
EDIT HOYK: URBAN ADAPTATION TO CLIMATE CHANGE FROM THE PERSPECTIVE OF A CIRCULAR ECONOMY

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The attempts to reduce the negative effects of climate change in urban environment primarily focus on overheating protection and decrease of UHI effect primarily. Green infrastructure has a prominent role in this adaptation process, which connects to a circular economy through the economic recovery of innovative solutions. In our research, we measured the urban climate – within a medium sized Hungarian city (Kecskemét) – with five Netatmo NRG01-WW weather stations, which give us a climatic cross-section of the town. We analysed 10 August 2017 – 10 November 2017 period. The measured parameters were the following: temperature, precipitation, humidity and wind. Because green surfaces can play a significant role to reduce UHI effect, we made qualitative and quantitative survey about the green areas of Kecskemét downtown (size of green areas, number, type and health of the trees). We used Google Street View and a simplified version of EU method for health status classification, with three health classes (1 – good; 2 – medium; 3 – bad health condition). Our results show 1,5-2 °C differences between the densely built downtown measure point and the loosely built downtown edge or the intermediate measure points, with higher nightly temperatures in the downtown. This indicates the presence of the UHI phenomenon in Kecskemét. However, there is no significant difference in the daytime warming. In the precipitation, there may be a significant difference between the city centre and downtown edge (data can show almost 30 mm difference within one day). The differences in precipitation between different points of the city reflect the unpredictable rainfall patterns; within a distance of 1 km, there is a deviation of up to 30% in the rainfall. Green areas of the downtown approx. 60 ha, which is about 30% of the investigated area. This value is relatively high, although it is not a coherent green area; the largest coherent greenery is about 5 ha – this extension can have a significant impact on the urban microclimate, but other green areas in the downtown are too small for a similar impact. Because of this, in case of the vegetation of the downtown, emphasis should be placed for shielding and decreasing of the daytime overheating. To achieve this, we need healthy canopy with high density and other alternative solutions, such as green facades, green roofs etc. A significant part of the woody vegetation surveyed