

FLOOD crisis management With Earth observation Solutions Improving flood crisis management through Earth observation

CONTEXT

The dramatic 2021 floods in Belgium and Germany underscored the severe impact of climate change, revealing the vulnerability of land to floods and the risks faced by populations. Earth observation (EO) can play a crucial role in flood crisis management but the timely provision of relevant EO data needs improvement.

OBJECTIVES

The FLOWS project aims to enhance flood crisis management by determining how and when EO data and derived products can best support it at three time steps: flood crisis, aftermath and reconstruction. Drawing on the experience of flood crisis managers and on the retrospective analysis of the acquisition, processing, and use of EO data during the 2021 event, the project aims to fill crisis managers' spatial information gaps using Earth observation data and technologies

METHODOLOGY

A participatory approach will be used to focus the research on the geo-information needs of crisis managers, and to validate the achieved developments. These will be based on a number of innovations:

- Integration of near real time radar satellite data ;
- Real-time flood mapping during data acquisition by drone;
- Tracking population dynamics using data from social media and mobile phone networks;
- Rapid mapping of damage and location of victims and impacted critical infrastructure using automatic analysis of satellite and airborne data.

These different products will be merged into probabilistic maps which will indicate the areas most affected by flooding. These results should pave the way for future operational developments to reduce the number of victims during floods, provide support to affected populations and design more flood-resilient landscapes.



Examples of products to be developed by the FLOWS project to map floods and their consequences (Sentinel-1 and NGI data)

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