result of urban development.³⁹ However, these problems are exacerbated in megacities, as areas with poor infrastructure capabilities are more prone to immense damage from natural disasters. And while not a direct natural disaster, megacities often experience a lack of fresh food sources, due to the general loss of tree cover and vegetation caused by physical barriers and pollution, as well as animal populations impacted by the loss of habitat, toxic substances, and vehicles.⁴⁰ Ultimately, the highly dense populations of megacities demand more of their environment and require strong infrastructure and city planning. However, many megacities the resources or capabilities to provide these essential resources, primarily a result of their rapid growth.⁴¹

Finally, the lack of security and exposure to armed conflict proffered by megacities creates one of the most significant threats to the world's urban populations. More than 50 percent of global violent armed conflicts occur in cities, a number which will continue to escalate as populations continue to become more concentrated in large and unequipped

²⁸ *World Urbanization Prospects*.

²⁹ "The World's Cities in 2018 Data Booklet," United Nations Economic and Social Affairs Council, 2019, https://www.un.org/en/events/citiesday/assets/pdf/the_worlds_cities_in_2018_data_booklet.pdf. (Accessed March 7, 2021).

³⁰ "The World's Cities in 2018 Data Booklet."

³¹ "The World's Cities in 2018 Data Booklet."

³² *World Urbanization Prospects: The 2018 Revision*, United Nations Department of Economic and Social Affairs, 2019, <https://population.un.org/wup/Publications/Files/WUP2018-Report.pdf>. (Accessed March 7, 2021).

³³ *World Urbanization Prospects*.

³⁴ *Population Facts*, United Nations Department of Economic and Social Affairs Population Division, 2018, https://population.un.org/wup/Publications/Files/WUP2018-PopFacts_2018-1.pdf. (Accessed March 7, 2021).

³⁵ "Urbanization Effects," National Geographic, February 10, 2021, <https://www.nationalgeographic.com/environment/article/urban-threats>. (Accessed March 7, 2021).

³⁶ "Urbanization Effects," National Geographic

³⁷ "Urbanization Effects," National Geographic

³⁸ "Urbanization Effects," National Geographic

³⁹ "Urbanization Effects," National Geographic

⁴⁰ "Urbanization Effects," National Geographic

⁴¹ "Urbanization Effects," National Geographic (National Geographic, February 10, 2021), <https://www.nationalgeographic.com/environment/article/urban-threats>.

megacities where resources are scarce.⁴² Cities such as Aleppo, Syria, Mosul, Iraq, and Sana'a, Yemen, have experienced “sieges, air and artillery strikes, and violent street fighting.”⁴³ Further, terrorist organizations focus most threats on large and highly populated urban areas, as can be seen as an escalation in recent attacks on cities throughout Africa and Europe.⁴⁴ As a result, NATO has urged its Allies to to prepare for future urban combat, particularly focused on capital cities and other metropolitan areas.⁴⁵ Due to these increased threats, the ability to conduct military operations in urban areas has recently become a new focus of NATO and, especially as combat and warfare tactics shift to more populous regions, the organization and Allies themselves have “begun to focus attention and resources on urban warfare and on building capabilities to facilitate urban missions.”⁴⁶

NATO Actions

Seeing the trend toward urbanization and the rise in terrorist attacks in urban areas, NATO began considering the unique role that urban areas play in combat situations.⁴⁷ In 2014, NATO Strategic Foresight Analysis (SFA) identified urbanization as the most important trend for the future of NATO security operations and began conducting research on it.⁴⁸ That research resulted in a 2016 report, which was then revised with wargame data from NATO Defense College before being presented to the NATO Military Council (MC) in 2017.⁴⁹ After reviewing this report, the MC tasked the NATO Strategic Commands (SC) to create a capstone concept report called the “Joint Military Operations in an Urban Environment” with the express purpose of identifying new strategies for future urban warfare.⁵⁰ The concept drew from many research reports, combat scenarios, wargames, and military experts to fulfill this purpose.⁵¹ It assessed relevant factors, influences, and forces that shape urban warfare and made suggestions on tactics and strategies for future urban NATO operations.⁵² The concept was presented to, and approved by the MC in 2018, and subsequently the North Atlantic Council in 2019, resulting in the official incorporation of the report into NATO’s future plans of operation.⁵³

Conclusion

As urban populations continue to increase and more highly concentrated city centers grow, NATO and its Allies must be prepared to defend urban centers and their populations from not only security threats but also environmental threats and socioeconomic conflicts. The idea of urban combat and warfare is relatively new to NATO, and although some reports have been published, more must be done. Particularly, NATO Member States should be focused on

⁴² Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE,” NATO PA, October 20, 2020, <https://www.nato-pa.int/document/2020-revised-report-urban-warfare-michel-kleisbauer-040-stctts-20-e-rev1>. (Accessed March 7, 2021).

⁴³ Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE.”

⁴⁴ Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE.”

⁴⁵ Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE.”

⁴⁶ Philippe Michel-Kleisbauer, “2020 - REVISED REPORT - URBAN WARFARE.”

⁴⁷ Jozsef Bodnar and Sue Collins, “NATO Joint Military Operations in an Urban Environment:A Capstone Concept,” NATO Joint Warfare Center, 2019, https://www.jwc.nato.int/images/stories/news_items/2019/threeswords/NATOURbanization_2035.pdf. (Accessed March 7, 2021).

⁴⁸ Bodnar and Collins, “NATO Joint Military Operations.”

⁴⁹ Phillipe Michel-Kleisbauer, “Urban Warfare Report,” NATO Parliamentary Assembly Science and Technology Committee, November 20, 2020, https://www.nato-pa.int/download-file?filename=/sites/default/files/2020-12/040%20STCTTS%2020%20E%20rev%20%20fin%20-%20REPORT%20-%20URBAN%20WARFARE_0.pdf. (Accessed March 7, 2021).

⁵⁰ Michel-Kleisbauer, “Urban Warfare Report.”

⁵¹ Jozsef Bodnar and Sue Collins, “NATO Joint Military Operations in an Urban Environment:A Capstone Concept,” NATO Joint Warfare Center, 2019, https://www.jwc.nato.int/images/stories/news_items/2019/threeswords/NATOURbanization_2035.pdf. (Accessed March 7, 2021).

⁵² Bodnar and Collins, “NATO Joint Military Operations.”

⁵³ Phillipe Michel-Kleisbauer, “Urban Warfare Report,” NATO Parliamentary Assembly Science and Technology Committee, November 20, 2020, https://www.nato-pa.int/download-file?filename=/sites/default/files/2020-12/040%20STCTTS%2020%20E%20rev%20%20fin%20-%20REPORT%20-%20URBAN%20WARFARE_0.pdf. (Accessed March 7, 2021).

detering actions that can be taken to not only prepare urban centers for conflict, but also mitigate the threats of urban conflict from both internal and external factors. There are a number of complex issues involved, including socioeconomic standing, availability of resources, infrastructure strength and modernization, religious factions, and more. Member States should evaluate comprehensive plans that create a path forward for protection of urban centers at home and abroad.