

Topic #2: Making dense urban area compatible for longer episodes of extreme weather

I. Background Information

The world is plagued by the serious environmental crisis of global climate change, as a result of the rapid change in weather throughout the world there has been an increase in episodes of extreme weather events leaving urban areas devastated. As carbon dioxide, methane, and other gasses increase they act as a blanket trapping in the heat within our atmosphere. In reaction to this earth's air and ocean temperatures are rapidly increasing resulting in the disruption of the water cycle leaving shifting weather patterns along with melting key land ice leading to the increase of extreme weather. Over the past few years in response to this change we have seen record breaking droughts, hurricanes, severe flooding, drenching rains, and extreme wildfires to name a few. Not only are these events becoming more frequent, they are becoming more intense. This human-caused rise in greenhouse gases is one of the main causes of the increase in extreme weather events according to the Intergovernmental Panel on Climate Change (IPCC)'s Sixth Assessment Report released in 2021.

As a result of climate change more and more cities have been subjected to flooding, extreme temperatures, and water or food shortages. As a consequence of torrential landslides, flooding or temperature events, major cities are experiencing damage to their already flawed infrastructure. In our rapidly growing world it is projected that by 2050 half of the world's population will be living in cities across the globe. Leaving the effects of climate change on urban areas unchecked will lead to struggle and will push the already faltering services to the brink. In 2018 alone 530 cities reported to the Carbon Disclosure Project (CDP) on climate hazards. These cities have a combined population of 517 million people. Due to the rapid growth of urban areas, social and environmental services are already under extreme pressure and unable to account for the vast population growth, combining this with the effects of extreme weather in cities, it shows just how catastrophic this situation is. The current infrastructure within urban areas are unable to withstand the devastating effects of these events leading to the necessity of climate change-resilient infrastructure.

Climate change-resilient infrastructure will work to prevent and slow the devastating effects of extreme weather in urban areas. In order to ensure urban areas are compatible for these long episodes of extreme weather, stronger infrastructure must be implemented. Infrastructure is the key to a well functioning society, economy, enabling the circulation of people, goods, and services. Systematically developing these strong infrastructures is a very important step however the question of cost efficiency is always in the forefront. Developing countries face

the biggest challenges in building climate-resilient infrastructure due to the cost for quality investments in order to build sustainable infrastructure. At the most recent UN Climate Change Conference (COP28), countries were committed to increase the resilience of infrastructure by 2030. Nations will need to take action to address this, with regional and local governments playing an essential role, being responsible for 69% of climate-significant public investment in The Organization for Economic Cooperation and Development (OECD) countries. The investments needed to seize these opportunities are significant: according to OECD, World Bank and UN Environment analysis, an annual investment of USD 6.9 trillion in infrastructure will be necessary by 2030 to ensure infrastructure investment is compatible with the Sustainable Development Goals and the Paris Agreement.

II. United Nations Involvement

With assistance from all relevant United Nations entities, offices and specialized agencies are able to invest in the infrastructure needed in order to prevent the devastating effects of global weather in urban areas. Through the Paris Agreement all parties involved are committed to strengthening the global response to climate change. Under Article 7.1 of the Paris Agreement, a Global Goal on adaptation sets out a collective commitment aimed at “enhancing the world’s adaptive capacity, strengthening resilience and reducing vulnerability to climate change.” Under the Climate Change Adaptation entity in the United Nations, projects are under way to ensure the resilience of mainly underdeveloped nations in specific Bhutan, Tonga, Sao Tome and Principe, Somalia, Timor-Leste, Algeria, Macedonia, and Montenegro.

The United Nations Environment Program (UNEP) has assisted almost 90 projects on climate change adaptation in over 50 countries. Combined, the projects are aiming to benefit around 3.5 million people, restore 241,000 hectares of land, improve climate adaptation knowledge of 324,000 people and 131 institutions, and build over 8,000 water harvesting structures and 82 weather stations. Some involvement specifically relating to making dense urban areas compatible for extreme weather are "Building resilience of urban populations with ecosystem-based solutions in Lao PDR," as approved by the Board of the Green Climate Fund at B.24, “Urban Ecosystem-based Adaptation in Asia Pacific (Bhutan, Cambodia, Lao PDR, Myanmar) - Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region”, “Building climate resilience of urban systems through Ecosystem-based Adaptation in Latin America and the Caribbean,” approved for implementation in 2016 which is one of the main projects for city adaptation.

III. Bloc Positions

Looking at regional bloc positions depend on the current levels of ascertainability for such infrastructure and their economic standpoint. Together with the United Nations many

countries around the world are ensuring that coastal areas of low poverty are first on the agenda to ensure these areas are not completely devastated by the rise of flooding due to the warming temperatures.

In specific the African Union is focused on incorporating climate issues into construction standards to work on more cost effective and efficient transfer to climate resilient infrastructure. However the African nations face disproportionate burden from the frequent extreme weather episodes. Throughout the continent there have been multi year droughts and the temperature has increased slightly above the average increase seen in other areas. On average, African countries are losing 2–5 percent of Gross Domestic Product (GDP) and many are diverting up to 9 percent of their budgets responding to climate extremes. The cost of adaptation in sub saharan africa is seen to reach 30-50 billion dollars annually. By 2030, it is estimated that up to 118 million extremely poor people (living on less than US\$ 1.90 per day) will be exposed to drought, floods and extreme heat in Africa, if adequate response measures are not put in place. This places additional burden on poverty alleviation efforts and can stunt growth within African urban areas.

The Eastern Europe group is moving to ensure security for the economy and infrastructure to prevent the devastating effects of climate change within their own region as well as other developing regions globally. They aim to enhance understanding of the consequences of climate change as well as educating on the importance of climate-resilient infrastructure. These objectives are being aimed for through the project “Climate Change and Security in Eastern Europe, Central Asia and the Southern Caucasus”.

The group of West Europe and Others (including the United States, Canada, Greenland, and Australia) is committed to becoming climate neutral by 2050 by directing a minimum of 35% of funds towards climate initiatives, a main point being climate-resilient infrastructure. These areas have a unique understanding of the importance of climate change initiatives and the increase of sustainable infrastructure within urban areas. Cities in this bloc are increasingly feeling the effects of climate change and the extreme weather conditions, seeing increased frequency of flooding, hurricanes, and heatwaves. Cities are aiming to adapt in budget effective ways to accommodate for the climate change effects by including urban planning and building codes, economic incentives and insurance, early-warning systems and information campaigns. Emerging areas of opportunity for adaptation include promoting urban agriculture, creating more liveable public spaces and protecting cultural heritage. Additionally switching to nature based solutions for cooling and water retention within cities.

The Latin America and Caribbean region is characterised by its vulnerability to climate change and its effects including extreme warm temperatures and precipitation patterns, coastal flooding and erosion and increase in intensity and frequency of tropical cyclones. These

hazards have negatively impacted the population within many urban areas which is leading to the increased need for building basic infrastructure such as housing, public infrastructure related to water supply, sanitation, transportation, and energy supply facilities. To respond to these challenges in the infrastructure sector, national governments, city authorities, federal institutions and local populations have implemented initiatives to address climate vulnerability and increase local infrastructure resilience. Through the Paris agreement Latin American and Caribbean nations have agreed to reduce their CO2 emissions by 2023. As of 2024 a new cooperation agreement between UNOPS and the Inter American Development Bank (IDB) – signed during the 79th Session of the UN General Assembly where they aim to build climate-resilience and advance sustainable development across the region of Latin America and the Caribbean.

Within the Asia-Pacific group, concerns have been raised about developing nations mainly in the Pacific and the detrimental effects climate change has brought. To help The United Nations Office for Project Services (UNOPS) successfully hosted a panel discussion, "Building Climate-Resilient Infrastructure in the Pacific", at the Coalition for Disaster Resilient Infrastructure (CDRI) Pavilion during COP29. This session focused on pioneering strategies to address the urgent infrastructure challenges faced by Small Island Developing States (SIDS) in the Pacific. These nations are at the forefront of the global climate crisis due to rising sea levels and increasingly severe weather events that threaten vital infrastructure, economies, and communities. This area specifically is struggling as a result of this crisis due to their lack of monetary funds in order to build health and climate resilient infrastructure. Looking at the entire region Asia-Pacific has some of the most climate-vulnerable and diverse geographies. At the same time, the region accounts for more than half of global energy consumption, with 85% obtained from fossil fuels. Access to clean energy and climate action are key to equitable and inclusive sustainable development in the region, especially in cities. Yet this requires considerable finance, and, except for China, Asia-Pacific received only 15% of global climate finance in 2020.

IV. Questions to Consider

- What is my country's official stance/position when it comes to investing in climate change-resilient infrastructure?
- How is my country affected by climate change/extreme weather?
- How dedicated is my country to preventing the destruction of climate change?
- Are there UN actions that your country supported or opposed regarding the topic?
- What is the stability of my country's current economy and infrastructure?

- How do other countries' positions affect your country's position on the residing issue?
- Which aspects of the issue are most important to your country?
- Is there evidence or statistics that help back your country's position?

V. Sources and useful links

Understand United Nations Involvement

- <https://unhabitat.org/sites/default/files/2024/11/wcr2024 - full report.pdf>
- <https://www.oecd.org/en/about/news/press-releases/2024/04/massive-investment-is-needed-in-sustainable-infrastructure-to-build-climate-change-resilience.html>
- <https://www.unep.org/topics/climate-action/adaptation/climate-adaptation-project-list>

Basic Information

- <https://www.unep.org/explore-topics/resource-efficiency/what-we-do/cities-and-climate-change#:~:text=Rising%20global%20temperatures%20causes%20sea,housing%2C%20human%20livelihoods%20and%20health>
- <https://www.ox.ac.uk/news/2024-01-29-expert-comment-urbanisation-s-role-climate-crisis-being-overlooked>

Climate Change-Resilient Infrastructure

- <https://news.climate.columbia.edu/2024/07/22/the-case-for-climate-resilient-infrastructure/>

Extreme Weather in Urban Areas

- <https://www.jll.de/en/trends-and-insights/cities/how-are-cities-responding-to-the-growing-risks-of-extreme-weather>
- <https://www.wri.org/insights/future-extreme-heat-cities-data>
- <https://www.cdp.net/en/research/global-reports/cities-at-risk>

