

Activities by the Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety to protect public health against heat and UV exposure

The Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety (BMUKN) is working on numerous measures to protect our health against heat and UV exposure. Key legislation, programmes and policies have already been adopted and are being implemented. Others are being prepared. These measures are interlinked and complementary. They create important structures and frameworks for adaptation to climate change. And they have local and direct effects for people and communities, enabling them to prepare for and mitigate the impacts of climate change.

1) Support municipalities in their actions to protect against heat and UV exposure

In 2017, the Federal Environment Ministry published “Recommendations for action: Heat action plans to protect human health” (<https://www.bundesumweltministerium.de/WS4443-1>). They provide a uniform basis for drawing up and establishing practical heat action plans adapted to the specific region. The Conference of German Environment Ministers (*Umweltministerkonferenz*) commissioned a federal government-federal state working group on climate change and health with the task of drawing up these recommendations for action. They primarily apply to the federal states. Implementation is largely carried out in the individual federal states at municipal level. The recommendations are known and recognised throughout Germany – as shown by a research project by the German Environment Agency (UBA) analysing heat action plans and health-related adaptation measures for extreme heat in Germany. The study can be found here: www.uba.de/n103730de (German only).

In many cases, adaptation measures to protect against excessive heat exposure are also suitable for protecting against increased UV levels. This is why the recommendations also contain tips for reducing UV exposure.

By funding and promoting climate adaptation managers that draw up and implement sustainable adaptation strategies in municipalities, facilitating a systematic and sustainable approach to local climate adaptation (see (8)), the Federal Environment Ministry is supporting the necessary local climate adaptation processes.

Additionally, the Centre for Climate Adaptation (ZKA) has been tasked by the Federal Environment Ministry to be a central contact for municipalities and social institutions, providing tailored advice, information, training and networking on all aspects of climate adaptation (www.zentrum-klimaanpassung.de, German only).

The Federal Office for Radiation Protection (BfS) has published practical tips for protection against UV exposure for municipalities, daycare facilities and schools as part of its “UV-safe”



(“UV-sicher”) campaign. Practical tips for sports clubs and associations were drawn up and published in 2025 in collaboration with the German Olympic Sports Federation (DOSB). Additionally, the BfS – based on its experience of installing free sun cream dispensers during the men’s UEFA European Football Championship in 2024 – drew up guidelines for providing UV protection with sun cream dispensers (www.bfs.de/DE/themen/opt/uv/klimawandel-uv/anpassung-klimawandel/anpassung-klimawandel.html (German only)).

2) Strengthen structures: The Federal Climate Adaptation Act enters into force

The Federal Climate Adaptation Act (KAnG) entered into force on 1 July 2024 (<https://www.bundesumweltministerium.de/WS7195-1>). It provides a framework for adaptation at national level and in federal states and municipalities. This framework facilitates progress on adaptation to climate change at all levels and across all sectors. For example, the Federal Government and the federal states all have to draw up their own climate adaptation strategies. The federal states also have to ensure that climate adaptation plans are established for their districts. Existing planning and strategies, for example heat action plans, have to be taken into account. Climate adaptation plans need to identify and close any gaps. The Federal Environment Ministry supports municipalities in establishing and implementing climate adaptation plans through funding programmes (see (1) and (8)).

3) Improve precautionary action: The Federal Government’s Climate Adaptation Strategy

In 2008, the Federal Government adopted the German Strategy for Adaptation to Climate Change (DAS). It has been continuously developed and updated since. The action area “health” on protecting public health, for example against heat and UV exposure, is one of the strategy’s key priorities. With its 2024 Climate Adaptation Strategy, the Federal Government underpinned its precautionary strategy with measurable targets and a process for measuring progress for the first time. The strategy contains over 30 targets, around 50 sub-targets and over 180 measures on climate adaptation (<https://www.bundesumweltministerium.de/WS6831-1>).

4) Intact nature to protect against heat: Action Plan on Nature-based Solutions for Climate and Biodiversity

Intact ecosystems not only sustain the foundations of our lives; they also provide valuable habitats for animals and plants, store water and offer places for recreation and respite. They help mitigate climate change by removing carbon from the atmosphere and storing it for the long term. The Action Plan on Nature-based Solutions for Climate and Biodiversity (ANK) adopted in 2023 will help significantly improve the general condition of ecosystems in Germany, and strengthen their resilience and climate mitigation performance. In this way, the plan combines climate change mitigation and biodiversity conservation. Many of the plan’s measures also contribute to climate adaptation – whether by regulating the water cycle or

protecting against heat. For example, trees provide cooling through evaporation and shade. This can also help reduce UV exposure.

Some of the plan's funds will be used for more urban greenery (*Förderrichtlinie Natürlicher Klimaschutz in Kommunen*, funding guidelines for nature-based solutions in municipalities, www.kfw.de/444, German only)). Green spaces with trees and shrubs in cities not only contribute to climate change mitigation and biodiversity conservation. They also ensure clean air, provide shade and UV protection, improve people's physical and mental health and act as natural water reservoirs. Sustainable urban development policy that secures or creates sufficient space for green and blue infrastructure is a key action area for better protection against heat.

To ensure a successful transition of urban habitats to places with high quality of life, it is essential to take due account of and communicate health risks like infection through ticks, mosquitoes and rodents, and allergies, and to prevent negative health impacts wherever possible. For example, plants with the potential to trigger allergies should not be used for greening.

5) Secure sustainable water and drinking water supply: National Water Strategy and Federal Water Act

Germany introduced its first ever National Water Strategy in March 2023. The strategy's goal is to protect natural water resources and achieve sustainable water management in Germany in every area of life and industry for the benefit of people and the environment. Priority is given to drinking water supply. The strategy aims to ensure that even 30 years from now and beyond, high-quality and affordable drinking water is readily available at all times everywhere in Germany. To this end, the semi-natural water regime will be strengthened and, where necessary, restored. Healthy soils, near-natural forests and intact peatlands store water and keep it in the landscape. This protects against drought and has a cooling effect. Using the concept of water-smart urban development and sponge cities, it is possible to plan and develop cities in ways that facilitate water storage. This can then be used to water urban greenery, helping cities adapt better to climate change. More water in cities also benefits the urban climate. However, it is important to closely monitor the spread of mosquitoes and microorganisms that cause diseases.

The Federal Water Act (WHG) was amended at the beginning of 2023 to ensure that everyone has adequate access to drinking water in public spaces.

Germany also has more than 2000 bathing waters that can help everyone cool off in summer. These waters satisfy high standards regarding hygienic water quality (www.uba.de/n11348de, German only).

6) Work together: Public Authorities' Dialogue "Health in a Changing Climate", interministerial working group and cooperation on UV protection

A federal government-federal state working group on climate change and health was established in 2008 under the joint lead of the Federal Environment and Health Ministries. The group meets on a regular basis. It brings together representatives of a number of federal ministries and authorities with representatives of the federal states' environmental and health authorities.

Adaptation measures are coordinated and discussed, and exchanges are held on acute health problems caused by climate change. Heat is a priority issue at every meeting.

Also in 2008, an interministerial working group on adaptation to climate change was set up, comprising representatives of all federal ministries, with the goal of sharing information about activities and findings, and coordinating action.

The Federal Office for Radiation Protection (BfS) coordinates the interdisciplinary UV Protection Alliance (https://www.bfs.de/EN/topics/opt/uv/alliance/alliance_node.html). This alliance is a collaboration between 31 key societies, organisations and authorities from the fields of radiation protection, medicine, science and occupational health that have been advocating active UV protection for many years. The alliance's goal is a long-term reduction in the number of new cases of skin cancer and other health impacts of UV radiation.

Most members provide comprehensive information on their websites and in publications about UV-related diseases and how to protect against them.

7) Stay active even in hot weather

Many athletes (amateurs and professionals alike), especially those doing outdoor sports, feel the effects of heat and UV exposure. Precautionary measures and adaptation to climate change are required to protect health, safeguard sporting activities and maintain sports facilities.

Strenuous outdoor activities should be avoided during heat waves; the advice is to stay indoors in cool spaces instead. A general recommendation for everyone is to drink plenty of fluids at regular intervals. This includes filling up water bottles at public drinking water fountains. In 2024, the Federal Environment Ministry funded 51 new public drinking water fountains at popular locations during the men's UEFA European Football Championship: <https://www.bundesumweltministerium.de/WS7224> (German only).

The German Olympic Sports Federation (DOSB) is currently assessing the scientific status quo of adaptation to climate change in sport. It will present its findings as part of the project "Climate Change and Sports: Adaptation Strategies for Athletes, Sports Federations, and Clubs". This project is jointly funded by the Federal Environment Ministry and the German Environment Agency. It will also develop a cross-disciplinary climate adaptation strategy in the form of recommendations for grassroots sports. Additionally, specific climate adaptation strategies and measures will be established, initially for three types of sport, taking account of their different special features (<https://www.dosb.de/en/topics/people-and-sports-clubs/recreational-sports-and-health/climate-change-health-and-sports/climate-change-transforms-sports>).

The Federal Office for Radiation Protection and the DOSB have jointly published practical advice and tips for clubs, outlining simple and suitable measures for effective UV protection (www.bfs.de/SharedDocs/Downloads/BfS/DE/broschueren/opt/praxistipps-uvschutz-vereine.pdf (German only)).

The project “KlimASport” (www.klimasport.de) supports sports clubs by outlining specific recommendations for action, including on how to work and play sport despite changing climate conditions. The German and English publication can be found here www.klimasport.de.

8) Promote adaptation to climate change

To master the existential challenges ahead, environmental policy needs environmental and nature conservation associations as partners. The Federal Environment Ministry therefore provides funding to these associations for their activities. For example, the *Deutsche Allianz Klimawandel und Gesundheit (KLUG)*, an alliance on climate change and health, received funding to help improve advice in out-patient settings about protection against the health impacts of climate change, and to develop educational modules on adaptation to climate change for those working in care and therapy professions. The UfU e.V. project “*Klimaanpassung selbstgemacht*” (“Do-it-yourself climate adaptation”) created nature-based solutions for local climate adaptation by repurposing and reactivating unused areas. Further information on the funding programme is available in German at www.bundesumweltministerium.de/FG3.

As part of the Action Plan on Nature-based Solutions for Climate and Biodiversity (see (4)), the Federal Environment Ministry is supporting municipalities, through the KfW, in unsealing and greening areas, planting trees, establishing semi-natural parks and creating natural oases, which also contributes to nature-based adaptation to climate change. Further information on funding is available in German at www.kfw.de/444.

With its funding guidelines for climate adaptation in social institutions (*Förderrichtlinie “Klimaanpassung in sozialen Einrichtungen”*), the Federal Environment Ministry has been supporting social institutions since 2020 in equipping themselves to deal with the impacts of climate change, such as heat. By developing holistic, institution-specific climate adaptation plans and implementing model investment measures like roof greening to reduce heat stress, the Federal Environment Ministry is supporting systematic and sustainable adaptation processes. Further information on the guidelines is available in German here: www.z-u-g.org/anpasol.

The funding guidelines on climate adaptation measures (*Förderrichtlinie “Maßnahmen zur Anpassung an den Klimawandel”*) support municipalities with personnel funding for climate adaptation managers, and for the climate adaptation plans these managers draw up and implement. Selected climate adaptation measures based on the plans are also funded. Further information on the funding guidelines is available in German at www.z-u-g.org/aufgaben/foerderung-von-massnahmen-zur-anpassung-an-die-folgen-des-klimawandels/.

The Federal Environment Ministry has carried out many projects on protection against extreme heat in the framework of these funding guidelines, including the following (information in German only):

- Charité Universitätsmedizin Berlin (2012-2013): Entwicklung von Bildungsmodulen für die Aus- und Weiterbildung von Pflegekräften und Ärzten zu den gesundheitlichen Auswirkungen des Klimawandels, Anpassungs-, Aufklärungs- und Behandlungsmöglichkeiten – Klimaanpassungsschule
- Ludwig-Maximilian-Universität (LMU) Munich (2016-2019): Bildungsmodule für Kinder- und Jugendärzte/innen - gesundheitliche Folgen des Klimawandels
- LMU University Hospital Munich (2016-2018): Bildungsangebot für Medizinische Fachangestellte und Pflegepersonen - Hitzeassoziierte Gesundheitsprobleme in der ambulanten Pflege
- Cologne City and Rheinische Friedrich-Wilhelms-Universität Bonn (2019- 2022): Hitzeaktionsplan für Menschen im Alter für die Stadt Köln
- LMU University Hospital Munich (2018-2020): Hitzeassoziierte Gesundheitsprobleme in der stationären Pflege – Maßnahmenplan für vollstationäre Pflegeeinrichtungen zur Anpassung an den Klimawandel
- LMU Munich (2020-2022): Vermeidung hitzerelevanter Erkrankungen in Zeiten erhöhten Infektionsschutzes vulnerabler Gruppen
- Worms City, Climate alliance of European cities with indigenous rainforest peoples / Alianza del Clima, Fulda University of Applied Science and LMU Munich (2020-2022): Entwicklung und Etablierung eines Hitzeaktionsplans für die Stadt Worms unter Berücksichtigung kurz-, mittel- und langfristiger Maßnahmen
- LMU Munich and the Bavarian Youth Council (BJR) (2021-2023): Bildungsmodule für Multiplikatoren der Jugendarbeit - Gesundheitsrelevante Maßnahmen zur Anpassung an den Klimawandel (KlimaBild)

9) Create knowledge: The Federal Environment Ministry's research

The Federal Environment Ministry finances research projects to further expand the knowledge base about the health impacts of climate change and the related adaptation requirements.

Below is an overview of the latest projects the ministry is funding on heat and health protection, and on UV exposure (information in German only):

- “Analyse von Hitzeaktionsplänen und gesundheitlichen Anpassungsmaßnahmen an Hitzeextreme in Deutschland” (2019-2023)
- “DAS: Weiterentwicklung und Harmonisierung des Indikators zur hitzebedingten Übersterblichkeit in Deutschland” (2020-2024)

- “Die mentalen Auswirkungen des Klimawandels und die Bereitschaft zur Anpassung” (2021-2024)
- “Analyse der sozialen Dimensionen von Klimawandelfolgen und Entwicklung entsprechend differenzierter Politikinstrumente” (2021-2024)
- “Möglichkeiten der Ausgestaltung und Umsetzung eines nationalen Hitzeaktionsplans für Deutschland” (2023-2026)
- Research project on sponge cities: nature-based solutions, including assessment of the effectiveness of policy instruments (relevant with regard to the cooling effect to reduce urban heat stress), accompanied by a public dialogue forum on the social dimension of climate change impacts with a focus on health and vulnerable groups
- “Machbarkeitsstudie zur flächendeckenden Angabe der aktuellen UV-Belastung in Deutschland unter Einbindung der aktuellen Messwerte des solaren UV-Messnetzes: Erprobung, Weiterentwicklung und Validierung” (2022-2023)
- “Mikroskalige Modellierung von UV-Belastungen und gefühlter Temperatur in urbanen Umgebungen für verschiedene Bevölkerungsgruppen zur Hautkrebsprävention” (2022-2023)
- “Entwicklung einer anwenderfreundlichen Nutzeroberfläche für das UV-Modell des Stadt-Klimamodells PALM” (2024-2026)
- “Machbarkeitsstudie zur Durchführung einer epidemiologischen Studie zur Ermittlung einer Dosis-Wirkungsbeziehung zwischen natürlicher UV-Exposition und Hautkrebs” (2024-2025)

10) **Raise public awareness**

The Federal Environment Ministry and its executive agencies provide comprehensive information about the health impacts of heat and UV exposure, and about protective measures:

- Health in Climate Change: <https://www.bundesumweltministerium.de/WS552-1>
- Hitzewellen: www.bundesumweltministerium.de/WS553 (German only)
- Den Klimawandel gesund meistern – Tipps für heiße Tage (BMUV 2022): www.bundesumweltministerium.de/PU644 (German only)
- Ratgeber für mentale Gesundheit im Klimawandel (UBA 2024): www.uba.de/n114279de (German only)
- Badegewässer (German only): www.umweltbundesamt.de/themen/wasser/schwimmen-baden/badegewaesser
- Schattenspender-Kampagne und Hitzeknigge für Kommunen (UBA 2021): www.uba.de/n34009de (German only)



- Climate change and health: Tips on coping with hot weather and heat waves (UBA/DWD 2019): <https://www.umweltbundesamt.de/publikationen/climate-change-health-tips-on-coping-hot-weather>
- Trink was – Trinkwasser aus dem Hahn (UBA 2020): www.uba.de/n7135de (German only)
- Hitze in der Stadt – eine kommunale Gemeinschaftsaufgabe (UBA 2012): www.umweltbundesamt.de/sites/default/files/medien/364/publikationen/kompass_theme_nblatt_hitze_stadt_2015_net.pdf (German only)
- Daten zur Umwelt: Gesundheitsrisiken durch Hitze (UBA): www.uba.de/n57569de (German only)
- Climate change and its impacts on human health - Recommended precautions and steps (BMU 2020) in German, English and Russian: www.bundesumweltministerium.de/DL3125
- Ratgeber für Kitas, Grundschulen und Eltern gegen Hitze, UV-Strahlung, Luftschadstoffe und Allergene (BMUV 2023): www.bundesumweltministerium.de/fileadmin/Daten_BMU/Download_PDF/Klimaanpassung/ratgeber_verhalten_hitze_kitas_bf.pdf (German only)
- On behalf of the Federal Environment Ministry, the ZKA has been organising an annual Climate Adaptation Week since 2022: www.bundesumweltministerium.de/WS7323 (German only)
- Toolbox und Bildungsmaterialien zu den Auswirkungen des Klimawandels auf Sportvereine: www.klimasport.de (German only)
- Filme zur Erstellung von Hitzeaktionsplänen und zur Hitzevorsorge in sozialen Einrichtungen sowie die Beratung des ZKA: www.zentrum-klimaanpassung.de/wissen-klimaanpassung/erklaervideos-zu-themen-der-klimaanpassung (German only)
- UV radiation: https://www.bfs.de/EN/topics/opt/uv/uv_node.html
- Influence of climate change on UV exposure: https://www.bfs.de/EN/topics/opt/uv/climate-change/climate-uv-exposure/climate-uv-exposure_node.html
- Unterrichtsmaterial Sonne – aber sicher!: www.bfs.de/DE/mediathek/alltag/optisch/sonne/sonne.html (German only)
- Adapting to the impact of climate change: strategies for reducing UV exposure: <https://www.bfs.de/EN/topics/opt/uv/climate-change/adaptation-climate-change/adaptation-climate-change.html>
- Current daily graphs of the UV index (https://www.bfs.de/EN/topics/opt/uv/index/current/current_node.html) and UV index forecasts for three days (https://www.bfs.de/EN/topics/opt/uv/index/forecast/forecast_node.html)

- UV newsletter with three-day UV index forecast:
<https://www.bfs.de/SharedDocs/Kurzmeldungen/BfS/EN/2023/0419-uv-newsletter-start.html>
- Air data website with forecasts of the maximum ground-level ozone concentration:
<https://www.uba.de/n305659en>

11) Recognise innovation: Federal Blue Compass Award

This award is the most prestigious award in Germany for projects on precautionary action and adaptation to the impacts of climate change. The competition is jointly organised by the Federal Environment Ministry and the German Environment Agency. Its goal is to showcase innovative, effective and sustainable solutions for dealing with the impacts of climate change like heat waves, drought and heavy downfall. Launched in 2016, it is awarded every two years (<https://www.bundesumweltministerium.de/themen/klimaanpassung/bundespreis-blauer-kompass> (German only)). The award ceremony takes place during Climate Adaptation Week.

12) Continuously improve protection against heat

An ongoing research project commissioned by the Federal Environment Ministry is looking into options to establish and implement a national heat action plan for Germany. In addition to the substance of the plan and a potential legal framework, the project is also researching the technical requirements of a system across federal states, as well as aspects of federal government-federal state responsibilities. The findings of the project will create an opportunity to improve national activities on protection against heat and UV exposure.