



Photo: Chris Gallagher

FLOODCITISENSE

EARLY WARNING SERVICE FOR URBAN PLUVIAL FLOODS FOR AND BY CITIZENS AND CITY AUTHORITIES

Extreme and unpredictable flooding can cause important damages to cities natural and built environment. Governments, water management authorities, and researchers try to cultivate ever more advanced flood warning systems. The project FloodCitiSense has developed a sophisticated early warning system (EWS) for flooding, to be used by inhabitants and municipal authorities across Europe. The system is now visible to municipal actors and flood mitigation experts.

CITIZENS TO PLAY AN IMPORTANT ACTIVE ROLE IN FLOODING MITIGATION

The project used citizen observatories which made citizens active research partners. Two citizen science workshops were organized in each pilot city, in the summer of 2018 and in the winter of 2019, respectively. Each workshop recruited 15-25 participants, training them to ensemble the rainfall sensors and to use the FloodCitiSense App. As a result, about 60 first-generation sensors and 50 second-generation sensors have been installed in Birmingham, Brussels, and Rotterdam. Local citizens also learned to use the self-designed app to report urban flooding by sending photos and texts. The FloodCitiSense mobile application is used to report pluvial flooding. Citizens select the rainfall and flooding types, and take a picture or a video. Reports can be viewed on a map along with rainfall from official rain gauges and FloodCitiSense rainfall sensors. The mobile app can be downloaded from the Google PlayStore or the Apple AppStore.

The results, including a push notification system (for mobiles) that can be used to warn people about imminent flooding, are very promising. The project means that the methods of co-creation and urban living labs are elements that makes the project and its results more innovative than previous similar projects. For example, testing a flooding EWS on a real flood inspires more confidence than EWS tested on a simulation. The differences between the involved cities (Brussels, Rotterdam, Birmingham) highlight the limitations of a general system and show where context specific adjustments need to be made.

CREATING A FLOOD MANAGEMENT DASHBOARD FOR CITY MANAGERS

The results lay ground for creating a flood management dashboard for city managers. Currently all the project data is hosted in a central database that could be accessed by city administrators. This would allow cities to create mutually beneficial feedback loops with their citizens. Citizens could help their city governments form a big picture view of flood risks.

The FloodCitiSense product will go through phases of rigorous testing and refinement to ensure credibility, and it has an excellent basis to develop into a fully operational EWS. The fact that the project is being conducted on a European level means more widely applicable results. The project has created a way to get much more consistent information about pluvial flooding, and raised public interest in flood research.

PROJECT FACTS

Duration: 2017-2020

Involved Cities: Brussels, Rotterdam, Birmingham

Partners: Vrije Universiteit Brussel, Delft University of Technology, Imperial College London, International Institute for Applied Systems Analysis, Etats Généraux de l'Eau à Bruxelles, Local Government Information Unit, RainPlusPlus Ltd, RPS Environmental Management Ltd, Disdrometrics, City of Brussels, City of Amsterdam, Birmingham Council, Severn Trent Water, National Taipei University of Technology

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Web: floodcitisense.eu

Result interview: jpi-urbaneurope.eu/FloodCitiSenseResults

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