QUICK GUIDE

DEALING WITH DROUGHTS AND WATER SCARCITY EU-WIDE KNOWLEDGE FOR LOCAL AND REGIONAL AUTHORITIES

This content was prepared by the projects REGILIENCE, IMPETUS, TransformAr, ARSINOE, and Pathways2Resilience with the support of the EU Mission on Adaptation.

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Regional Pathways to Climate Resilience

IMPETUS

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DEALING WITH DROUGHTS AND WATER SCARCITY

EU-WIDE KNOWLEDGE FOR LOCAL AND REGIONAL AUTHORITIES

WHAT IS A DROUGHT?

A drought is an exceptional period of water shortage, challenging ecosystems and people due to a lack of rain, high temperatures, and/or wind.[1] Droughts can occur anywhere in Europe, in both high- and low-precipitation areas, and at any time of the year.

When droughts occur in regions with reduced water availability, or when water resources are overexploited, their effects are exacerbated, leading to water scarcity. This is typical for the southern European regions in Portugal, Spain, Italy, Malta, Greece, and Cyprus, but is becoming increasingly common in other parts of Europe such as Germany.

1 European Drought Risk Atlas, JRC: publications.jrc.ec.europa.eu/repository/handle/JRC135215

Addressing droughts in Europe

Due to climate change, many European regions are already facing more frequent, severe, and prolonged droughts, and will continue to do so for the foreseeable future. Particularly the Mediterranean region should prepare for hotter and dryer summers with more frequent droughts.

Several major European strategies address droughts and water scarcity: the 2021 EU Strategy on Adaptation to Climate Change, the 2020 Circular Economy Action Plan and the Biodiversity Strategy for 2030, as well as the Water Framework Directive adopted in 2020, provide a suitable framework to reduce the effects of droughts and water scarcity. Furthermore, Drought Management Plans are in place in 13 EU countries: Belgium, Cyprus, Germany, Greece, Spain, France, Hungary, Ireland, Italy, The Netherlands, Portugal, Romania and Sweden, often regulating how water can be used under different drought severity.

Bourg-Saint-Maurice, France where lake Forclaz is running dry in 2022.
©Mathieu Odin, Unsplash

ADAPTATION TO CLIMATE CHANGE

2020 CIRCULAR ECONOMY ACTION PLAN

2030 BIODIVERSITY STRATEGY

WATER FRAMEWORK DIRECTIVE

ANALYSIS AND OUTLOOK

DROUGHT MANAGEMENT PLANS

KEY FACTS & RECENT EVENTS

Since 2011 alone, the European Drought Observatory (EDO) has reported 21 severe drought events. In Europe, most of the losses caused by drought affect agriculture, the energy sector and the public water supply and are

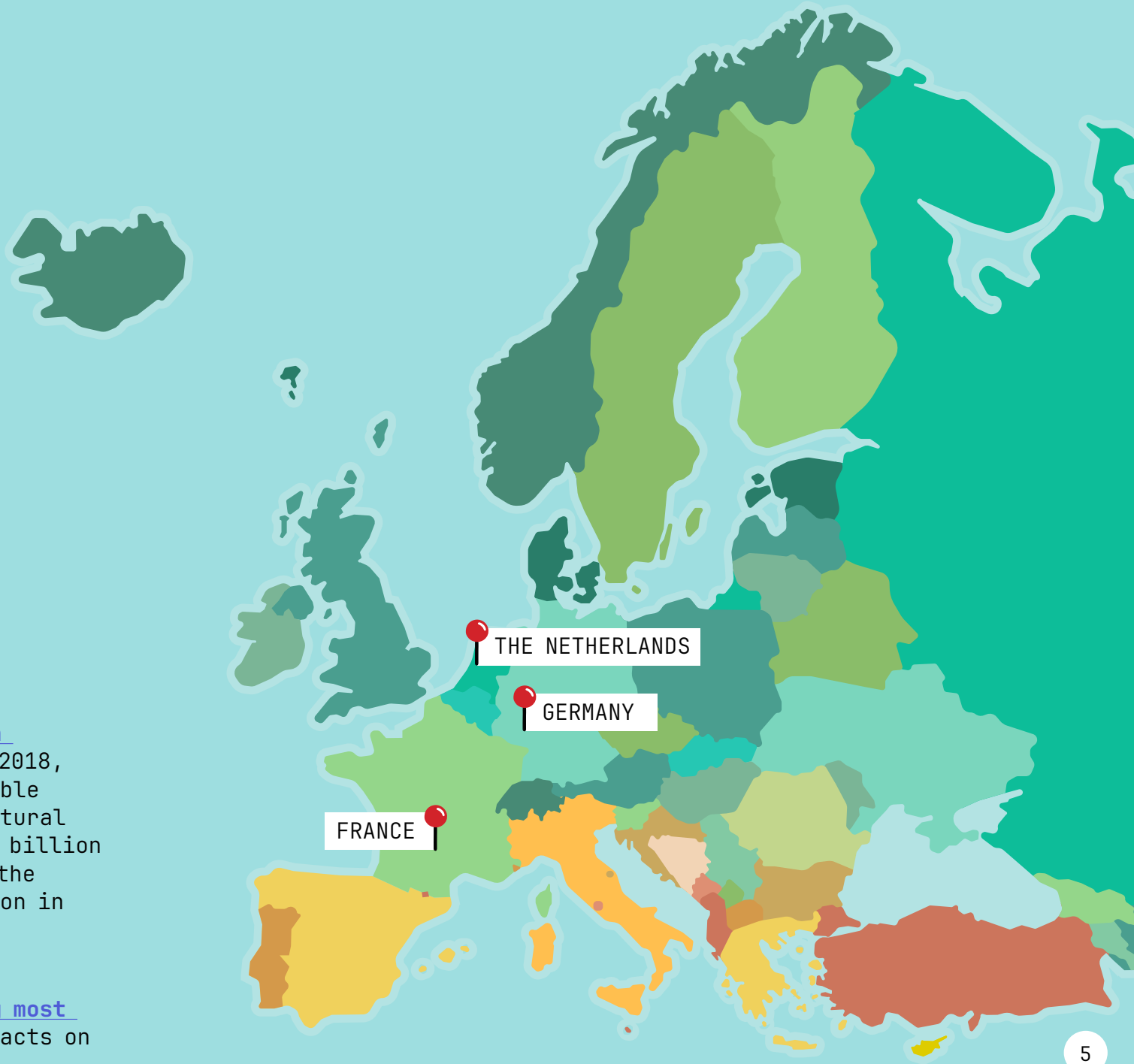
estimated at EUR 9 billion/year.

Picture: European Drought Observatory website showing warnings

Recent major droughts:

- **2018-2020**: Extreme droughts in western and central Europe in 2018, 2019 and 2020 caused considerable damage. In 2018 alone, agricultural damages amounted to some EUR 2 billion in France, EUR 1.4 billion in the Netherlands, and EUR 770 million in Germany.

- **Summer 2024**: Drought affecting most of Europe reporting severe impacts on crops and vegetation growth.



Key impacts on your community

Droughts can have long-lasting direct and indirect effects across economic sectors, and borders, especially on:

Agriculture and forestry:

Crop failure in rain-dependent agriculture, withering forests, reduced forest health, and a lack of water supply for irrigation.

Industry and public water supply:

Supply shortages and restrictions, disruption of energy production or river navigation.

Ecosystems:

Drying of vegetation, rivers and wetlands, along with food and prey shortages. Find more information here on the impacts of droughts on vegetation productivity.

Hill erosion after a strong rainfall (Bretagne, France, January 2008). ©Olivier Malassingne, Cerema

HOW TO TAKE ACTION

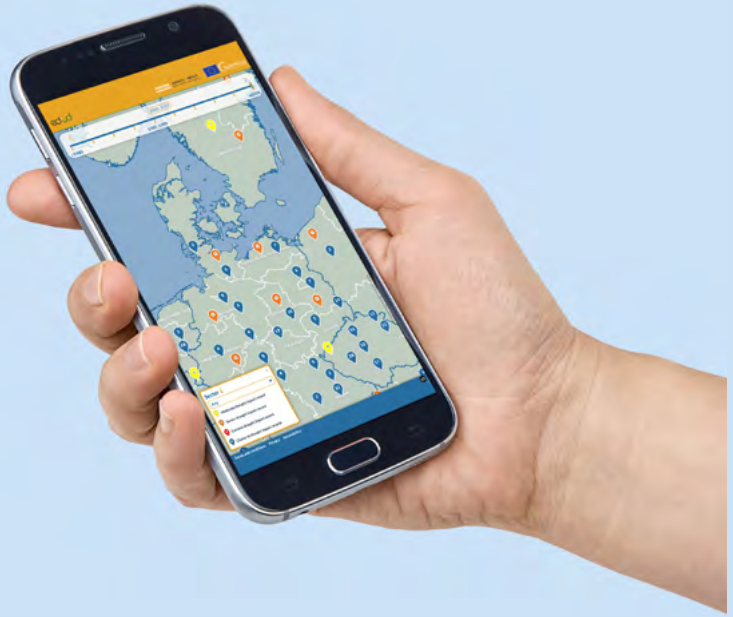
Understand your drought risks: data, maps and tools

ThinkHazard! allows you to quickly assess the risk of water scarcity within your area, by simply typing the name of your location.

The European Drought Observatory provides a map of the current drought situation in Europe, based on a Combined Drought Indicator, which is updated every 10 days. The Water scarcity conditions in Europe resulting from droughts and overexploitation are reflected by the Water Exploitation Index plus indicator.

The European Drought Impact Database provides a map and information on past European droughts and their impacts.

The European Drought Risk Atlas published in 2023 provides information, maps and graphs on how droughts might affect agriculture (e.g., projected yield losses for main crops), public water supply, energy production, river transportation and terrestrial and freshwater ecosystems in the future.



Picture above: European Drought Impact Database
Picture below: Water Exploitation Index plus indicator

THINKHAZARD!

EU DROUGHT OBSERVATORY

WATER SCARCITY IN EU

WATER EXPLOITATION INDEX

EU DROUGHT IMPACT DATABASE

EU DROUGHT RISK ATLAS

Implement concrete actions

Find more than 20 recommended **actions** for reducing the impact of droughts and water scarcity 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:

- Water reuse, like using recycled water in Riba-Roja de Túria, Spain for creating green firebreaks to mitigate forest fire risks
- Water restrictions and water rationing, like reducing the leakages from the water distribution network in Lisbon, Portugal
- Improved water retention capacity in the agricultural landscape, e.g., in Tamera, Portugal

In Spain, emergency management plans at the municipal level are compulsory for water supply systems serving at least 20,000 inhabitants and usually follow the sector's general guidelines (in Spanish) and those for medium- and small-size operators.

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
WATER REUSE
RECYCLED WATER IN SPAIN
WATER RESTRICTIONS AND RATIONING
LEAKAGE MONITORING
WATER RETENTION CAPACITY
TAMERA WATER RETENTION
SELF-ASSESSMENT TOOL
ES GUÍA PARA LA ELABORACIÓN DE PLANES
ES SEGUÍA: PLANES DE GESTIÓN

Find funding opportunities

Access EU and national funding options via MIP4Adapt to support your drought 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 droughts.

Picture above: Irrigation Canal. ©Mark Stebnicki, Pexels

Picture below: DIY Manual on Engaging Stakeholders and Citizens in Climate Adaptation by MIP4Adapt

PRACTICAL EXAMPLES FOR LOCAL AND REGIONAL AUTHORITIES

For inspiration from practical examples,

Find and read some short adaptation stories such as about Climate Adapted Transport Facilities in Vienna, or the Resilience Index for assessing the adaptive capacity of Galicia's aquaculture.

Find more detailed information by selecting one of the over 30 "climate impacts - Storms" case studies - e.g. about Large-scale forest restoration solutions for resilience to multiple climate stressors in North Rhine-Westphalia, Germany or the Replacement of overhead lines with underground cables in Finland.

Picture above: ©Elijah Hiett, Unsplash

Picture below: ©Chiara Guercio, Unsplash

ADAPTATION STORIES

CLIMATE ADAPTED TRANSPORT

THE RESILIENCE INDEX

CASE STUDY EXPLORER

FOREST RESTORATION

UNDERGROUND CABLES IN FINLAND

NEED HELP?

Contact us:
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E-MAIL US

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Page 3: Bourg-Saint-Maurice, France where lake Forclaz is running dry in 2022. ©Mathieu Odin, Unsplash

Page 4: European Drought Observatory, mockup.

Page 6: Hill erosion after a strong rainfall (Bretagne, France, January 2008). ©Olivier Malassingne, Cerema

Page 7: Picture above: European Drought Impact Database, mockup.
Picture below: Water Exploitation Index plus indicator, mockup.

Page 8: Picture above: Dry soil. ©Slashio Photography, Pexels
Picture below: Plant sprout on dry soil. ©Zaid Ahmed, Pexels

Page 9: Picture above: Irrigation Canal. ©Mark Stebnicki, Pexels
Picture below: DIY Manual on Engaging Stakeholders and Citizens in Climate Adaptation by MIP4Adapt, mockup.

Page 10: Picture above: ©Elijah Hiett, Unsplash
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Page 11: Santarem, Portugal: Low river water-level in 2019. ©Remy Penet, Unsplash

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