Foundation

Global Safety Evidence Centre

The impact of climate change on safety at work

Safe Work

Evidence Review

Briefing

1. The quick read

A review of the evidence on the impacts of climate change on worker safety and health found that:

- Climate change is a global phenomenon, but not all regions will be equally affected. Approaches to protect workers need both global data and local knowledge to be effective.
- Workers across all sectors will be affected, but not all sectors or occupations carry the same risks or have been researched equally.
- Ocean workers are represented across several high-risk sectors which are particularly affected by climate change including fishing and aquaculture, energy, and transport.

The main risks to worker safety are:

Direct risks

- Excessive heat
- Extreme weather events
- UV radiation
- Air pollution
- Vector-borne diseases
- Agrochemicals

Indirect risks

- Disrupted supply chains
- Climate-induced migration
- Loss of productivity and added pressures

Other risks

- Mental health impacts

Of these, excessive heat and UV radiation are well researched, while the others are less studied.

Emerging technologies and materials needed to combat climate change pose new risks to workers. There is a lack of evidence on how to protect workers from climate-change related risks, especially those working in low-and-medium income countries.

More research is needed, especially around effectiveness of interventions and policies in specific contexts. Where evidence exists, it is often limited to one sector or region and needs to be tested and adapted to other contexts so other employers and workers can benefit.

2. Why this is important

Our World Risk Poll data from 2023 shows that 30% of people globally had experienced a disaster related to a natural hazard in the past five years, up from 27% in 2021. Three types of disasters dominate: flooding, hurricanes and earthquakes[1].

As climate change and global warming worsen, natural hazards – from heatwaves to floods and tropical storms – will intensify.

As well as disrupting communities, climate change has a deep impact on workers' safety and health, and on the availability and type of work they do.

We wanted to understand how climate change affects worker safety in different sectors around the world, and the evidence gaps that still need to be filled.

1. Lloyd's Register Foundation. (2024). World Risk Poll 2024 Report: Resilience in a Changing World. Lloyd's Register Foundation. https://doi.org/10.60743/CORM-H862

3. The research

Researchers from RAND Europe mapped the evidence on climate change and occupational safety and health, reviewed the evidence for key sectors, and brought in expert voices through interviews and a workshop.

3.1 Mapping the evidence base

The evidence on the effects of climate change on general worker safety and health is vast and growing. Initially over 1.8 million studies published in English between 2021 and 22024 were identified. After being ranked by relevance, the 'meta-data' (titles, abstracts and keywords) for 2,000 studies was analysed to provide an overview of the evidence landscape, helping to inform the selection of topics for the evidence review.

Using Artificial Intelligence to review the evidence

The evidence base on this topic is large and growing – the initial searches found around 1.8 million results. New tools were used to manage and make sense of this complex and growing field.

The research team used artificial intelligence (AI) tools to:

1. Develop a **clustering map of the evidence** based on the abstracts of 2,000 studies. Summaries of the main themes were generated, providing an overview of the evidence landscape.

2. **Retrieve information** from the study abstracts and thematic clusters based on questions asked by the researchers. This created concise answers with references to the evidence.

The research team used these tools to **refine the search terms** and exclude topics which were not relevant to the research questions. Researchers thoroughly reviewed the included studies identified by these AI tools.

3.2 Focus on specific sectors

The research team drew on 215 relevant academic and grey literature studies to understand how selected high-risk sectors are affected.

3.3 Evidence from practice

The research team conducted six expert interviews and a workshop with practitioners and experts in occupational safety and climate change. These conversations brought in further insights, identified gaps and helped validate the findings of the review.

4. The findings: Risks

Workers may experience different risks depending on their job location, task or even the time of the year. Workers are unlikely to experience risks in isolation, and the combination of risks may present unique or additional impacts.

While some risks are well understood, others have been less studied, and new risks continue to emerge as climate change evolves.

Many protective measures and interventions to reduce harm are also well known and international labour standards have been in place for decades in most countries.

In some cases, there is a need for evidence on which interventions work in different contexts, as well as a need to communicate evidence to sectors where responses are less developed.

4.1 Excessive heat

Extreme heat exposure increases the risk of work injuries by 1% for every 1°C increase, and 17.4% in heatwaves, especially in subtropical climates. Heat stress contributes to around 22.85 million occupational injuries, 18,970 fatalities, and 2.09 million disability-adjusted life years annually.

Heat stress is one of the most well-understood risks, and many studies and reviews look at specific interventions. There is a need to explore the long-term effects of prolonged exposure to heat.

What we know:

- **Who is affected?** Outdoor workers in agriculture and construction, as well as indoor workers especially in badly ventilated environments.
- **What are the effects?** Higher temperatures and heatwaves can cause heat stroke and exhaustion, dehydration and other health conditions, and reduce productivity. These can increase the risk of accidents, lead to loss of productivity as work is halted and put pressure on workers to make up for work stoppages.
- **How are they managed?** Scheduling work for cooler hours and stopping work when temperatures get too high, wearing protective clothing and keeping hydrated.

4.2 Extreme weather events

Global warming is related to more frequent and severe heatwaves, floods, landslides, droughts, storms and wildfires.

What we know:

- **Who is affected?** Workers in outdoor roles like agriculture, forestry and fishing, maritime and shipping. Workers who operate in and during extreme weather, such as emergency and disaster response workers.
- **What are the effects?** Extreme weather events can also cause damage to infrastructure and industrial buildings, leading to potential chemical spills or industrial accidents.
- **How are they managed?** Emergency planning, tailored response plans for different scenarios, robust occupational safety systems.

4.3 UV radiation

Increased UV radiation occurs as a result of the interaction of greenhouse gases, climate change and ozone depletion.

What we know:

- **Who is affected?** Excessive exposure poses significant risks to outdoor workers (such as those in agriculture and construction), but also specific occupations such as airline pilots.
- **What are the effects?** Health conditions (especially to skin, eyes and immune systems).
- **How are they managed?** Safety clothing, eyewear, sunscreen and shade structures.

4.4 Air pollution

Higher temperatures increase ground-level ozone concentrations;, wildfires release and spread pollutants and particulate matter into the atmosphere;, while drought increases windblown dust in some areas. Climate change also affects indoor pollutants such as mould.

What we know:

- **Who is affected?** At least 860,000 workers die every year from occupational air pollution, with outdoor workers and those in low-and-middle income countries particularly affected.
- **What are the effects?** Acute and chronic health conditions (respiratory, cardiovascular, allergies, cancer, neurodegenerative diseases).
- **How are they managed?** Rotating work roles, medical surveillance, pollution monitoring, PPE, adopting electric vehicles, maintaining and upgrading equipment.

4.5 Vector-borne diseases and agrochemicals

Higher temperatures and changing rain patterns impact the number and spread of illnesses transmitted by mosquitoes, ticks and fleas. Workers are exposed to the illness as well as to the effects of the pesticides used to manage outbreaks. Climate change also affects the yield of crops, increasing the use of fertilisers.

What we know:

- **Who is affected?** Outdoor workers in agriculture, construction, forestry and fishing are most affected, although it's difficult to determine whether infections occur at work or at home. Workers who manufacture, handle and dispose of pesticides and fertilisers.
- **What are the effects?** Insect-spread diseases such as Lyme disease, West Nile virus, Chikungunya, Dengue, and Zika fevers. Pesticides and fertilisers can cause health conditions (respiratory, gastrointestinal, neurological, skin) as well as chemical burns from spills or splashes and poisoning from accidental ingestion.
- **How are they managed?** The use of disease surveillance, worker training on handling and use of pesticides and fertilisers, and use of personal protective equipment (PPE) is recommended but not equally adopted around the world. Safety instructions are generally written, but workers may not be able to read safety labels. Some substances are banned in one region but allowed in another.

4.6 Indirect risks

Climate change can impact worker safety in less direct ways, including:

- Changing weather patterns can **disrupt supply chains**, affecting job stability in different sectors and regions.
- **Climate-induced migration** can displace communities and expose workers to unfamiliar jobs and new hazards.
- **Loss of productivity** can result from damage to infrastructure or disrupted work from extreme weather, and increased need for workers to take breaks during heatwaves. This in turn can result in increased pressure on workers, leading to longer hours, stress and burnout.

4.7 Mental health impacts

Climate change can affect mental health in complex ways, including:

- Extreme weather events can lead to **stress, anxiety and post-traumatic stress disorder**.
- Disruptions to sectors such as agriculture, forestry and fishing can lead to **financial stress**, and can cause forced migration which can leave people **isolated**.
- Longer hours for emergency responders and healthcare workers, and more frequent climate-related emergencies, can lead to **burnout**.
- Anxiety about climate change may also lead to **depression and feelings of helplessness and grief**.

Most of the research focuses on the impact on the general population, not workers specifically.

Next steps for research

Effectiveness of workplace interventions, including:

- Workplace adaptations to extreme weather events (training and safety drills, infrastructure modifications, new technology) in different contexts and against different events.
- The risks of air pollutants (ozone and small particles) and the effectiveness of protective measures.

Better data, including:

- Safety risks of shipwrecks resulting from extreme weather events.
- Workers' exposure to poisonous plants, reptiles and venomous insects.

Under-researched groups and risks, including:

- Risk of eye injuries for people working in reflective environments (snow and water).
- Indirect risks posed by climate change in different regions and occupations.
- Links between climate change and workers' mental health in different contexts.

5. The findings: Geography

Not all regions of the world are at equal risk of experiencing severe impacts of climate change, and some areas are at risk of multiple impacts.

The following map shows the areas of greatest concern for experiencing severe climate-related impacts at 4°C global warming relative to pre-industrial levels (1850-1900). The impacts shown are extreme heat stress, river flooding, fire weather, drought and food insecurity.

Climate change affects workers around the world, but the effects on worker safety and health are affected by regional factors such as socio-economic conditions, regulation and infrastructure, as well as by sector.

- **Coastal areas** are vulnerable to rising sea levels and storms which threaten fishing and tourism workers and infrastructure;
- **Arid areas** may experience droughts which affect air pollution or agricultural production;
- **Urban areas** face risks associated with air pollution, heat waves and 'heat island effects', affecting indoor as well as outdoor workers.

Poorer countries are disproportionately affected. Low-and-middle income countries experienced 82% of all global deaths linked to weather and climate hazards. This higher general risk extends to workers in those countries.

Local data as well as global insights are needed to address these risks for workers across the world.

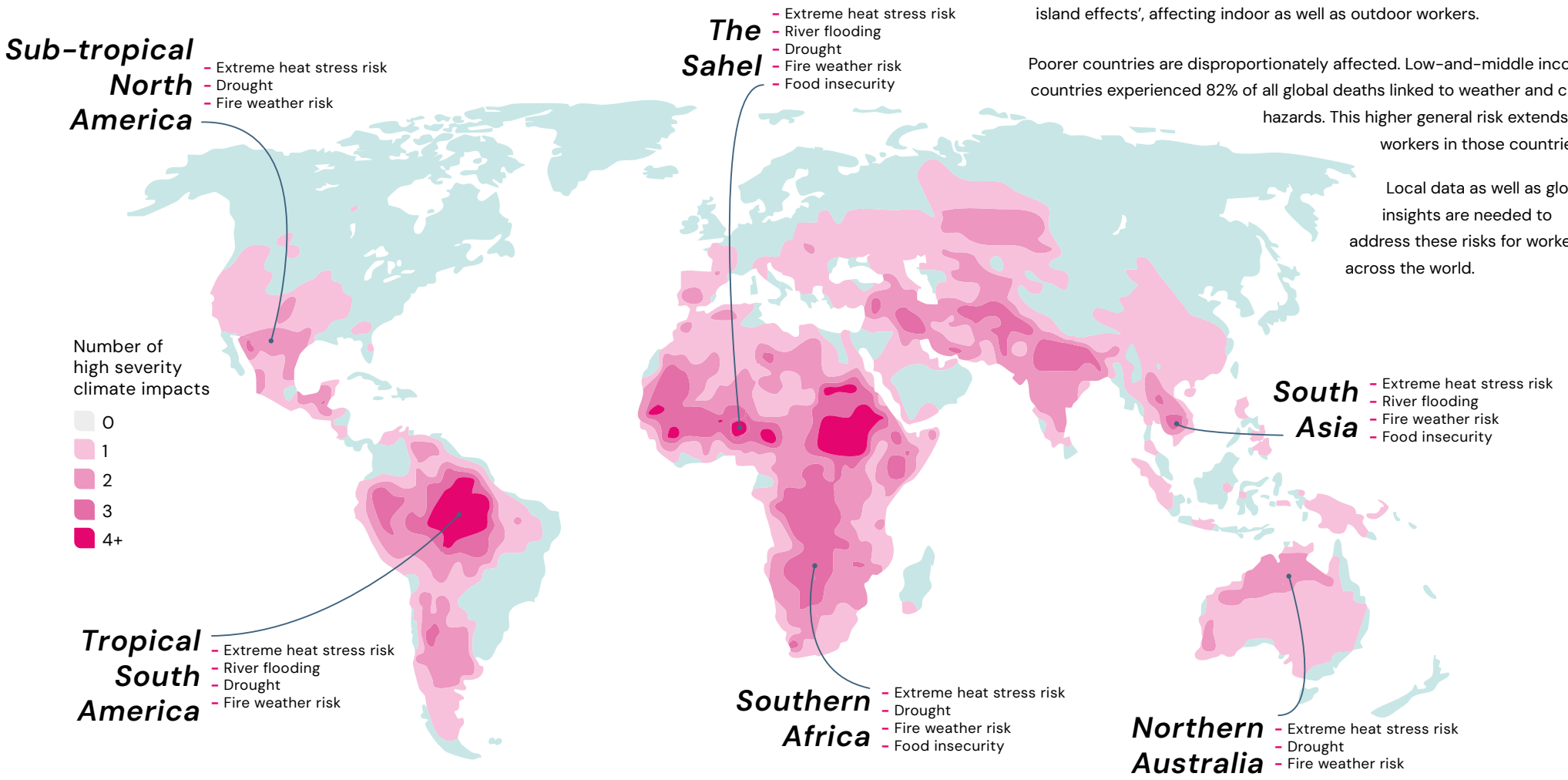

Image adapted from: Met Office, Global impacts of climate change - projections.
metoffice.gov.uk/research/climate/climate-impacts/global-impacts-of-climate-change---projections

Focus on: Mauritius

As an island nation, Mauritius is particularly vulnerable to climate change due to its location, economic reliance on sectors such as agriculture, fisheries and tourism, and limited resources for adaptation.

Ways in which climate change affects Mauritius:

- **Flash flooding,** which has increased in the last decade.
- **Cyclones** causing increased coastal flooding.
- **Rising sea levels.**
- **Vector-borne diseases** such as dengue fever.
- **Increased heat.**

Effects on workers and local response:

These changes affect worker safety across industries, for example when cyclones and rising sea levels cause damage to hotels or tourism infrastructure.

Increased heat poses less of a challenge than other effects due to the island's historic adaptation techniques such as pre-dawn working shifts for sugar cane workers.

The meteorological agency has a crucial role in guiding occupational safety and health decisions on the island, providing evidence to a national crisis committee. There are challenges in how the committee then determines whether it is safe for people to work and how it communicates their decision to public and private sectors.

For example, on one occasion, a controversial decision allowed workers to go to work despite impending flooding, only for a midday reversal to advise against it, leading to many workers trying to return home finding their vehicles submerged in floodwaters.

Effective communication during climate events is also essential, as past instances of misinformation and delayed responses have posed unnecessary risks to both the population and the workforce.

Both the private and public sectors have written protocols that serve as guidelines for providing practical advice to organisations in times of heavy rainfall.

This case study is based on an interview with a highly experienced occupational safety and health professional holding leadership roles in Mauritius and internationally.

6. The findings: Sectors

Most of the evidence on climate-change related risks looks at the general population, not workers in different contexts. This section sets out evidence on how climate change affects worker safety in high-risk sectors.

6.1 Agriculture, forestry and fishing

These three sectors represent 4% of global Gross Domestic Product (GDP), which rises to 25% in low-income countries. They employ over a quarter of all workers globally and have some of the highest injury and fatality rates. Our World Risk Poll shows that 18% of agricultural workers have personally experienced harm in the past two years.

Key statistics

- Represents 4% of global GDP (up to 25% in low-income countries).
- Accounts for 27% of global employment.
- At least 210,000 workers die in accidents each year.
- Fatal injury rate: 13.4 / 100,000
- 18% of agricultural workers have experienced harm.

Increased risks due to climate change

- Heat and chemical exposure: increased heat stress, volatile chemicals, and increased use of fertilisers.
- Extreme weather: more frequent strong storms, fires and floods create hazardous working conditions.
- Pathogens and vector-borne diseases: warmer temperatures expand insect habitat; increased infection risk and exposure to pesticides.

Workers most at risk

- Smallholder farmers.
- Small-scale fisheries, individual fishers or fishing households.

Affected geographies

- Tropical and subtropical areas in Africa, Asia and South America.
- Semi-arid regions (Sahel and Horn of Africa).

Nature of the evidence and potential gaps

- Mix of quantitative and qualitative evidence.
- Data and reporting gaps hinder comparisons between low- and high-income countries.
- Limited evidence on how intersecting characteristics relate to occupational risks.

Focus on: Ocean workers

Ocean workers – those who work on or near the water – are represented across a number of high hazard sectors, including energy and transport. Fishing and aquaculture employ around 200 million people worldwide.

Our World Risk Poll shows that 9% of ocean workers say workplace harm is the greatest risk to their daily safety – three times higher than reported by the rest of the global workforce. While risks have always existed, 17% of ocean workers now identify climate change as the greatest personal safety risk they face – almost triple the response of other workers. One third of ocean workers have experienced serious harm from severe weather events in the past two years[1].

How climate change increases risks for workers:

- Rising sea levels and more heavy storms damage coastal infrastructure.
- Higher rainfall and melting glaciers affect freshwater conditions and safety on rivers and lakes.
- Rising sea surface temperatures promote pathogen growth and risk of infections.
- High temperatures increase heat stress.
- Adverse weather conditions at sea increase risk of injuries from machinery, slips and falls, electrical accidents and chemical spills.

Workers most at risk:

- Small-scale fisheries, individual fishers or fishing households.
- Fishers with poorer access to safety equipment and training or fewer resources to invest in safety.
- Offshore energy workers, especially in low-carbon industries.
- Ocean transport workers, including those transporting materials needed for renewable energy transition.

Affected geographies:

- For fishing and aquaculture:
  - Both marine and freshwater ecosystems are affected.
  - Southeast Asia will be especially impacted by floods, sea-level rise and seawater intrusion.
  - China, especially major aquaculture areas like the Yangtze and Yellow River basins.
  - Islands in the tropical Pacific are affected by extreme weather events and ocean acidification.
  - Northern Europe and North America will experience more frequent and heavier rainfall leading to flooding.
- For offshore energy:
  - Areas with growing number of offshore wind farms such as China, Europe and Vietnam.
- For ocean transport:
  - Tropical and subtropical regions and Southern Asia.

State of the evidence and gaps:

- There is limited evidence on the effects of climate change on energy, fishing and aquaculture, compared to other sectors. Most of the research focuses on food security rather than workforce safety.
- High- income countries report data on injuries and deaths, but low-and-middle income countries often lack data.
- Evidence is needed on the effectiveness of approaches to protect ocean workers' safety in different contexts.

1. Lloyd's Register Foundation, "World Risk Poll 2024 Focus On: Risk Perceptions and Experiences of Ocean Workers," Lloyd's Register Foundation, 2025. doi: *10.60743/XJN7-9X64*

6.2 Construction

Represents 13% of global GDP and 7% of employment across the world. Features a wide range of jobs and industries, including labourers, skilled tradespeople, architects and engineers. Existing risks include slips, trips and falls, working at height, heavy machinery and tools, working with chemicals or explosives and exposure to noise. Our World Risk Poll shows that 22% of construction workers have experienced harm.

Key statistics

- Represents 13% of global GDP.
- Accounts for 7% of global employment.
- Fatal injury rate: 12 / 100,000
- 22% of workers have experienced harm.

Increased risks due to climate change

- Extreme weather events increase physical hazards and cause damage to infrastructure under construction.
- High temperatures increase heat stress, physical injuries (such as burns from handling hot machinery), exposure to chemicals, air pollutants, and infectious diseases.
- Exposure to UV radiation increases skin and eye injuries and cancers.

Workers most at risk

- Outdoor manual labourers in construction, quarry and industrial sites.
- Workers handling tools and machinery.
- Migrant workers who are less likely to receive adequate safety training.

Affected geographies

- Australia and the Pacific Islands (wildfires).
- Southern Europe (heat waves)
- High humidity areas.
- Urban areas due to "urban heat island effect."
- Regions lacking labour protection or relying on low-income labour.

Nature of the evidence and potential gaps

- Heat stress and heat related mortality are well researched.
- Limited evidence on non-heat related impacts.
- Limited evidence on different geographies or how regulations can combat risks.

6.3 Manufacturing

Manufacturing accounts for 14% of global employment and 16% of global GDP across 23 industries. Higher temperatures pose the biggest risk to safety as well as productivity. For example, in India, manufacturing output declines by approximately 2% per degree Celsius increase in temperature. Our World Risk Poll shows that 15% of workers have experienced harm.

Key statistics

- 14% of global employment.
- 16% of global GDP across 23 industries.
- Fatal injury rate: 4.3 / 100,000
- 15% of workers have experienced harm.

Increased risks due to climate change

- Severe weather causes disruption in factories and riskier working conditions.
- Higher temperature and humidity cause heat stress and increased wear and tear of factories and machinery.
- Weather-related breaks and water shortages may lead to lost productivity and increased pressure on workers.

Workers most at risk

- Workers who manufacture heavy machinery and transport equipment.
- Workers in chemical manufacturing.
- Garment and textile workers.

Affected geographies

- Regions most impacted by rising temperatures and flooding.
- Sub-Saharan Africa, South and South-East Asia, China, Middle East, Mexico.

Nature of the evidence and potential gaps

- Extensive evidence on the effects of heat stress, but less on the wider effects of climate change.
- Grey literature focuses on how manufacturing should transform to reduce carbon footprint.
- Lack of data from some regions, including underreporting of injuries.

6.4 Disaster response

In 2021, $31.3 billion was spent globally on conflict and climate-related disasters. Supporting these efforts involved approximately 630,000 humanitarian aid workers.

Key statistics

- $31.3 billion in humanitarian financing towards all disasters (not only related to climate change), including wars.
- 630,000 humanitarian aid staff towards all disasters (not only related to climate change), including wars.
- Fatal injury rate: 1.6 / 100,000

Increased risks due to climate change

- Extreme weather events increase physical hazards and cause damage to infrastructure under construction.
- More frequent and widespread wildfires increase physical injuries to firefighters, damage from smoke or chemical inhalation, and heat stress due to heavy PPE.
- More frequent floods expose responders to hazardous chemicals and sewage.
- Mental health conditions can result from stress, trauma and burnout in emergency responders.

Workers most at risk

- Firefighters and flood responders.
- Ambulance workers, police officers, outdoor traffic officers.
- Humanitarian aid workers operating in regions affected by climate change or disasters.

Affected geographies

- Low-and-middle income countries in Asia, Africa and Central and South America.
- Australia (especially coastal areas)
- Regions with high humanitarian need or in conflict.

Nature of the evidence and potential gaps

- Lack of evidence on firefighter safety during extreme weather events, especially in low-and-middle income countries.
- Most research focuses on the general impacts of the disasters rather than on the safety of emergency workers.

6.5 Energy

The energy sector represents 2% of global employment, and includes workers in oil, gas and coal, as well as renewables and nuclear. Clean energy accounts for 10% of global GDP growth and presents new workplace safety challenges.

Key statistics

- Represents 2% of global employment, while clean energy accounts for 10% of global GDP growth.
- Lost time due to injuries is four times higher in offshore renewables than offshore oil and gas in the UK.
- Fatal injury rate: 10.2 / 100,000

Increased risks due to climate change

- High temperatures increase heat stress in outdoor and offshore sites.
- Extreme weather and unpredictable wind patterns increase physical injuries in outdoor or offshore sites.
- Disasters related to natural hazards increase risks of electrical accidents.
- New safety hazards are emerging with transition to low-carbon fuels like ammonia, methanol, and hydrogen.

Workers most at risk

- Outdoor and offshore workers.
- Onshore and offshore windfarm workers.
- Workers in transition to low-carbon fuels (especially maritime workers).
- Small renewable businesses.

Affected geographies

- No information was found on geographic disparities specific to renewable energy and risks brought by the climate change
- Areas with growing renewable energy sectors may be at risk in the future, including Brazil, Europe and China.

Nature of the evidence and potential gaps

- Most information comes from trade associations.
- Better data needed on how known risks are affected by climate change.
- Evidence needed on the emerging risks of transition from high- to low-carbon fuels in maritime settings.

6.6 Mining and quarrying

Large-scale mining is generally well-funded and regulated, but small-scale and informal mining is usually unregulated. Small-scale mining – usually carried out by families or small groups – accounts for around 40 million people, while large mining companies employ around nine million workers. Our World Risk Poll shows that 21% of workers have experienced harm. The transition to renewables will lead to more people working in informal mining for tantalum, cobalt and lithium.

Key statistics

- Represents 1.2% of global GDP.
- Small-scale mining employs around 40M people, large-scale mining around 9M.
- Fatal injury rate: 4.2 / 100,000
- 21% of workers have experienced harm.

Increased risks due to climate change

- Temperature rises lead to heat exhaustion.
- Extreme weather leads to floods, landslides and hazardous working conditions.
- Thawing of permafrost can destabilise the ground and infrastructure.
- Increased demand for materials used in renewable technologies will lead to more people working in small-scale, riskier, mining.

Workers most at risk

- Workers in small-mining operations.
- Workers in underground mines.
- Workers and operators in open-cast mining.

Affected geographies

- Low-and-middle income countries.
- Regions affected by temperature rises.
- Countries with unregulated mining sector and small-scale mining.
- Regions with deposits of materials used in low-carbon technologies.

Nature of the evidence and potential gaps

- Most data comes from large mining operations.
- Data needed on the impact of climate change on small-scale mining workers and those in low-and-middle income countries.
- Research is needed on the effectiveness of approaches to protect small-scale mining, especially in affected regions.

6.7 Transportation and storage

Occupations related to the movement and storage of goods and people are vital for the global economy. These sectors include land water and air transport, and essential support activities such as storage, warehousing and logistics.

Key statistics

- Fatal injury rate: 10 / 100,000

Increased risks due to climate change

- Extreme weather may disrupt and damage infrastructure, lead to exposure to hazardous materials and dangerous working conditions.
- Increased air pollution for drivers.
- Higher temperatures leading to heat stress for outdoor and indoor workers.
- Higher ocean temperatures lead to heat stress and dehydration in ocean workers, especially those using heavy PPE.
- Increased shipping of materials used in renewable technologies may lead to new risks.

Workers most at risk

- Outdoor transport workers
- Informal land transport workers
- Road and rail workers
- Seafaring transport workers
- Warehouse and storage workers
- Air pilots and flight crew

Affected geographies

- Lack of data makes identifying regions difficult.
- Coastal communities and ports.
- Tropical and subtropical regions, Southern Asia and Western Africa.
- Europe and North America.

Nature of the evidence and potential gaps

- Lack of good global data and lack of data for transport routes or contexts.
- Outdated evidence for some sectors (rail transport)
- Maritime and green shipping has stronger evidence

7. Recommendations

Researchers, evidence brokers and practitioners all have a role to play in how we respond to the risks posed to workers by climate change:

Sharing reliable information

1. Where evidence is strong, such as on the risks of heat and UV radiation, this should be communicated as widely as possible in the form of guidelines to employers. Insights from at- risk occupations should be added to the evidence base.

Filling the evidence gaps

2. Data gaps in informal work and in places with less regulation and reporting should be prioritised to fully understand the scale of the problem.
3. Research should focus on how effective interventions and approaches are in protecting workers from climate-change related risks in different contexts.
4. Living evidence reviews will ensure knowledge is updated in a rapidly changing world.

Working with practitioners

5. Practitioner insights should help guide research priorities, such as when identifying new or more serious risks or occupations of concern.
6. Bringing together researchers and practitioners to share knowledge across sectors and regions will be key to disseminating findings widely.
7. Local knowledge and data are needed to ensure solutions address local conditions and needs. Supporting practitioners to collect and share local knowledge is key to this.

About Lloyd's Register Foundation Global Safety Evidence centre

The Lloyd's Register Foundation Global Safety Evidence Centre is a hub for anyone who needs to know 'what works' to make people safer. The Centre collates, creates and communicates the best available safety evidence from the Foundation, our partners and other sources on both the nature and scale of global safety challenges, and what works to address them. It works with partners to identify and fill gaps in the evidence, and to use the evidence for action.

To find out more about the Global Safety Evidence Centre, visit *gsec.lrfoundation.org.uk*

About Lloyd's Register Foundation

Lloyd's Register Foundation is an independent global safety charity that supports research, innovation, and education to make the world a safer place. Its mission is to use the best evidence and insight to help the global community focus on tackling the world's most pressing safety and risk challenges.

To find out more about Lloyd's Register Foundation, visit *lrfoundation.org.uk*

Lloyd's Register Foundation, 71 Fenchurch Street, London, EC3M 4BS, United Kingdom

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RAND Europe was engaged to conduct the evidence review on which this summary briefing – authored by Lloyd's Register Foundation – is based. A full technical report of the evidence review – authored by RAND Europe – is also available on the Global Safety Evidence Centre website.