

# Water sensitive urban planning – how can heavy rain and storm water be better managed?

Intensive knowledge exchange and peer consultation: Connective Cities dialogue event in Cologne



## Overview

Heavy rain and storm water events such as those in the Ahr valley in Germany in 2021 or in Pakistan, Australia or South Africa in 2022 cause streams to swell to raging torrents. They flood roads, destroy houses and bridges and important infrastructure. Yet not only do they cause damage worth billions – they also lead to loss of life. They occur suddenly, and can only be predicted at short notice. Due to climate change, these events will continue to increase in frequency and severity worldwide.

41 experts from 16 cities and eight countries accepted the joint invitation of Connective Cities with Stadtentwässerungsbetriebe Köln (SIEB Köln) and United Cities and Local Governments (UCLG) to this dialogue event in December 2022.

Twelve practical examples from five countries formed the starting point for an intensive peer consultation on which approaches can be used to minimise the risks of heavy rain and storm water events for people and municipal infrastructure. Existing projects were enriched and new project ideas emerged.



## Program

The event started with welcoming speeches by Andreas Wolter, Deputy Mayor of Cologne and representatives of SIEB Cologne, Connective Cities and UCLG. In two main presentations, the concept of "Integrated Water Resources Management" was theoretically underpinned and how water-sensitive cities can be promoted through capacity development.

The core of the conference was the peer consultation based on the concrete practical examples of the participants in different parallel working groups and several rounds.

In addition, the participants had the opportunity to inform themselves about further initiatives and funding programmes on the topic and to establish contacts at a "market of opportunities".

The conference concluded with an excursion to pumping stations and flood protection measures of SIEB Cologne.

[Participating municipalities and agenda](#) [pdf, 623 kb]

## Keynotes

[Integrated Water Resources Management](#)  
Betül Türkeri, Mercator-IPC (Istanbul Policy Center) Fellow  
Integrated Water Resources Management (IWRM) analyses the interaction of surface water, aquifers and coastal waters, with a view to managing them sustainably in order to promote social and economic development, and ensure ecosystem functionality.  
[pdf, 330 kb]

["Catalyzing" Water Sensitive Cities through Capacity Development](#)  
Julie Perkins, Global Water Operators' Partnerships Alliance (GIWOPA)  
So far, water supply and sanitation services are far from reaching all people. Peer consulting in Water Operators' Partnerships (WOPs) can be a crucial lever to improve capacity here.  
[pdf, 3,4 mb, in English]



## Presentations

The starting point for further peer consultation was twelve practical examples, which at the same time reflected the diversity of approaches. They ranged from improving infrastructure for flood protection in high-risk zones in Cologne and Dnipro (Ukraine), to raising awareness and supporting citizens in private heavy rainfall management in Heidelberg and Mannheim (Germany), to nature-based solutions such as improving green infrastructure in Kigali (Rwanda), tree-trenches in Hagen (Germany) and the development of a sponge city concept in Hamburg (Germany), to the targeted involvement of local residents in urban drainage construction measures in Banjul (Gambia) and Rio de Janeiro (Brazil), to water-sensitive land use planning in Düsseldorf and Duisburg (Germany) and a pilot study on decentralised flood protection in the Ahr Valley (Germany).

An overview of the twelve practical examples and further links can be found in the report (see below).

## Results

During the two-and-a-half-day event, there was a close as well as diverse exchange of expertise among colleagues, for example on a financing concept for an improved drinking water and wastewater system in Kigali, Rwanda; on decentralised flood protection and the involvement of the population in the planning of flood protection measures in the Ahr Valley, Germany; on improving drainage infrastructure in Mwanza, Tanzania and in Zarqa, Jordan; on preventing flood amnesia – the forgetting of flood risks over generations; on integrating sponge city measures into existing infrastructure; and on a pilot tree-trenches programme in Banjul, Gambia.

Some general lessons also emerged, such as:

1. Flood protection along river courses cannot only start in the river valleys, but also in the upstream river tributaries.
2. It takes many small measures on a regular basis to prevent flood amnesia.
3. Successful pilot projects and positive cost-benefit analyses can help to convince the population as well as decision-makers for changes in existing infrastructure, for example with regard to a sponge city concept.
4. Sponge cities help to protect groundwater resources through more infiltration areas and become more resilient to prolonged droughts and hot spells, but provide only limited protection during very extreme storm and heavy rainfall events.
5. If residents' own resources are limited to get involved in an organised way in the development of flood protection concepts, it can be helpful to involve external partners such as universities, mediators and/or journalists.
6. The direct involvement of local residents in the construction work for improved drainage infrastructure not only generates local income, but also increases the acceptance and thus the sustainability of the measures.

The event was concluded with a tour of pumping stations and flood protection measures of SIEB Cologne.

A more detailed description of the dialogue processes can be found in the report on the conference (see below).



## Report

Conference Report:  
[Water sensitive urban planning - how can heavy rain and storm water be better managed?](#)  
Results of the Connective Cities dialogue event from 6 to 8 December 2022 in Cologne in cooperation with Stadtentwässerungsbetriebe Köln (SIEB Köln) and United Cities and Local Governments (UCLG)  
[pdf, 7 pages, 1,47 mb]

Documentation of UCLG and Connective Cities:  
[Water Sensitive Urban Planning in times of Climate Change](#)  
UCLG Peer Learning Note #33  
[pdf, 16 pages, 2,5 mb]

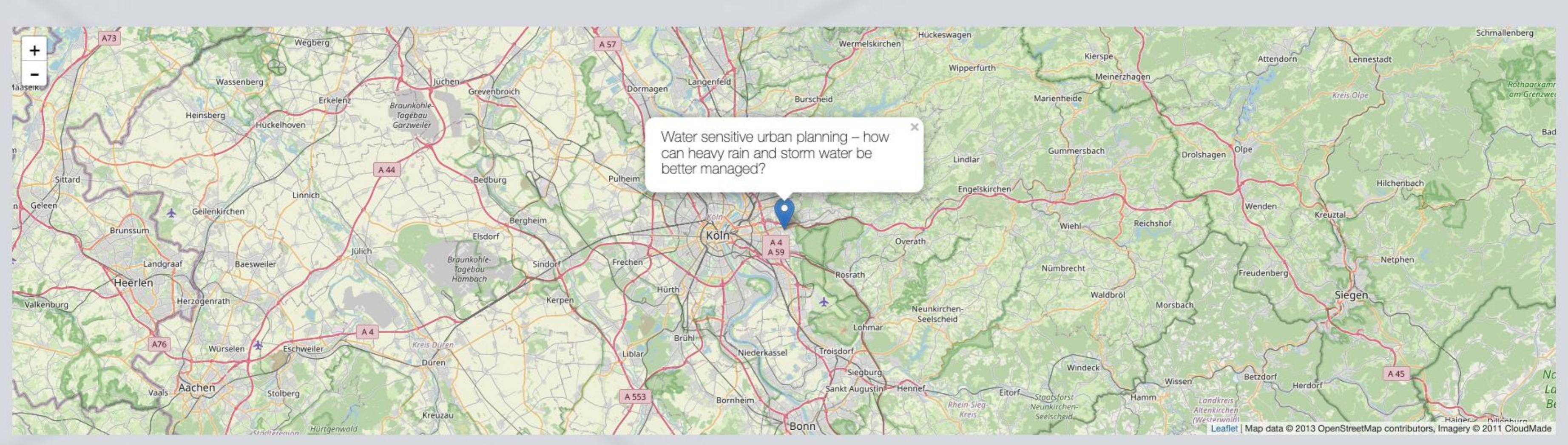
## Gallery



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## Location



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