Climate Change, Cities, Communities & Equity in Health

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Urban Health

Why do we care about the urban areas? Cities are often characterized by high population density, air pollution, traffic congestion, and other environmental hazards that can impact the health of residents. The percentage of people living in cities exceeds 55% of the world's population, a number which is estimated to reach up to 68% by the middle of the 21st century.

Numerous scientific studies have highlighted the connection between climate change and urban health. The term urban health refers to the sustainable regeneration of the city with the aim of preventing but also dealing with the effects of climate change. One major impact of the increased temperature in cities is the intensification of the urban heat island (UHI) phenomenon which refers to the temperature difference between urban and rural areas. The exacerbation of the UHI phenomenon will lead to even higher ambient temperatures than the existing ones affecting, hence, the urban health of dwellers living in the cities. In general, the urban health of residents deteriorates in extreme weather conditions (with very high- or low-temperature values or increased concentrations of pm in the atmosphere) putting them at risk, especially those belonging to vulnerable groups. Citizens' exposure to climate change impacts is linked to several health problems, namely heat stroke, heat cramps, and heat syncope.

Consequently, climate change exacerbates the problems of cities even more and makes them even more vulnerable. A city's vulnerability to climate change depends on both its exposure to it and its degree of sensitivity. Therefore, the authorities of individual cities and the countries' governments are called to regenerate the cities to protect their population and ensure their access to sustainable living and building environments. Mitigation measures should be taken in order to reduce greenhouse gas emissions and limit the extent and impact of global warming by using both renewable energies and innovative technologies. Mitigation measures are an important aspect of risk management and environmental sustainability. On the other hand, the term adaptation refers to the adaptation of systems to the existing and projected impacts of climate change with the aim of mitigating them.

In these workshops, students delved into all these concepts and focused their attention on the city of Strovolos located in Cyprus. Also, different educational methodologies were applied to enhance their contribution and improve skills that they will need as future scientists. Some of the most interesting are highlighted below.

Urban walk

Students participating in the workshops had the opportunity to explore the city of Strovolos in 2 different ways:

❖ **From above**
By finding information related to the city as
- ➢ total surface area
- ➢ demographic data (number of habitants/km2)
- ➢ road network
- ➢ public transport
- ➢ commercial shops
- ➢ cultural activities
- ➢ athletic activities
- ➢ presence of green areas

❖ **From within**
Using walking as a research method in order to get to know better and familiarize themselves with a specific neighborhood.

Figure 1. Photos during the urban walk using a camera (left column) and a thermal one (right column).

Debate

During these workshops, students also had the opportunity to have a hands-on experience in debate. More specifically, the topic of the debate was to **argue for or against a plan of regeneration** of an area with a 1km radius around the Panayia Chryseleousis church in the municipality of Strovolos. The plan included
- ➢ modifications in the road network (forbidding cars in the historical center and pedestrianization).
- ➢ creation of green and blue infrastructure.
- ➢ renovation and renewal of buildings.
- ➢ motivations for establishing businesses.

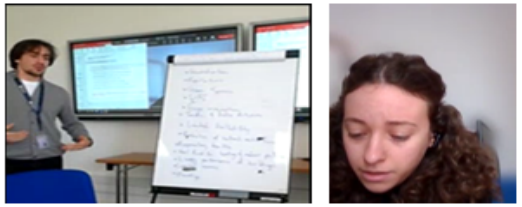

Figure 2. Photos of students during the debate.

Expert Panel

Furthermore, students participated in an expert panel whose topic was "How climate modeling can enable the assessment of climate change impact on people's lives?". Hence, each student had to be an expert in his research field except one who would be the chair of the panel. Each expert gave a 5-minute presentation of his point of view on this specific topic which was then followed by a questions and answers session from the public.

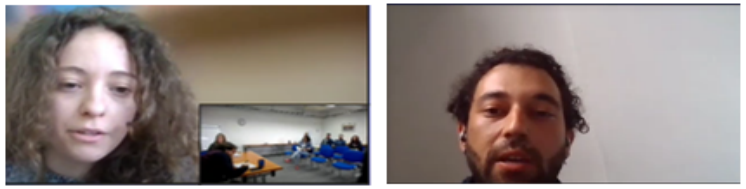

Figure 3. Photos of students and the public during the expert panel.

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Result Leading Organization: Salvatore Carlucci, Ioanna Kyprianou, George Artopoulos, Panos Hadjinicolaou