QUICK GUIDE

DEALING WITH FLASH FLOODS EU-WIDE KNOWLEDGE FOR LOCAL AND REGIONAL AUTHORITIES

This content was prepared by the projects REGILIENCE, IMPETUS, TransformAr, and ARSINOE, with the support of the EU Mission on Adaptation

ARSINOE

TransformAr

IMPETUS

REGILIENCE
Regional Pathways to Climate Resilience

DEALING WITH FLASH FLOODS

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WHAT IS A FLASH FLOOD?

Floods are the most common and most costly natural disasters in Europe. They are becoming more frequent and intensive due to climate change and have devastating effects, endangering lives and leading to heavy economic losses. Floods can also release pollutants stored in the ground and spread them even more widely.

A flash, or pluvial, flood occurs when an extreme rainfall event within a short amount of time creates an intense, high-velocity torrent of water. This can happen near a river or lake or far away, as an effect of rainfall within the vicinity or on nearby elevated terrain. They can be very dangerous and destructive, because of the force of the water, and the debris like trees or cars it carries.

Flash floods can also overlap with River floods and/or Coastal floods, caused by storm surges.

KEY FACTS & RECENT EVENTS

According to the European Parliament, in Europe over the last 30 years:

5.5 million people have been affected by floods.

Nearly 3,000 lost their lives.

Economic damage: EUR 170 billion.

The EU aims to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity.

Under the EU Floods Directive Member States are required to create and update Flood Hazard and Risk Maps, and some of them include pluvial floods in the mapping: Austria, Belgium, Bulgaria, Cyprus, Spain, France, Hungary, Ireland, Italy, Lithuania, Malta and Romania.

Flood Hazard Maps should cover the geographical areas which could be flooded, and Flood Risk Maps show the potential adverse consequences associated with these flood scenarios. These maps form the basis for the drafting of **Flood Risk Management Plans**.

EU PARLIAMENT 19/09/24

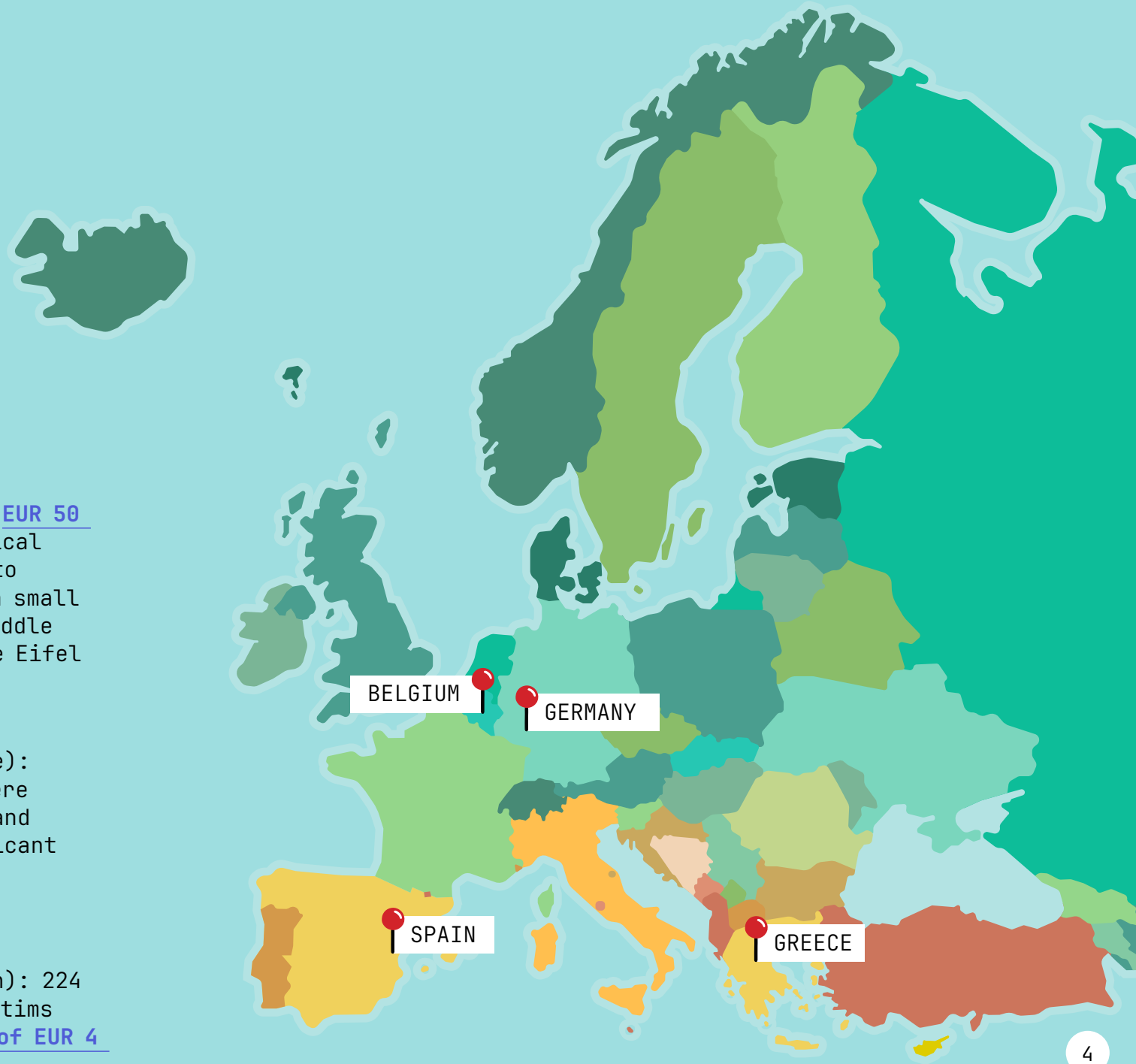
EU FLOODS DIRECTIVE

Recent major flash floods:

- **July 2021** (Germany, Belgium): EUR 50 billion in damages, with critical infrastructure impacted, led to quickly rising flash floods in small and steep catchments in the middle hills, particularly around the Eifel mountain range.

- **September 2023** (central Greece): Storm Daniel flood caused severe consequences for agriculture and animal husbandry, with significant impacts on crop and livestock production.

- **November 2024** (Valencia, Spain): 224 deaths, almost half of the victims were aged over 70, and a cost of EUR 4 billion.



Key impacts on your community

Infrastructure:

Damage to homes, roads, bridges, hospitals, schools and other buildings. Find more information here.

Health:

Increased risk of waterborne diseases like diarrhea or dysentery, injuries, and fatalities. Find more information here.

Environment:

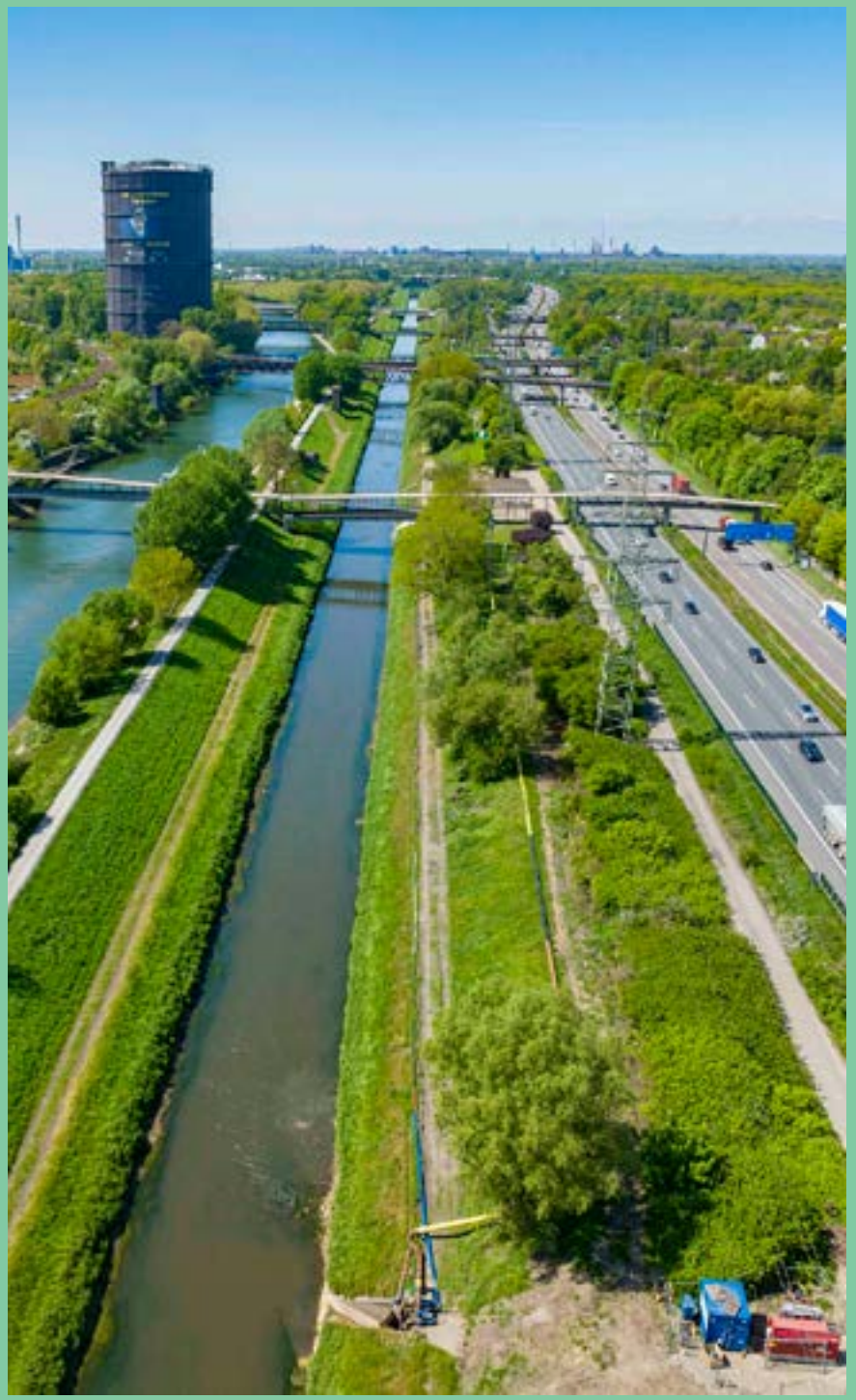
Floods may also destroy wetland areas and reduce biodiversity, cause soil erosion and water pollution. Find more information here.

HOW TO TAKE ACTION

Understand your flood risks: data, maps and tools

If you are in Austria, Belgium, Bulgaria, Cyprus, Spain, France, Hungary, Ireland, Italy, Lithuania, Malta and Romania, find out if your municipality is within a flash flood risk area, with more details in the official Flood Hazard and Risk Maps of your country/region.

Access data on the number, fatalities and economic losses due to river floods between 2004 and 2024 at the Risk Data Hub Atlas.



River Emscher restoration in Germany. ©Andreas Fritsche, EGLV

Implement concrete actions

Find more than 30 recommended **actions** for reducing the impact of flooding in this database, each of them describing costs and benefits, legal aspects for implementation and referring to implemented case studies. Some of the actions which can be implemented at the urban or municipal level are:

- Urban green and blue infrastructure planning, like in Hamburg's 2014 Green Roof Strategy.

- Water sensitive urban and building design including Sustainable Urban Drainage Systems (SUDS), e.g., applied in the refurbishment of the Gomeznarro park in Madrid.

Assess your planned actions with this self-assessment tool to avoid negative effects which increase vulnerability, diminish well-being or undermine sustainable development. It's available in 10 languages!

ADAPTATION DATABASE

INFRASTRUCTURE PLANNING

HAMBURG'S GREEN ROOF STRATEGY

WATER SENSITIVE DESIGN

STORM WATER RETENTION

SELF-ASSESSMENT TOOL

Find funding opportunities

Access EU and national funding options via MIP4Adapt to support your flood adaptation strategies.

Engage stakeholders and citizens in decision-making and action.

Check the MIP4Adapt Do-It-Yourself Manual on Engaging Stakeholders and Citizens in Climate Adaptation to learn how to involve communities in preparing for and mitigating the effects of flash floods.

You can also use specific tools like the TransformAr Playbook to plan participatory workshops.

PRACTICAL EXAMPLES FOR LOCAL AND REGIONAL AUTHORITIES

For inspiration from practical examples,

Find and read more than 15 short adaptation stories - e.g., about dealing with flash flood impacts on road infrastructure in Troskotovice, Czech Republic;

Find more detailed information by selecting one of the 60 “climate impacts – Flooding” case studies – e.g. about protecting bathing water quality from sewage overflow in Rimini, Italy or stormwater management in Malmö, Sweden, and in Lappeenranta, Finland, where climate change will raise human health risk due to deteriorating drinking and bathing water quality in Lake Saimaa.

ADAPTATION STORIES

ADAPTATION IN TROSKOTOVICE

CLIMATE-ADAPT CASE STUDY

PROTECTING WATER IN ITALY

STORMWATER IN MALMÖ, SWEDEN

STORMWATER IN FINLAND

NEED HELP?

Contact us:
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Page 10: City of Leuven, Belgium exposing the ground in urban spaces which helps absorb rainfall and reduce flooding. Realised within the Life Pact project. ©Baptist Vlaeminck, City of Leuven

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Graphic design: Agata Smok

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These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036560 (REGILIENCE), No 101037084 (IMPETUS),No 101036683 (TransformAr), No 101037424 (ARSINOE).