

# AQUACLEW

Advancing Quality of Climate services for European Water

## What are Climate Services?

The AQUACLEW project understands climate services as the user-driven development, translation and transfer of climate knowledge to researchers, policy makers and private businesses. This includes knowledge for better understanding of climate change and its impacts as well as guidance for making better use of climate knowledge.

## Main Research Questions

The AQUACLEW project aims to investigate in several water related case studies how a broad range of users could best utilize climate information from a tailor-made online climate service.

The main research questions are therefore:

1. How can climate services be developed by incorporating multiple organizations along the entire climate service production chain, from research to data production, climate service use and decision making?
2. How should data, quality assurance and guidance be tailored along the whole data-production chain to closer meet user needs and requirements, including resolution and precision?

## IRPUD's Responsibilities

The IRPUD team will

1. identify and assess the user needs of German climate services users in the water sector,
2. assist the integration of AQUACLEW indicators into existing German climate services,
3. coordinate the European case studies and conduct the German case study (urban flash floods in the city of Hagen).

## Research Period and Sponsor

10/2017 - 09/2020  
www.aquaclew.eu



European Research Area for Climate Services



GEFÖRDERT VOM  
Bundesministerium für Bildung und Forschung

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## Helping users to use climate services

Providing data through user-friendly technology is only one aspect of making climate services successful. For users the 'soft' aspects of integrating the hard data and services into their own organization and work is often even more important for taking up, sustaining and effectively using such services. Thus embedding climate services' outputs into the structures, decision-making and implementation processes of an organization is crucial.

At the same time, in the spirit of 'co-development', the case study organizations will actively participate in tailoring the AQUACLEW climate services to really suit the needs of users. In the end, the case study organizations and similar users should be able to effectively and efficiently use the AQUACLEW climate data to for example conduct climate change impact assessments or develop water management, environmental protection, land-use or disaster response plans.

## Case Studies

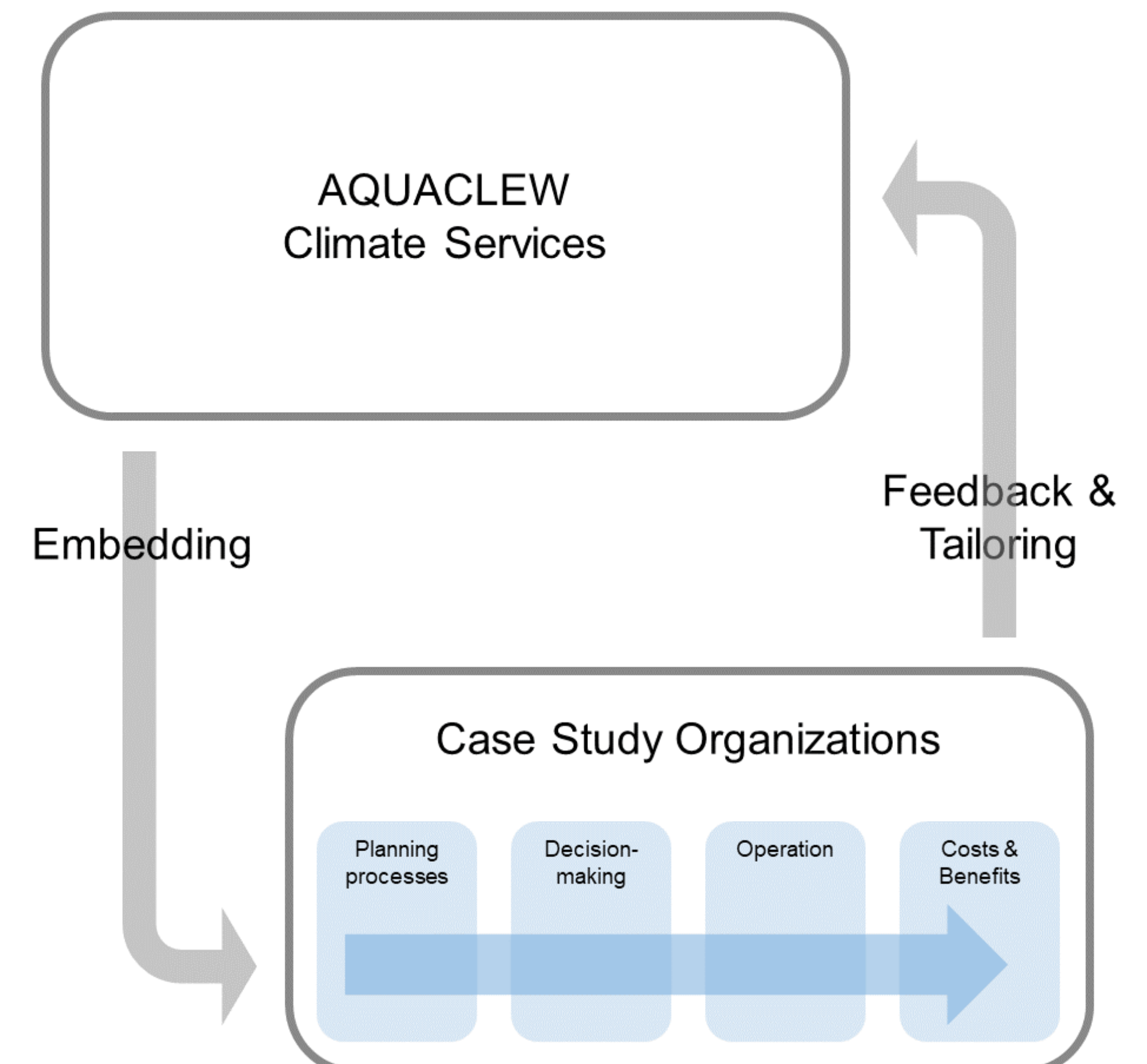
The project will study these issues in seven case studies across Europe (see map). The case studies will each have a specific water related focus:

- Urban flash floods
- Pluvial flash floods in a pre-alpine region
- Drought and water resource allocation for the tourism, agriculture, energy sectors
- Hydropower production
- Water for agricultural production
- Biodiversity decline due to hydrological changes
- Fluvial and coastal interactions under Mediterranean climate conditions

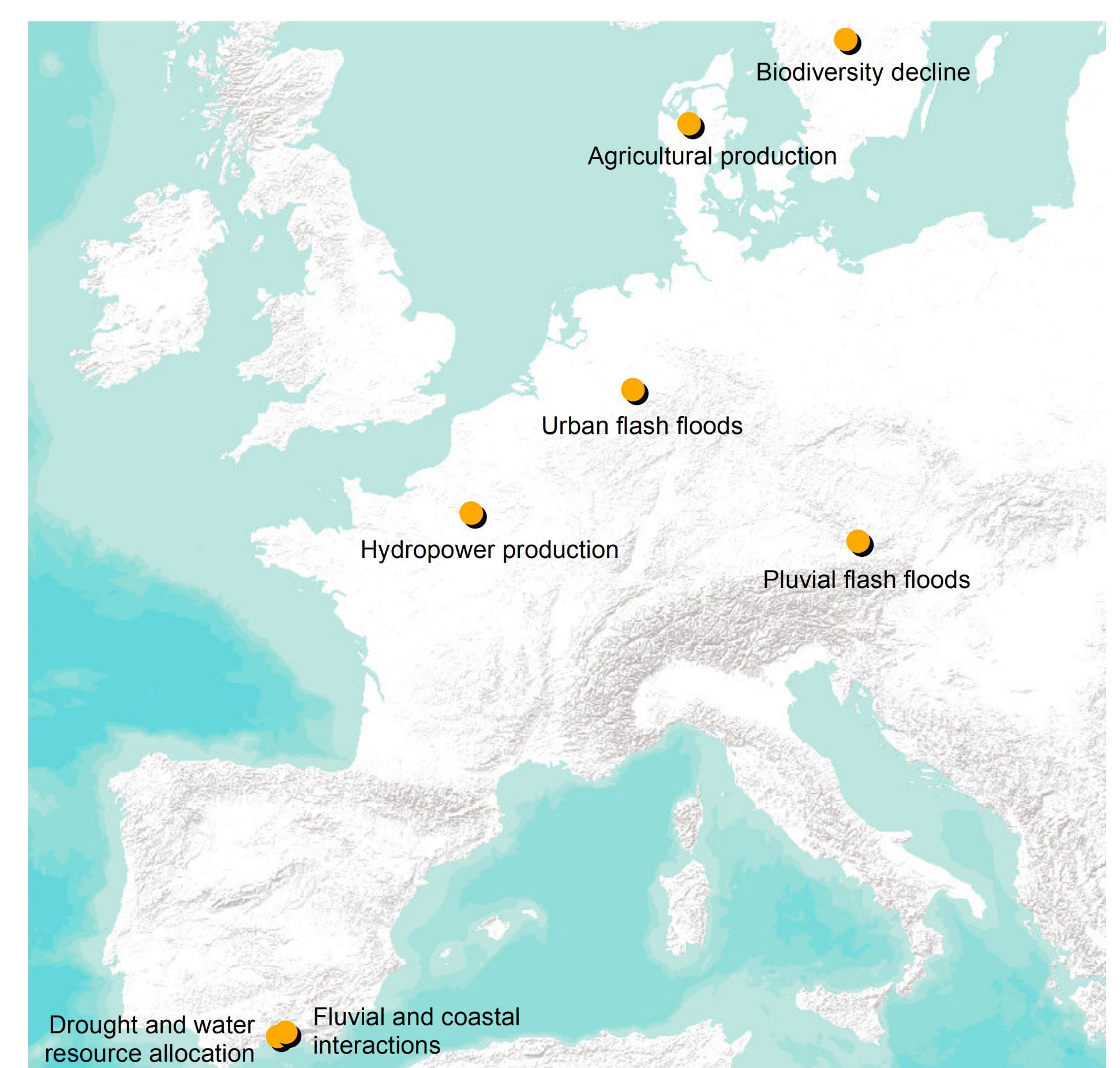
## German case study - Urban flash floods in Hagen

Hagen is a city of 190,000 inhabitants at the southern edge of Germany's largest urban agglomeration, the Ruhr District. Hagen's topography is characterised by mountainous terrain and several river valleys. In case of extreme rainfall events some parts of Hagen are prone to flash floods.

AQUACLEW will investigate how climate change will affect urban flash flood risks in Hagen and how this knowledge can be used for adaptation planning. The impact of different scenarios of extreme rainfall in Hagen will be analysed using specialized GIS software. This will allow to model the temporal sequences of the depths, flow paths and flow velocities of the rainwater. The results can be used to identify settlements and particular areas at risk in order to plan appropriate counter measures.



own representation, 2018



own representation based on Esri, USGS, NOAA, 2018



own representation based on Geobasisdaten NRW, 2018

# IRPUD

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