

UN environment programme

**REPORTING EXTREME HEAT:** PRACTICAL WORKSHOP FOR JOURNALISTS

# Frequently Asked Questions (FAQs)

## Why is UNEP holding this workshop now?

Q

Extreme heat is one of the fastest-growing climate risks and among the most visible impacts of climate change. Yet reporting on officially defined heatwaves often treats them as isolated weather events, without explaining their connection to long-term climate trends.

Extreme heat also has far-reaching impacts on food systems, public health, livelihoods, and energy infrastructure, affecting everything from agricultural productivity and food security to electricity reliability during periods of peak demand.

This workshop equips journalists with trusted data, expert sources, and practical tools to accurately report on extreme heat, counter misinformation and disinformation, and highlight evidence-based solutions that protect people and communities. This workshop will specifically focus on urban heat and sustainable cooling solutions. It will also shed light on the debate around air conditioners that has been raging this summer.

## What should journalists know about reporting climate and heat data?

Q

Climate and weather are not the same. A single hot day is weather; long-term trends reveal climate change.

Heat-related reporting often draws on several types of climate information, each serving a different purpose. Weather forecasts provide estimates of future conditions, while observations document temperatures and other conditions that have already occurred. Climate records help determine how unusual an event is by comparing it with historical patterns and long-term trends. Attribution studies go a step further by examining whether, and to what extent, human-induced climate change made a specific heatwave and period of extreme heat event more likely or more intense. Being clear about these distinctions can help audiences better understand both the immediate event and its broader climate context.

Reporting on extreme heat is often strongest when it combines information about a specific event with evidence from long-term climate records. This helps audiences understand how individual heat events relate to broader climate trends, while avoiding conclusions based solely on isolated weather occurrences.

## What are some common mistakes when reporting extreme heat?

Q

Common pitfalls include:

- Treating a heatwave as an isolated event without climate context.
- Focusing only on record temperatures rather than impacts on people.
- Treating official heat-death figures as definitive. Heat-related deaths are often undercounted and may be significantly higher than reported.
- Focusing intensely on a single solution such as air conditioning.
- Suggesting that everyone is equally affected by extreme heat.
- Overlooking vulnerable populations.
- Ignoring the role of humidity and heat stress.
- Confusing weather variability with long-term climate trends.
- Reporting risks without explaining practical actions that can reduce harm.
- Blaming insulation and double glazing for overheating. Overheating is usually caused by poor ventilation, inadequate shading, and excess solar heat gain—not insulation or double glazing, which can help keep buildings cool during extreme heat.
- Comparing temperatures without considering seasonal context. The same temperature can have very different implications depending on when and where it occurs. For example, 40°C in June may be far more exceptional and potentially more disruptive than 40°C in August, depending on local climate conditions and historical norms.
- Using “heatwave,” “extreme heat” and “record temperature” interchangeably.
  - ► A heatwave is a prolonged period of unusually hot conditions, usually declared as such by the national hydro-met services.
  - ► Extreme heat is a broader term covering dangerous temperatures or heat stress, including events that may not meet an official heatwave definition.
  - ► A record temperature is a measured value that exceeds the previous record for a specific location, period, or dataset. It does not necessarily mean that a heatwave occurred.
  - ► Heatwave definitions vary by country and are issued by national meteorological services.

Accurate reporting combines science, human stories, and evidence-based solutions.



## Why is extreme heat considered such a major issue?

Extreme heat is often called the “silent killer” because its impacts are widespread but frequently underreported. An estimated 489,000 people die each year from heat-related causes worldwide.

Heat is also a growing labour issue. The International Labour Organization estimates that 2.41 billion workers - more than 70% of the global workforce - are exposed to excessive heat, resulting in nearly 19,000 work-related deaths and around 23 million occupational injuries annually.

The consequences extend beyond health. Extreme heat reduces workers’ productivity and earnings, particularly in agriculture, construction, and other outdoor sectors. It also affects education: recent evidence shows that student performance declines as temperatures rise, and that each additional school day with temperatures above 26.7°C can reduce annual learning by almost 1% of a school year equivalent.

As temperatures continue to increase, heat is becoming a major public health, labour, education, and development challenge, with significant implications for economic growth, inequality, and human capital.

## Is every heatwave caused by climate change?

Heatwaves are natural weather events, but climate change is making them more frequent, more intense, and longer lasting.

According to UNEP’s latest Emissions Gap Report, current policies are putting the world on a trajectory of roughly 2.8°C of warming this century, while full implementation of current national climate pledges would still result in around 2.6°C of warming well above the Paris Agreement goals.

Scientists can increasingly assess the extent to which climate change influences specific extreme heat events through attribution studies – a specific scientific methodology aimed at distinguishing between climate warming attributable to anthropogenic causes as opposed to natural climate cycles. While no single heatwave can automatically be attributed entirely to climate change, a warmer climate makes extreme heat more likely and more severe.

According to the Indicators of Global Climate Change (IGCC) 2025 update, human activities had caused approximately 1.37°C of global warming above pre-industrial levels by 2025, with human-induced warming increasing at an average rate of 0.27°C per decade over the last decade. Importantly, a global average warming of 1.5°C does not mean every location warms by 1.5°C; some regions can experience much larger increases and far more extreme temperature swings, making the impacts far from benign – for instance 19°C above historical averages in the poles and at high altitude.



## How does El Niño influence extreme heat?

El Niño is a natural climate phenomenon that periodically warms parts of the Pacific Ocean and influences weather globally. It often contributes to higher global temperatures and can increase the risk of heatwaves in some regions. However, El Niño is a temporary climate pattern, whereas climate change is the long-term trend in temperature and precipitation, driving increasingly frequent and intense extreme heat. Climate change raises the baseline temperature, compounding El Niño's additional short-term warming influence and subsequently leading to more powerful El Nino events. This means heat records, one of the El Nino manifestations together with hurricanes, floods and droughts, are more likely to be broken, and extreme heat impacts can become more severe.

For journalists, it is important not to attribute every heatwave to El Niño and distinguish between long-term climate change and natural climate variability such as El Niño. Resources such as the WMO El Niño/La Niña Update and related WMO factsheets can help explain how natural climate patterns may influence a particular year while underlying human-caused warming continues to drive long-term increases in extreme heat.

## Who is most vulnerable to extreme heat?

Heat does not affect everyone equally.

While temperatures are rising worldwide, risks vary considerably between and within countries. Some regions already face prolonged, life-threatening heat extremes, and even within the same city, exposure can differ significantly depending on where people live and work and what means they have access to.

Neighbourhoods with limited tree cover and large areas of concrete tend to be hotter than greener areas, while people living in poorly ventilated housing or working outdoors may experience far greater heat exposure than others during the same period of extreme heat.

Older people, infants and young children, pregnant women, people with chronic illnesses, outdoor workers, low-income households, residents of informal settlements and people experiencing homelessness often face the greatest risks.

Vulnerability is shaped not only by age or health, but also by housing quality, access to affordable cooling and healthcare, working conditions, and the surrounding environment. Indoor heat exposure is often overlooked: poor ventilation, limited shade, overcrowding and unreliable electricity can make homes, schools, and workplaces dangerously hot. Night-time heat is particularly harmful because it prevents the body from recovering from daytime heat stress. Night-time temperatures are also an important criterion used by many meteorological services when determining whether conditions meet their local definition of a heatwave.

Reporters may want to look beyond temperature records and examine who is most affected, why certain groups face higher risks and how those risks can be reduced.

## Why are cities hotter than surrounding areas?

Q

Cities are often significantly hotter than surrounding rural areas because of the urban heat island effect. Buildings, roads, and other hard and dark surfaces absorb heat during the day and release it slowly at night, keeping urban areas warmer, especially after sunset.

Air temperature alone does not capture how hot conditions actually feel – humidity and wind velocity have a significant effect on thermal comfort. Heat radiated by surrounding surfaces (known as mean radiant temperature) can significantly increase heat exposure, particularly in neighbourhoods with little shade with lack of green and open spaces due to dense development or poorly designed buildings. Highly reflective or extensively glazed building façades can also intensify localized heat exposure by redirecting sunlight onto streets, public spaces, and neighboring buildings. Mirror-like or curved façades can create concentrated radiant-heat and glare hotspots, increasing discomfort and risk for pedestrians even when the surrounding air temperature has not risen. Because many heat policies and health guidelines rely primarily on air temperature, they may underestimate the risks faced by outdoor workers and people living in informal settlements or low-income housing.

For journalists, the urban heat island effect is a reminder that extreme heat is not only a climate story. It is also a story about urban planning, housing, inequality, and public health.

## What is wet-bulb temperature and why does it matter?

Q

Wet-bulb temperature is a measure that combines heat and humidity to indicate how effectively the human body can cool itself through sweating.

When humidity is high, sweat evaporates more slowly, making it harder for the body to regulate its temperature. This means that a lower temperature in a humid environment can sometimes be more dangerous than a higher temperature in a dry climate.

For journalists, wet-bulb temperature can help explain why heat impacts vary across regions and why humidity is an important part of assessing heat risk. It might explain why human casualties are higher in places experiencing lower temperatures – in addition to other prevention and response capabilities.





## Is air conditioning the answer to extreme heat?

Q

Air conditioning saves lives and can be  essential, particularly in hospitals, care homes, schools, and homes occupied by vulnerable populations. As extreme heat becomes more frequent and intense, access to cooling is increasingly a public health necessity.

However, air conditioning alone cannot solve the growing challenge of extreme heat. While cooling is a critical adaptation measure, around 1.2 billion people still lack access to essential cooling. For many households, air conditioning remains unaffordable to buy or operate, even in higher-income countries, meaning reliance on air conditioning alone risks creating unequal protection from extreme heat.

Growing demand for air conditioning also places increasing pressure on electricity systems. Older or inefficient units consume large amounts of energy, often use high-global-warming-potential refrigerants, and release heat that can worsen temperatures in densely built urban areas.

A more resilient approach is to reduce the need for air conditioning in the first place through passive cooling. Better building design, shade, natural ventilation, reflective roofs and urban greening help keep buildings cooler, and can be coupled with low-energy technologies such as fans and evaporative coolers can provide relief using a fraction of the energy required by air conditioning. If air conditioning is required, these combined measures allow smaller air conditioning systems to be installed and used for fewer hours of the year while still maintaining comfortable indoor temperatures but with much lower electricity usage.

Passive cooling and low-energy technologies also improve resilience during power outages, which can often occur during heatwaves when electricity demand is highest. Buildings designed to stay cooler naturally remain more habitable and safe, while low-energy devices such as fans can be powered by rooftop solar or battery storage far more easily than conventional air conditioning.

Where air conditioning is required, modern, high-efficiency air conditioners that use climate-friendly refrigerants also have an important role to play. Combined with renewable electricity and passive cooling measures, they can provide life-saving cooling while minimising emissions and reducing power bills.

For these reasons, experts increasingly emphasise a broader approach to heat resilience that delivers thermal comfort and access to cooling by combining better building design, shade, urban greening, natural ventilation, reflective surfaces with equipment that is high efficiency and uses climate friendly refrigerants. This broader approach can be integrated into cities, heat action plans, climate plans and developed alongside early warning systems for extreme heat.

The challenge is not whether people should have access to cooling. The challenge is ensuring that everyone has access to cooling that is affordable, efficient, and sustainable, while reducing the need for mechanical cooling wherever possible.

## What is sustainable cooling?

As extreme heat becomes more frequent, prolonged and intense, access to cooling is becoming critical to protecting public health, maintaining essential services and safeguarding infrastructure. The challenge is meeting growing cooling needs without driving further climate change

Sustainable cooling provides the cooling people need while minimising impacts on the climate and environment.

It combines:

- Better building design
- Passive cooling measures
- Energy-efficient cooling technologies
- Climate-friendly refrigerants
- Urban planning that reduces heat exposure
- Centralised cooling and district cooling

According to UNEP's Global Cooling Watch report, a sustainable cooling pathway could significantly reduce cooling-related emissions while protecting billions of people from rising temperatures and reducing future energy and infrastructure costs.

Sustainable cooling is both an adaptation solution that helps people cope with heat today and a mitigation solution that helps limit future warming.

## Beyond cooling, what solutions reduce heat risks?

Managing extreme heat requires action across multiple sectors, from public health and labour to urban planning and education. Effective measures include:

- Heat action plans
- Early warning systems
- Adjusting working hours to avoid the hottest parts of the day, particularly for outdoor workers
- Increasing hydration breaks and ensuring drinking water is readily accessible
- Adapting school schedules during periods of extreme heat
- Updating workplace dress codes to reduce heat stress where appropriate
- Training healthcare workers to recognise and treat heat-related illness, and strengthening health facilities to respond
- Establishing cooling shelters and community cooling centres
- Community outreach and buddy systems to check on older people and other vulnerable groups
- Reliable access to safe drinking water that remains available during power outages
- Urban greening, tree planting and shade infrastructure
- Cool and reflective roofs and pavements
- Better building standards that promote passive cooling and natural ventilation
- Heat-resilient schools, hospitals and other critical infrastructure.

Sustainable cooling is a key part of the response, but reducing heat risk requires coordinated action across health, housing, labour, disaster risk reduction, and urban planning.



## What are cities doing to prepare for extreme heat?

Q

Cities are increasingly treating extreme heat as a public health, infrastructure, and an urban planning challenge.

Many are undertaking urban heat island and vulnerability assessments, developing heat action plans, strengthening early warning systems, expanding urban greening and shade, transforming schoolyards into climate-resilient oasis, developing cooling shelters networks and cool itineraries, increasing access to water-based cooling (water fountains, water play features, and swimmable urban spaces), preparing bankable project pipelines for public building retrofits and outdoor area retrofits and innovating on finance mechanisms, improving building design, and investing in sustainable cooling to reduce heat risks.

These measures are designed not only to protect people during periods of extreme heat, including officially declared heatwaves, but also to reduce long-term vulnerability as temperatures continue to rise.

In some countries, cities and subnational governments declare officially defined heatwaves as a specific disaster to their geography, unlocking targeted funds from central governments, disaster departments, bond markets, and insurers. These can be used to finance the city's disaster response to heatwaves, make fast payouts to those impacted and unlock long-term budgets to mitigate impacts of heatwaves - such as paying for passive cooling retrofits for public buildings. Such funds and structures can be complemented with climate finance given the worsening impacts of more severe heatwaves due to the climate crisis and the longer periods of extreme heat that are also prevalent even outside of heatwave conditions.

For journalists, cities provide some of the clearest examples of how governments are adapting to climate change. Reporting can explore which measures are working, who benefits, where gaps remain, and how local decisions on planning, housing, and public health shape people's exposure to extreme heat.

UNEP is supporting city action through the **Beat the Heat implementation drive** and **50@50 global activation** that brings together more than 50 cities to share practical solutions and prepare for a future in which temperatures of 50°C become increasingly common.

## What are governments doing to prepare for extreme heat?

Q

Governments play a critical role in reducing heat risks through planning, infrastructure, public health measures, and access to sustainable cooling.

According to UNEP's Global Cooling Watch Report, effective responses combine adaptation and mitigation measures that protect people from rising temperatures while limiting growth in cooling-related emissions. These include:

- Developing and implementing national and local heat action plans.
- Strengthening heat early warning systems and public alert mechanisms.
- Expanding access to affordable and sustainable cooling, particularly for vulnerable populations.
- Improving building energy performance through stronger building codes and passive cooling measures.
- Setting minimum energy performance standards and gradually phasing out the least efficient cooling equipment, reducing electricity demand and easing pressure on power grids during heatwaves and periods of extreme heat.
- Promoting the use of refrigerants with lower global warming potential, alongside proper installation, maintenance, and end-of-life management.
- Investing in urban greening, shade infrastructure, and climate-resilient public spaces.
- Strengthening the resilience of electricity systems, healthcare facilities, schools, and other critical infrastructure.
- Integrating heat risk into urban planning, public health and disaster risk reduction strategies.

The Global Cooling Watch Report highlights that cooling demand could more than triple by 2050 under a business-as-usual pathway. A Sustainable Cooling Pathway - combining passive cooling, efficient technologies, and climate-friendly refrigerants - could significantly reduce emissions, lower energy costs, and improve access to life-saving cooling for billions of people.

75 countries and over 200 cities have already joined the Global Cooling Pledge, the world's first collective commitment to cut cooling-related emissions by 68% by 2050.

The key message is that heat resilience is not achieved through air conditioning alone. Effective government responses combine public health preparedness, better urban design, sustainable cooling, and long-term climate planning.





## What role do building codes and passive cooling play in government responses to extreme heat?

Building codes give governments a way to reduce heat exposure across an entire building stock, rather than depending on individual choices made one building at a time.

Effective codes prioritise passive design measures, such as shading, insulation, orientation, and natural ventilation, before relying on mechanical air conditioning. This sequencing matters: reducing the need for cooling in the first place is more resilient than adding equipment to compensate for poor design, particularly during power outages, when air conditioning stops working but a well-designed building can stay cooler for longer.

Adoption of building energy codes remains uneven worldwide, and even where codes exist, passive cooling measures are rarely included within them. Closing these gaps is a significant opportunity for governments to reduce heat exposure at scale.

For homes, schools, healthcare facilities, and workplaces, this can extend to minimum indoor thermal comfort requirements and heat safety standards, giving people a regulatory floor of protection rather than relying on individual buildings to act voluntarily.

For journalists, this is a reminder that who stays safe in extreme heat often depends on decisions made long before periods of extreme heat occur, in how buildings are designed, built, regulated, and enforced.

## What can individuals and communities do to reduce heat risks?

Individuals and communities can reduce heat risks by staying informed about heat warnings, checking on vulnerable neighbours, seeking shade and cooler spaces during periods of extreme heat, staying hydrated, limiting strenuous outdoor activity during the hottest parts of the day, and helping to create cooler neighbourhoods through tree planting, shading and community preparedness initiatives.

Community organisations, schools, employers and local authorities can also strengthen resilience by developing heat response plans, improving access to cooling and ensuring vulnerable groups receive timely support.

For journalists, this means that reporting on extreme heat should go beyond temperature records and demand for air conditioners. Effective heat resilience begins long before a heatwave occurs and depends on how well communities, institutions and individuals are prepared to respond.

Good reporting can help audiences understand practical ways to reduce risk, including awareness of heat warnings, access to cooling and shaded spaces, neighbour-to-neighbour support, and measures that protect vulnerable populations.

## Where can journalists find reliable information and expert sources?

Q

Journalists should rely on trusted scientific and public institutions and consult both operational data providers and authoritative assessment reports.

Key sources include:

- **National Meteorological and Hydrological Services (NMHSs)** for weather observations, forecasts, climate records, and local expertise.
- **National public health authorities** for information on heat-related illness, mortality, and public health preparedness.
- **Copernicus Climate Change Service (C3S)** for global and regional climate monitoring, temperature records, and climate indicators.
- **World Meteorological Organization (WMO)** for global climate and weather assessments, heat alerts, and attribution-related resources.
- **United Nations Environment Programme (UNEP)** for analysis on climate impacts, adaptation, sustainable cooling solutions, and trends as well as buildings solutions and trends.
- **International Energy Agency (IEA)** for data on air-conditioning trends, electricity use, energy efficiency, and power system impacts.
- **Peer-reviewed scientific studies** for evidence on heat impacts, climate attribution, health outcomes, and adaptation measures.

Journalists reporting on extreme heat may find the following resources particularly useful:

- **UNEP's Global Cooling Watch Report**, which tracks global cooling demand and identifies pathways to expand access to cooling while reducing emissions. The report finds that cooling demand could more than triple by 2050 under a business-as-usual pathway, while a Sustainable Cooling Pathway could reduce cooling-related emissions by 64 per cent and help protect billions of people from rising heat.
- **United Nations Secretary-General's Call to Action on Extreme Heat** which brings together the diverse expertise and perspectives of ten specialized UN entities (FAO, ILO, OCHA, UNDRR, UNEP, UNESCO, UN-Habitat, UNICEF, WHO, WMO) in a first-of-its-kind joint product, underscoring the multi-sectoral impacts of extreme heat.
- **UNEP Cool Coalition resources**, which provide information on sustainable cooling, refrigerants, passive cooling measures, and policy solutions.
- **UNEP's Global Status Report for Buildings and Construction**, which tracks global progress on decarbonising the buildings sector and provides data on building energy performance, passive design, and resilience to extreme heat.
- Explore the **50@50 interactive map** to discover how more than 50 cities are preparing for a hotter future through practical, scalable solutions to extreme heat.

Participants in this workshop will receive links to trusted datasets, reporting tools, expert contacts, visual assets, and background materials to support future reporting on extreme heat, resilience, and sustainable cooling.