



## **Urban farming and water management: can rooftop gardening play a role ?**

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Our project takes part in a series of research projects whose aim is to design novel production systems for urban farming. Such systems are sought to be, adjustable, inexpensive to build, labor-extensive and sustainable. Another prominent goal of this work is to promote the efficient use of water resources by offering a way to use rainwater, in a water scarcity context.

The research object is a rooftop gardening prototype made up of plastic tanks used for vegetable production, and for rainwater storage. The system permits an autonomous water supply to the crops. It also aims at mitigating the effects of storm events in urban areas.

Our contribution, as master students, consisted in the design of a rainfall simulation system and related monitoring of water fluxes and water stocks in the gardening prototype. We also developed a simple reservoir model in order to represent its hydrological behavior.

Rainfall simulations and hydrological modelling allowed us to characterize two different prototypes and to simulate how they would behave using long term weather data.