

EU Green Week  
**PARTNER EVENT**

# Climate, water and health in Europe

European Environment Agency



Lisbon, Portugal  
4 June 2024

#WaterWiseEU



# Climate hazards

Land regions	Northern Europe		Western Europe			Central-Eastern Europe			Southern Europe			European regional seas			
	Past	Future		Past	Future		Past	Future		Past	Future		Past	Future	
		Low	High		Low	High		Low	High		Low	High			
Mean temperature	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗
Heat wave days	□(*)	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗
Total precipitation	↗	↗	↗	↗	↘	↘	↗	↗	↘	↘	↘	↘	↘	↘	↘
Heavy precipitation	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗
Drought	↗	↘	↘	↗	↘	↗	↘	↗	↘	↗	↘	↗	↘	↗	↗



## Legend

- ↗ Increase
- ↗ Increase (limited agreement between models, datasets or indices)
- ↘ Decrease
- ↘ Decrease (limited agreement between models, datasets or indices)
- ↘ Low confidence in direction of change
- No change

## Note

(\*) Other heatwave indices show an increase for the past

# European Climate and Health Observatory



The screenshot shows the website's header with the European Union logo and navigation links. The main banner features a photograph of two people walking on a path in a forest, with the text 'European Climate and Health Observatory' and a description of the site's purpose. Below the banner is a section titled 'DISCOVER THE MAIN TOPICS AND TOOLS OF THE OBSERVATORY' with icons for Case studies, Indicators, Country profiles, and Resource catalogue.

An official website of the European Union | How do you know? ▾ Environmental information systems ▾ EN

**EUROPEAN CLIMATE AND HEALTH OBSERVATORY** **Climate ADAPT** SHARING ADAPTATION KNOWLEDGE FOR A CLIMATE-RESILIENT EUROPE

About Policy context Evidence on climate and health Publications and outreach

## European Climate and Health Observatory

We provide easy access to a wide range of relevant tools, data, publications and other resources related to climate change and health.

DISCOVER THE MAIN TOPICS AND TOOLS OF THE OBSERVATORY

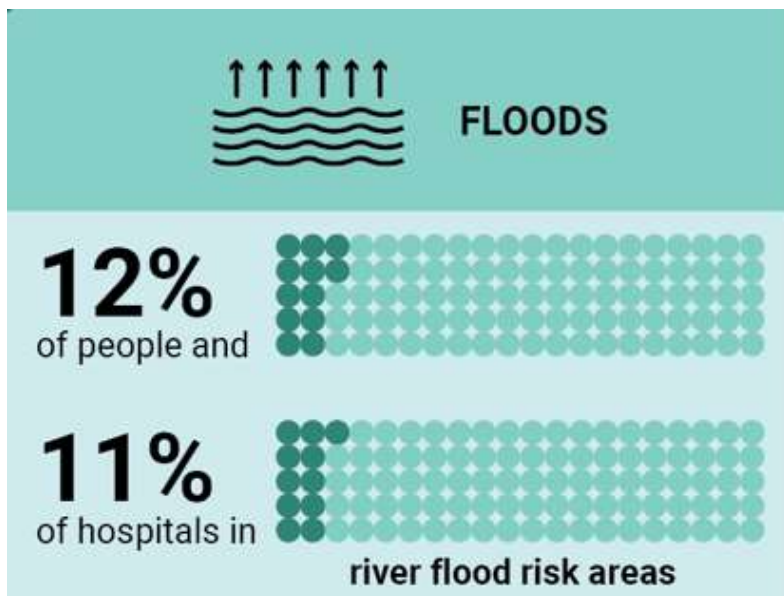
- Case studies
- Indicators
- Country profiles
- Resource catalogue

# Responding to climate change impacts on human health: focus on floods, droughts and water quality

Responding to climate change impacts on human health  
in Europe: focus on floods, droughts and water quality



# Exposure to floods



**+935,000** people in areas potentially at risk of flooding (2011 – 2021)



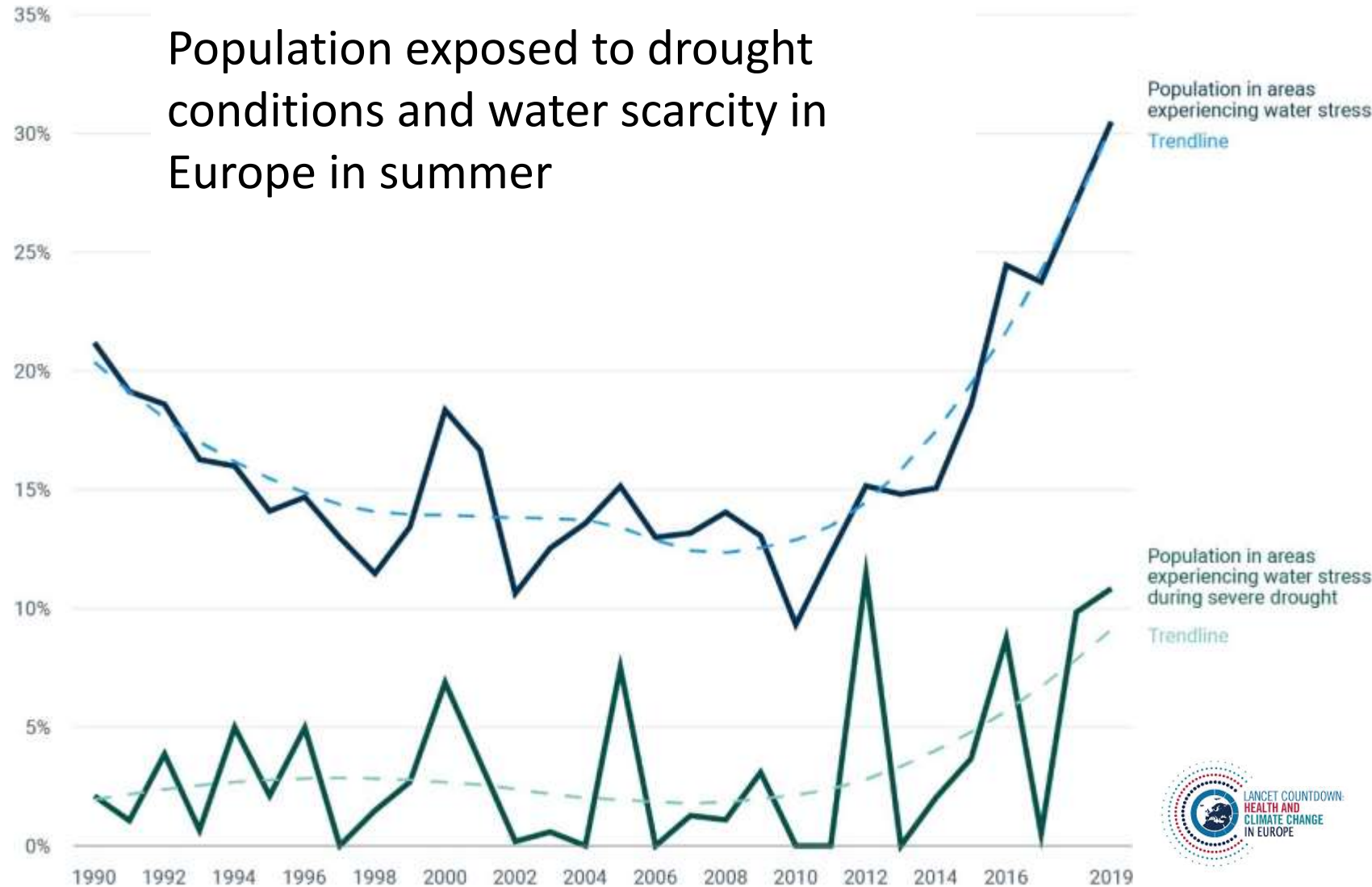
# Exposure to water scarcity



## WATER SCARCITY



In Southern Europe  
**30%**  
of population  
in areas with  
**permanent  
water stress**



# Reduced water quality



IMPAIRED WATER QUALITY

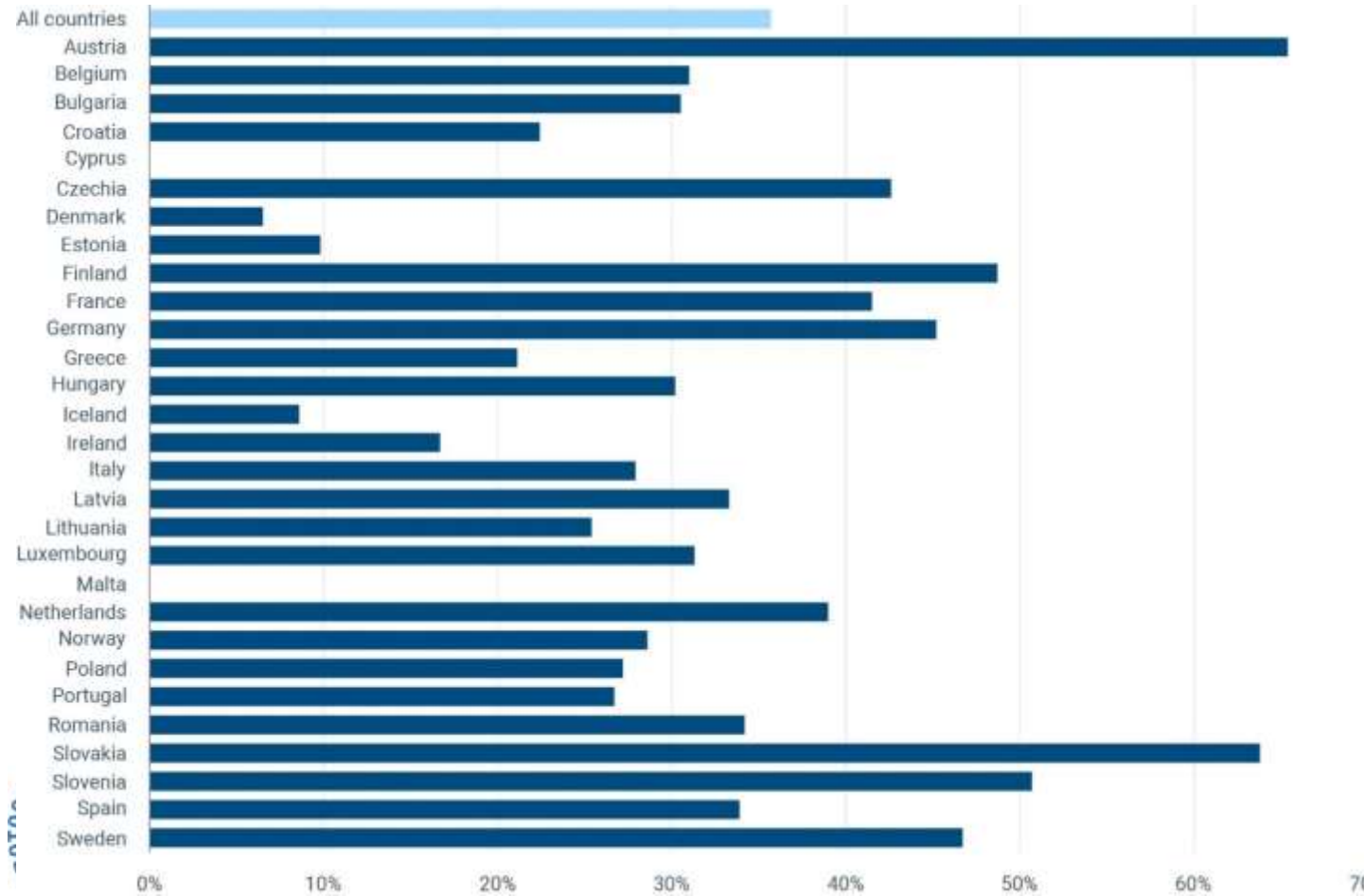


**15%** of industrial facilities  
in flood risk areas



Estimated  
**650,000** combined  
sewer overflows

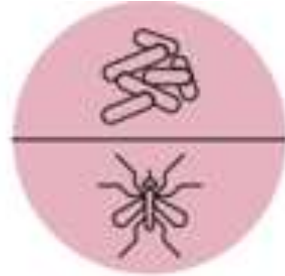
**36%** of UWWTPs  
in potential riverine flood-prone areas



# Impacts on human health



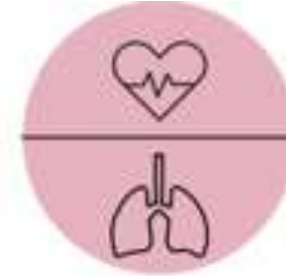
Fatalities  
and injuries



Infectious  
diseases



Mental health  
issues



Non-communicable  
diseases

## FATALITIES

direct deaths (1980-2022)

**5,582** from floods

**702** from wildfires

## INFECTIOUS DISEASES



Fecal bacteria  
in bathing water  
are two times more likely  
after heavy rain events

## NON-COMMUNICABLE DISEASES



Increase in **asthma** and  
**allergies** linked to  
water-damaged buildings  
and drought episodes

## MENTAL HEALTH



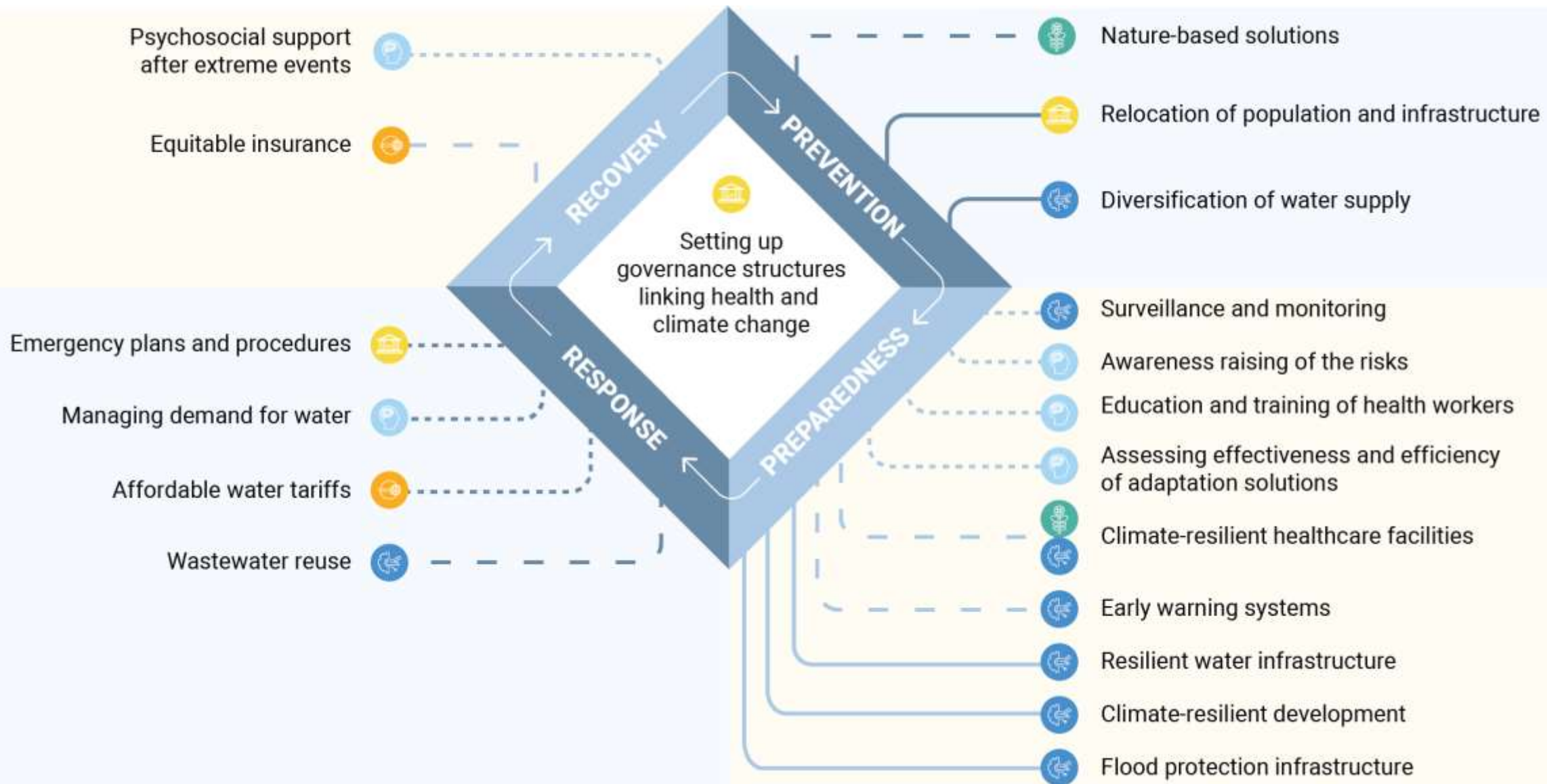
**Children** particularly  
affected by floods  
and wildfires



**Farmers** and rural  
communities affected  
by droughts



# Responses



## Subsidised drought insurance for farmers in Austria



© Osman Karis, Climate Change Pix/EEA

The subsidised public-private drought insurance system for agriculture adopted by the Austrian government combines indemnity-based insurance with weather index-based products. It aims at preparing farmers to overcome extreme events, reduce their dependence on subsidies and as such promote their well-being and mental health, while simultaneously allowing through public-private partnerships for better financial planning.

Agriculture is highly sensitive to weather extremes, such as droughts, floods, storms, hail and heat. Drought in particular poses a significant challenge to farmers and governments due to its potential, negative impact on crop yields. Climate change amplifies the occurrence and severity of droughts and increases the risk of agricultural losses. In Austria, recent drought-induced crop losses and impacts on agricultural production led the government to adopt a subsidised drought insurance system for farmers. This system replaces the traditional approach of providing ad-hoc compensation to farmers for economic damages due to droughts. The public-private insurance system combines indemnity- and index-based products for drought-related agricultural damage to:

## Mental health support for flooded populations in Emilia-Romagna, Italy



ERC

The Emilia-Romagna Region in May 2023 was hit by floods and landslides and declared a state of emergency, an increase in such events is projected for the Mediterranean region. Support was offered by psychologists specifically trained for emergency intervention, who carried out mainly proximity activities in all affected areas, treating both the population and staff assisting them.

## Toolbox for transboundary water contingency management in the Sava River Basin



ISRBC Secretariat

The toolbox and related strategies for transboundary water contingency management in the Sava River Basin improve the resilience of countries within the basin against flooding and pollution events, and reduce associated risks to people and the environment.

Climate change increases the frequency and severity of heavy precipitation. The Sava River Basin in Southeastern Europe is increasingly at risk of flooding, presenting a challenge to both people and the environment. To facilitate a coordinated response to extreme flooding and pollution events in the basin's transboundary watercourses, an operational system with several tools was developed in a joint effort by stakeholders from different countries that are part of the Sava River Basin. The toolbox consists of a real-time knowledge sharing platform and a GIS-model of the river basin, accompanied by a catalogue of best practices and strategy guidelines on how to use the tools and manage hazards such as floods and pollution. Authorities involved in disaster risk management can use the system to activate accident management protocols and improve transboundary cooperation.

## Protecting bathing water quality from sewage overflow in Rimini, Italy



Comune di Rimini

sewerage system was drastically reduced, decreased.

During heavy rainfall events, Rimini frequently experienced combined sewerage system overflows which caused local surface flooding in the city and direct discharge of untreated, diluted wastewater into the sea. The resultant contamination of sea water was posing health risks and necessitated frequent implementation of bathing bans on the city's beaches, with

## New North Zealand Hospital: A resilient acute care hospital for the future, Hillerød, Denmark



© Herzog & de Meuron

resilience to both natural and health risks.

The new North Zealand Hospital in Hillerød aims to enhance resilience against climate-related impacts by incorporating a climate-informed design, innovative solutions for flood risk reduction and flexible organisation. It sets a blueprint for future hospitals of the country.

Climate change is increasing the frequency and magnitude of extreme weather events and creates risks that will impact health care facilities. Exposure of hospitals and other health facilities to heatwaves, flooding or other climate impacts can have negative impact on the patient and staff health. Strategies have to be adopted to strengthen resilience of health facilities to climate change and to promote environmental sustainability in order to provide quality and affordable care (WHO, 2020). The adaptation of buildings to climate change is seen as an asset to promote

Setting up governance structures linking health and climate change

## West Nile virus infection prevention and control measures in Greece



West Nile virus (WNV) is a vector-borne pathogen, which can infect humans, mammals (e.g. horses) and birds. Its transmission cycle is related to the interactions between pathogen, vector, vertebrate hosts, and the environment. Weather conditions have direct and indirect influences on this vector; changes in climatic conditions (temperature, precipitation, relative humidity, and winds) could lead to an increased spread of WNV also in areas that currently

## Control of ciguatera poisoning in Canary Islands, Spain



© Juan Guerrero Jiménez

The surveillance system set up by the Canary Islands Government aims to remove certain fish containing ciguatoxins from the market and to improve the detection of ciguatera in humans. The case study illustrates benefits to artisanal fisheries and public health.

Ciguatera poisoning (CP) occurs when people consume fish containing ciguatoxins (CTXs) with a high toxicity level. CTXs are a type of marine biotoxins produced by certain microalgae (Gambierdiscus spp. and Fukuyoa spp.) accumulated by the marine food chain. Within Europe, CP from locally caught fish is largely limited to Macaronesia, but the toxic microalgae are also present in the Mediterranean where, under the changing climate and with warming sea temperatures, they may lead to increased risk of CP. In the Canary Islands, between 2008 and 2023, 22 CP outbreaks were reported affecting 129 people. In recognition of the risk, several control methods have been introduced. Firstly, certain types of fish caught are controlled by the Canary Islands Directorate-General for Fisheries (DG Fisheries) for ciguatoxins before being approved for human consumption. Secondly, the Canary Islands Public Health Service includes CP a notifiable disease, which means that the diagnosed cases are recorded, and the poisoning can be monitored. Thirdly, awareness raising among the healthcare workers and the public is planned. Finally, the Canary Islands Government is participating in the EuroCiguera 2 project.



Climate-resilient development



Flood protection infrastructure

# More information



**EUROPEAN  
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# Thank you for your attention!

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