

## **keep your models up-to-date: connecting community mapping data to complex urban flood modelling**

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The world is urbanizing rapidly. According to the United Nation's World Urbanization Prospect, 50% of the global population already lives in urban areas today. This number is expected to grow to 66% by 2050. The rapid changes in these urban environments go hand in hand with rapid changes in natural hazard risks, in particular in informal unplanned neighbourhoods. In Dar Es Salaam – Tanzania, flood risk dominates and given the rapid changes in the city, continuous updates of detailed street level hazard and risk mapping are needed to adequately support decision making for urban planning, infrastructure design and disaster response. Over the past years, the Ramani Huria and Zuia Mafuriko projects have mapped the most flood prone neighbourhoods, including roads, buildings, drainage and land use and contributed data to the open-source OpenStreetMap database.

In this contribution, we will demonstrate how we mobilize these contributed data to establish dynamic flood models for Dar Es Salaam and keep these up-to-date by making a direct link between the data, and model schematization. The tools automatically establish a sound 1D drainage network as well as a high resolution terrain dataset, by fusing the OpenStreetMap data with existing lower resolution terrain data such as the globally available satellite based SRTM 30. It then translates these fully automatically into the inputs required for the D-HYDRO modeling suite. Our tools are built such that community and stakeholder knowledge can be included in the model details through workshops with the tools so that missing essential information about the city's details can be augmented on-the-fly. This process creates a continuous dialogue between members of the community that collect data, and stakeholders requiring data for flood models. Moreover, used taxonomy and data filtering can be configured to conditions in other cities, making the tools generic and scalable. The tools are made available open-source.