# Enhanced Warning System for Mayors: A Mobile Decision-Support Tool for Extreme Weather Events

Gen Maj Petr Ošlejšek
Ministry of the Interior-Directorate General of the Fire Rescue Service of the Czech Republic
Deputy Director
Email: petr.oslejsek@hzscr.cz
ORCID: -

col. Iva Brejzová
Ministry of the Interior-Directorate General of the Fire Rescue Service of the Czech Republic
Head of department of Integrated Rescue System and Humanitarian Aid
Email: iva.brejzova@hzscr.cz
ORCID: 0009-0000-9489-6976

The Czech pilot action under the Interreg Central Europe project LOCALIENCE focuses on strengthening local preparedness and response to floods and other extreme weather events through an enhanced warning and decision-support system designed specifically for mayors and municipal crisis managers. The pilot's core output is a mobile application that supports local decision-making during emergencies by providing structured guidance, timely alerts, and access to reliable information in one place.

LOCALIENCE aims to improve the response capacity and resilience of Central European regions against extreme weather by strengthening cooperation among disaster management, water management, fire and rescue services, and local-level stakeholders. The Czech pilot contributes to these objectives by addressing a common challenge across municipalities: smaller towns and villages often lack sufficient capacity, clear procedures, or fast communication channels, which increases their vulnerability to sudden events such as flash floods.

The enhanced warning system is designed as a practical and user-friendly tool that supports municipalities in crisis situations by ensuring rapid access to clear, step-by-step instructions and verified warnings. Its main goal is to empower local leaders to react faster, coordinate more effectively, and avoid delays caused by uncertainty, lack of experience, or missing information. The pilot combines prevention, digitalisation, and stakeholder involvement, making it an example of how local governance can be strengthened through innovation while remaining aligned with national disaster-risk-reduction policies and broader European climate adaptation priorities.

The pilot is led by the Fire Rescue Service of the Czech Republic in close cooperation with the University of Ostrava and associated partners. Key stakeholders include the Union of Towns and Municipalities, the Czech Hydrometeorological Institute, and the Ministry of Environment, ensuring that the solution reflects both municipal needs and expert knowledge on warnings and crisis-management procedures.

The development followed a structured sequence of activities: defining typical emergencies relevant to municipalities, preparing and validating guidance content for integration into the app, designing the technical layout, and preparing procurement documentation for an IT provider. Stakeholder involvement was ensured through a dedicated working group, consultations, and feedback loops, with the Union of Towns and Municipalities acting as a key intermediary to gather input from end users and support dissemination.

The application will be publicly available via Google Play and the App Store, supporting long-term usability and ensuring broad accessibility.

Keywords: extreme weather, floods, mayors, decision support, crisis management, mobile application, CAP warning system, resilience, stakeholder cooperation, digitalisation