

## Environmental and Formal Conditions for the Development of Blue-green Infrastructure (BGI) in the Cities of Central Europe on the Example of Poland

**Authors :** Magdalena Biela, Marta Weber-Siwirska, Edyta Sierka

**Abstract :** The current noticed trend in Central European countries, as in other regions of the world, is for people to migrate to cities. As a result, the urban population is to have reached 70% of the total by 2050. Due to this tendency, as well as taking high real estate prices and limited reserves of city green areas into consideration, the greenery and agricultural soil adjacent to cities is are to be devoted to housing projects, while city centres are expected to undergo partial depopulation. Urban heat islands and phenomena such as torrential rains may cause serious damage. They may even endanger the very life and health of the inhabitants. Due to these tangible effects of climate change, residents expect that local government takes action to develop green infrastructure (GI). The main purpose of our research has been to assess the degree of readiness on the part of the local government in Poland to develop BGI. A questionnaire using the CAWI method was prepared, and a survey was carried out. The target group were town hall employees in all 380 powiat cities and towns (380 county centres) in Poland. The form contained 14 questions covering, among others, actions taken to support the development of GI and ways of motivating residents to take such actions. 224 respondents replied to the questions. The results of the research show that 52% of the cities/towns have taken or intend to take measures to favour the development of green spaces. Currently, the installation of green roofs and living walls is are only carried out by 6 Polish cities, and a few more are at the stage of preparing appropriate regulations. The problem of rainwater retention is much more widespread. Among the municipalities declaring any activities for the benefit of GI, approximately 42% have decided to work on this problem. Over 19% of the respondents are planning an increase in the surface occupied by green areas, 14% - the installation of green roofs, and 12% - redevelopment of city greenery. It is optimistic that 67% of the respondents are willing to acquire knowledge about BGI by means of taking part in educational activities both at the national and international levels. There are many ways to help GI development. The most common type of support in the cities and towns surveyed is co-financing (35%), followed by full financing of projects (11%). About 15% of the cities declare only advisory support. Thus, the problem of GI in Central European cities is at the stage of initial development and requires advanced measures and implementation of both proven solutions applied in other European and world countries using the concept of Nature-based Solutions.

**Keywords :** city/town, blue-green infrastructure, green roofs, climate change adaptation

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