



## SmartFood: Engaging citizens in food diversity in cities

### D1.2. Blueprint of water management solution for sharing using rainwater and water form A-C for urban agriculture

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<b>Lead partner</b>	Cracow University of Technology CUT		
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## **Executive Summary**

The observed climate change and the possibility of unforeseeable crisis situations force us to look for new solutions for the cities of the future. The necessity to transform cities and increase the resilience of their inhabitants does not require discussion. One of the main problems is the need to ensure food and water security for cities dwellers.

The report presents the conceptual design of novel water management solutions for sharing water from alternative sources for hydroponic cultivation in urban multi-family buildings. The proposed system includes the collection of rainwater from a downpipe carrying rainwater from a flat roof, to the planned reservoir. Then, the raw rainwater will be directed to the highly efficient water treatment system, and further to the technological water tank. Its amount will be topped up with tap water, which will also be referred to as technological water after additional treatment. This water from the tank will be distributed to the cabinets with hydroponic crops (so called hydroponics) located on individual floors through the installation of process water remaining under pressure. To ensure water safety, it was also suggested to recirculate the water in the riser. UV disinfection is also provided. It was suggested that the water could be cut off from the floor level on each floor. It was proposed to install a water shut-off valve accessible from the level of floor on each storey. It is also assumed that each of the cabinets is measured with water meters.

In addition, the study also includes an justification explaining the rationale for introducing the urban farming, supplied by rainwater and/or water from the air conditioner. The document also describes the various stages of work aimed at developing a concept of water management solutions for hydroponics. The preliminary phase covered, inter alia, creating a visualization of water sharing systems for hydroponics in multi-storey buildings, study visits to selected buildings considered in terms of the location of the Urban Living Lab (ULL), as well as an analysis of selected factors determining the introduction and effective operation of rainwater using systems for the needs of urban agriculture in existing multi-family buildings.