QUICK GUIDE

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

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

TransformAr

IMPETUS

REGILIENCE
Regional Pathways to Climate Resilience

DEALING WITH RIVER FLOODS

EU-WIDE KNOWLEDGE FOR LOCAL AND REGIONAL AUTHORITIES

WHAT IS RIVER FLOODING?

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 severe economic losses. Floods can also release pollutants stored in the ground and spread them even more widely.

A river, or fluvial flood, occurs when the water level in a river or lake rises and overflows onto the neighboring land. The rise in the water level in the river could be due to excessive rain or snowmelt, and depends also on land use. A river flood can cause downstream dams and dikes to break and flood nearby areas.

River floods can also overlap with Flash floods – due to intense rainfalls - and/or Coastal floods, caused by storm surges or tsunamis.

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.

Flood Hazard Maps 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 drafting **Flood Risk Management Plans**.

EU PARLIAMENT 19/09/24

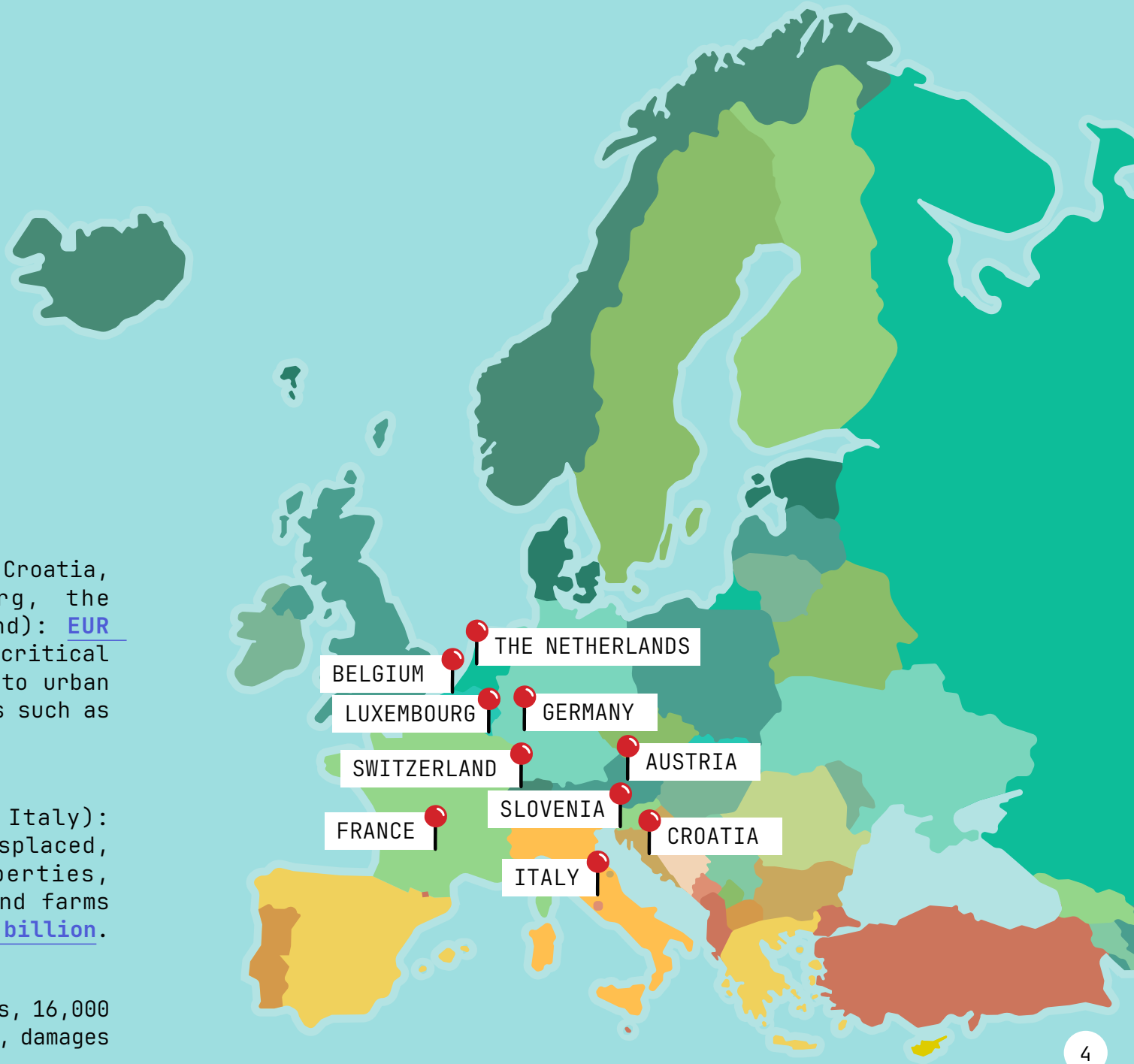
EU FLOODS DIRECTIVE

Recent major river floods:

July 2021 (Austria, Belgium, Croatia, Germany, Italy, Luxembourg, the Netherlands, and Switzerland): **EUR 46 billion in damages**, with critical infrastructure impacted, led to urban flooding in some bigger cities such as Cologne.

May 2023 (Emilia-Romagna, Italy): 16 deaths, 15,000 people displaced, resulting in private properties, businesses, infrastructure and farms damaged totalling **over EUR 8.5 billion**.

August 2023 (Slovenia): 7 deaths, 16,000 people left without electricity, damages totalling **EUR 9.9 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

Find out if your municipality is within a flood risk area by checking the European flood risk map viewers (based either on **officially reported data** or on a **modelling** exercise) and find more details in the official Flood Hazard and Risk Maps of your country/region.

The **European Flood Awareness System** (EFAS) is the first operational pan-European flood forecasting and monitoring system to support national and regional flood risk management authorities in arranging preparatory measures before an event strikes.

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

FLOOD RISK AREAS VIEWER

EU FLOOD AWARENESS SYSTEM

RISK DATA HUB ATLAS

Implement concrete actions

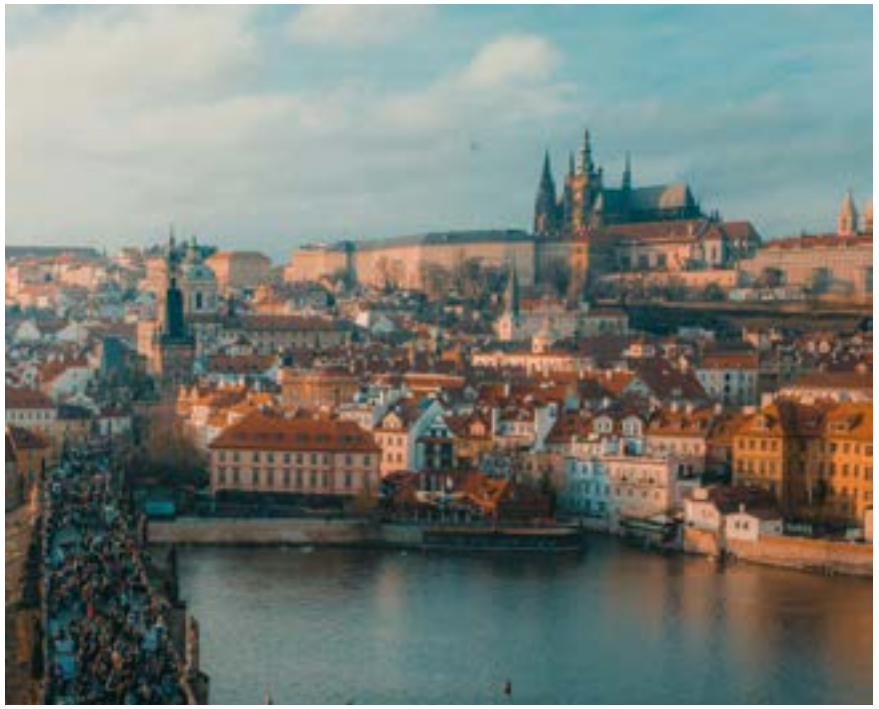
Find more than 30 recommended **actions** for reducing the impact of flooding in this database, each of them describing costs and benefits, legal aspects for implementation and referring to implemented case studies. Some of the actions which can be implemented at the urban or municipal level are:

- **Urban green and blue infrastructure planning**, like the **Water management plan and restoration of the Isar river in Munich, Germany**.

- **Retreat from high-risk areas**; for example, since the 1970s, the Austrian government (national, regional, and local levels) has organised a managed retreat process for private households and businesses along the Danube River in moving more than 500 households.

- **Improved design of dikes and levees**, like the **flood protection measures for the city of Prague**.

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

MUNICH'S WATER MANAGEMENT PLAN

RETREAT FROM HIGH-RISK AREAS

DIKES AND LEVEES DESIGN

PRAGUE FLOOD PROTECTION

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. Learn how to involve your communities in preparing and mitigating the effects of river floods.

You can also use specific tools like the TransformAr Playbook to plan participatory workshops, which has been applied by the West Country Rivers Trust in the UK.

MIP4ADAPT

DIY MANUAL

TRANSFORMAR PLAYBOOK

TRANSFORMAR OPEN DAYS VIDEO

PRACTICAL EXAMPLES FOR LOCAL AND REGIONAL AUTHORITIES

For inspiration from practical examples,

Find and read more than 15 short adaptation stories such as the Emscher Restoration in Germany.

Find more detailed information by selecting one of the 60 “climate impacts – Flooding” case studies – e.g. about the Use of insurance loss data by local authorities in Norway or The integrated system of Nature-based Solutions to mitigate floods and drought risks in the Serchio River Basin, Italy.

River Emscher restoration in Germany. ©Rupert Oberhäuser. EGLV

ADAPTATION STORIES

THE EMSCHER RESTORATION

CLIMATE-ADAPT CASE STUDY

INSURANCE LOSS DATA IN NORWAY

NATURE-BASED SOLUTIONS IN ITALY

NEED HELP?

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Page 10: Before and after of Spaanse Kroon district in Leuven, Belgium exposing the ground in urban spaces which helps absorb rainfall and reduce flooding. ©Baptist Vlaeminck, City of Leuven

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EU MISSIONS

ADAPTATION TO CLIMATE CHANGE

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