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Development of a web based GIS application to provide climate adaptation data for decision-makers

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Climate adaptation research needs to reach policy-makers and urban planners, otherwise it remains purely academic. However, this information flow is hindered by several problems. Raw data are rarely available or barely processable due to their size. Also, most scientific publications of urban climate research do not address matters of planning directly and urban climate scientists are not necessarily aware of the specific needs of urban planners. For the city of Hamburg (Germany), a web based GIS application, developed in co-operation with the local authority for urban planning and the environment ("Behoerde fuer Stadtentwicklung und Umwelt"), seeks to close this information transfer gap. We make use of the mesoscale numerical model METRAS to analyse the efficacy of adaptation measures in urban climate, mostly in regard to the implementation of green roofs. Apart from being published in scientific journals, we further process and refine the results in order to address the needs of urban planners explicitly. Our interactive web based GIS provides the means to communicate results efficiently. Climate scientists and urban planners collaborate with each other to draw a plan of how the tool will work. Scientists organize workshops not only to receive feedback straight from the users, but also to strengthen the cooperation between the involved groups. Thereby, stakeholders will gain an improved understanding of each other, where common problems such as those mentioned above are avoided. Scientists will learn which results are of interest and how they should be processed for urban planners. Urban planners establish direct contact with scientist and get immediate information. Furthermore, we expect policy-makers will be able to work towards efficient climate adaptation strategies. The tool and the experience gained in this project will also be valuable for comparable international programs.