



Impact of Climate Change on Occupational Safety and Health

For Prelims: [International Labour Organization](#), [Occupational safety and health](#), [Extreme weather events](#), Constitutional Provisions Related to Labour Safety, [Occupational Safety, Health, and Working Conditions Code of 2020](#).

For Mains: Impacts of Climate Change on Occupational Safety and Health.

[Source: ILO](#)

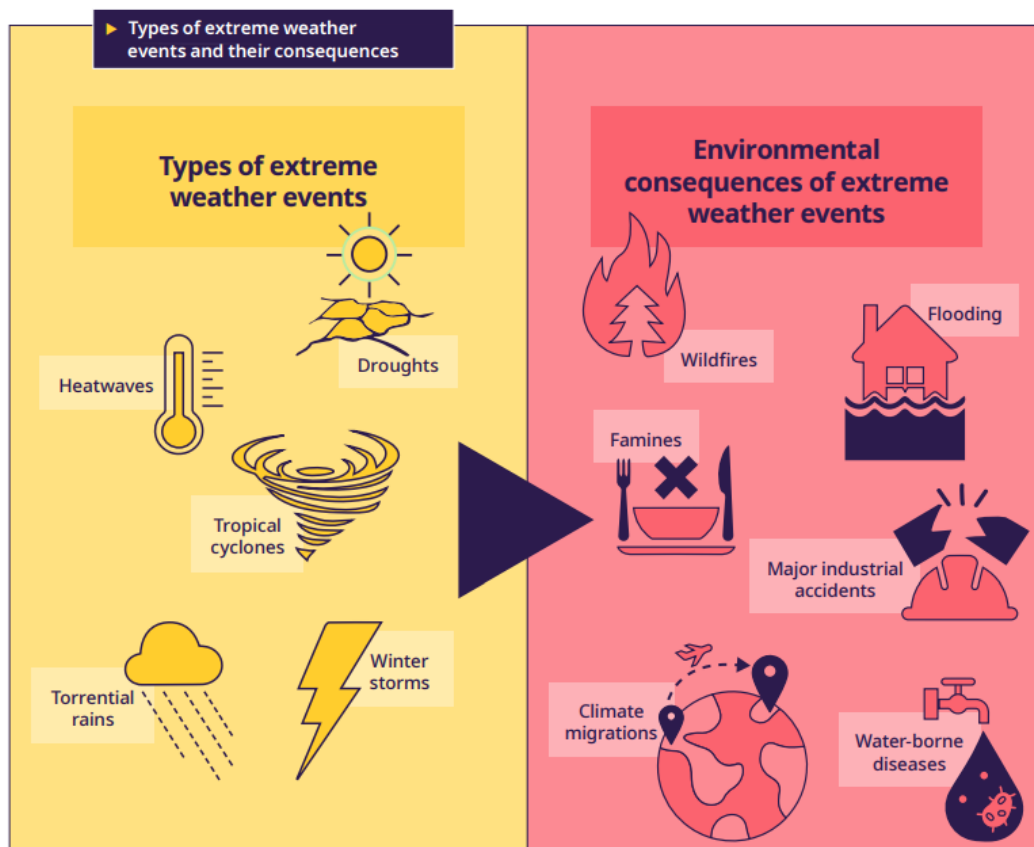
Why in News?

A recent report by the [International Labour Organization \(ILO\)](#) stated that climate change is significantly affecting [occupational safety and health \(OSH\)](#) **worldwide**, with workers facing increasing hazards but often having to work in dangerous conditions.

What are the Impacts of Climate Change on Occupational Safety and Health?

Occupational Hazard	Industries Affected	Health Risks	Impact
Excessive Heat Exposure	Agriculture, environmental services, construction, etc.	Heat stress, heatstroke, rhabdomyolysis (muscles break down) , cardiovascular diseases, etc.	2.41 billion workers exposed annually , 22.85 million injuries, 18,970 work-related deaths
UV Radiation Exposure	Outdoor work like construction, agriculture, lifeguards, etc.	Sunburn, skin cancers , weakened immune systems, etc.	1.6 billion workers exposed annually , over 18,960 deaths from non-melanoma skin cancer alone
Extreme Weather Events	Emergency workers, construction, agriculture, etc.	Varied risks due to extreme weather events	Many parts of India, Bangladesh, Thailand and Laos saw record-high temperatures in April, 2023.
Workplace Air Pollution	Outdoor workers, transport workers, firefighters, etc.	Lung cancer, respiratory diseases, cardiovascular diseases	1.6 billion outdoor workers face increased exposure , 860,000 work-related deaths annually due to air

			pollution
Vector-Borne Diseases	Outdoor workers such as farmers, landscapers, construction workers, etc.	Malaria, Lyme disease, dengue, among others	Limited data, over 15,170 work-related deaths each year due to parasitic and vector-borne diseases
Agrochemical Exposure	Agriculture, chemical industries, forestry, etc.	Poisoning, cancer, neurotoxicity , reproductive disorders, etc.	Significant risk for the 873 million workers in agriculture, over 300,000 deaths annually due to pesticide poisoning



What are the Provisions Related to Labour Safety in India?

■ Constitutional Provisions:

- **Concurrent List: Labour** is a subject in the Concurrent List where both the Central & State Governments are competent to enact legislation subject to certain matters being reserved for the Centre.
 - Entry No. 55 in this list mentions “**Regulation of labour and safety in mines and oil fields**”.
- Directive Principles of State Policy:
 - **Article 39(e) of the Constitution** emphasises the protection of **workers' health**, irrespective of gender, and ensures that **children are not exploited due to their young age**.
 - It also aims to **prevent individuals from being compelled by economic circumstances** to engage in occupations that are not suitable for their physical abilities.
 - **Article 42** mandates that the State shall make provisions for securing just

- and humane conditions of work and for maternity relief.
- **Article 43** outlines the State's responsibility to ensure that all workers, whether in agriculture, industry, or other sectors, **receive a wage that allows for a decent standard of living.**
 - This includes conditions of work that enable a satisfactory quality of life, adequate leisure time, and access to social and cultural opportunities.
 - Additionally, the State should work towards promoting cottage industries either individually or cooperatively in rural areas.
- **Legislative Provisions:** The [Occupational Safety, Health, and Working Conditions Code of 2020](#) delineates responsibilities for employers and employees, sets safety standards across sectors, addresses **worker health, working hours, and leave policies.**
 - The **Labour Bureau** under the **Ministry of Labour and Employment** in India compiles statistics on industrial accidents and oversees occupational safety.
- **International Commitments:** India has ratified **47 International Labour Organization conventions** along with 1 protocol. Currently, 39 conventions are in force.
 - The major conventions related to worker's health include, the Medical Examination of Young Persons (Sea) Convention, 1921, Equality of Treatment (Accident Compensation) Convention, 1925, Protection Against Accidents (Dockers) Convention (Revised), 1932.



Existing international labour standards and codes of practice related to climate change and OSH

General

climate-related

OSH hazards

- **Occupational Safety and Health Convention, 1981 (No. 155)**
- Occupational Safety and Health Recommendation, 1981 (No. 164)
- **Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)**
- Promotional Framework for Occupational Safety and Health Recommendation, 2006 (No. 197)
- Occupational Health Services Convention, 1985 (No. 161)
- List of Occupational Diseases Recommendation, 2002 (No. 194)
- Safety and Health in Agriculture Recommendation, 2001 (No. 192)
- Hygiene (Commerce and Office) Recommendation, 1964 (No. 120)
- Workers' Housing Recommendation, 1961 (No. 115)
- Reduction of Hours of Work Recommendation, 1962 (No. 116)
- Protection of Workers' Health Recommendation, 1953 (No. 97)
- Safety and health in construction (revised 2022), Code of Practice
- Safety and health in shipbuilding and ship repair (revised 2019), Code of Practice
- Safety and health in ports (revised 2016), Code of Practice
- Safety and health in forestry (1998), Code of Practice
- Safety and health in opencast mines (1991), Code of Practice



Excessive heat

- Plantations Convention, 1958 (No. 110)
- Ambient factors in the workplace (2001), Code of practice

Ultraviolet (UV)

radiation

- Ambient factors in the workplace (2001), Code of practice

Air

pollution

- Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (No. 148)
- Working Environment (Air Pollution, Noise and Vibration) Recommendation, 1977 (No. 156)

Extreme

weather events

- Prevention of Major Industrial Accidents Convention, 1993 (No. 174)
- Prevention of Major Industrial Accidents Recommendation, 1993 (No. 181)
- Employment and Decent Work for Peace and Resilience Recommendation, 2017 (No. 205)

Vector-borne

diseases

- Workers' Housing Recommendation, 1961 (No. 115)
- Technical guidelines on biological hazards in the working environment (2022)



Agrochemicals

- Chemicals Convention, 1990 (No. 170)
- Chemicals Recommendation, 1990 (No. 177)
- Safety and Health in Agriculture Convention, 2001 (No. 184)
- Safety and health in agriculture (2010), Code of practice
- Safety in the use of chemicals at work (1993), Code of practice

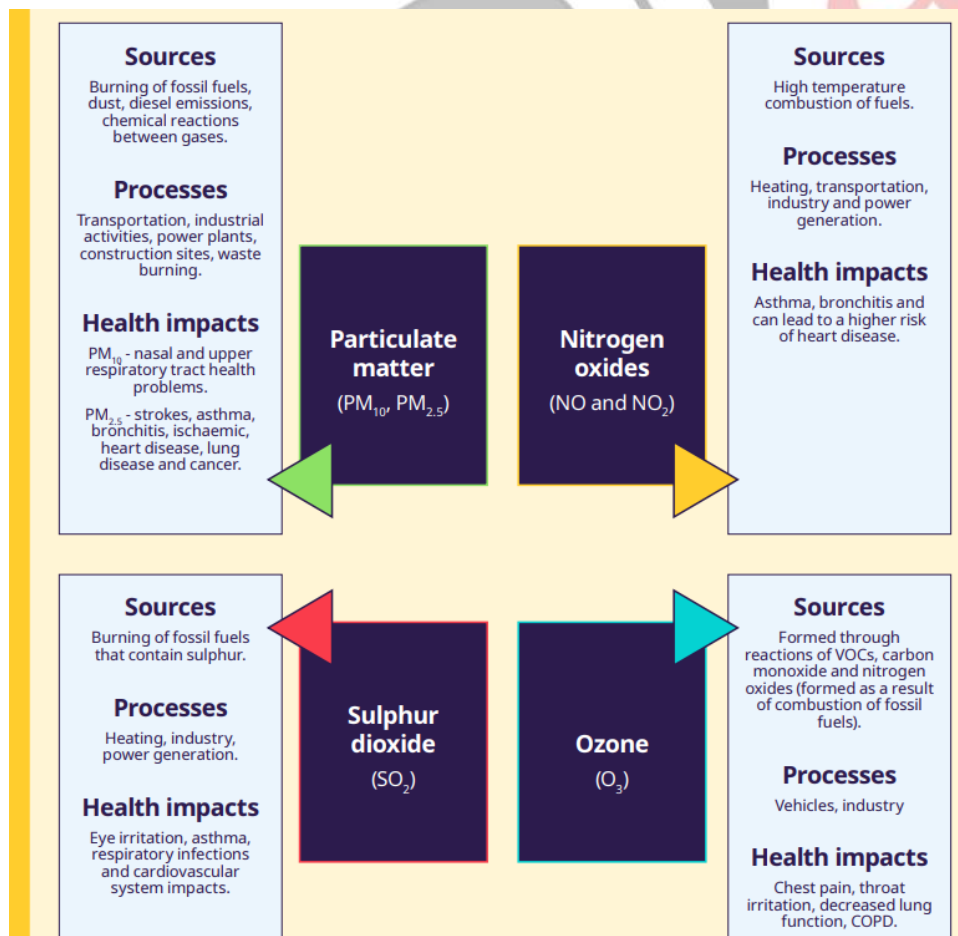


What are the Temperature Limits Related to Workplace in Different Countries?

Country	Temperature Limits
India	Wet Bulb Globe Temperature (WBGT) should not exceed 30°C in factory workrooms
China	Work stoppage above 40°C outdoor temperature
Singapore	The temperature in working chambers should not exceed 29°C
Brazil	Work stoppage above WBGT of 29.4°C for low intensity

Note:

- The **Indian National Disaster Management Authority**, along with the Ministry of Home Affairs, issued guidelines for **managing heatwaves to safeguard workers**.
- These guidelines stress educating workers, ensuring hydration, regulating schedules, and providing medical facilities.
- Special consideration is advised for pregnant workers and those with health issues. Dressing in light, breathable clothing and using umbrellas or hats is recommended.



Way Forward

- **Training and Awareness:** Providing comprehensive training and awareness programs on **climate-related hazards and safety measures** can empower workers to identify risks and respond effectively.
- **Green Jobs and Sustainable Practices:** Promoting [green jobs](#) and **sustainable practices** not only contributes to mitigating climate change but also fosters healthier and safer working environments, such as reducing exposure to harmful substances or emissions.
- **Climate-Resilient Policies:** Developing and implementing climate-resilient policies and regulations that prioritise worker safety and health in the context of climate change can provide a structured framework for organisations to follow.
- **Heat Stress Management:** Implementing heat stress management programs, including **regular breaks, hydration stations, and access to shaded areas**, can protect workers from heat-related illnesses in hotter climates.
- **Highly Hazardous Pesticide(HHP) Control:** Implementing strict regulations and standards for the production, sale, and use of HHPs. This includes thorough risk assessments before approval, periodic reviews, and bans or phase-outs of particularly hazardous substances.

► Example of an HHP Hierarchy of Controls

More effective ↑ ↓ Less effective	Elimination	Physically remove the chemical	Eliminate HHPs and use an alternative pest control method, e.g. biopesticides or techniques such as cover cropping.
	Substitution	Replace the chemical	Substitute the HHP with a less toxic pesticide.
	Engineering controls	Isolate workers from the chemical	Use a system that minimizes the generation or emission of a pesticide, suppresses or contains a pesticide within a controlled area, or delivers the pesticide in a way that reduces misting e.g. using extraction ventilation equipment to remove vapours after treatment or changing nozzle parameters, droplet size or spray pattern.
	Administrative controls	Change the way work is performed	Put in place work systems and practices to provide protection for workers, e.g. adjust work tasks or schedules to limit the time workers are exposed to chemicals and create written operating procedures on handling hazardous substances.
	Personal Protective Equipment (PPE)	Protect the worker with PPE	Ensure workers wear appropriate PPE, e.g. gloves, overalls, masks with filters and safety glasses, as deemed relevant by risk assessment.

Drishti Mains Question:

Examine India's current occupational safety and health framework, highlighting key challenges and suggesting innovative solutions.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. Consider the following statements: (2017)

1. The Factories Act, 1881 was passed with a view to fix the wages of industrial workers and to allow the workers to form trade unions.
2. N.M. Lokhande was a pioneer in organizing the labour movement in British India.

Which of the above statements is/are correct?

- (a)** 1 only
- (b)** 2 only
- (c)** Both 1 and 2
- (d)** Neither 1 nor 2

Ans: (b)

Mains:

Q. "Success of 'Make in India' programme depends on the success of 'Skill India' programme and radical labour reforms." Discuss with logical arguments. **(2015)**

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