

# Understanding the climate change impact on health

---

 [openaccessgovernment.org/article/understanding-climate-change-impact-health/163192](https://openaccessgovernment.org/article/understanding-climate-change-impact-health/163192)

7 July 2023

## Scientists at the Climate Service Center Germany (GERICS) help society to prepare for climate change impacts on health in a multi-faceted approach

---

Health becomes a pressing topic since the pandemic, while climate change and other crisis continue to rise. Therefore, it is important to look at the different impacts in climate change and health for the vulnerable groups.

Rising energy prices have become an urgent topic and impose challenges for households and the economy. Another demographic challenge is the higher demand for long-term care and countries investing higher expenditure in elderly long-term care.

In addition, an older population in society is more vulnerable to climate change effects, plus temperature extremes impose significantly higher health and mortality risks on older adults.

### Climate change impact on health, energy demand & elderly care

---

There is a research gap in understanding how climate change affects energy demand, elderly long-term care and health, and their socio-economic status, plus how their behaviours and energy efficiency in the living environment could affect senior citizens' health and economic outcomes when accounting for future climate trends.

The BMBF Junior Research Group CoCareSociety (Co-creating Climate Services for Care Economy and Caring Society), hosted at GERICS, examines long-term care and health in ageing societies and their energy needs and efficiency.

CoCareSociety aims to support aging societies by integrating knowledge and solutions for climate change mitigation and adaptation measures that enhance the support for the aging population facing the impacts of climate change, while also improving energy efficiency in living environments.

To bring together knowledge and practical experience from the fields of health, climate change, energy efficiency and future ageing societies, an integrated, transdisciplinary and solution-oriented research approach is required.

Together with societal users, CoCareSociety will map the complex relationships of systemic risks and interrelationships between climate change, ageing society, and energy demands and co-create knowledge to improve the measures of the interdependence of the health-climate-energy nexus through a participation process.

### Preparing for future heat extremes

---

---

With the increase in extreme heat events caused by climate change, policymakers, urban planners, and public health officials must act to protect the health of urban citizens, for example, by implementing climate adaptation measures, preparing for emergency response, and establishing heat warning systems. Hence, there is a growing need for detailed climate information for urban areas, which create their own local climate (i.e., urban climate).

### **At the same time, cities must plan**

---

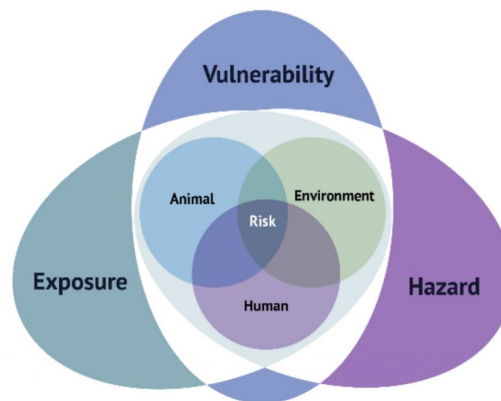
and implement climate mitigation measures because they are responsible for over 70% of global CO<sub>2</sub> emissions. However, these measures can have unintended negative impacts on the exposure of urban dwellers to heat stress, which can lead to increases in respiratory, cardiovascular, and renal diseases.

The conflicts and synergies between climate mitigation and adaptation measures still need to be fully understood because such an effort requires a very high-resolution representation of future urban climate conditions.

The BMBF Junior Research Group CoSynHealth, hosted at GERICS, will close this gap using an integrative urban system approach, considering complex interactions between the urban environment, urban morphology, urban society, urban citizens, and urban health.

Based on this approach, new climate services will be co-developed together with relevant stakeholders to fulfil the need for climate – and health-related information during the planning phase of urban neighbourhoods. In particular, future heat stress will be assessed using high-resolution urban climate modelling combined with climate change information from regional climate model output.

Furthermore, future exposure to heat stress as a function of different lifestyles will be explored by integrating the future thermal comfort assessment with agent-based modelling. Finally, these climate service tools will be used during innovative scenario workshops for test cases in German cities.



*This project has received funding from the European Union's Horizon Europe programme under Grant Agreement 101057554.*

More information: Infectious disease decision-support tools and alert systems to build climate resilience to emerging health threats (IDAlert, Horizon Europe) can be found at <https://idalertproject.eu/>

## Infectious disease risk under climate change in Europe

---

### Improved projections, adaptation options & critical infrastructure management

---

GERICS is contributing to a better understanding of the causes of increasing infectious disease occurrence and spreading, including pandemics, and possible adaptation measures in two projects that the European Union funds:

The IDAlert project will generate tools to assess the cost-benefit of climate change adaptation and mitigation measures across sectors and scales to reveal novel policy entry points and opportunities. Surveillance, early warning and response systems will be co-created and prototyped to increase health system resilience at regional and local levels and explicitly reduce socio-economic inequality. Indicators and tools will be co-produced for selected hotspots in Spain, Greece, The Netherlands, Sweden, and Bangladesh, experiencing rapid urban transformation and heterogeneous climate-induced disease threats.

GERICS leads the development and application of climate and land-use scenarios for projecting future infectious disease risk. GERICS will also contribute to policy analysis in selected case study areas and co-lead the capacity building of the project, including developing an E-Guide.

The SUNRISE project will facilitate the active collaboration of CIs across Europe to share best practices and jointly tackle future pandemics. By the second half of 2025, this collaboration will result in a new stable working group for resilience to pandemics with at least 100 members.

With a group of CI authorities and operators, researchers and software developers, we will identify pandemic-specific vital services and CIs, their dependencies, risks, cascading effects, and effective measures to tackle them at the European level; and develop a comprehensive strategy and innovative tools to ensure greater reliability and continuity of pandemic-specific vital services in Europe.

In addition, GERICS contributes to the analysis of extreme weather events and projected climate change, which puts a risk to CIs, but also influences the occurrence of pandemic events and demand side changes for several services. Such weather-sensitive services include energy, drinking water supply, and transport.

More information: Strategies and technologies for united and resilient critical infrastructures and vital services in pandemic-stricken Europe (SUNRISE, Horizon Europe) can be found at <https://sunrise-europe.eu/>

Please Note: This is a Commercial Profile



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

## More About Stakeholder

---



### Climate Service Center Germany (GERICS)

The Climate Service Center Germany (GERICS) was initiated by the German Federal Government in 2009 as a fundamental part of the German hightech-strategy for climate protection. Since June 2014, GERICS has been a scientific organizational entity of Helmholtz-Zentrum hereon GmbH. The director of GERICS is meteorologist and climate scientist Prof. Dr. Daniela Jacob. Mission [...]