

Unit 1: Introduction to Smart City 3.0

1.3. Challenges of the urban environment

Duration: 45 Minutes

Teaching topic:

- What is urbanization and how does it affect people's daily lives?
- What are the Solutions to the challenges?
- Exercise: Draft your optimal Urban City.

Learning Aims:

- Through this unit, young people should learn what challenges they can identify in the places where they live. This will help them to relate their situation to current problems. How climate change directly affects them, even if they do not understand it. They will also learn what megacities are, their problems, and how they differ from non-megacities.
- The main learning objective of this unit is to learn about the potential solutions to urban challenges. In addition, we will focus on making a city walkable, one of the most undervalued solutions.

Methodology - Example:

- Presentation
- Learning Videos: (15 minutes)
- Group Exercise.

Sub Topic 1: What is urbanization and how does it affect people's daily lives?

Duration: 20 Minutes

Content: Presentation

Slide 1:

Welcoming young people to Unit 1.3 with a question. What do they believe that urbanization is? Then, after a 5-minute discussion, we proceed to Slide 2.

Slide 2:

According to the Britannica Online Dictionary Urbanization refers the process by which large numbers of people become permanently concentrated in relatively small areas, forming cities. By concentrating large numbers of workers and their families in cities, industrialism ultimately led to modern life being

unquestionably urban for most of the world's population. Through the 20th and the 21st centuries, continued economic development and population growth fueled the generation of megalopolises—concentrations of urban centres that may extend for scores of miles.

As of today, more than half of the world's people (55%) live in urban areas, and this is expected to increase to 68% by the year 2050. This gradual shift from rural to urban areas is called urbanization. Industrial growth, employment opportunities, better living standards, economic problems, political turmoil in developing areas and modernization are some of the factors that contribute to urbanization.

Slide 3:

You can see on this slide how the landscape has changed over the years and how the rural population has decreased and the urban population has increased.

Slide 4:

However, this rapid urbanization and increase in population and economic/industrial activity poses many challenges to the urban environment. The four main challenges that are identified are the following:

1. **Standard of Living and Inequality:** In developed countries, inequalities in housing, education, jobs, and health are major issues. Those with lower income may live in housing that has access to fewer parks and more roads, leading to health problems. Children in deprived districts may leave schools with fewer qualifications, making it difficult to achieve steady employment. Unhealthy lifestyles can also arise from a lack of education, affecting life expectancy.
2. **Climate Change:** The threat of climate change is having a significant impact on our society in many ways. In recent decades, changes in weather patterns have placed a great deal of pressure on new urban development. To address the increasing risks posed by natural disasters and extreme weather conditions, urban planners are exploring ways to enhance the resilience of urban areas.
3. **Urban Pollution:** Urban pollution encompasses many types of pollution, such as waste, air, and water pollution. Cities generate a lot more waste and pollution than rural areas and demand more resources. Urban waste management is also increasingly important as cities grow and waste must be transferred out.
4. **Congestion:** Congestion is particularly pronounced in cities with a population greater than 1 million inhabitants. It leads to reduced vehicle speeds, longer travel times, and increased air pollution. Additionally, congestion can cause delays in emergency response times and negatively impact the overall quality of life for urban residents.

Slide 5:

To those Challenges, three trending solutions are to be found that are explained in three videos.

Slide 6-9: 3 Videos of 15 minutes in total.

Slide 10:

Divide young people into groups of three and have them select one challenge to investigate further. Ensure that all four challenges are chosen and then have them assign roles within the team while also selecting one or more solutions to create their optimal urban city. They can consider real-life cases of problems or challenges and focus their research accordingly. For the remaining time, the focus should be on examining how the challenges can be resolved using the three proposed solutions. Finally, in the last 10 minutes, the solutions should be presented publicly.

Further Reading:

- Urban Threats by National Geographics Team
- Problems of Rapid Urbanisation
- Bernardo, V., Fageda, X., & Flores-Fillol, R. (2021). Pollution and congestion in urban areas: The effects of low emission zones. *Economics of Transportation*, 26–27, 100221.
<https://doi.org/10.1016/j.ecotra.2021.100221>
- Ramin Keivani (2009) A review of the main challenges to urban sustainability, *International Journal of Urban Sustainable Development*, 1:1-2, 5-16, DOI:10.1080/19463131003704213

Methodology

- Delivering presentation
- Watching a video

Material

- Presentation
- Internet Connection
- Laptop or Smartphone for searching