**WHAT** are the impacts of heatwaves?

**HEALTH**
- Dehydration, heat exhaustion and stroke, death
- Exacerbated pre-existing health conditions
- Strained health systems

**INFRASTRUCTURE**
- Strain on energy and water systems
- Melting or buckling road pavement, tarmacs and rail lines

**CITY ECONOMY AND ESSENTIAL SERVICES**
- Loss of productivity for outdoor workers and in areas without cooling
- Loss of revenue in sectors such as construction and transportation

**WHY** are cities particularly vulnerable to heatwaves?

- **Urban Heat Island Effect**: prevalence of surfaces that retain heat and release it slowly
- Buildings block wind
- Vehicles and buildings generate excess heat
- Lack of vegetation to cool parts of the city
- High population densities
- Presence of informal settlements without access to cooling and municipal services
- Higher concentrations of air pollution increase heat’s negative health impact

**WHO** is most vulnerable to heatwaves?

- Older adults
- Very young children
- Pregnant and lactating women
- People with pre-existing medical conditions
- Outdoor laborers
- People living alone or who are socially isolated
- People living in informal settlements and the homeless

**IMPACTS** of heatwaves on cities globally

- **Paris, France (2003)**
  - 4,870 excess deaths
- **Rio de Janeiro, Brazil (2010)**
  - 737 excess deaths
- **California, USA (2006)**
  - Estimated $179 million in additional healthcare costs due to increased hospitalizations, emergency room visits and outpatient visits
- **Moscow, Russia (2010)**
  - 10,900 excess deaths
- **Melbourne, Australia (2009)**
  - Train services reduced by 25% due to track buckling, and 500,000 residents left without power
- **Tokyo, Japan (2018)**
  - 6,000 people admitted to hospital with heat stroke or exhaustion
- **Nanjing, China (2013)**
  - Estimated 27.49 billion Yuan (4 billion US dollars) lost due to reduced productivity

In 2017, **153 billion hours of work** were lost globally due to extreme heat.