



Small Blue – Green Infrastructure - nature-based solution for the adaptation of the city to climate change

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Abstract

Cities are areas particularly vulnerable to the effects of anthropogenic climate change. High densities of people and infrastructure mean that catastrophic phenomena can cause significant material, economic, psychological and health losses in cities.

In addition, the effects of climate change, such as high temperatures or heavy rainfall, are compounded by the specific climate of the city, created as a result of replacing the natural landscape with urban development. The increasing number of sealed surfaces (streets, sidewalks, parking lots, squares, houses) and the reduced share of biologically active areas (greenery, rivers and natural water bodies) increase the temperature inside the city (the so-called urban heat island and the urban surface heat island) and increase the risk of flooding and flooding. Analyses of the space of Radom indicated that the central parts of the city are the most sensitive to high temperatures and flash floods.

The basis for the adaptation of urban space to climate change is the proper functioning of the so-called blue-green infrastructure (BZI). It consists of all areas related to urban greenery, surface water and various technical solutions that retain rainwater in the place of precipitation and support water retention in the landscape.

The use of BZI allows you to reduce the surface temperature and the effect of the urban surface heat island, as well as alleviate the occurrence of flooding resulting from intense rainfall. The retention of rainwater translates into a smaller amount of rainwater in the rainwater drainage system, and thus – less problems with the inefficiency of sewage manholes and flooding from rivers.

As part of the project, LIFE_RADOMKLIMA_PL of the more than 30 adaptation activities were carried out in Radom, consisting in the implementation of small blue-green infrastructure



facilities (so-called small BZI). Their task is to retain rainwater at the place of precipitation in tightly built-up, central parts of the city, where the risk of overcrowding of rainwater drainage and flooding resulting from rapid urban floods is the greatest. Thanks to their construction, attractive places for residents are created, and biodiversity enclaves are introduced in place of the surface.

In the presentation, we will show solutions made as part of the project, such as ClimaPond biological ponds, ClimaBox biological water reservoirs, draining swales, rain gardens, green bus-stops and bicycle shelters. We will also discuss their performance in rainwater retention and implementation challenges.

Keywords: adaptation to climate change, rainwater, blue and green infrastructure.