

USE CASE 2

URBAN FLOOD (North-Central Europe)

Partners: SEA (SK), Ministry of Interior (SK), Forum Virium Helsinki (FI), Klimatorium (DK), THW (DE)

OVERVIEW

Use Case 2 addresses urban water challenges, focusing on water distribution issues influenced by human and external factors like seepage and rising sea levels. The city of Bratislava, located within the Danube river basin, faces **both water abundance due to storage and infiltration problems and water shortages**, which can damage infrastructure and increase wildfire risks. The goal is to enhance urban water management and climate resilience using smart technologies, including satellite monitoring and data science, to track soil moisture, groundwater, and surface water levels. The project aims to **mitigate risks from flooding, wildfires, and water quality issues** by analyzing historical trends and developing spatial risk assessment indicators. Stakeholders in Bratislava report a lack of data on flash floods, limited public access to drinking and irrigation water data, concerns about open-data security, unclear data roles and responsibilities, and insufficient visualization and interpretation support.



USE CASE 2 IN DETAIL

Pain points & user needs

Stakeholders in Bratislava report a lack of data on flash floods, and that drinking and irrigation water data exists, but is not publicly available. Concerns regarding the **security of open-data sharing** were raised. Furthermore, stakeholders raised issues concerning the **lack of clear roles and responsibilities** and ownership of data, as well as a general issue with a **lack of good visualization and interpretation support**.

Available tools and data examples

- **SHMI hydrological service**: free hydrological data from the Slovak Hydrometeorological Institute (SHMI)
- **National Geoportal**: spatial data (maps and datasets) for Slovakia
- **Climate change adaptation platform**: Platform summarising climate adaptation plans for Slovakia, maintained by the Slovak Environment Agency
- **Spatial data registry**: Slovakian spatial data, and metadata, available for free
- **SHMU Portal**: soil moisture data for Slovakia
- **SYKE satellite observations**: open satellite data for Finland from Copernicus and NASA
- **FMI sea water level measurements**: Finnish sea level measurements provided by the Finnish Meteorological Institute (FMI)



HOW PCP WISE CAN HELP

- Regular (& historical) monitoring of soil moisture, groundwater & surface water
- Development of risk indicators for water-related and flood-related crises that may damage city infrastructure and the surrounding rural area.
- Long-term monitoring of water shortages and excess—based on past (spatio-temporal) trends and future climate scenarios
- Daily spatial risk indicators and local information, presented in a userfriendly viewer

