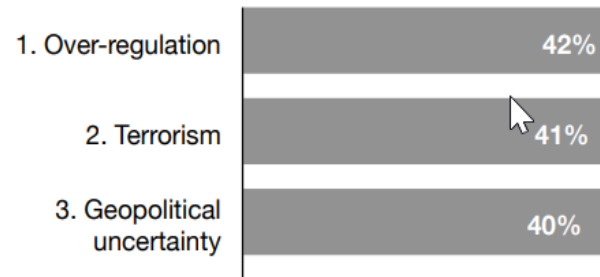


# Climate risks in Life insurance

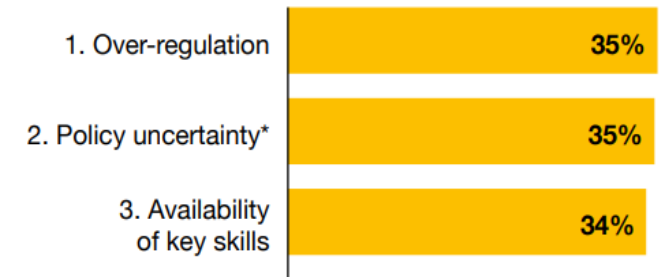


*How **concerned** are you, if at all, about each of these potential economic, policy, social, environmental, and business threats to your organisation's growth prospects?*

**2018 top ten threats**



**2019 top ten threats**



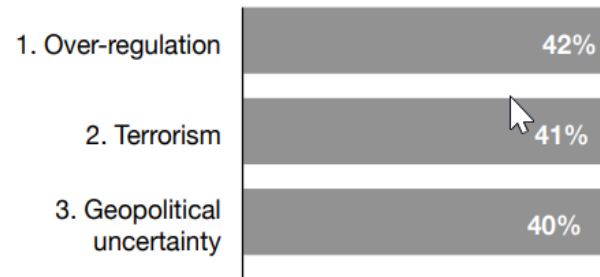
**2020 top 20 threats**



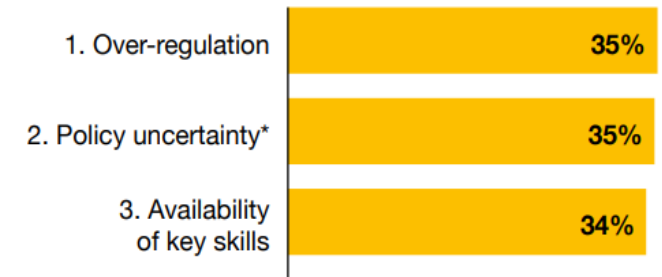
• Source: PwC 24<sup>th</sup> and 25<sup>th</sup> Annual Global CEO Survey

*How concerned are you, if at all, about each of these potential economic, policy, social, environmental, and business threats to your organisation's growth prospects?*

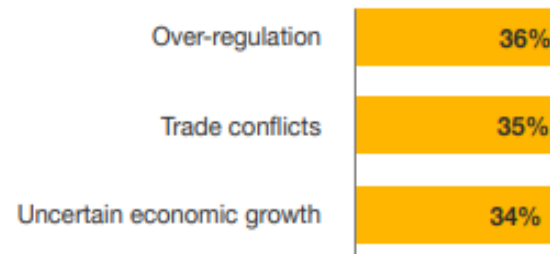
2018 top ten threats



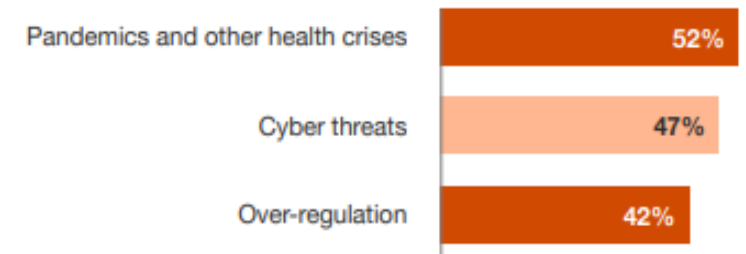
2019 top ten threats



2020 top 20 threats



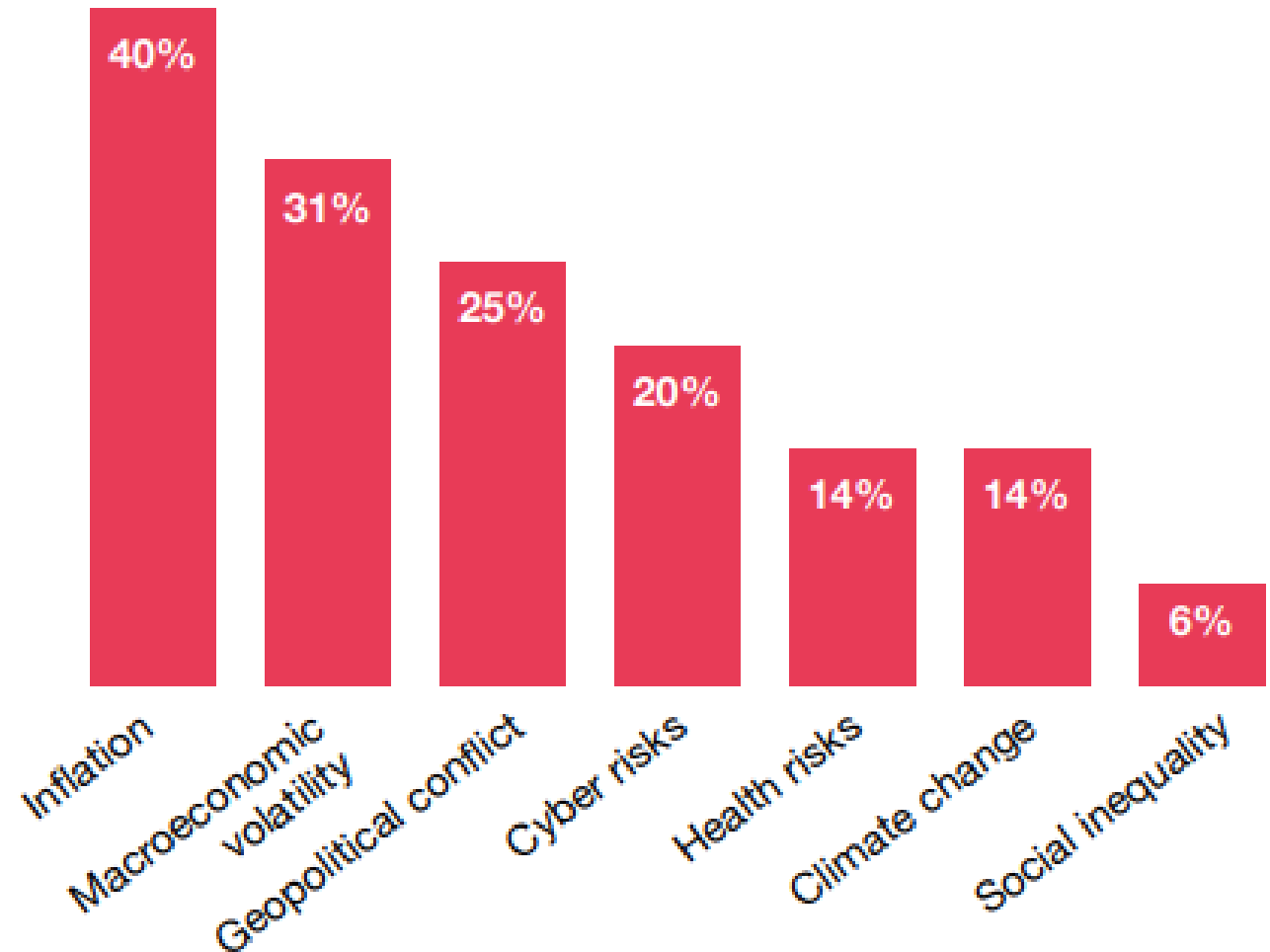
2021 top 20 threats



• Source: PwC 24<sup>th</sup> and 25<sup>th</sup> Annual Global CEO Survey

*How **concerned** are you, if at all, about each of these potential economic, policy, social, environmental, and business threats to your organisation's growth prospects?*

## Post 2022 risks



• Source: PwC 26th Annual Global CEO Survey

# Biggest Considerations



01



Regulation and policy

02



Recency Bias

03



Need for proactivity

# The multi-polar world and economic dependencies lead to more risk



**Growing social, economic and environmental risks threaten a sustainable future**

# Agenda

1

Climate Change & **Human health**

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2

Complexities of its **impact**

---

3

**Life Insurer** considerations

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4

What are possible **Opportunities**

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5

Summary and **Q&A**

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# How climate change impacts health and life

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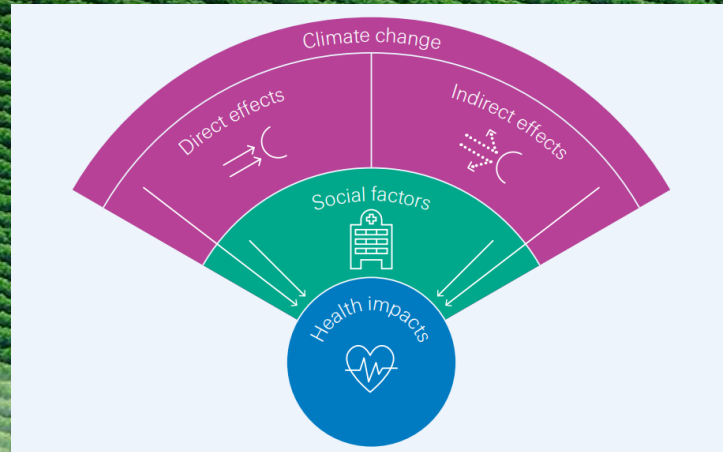
**How Climate change**  
impacts Life and Health





**Direct  
Impacts**

Social Factors

**Indirect  
impacts**





Climate change		Social factors	Health impacts affected by age, sex and comorbidities
Direct effects	Indirect effects		
 <ul style="list-style-type: none"> <li>■ Extreme heat</li> <li>■ Floods/storms/hurricanes</li> <li>■ Wildfires</li> <li>■ Droughts</li> <li>■ Deforestation</li> </ul>	 <ul style="list-style-type: none"> <li>■ Air pollution</li> <li>■ Thawing permafrost</li> <li>■ Water quality/food shortage</li> <li>■ Ecological change</li> </ul>	 <ul style="list-style-type: none"> <li>■ Socioeconomic status</li> <li>■ Public health infrastructure</li> <li>■ Mobility and conflict status</li> </ul>	 <ul style="list-style-type: none"> <li>■ Cardiovascular diseases</li> <li>■ Respiratory diseases</li> <li>■ Aeroallergens</li> <li>■ Mental health</li> <li>■ Infectious/vector-borne diseases</li> <li>■ Injuries</li> <li>■ Gastrointestinal diseases</li> </ul>

People of lower socioeconomic status are typically more vulnerable to the health impacts of air pollution due to factors such as limited access to healthcare and inability to mitigate exposure level and duration.



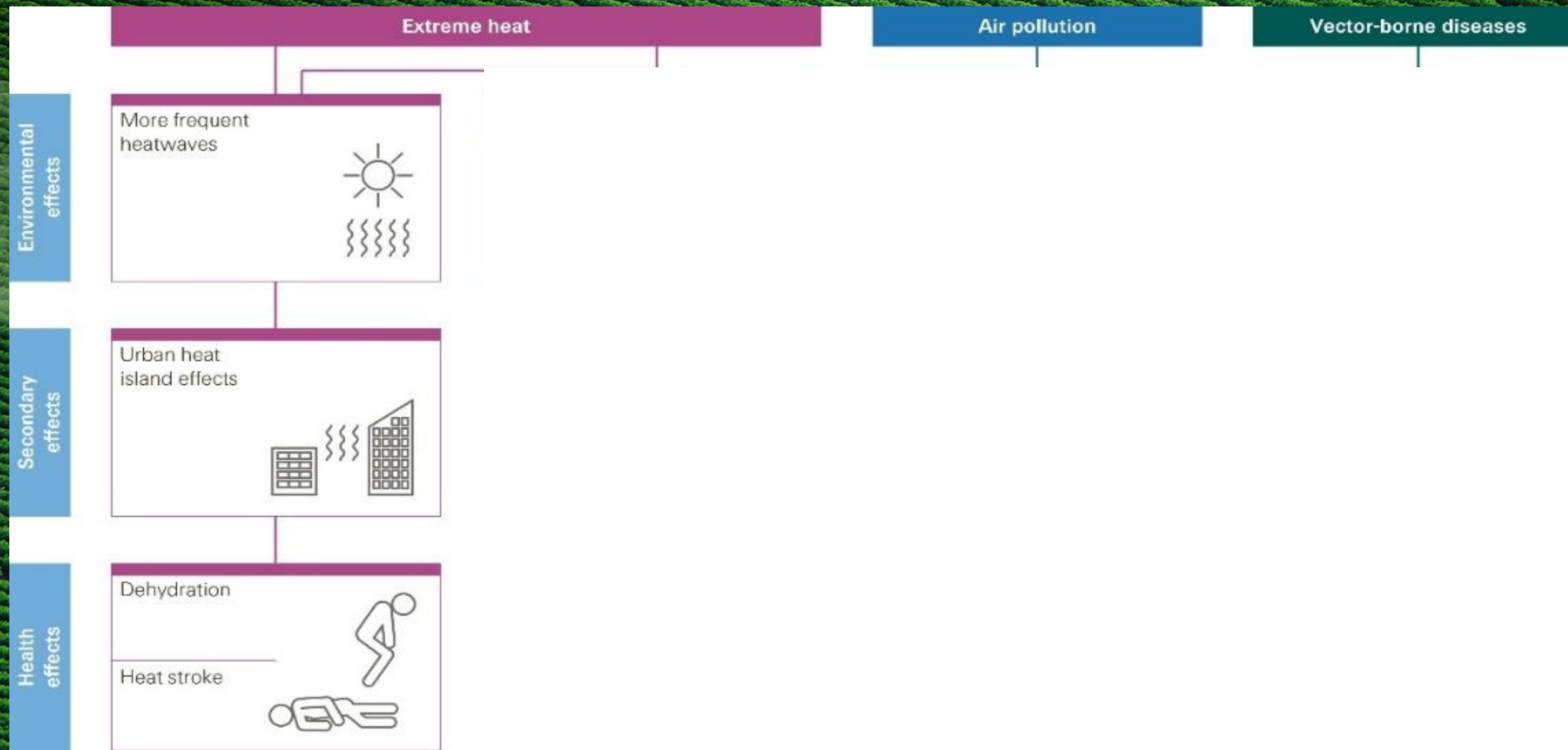


Extreme heat

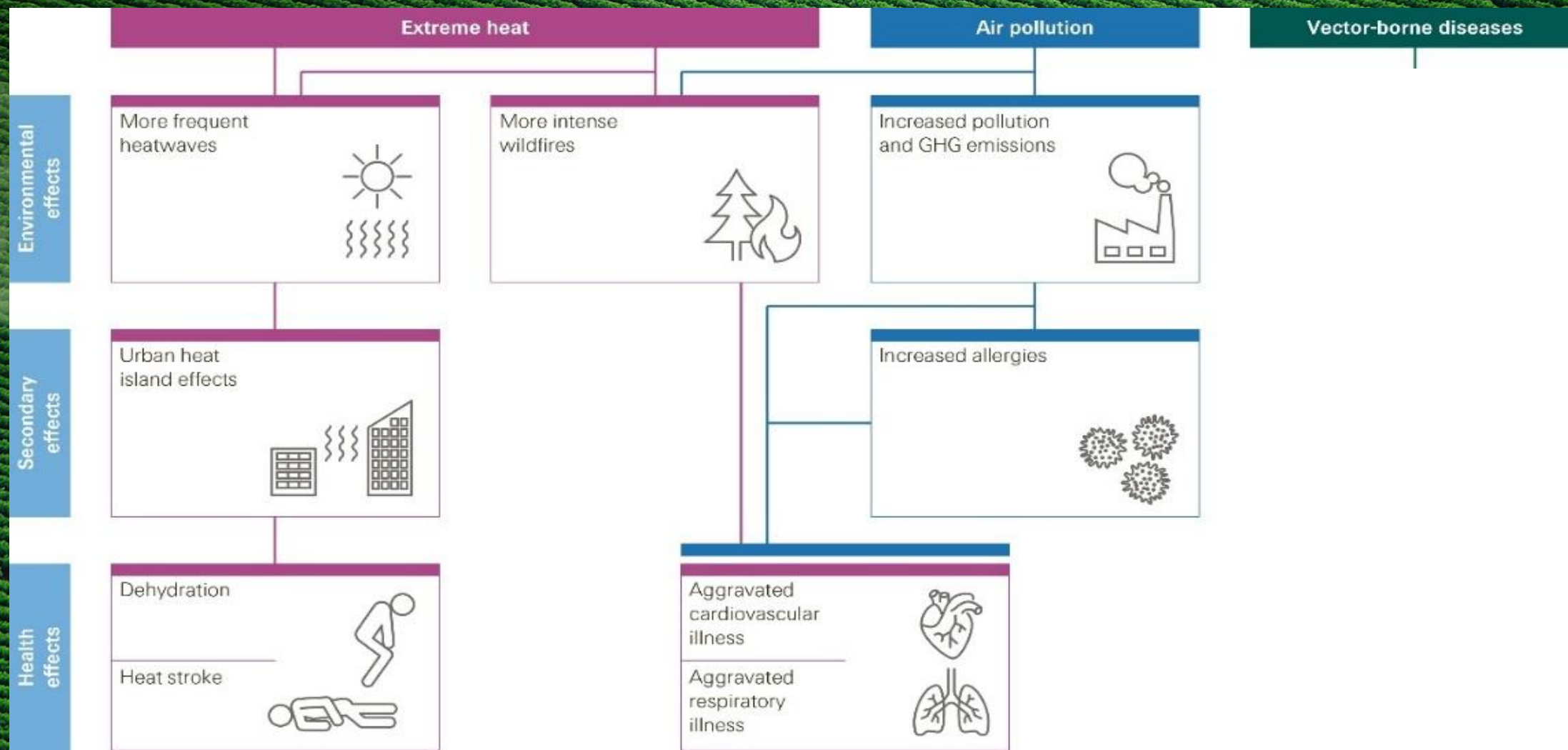
Air pollution

Vector-borne diseases

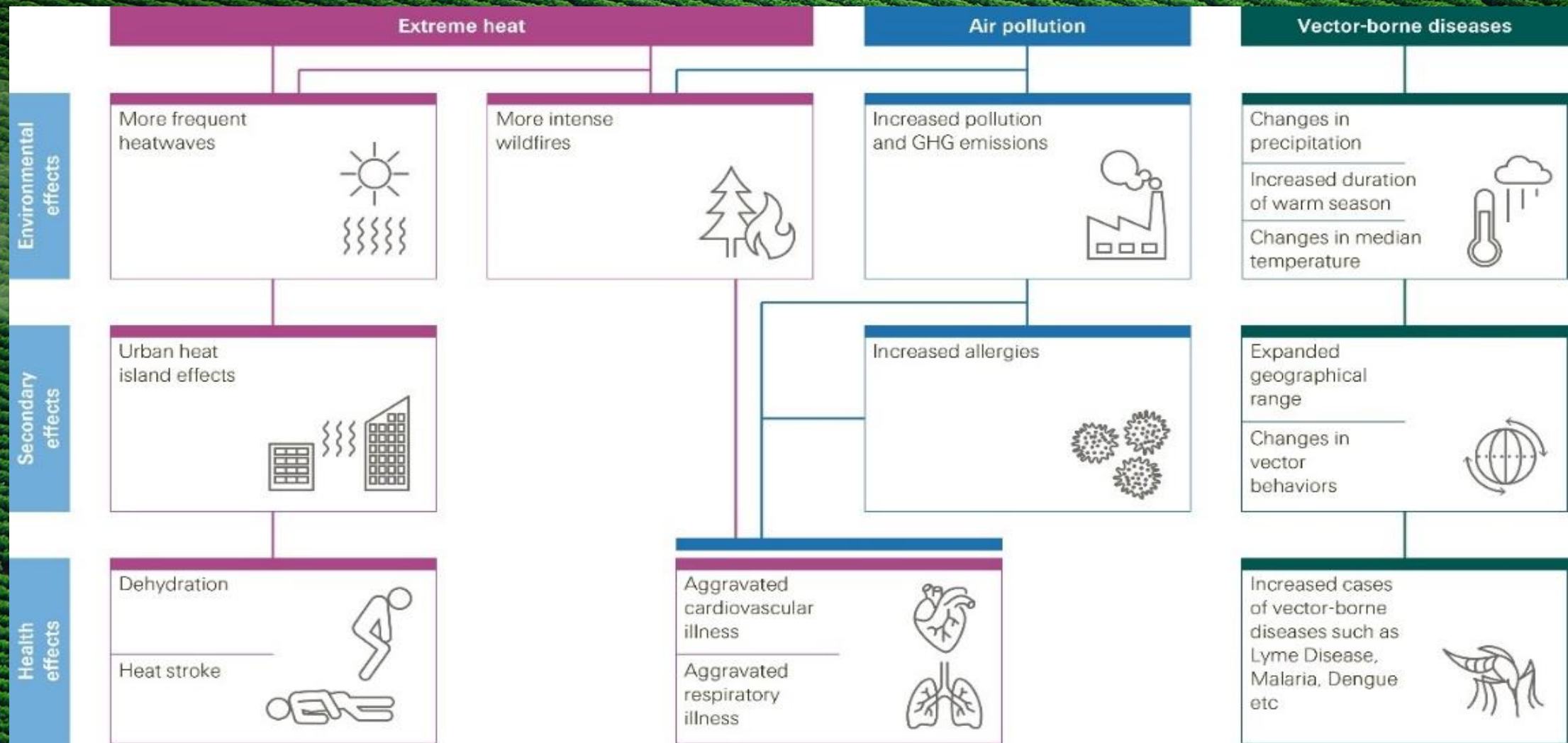




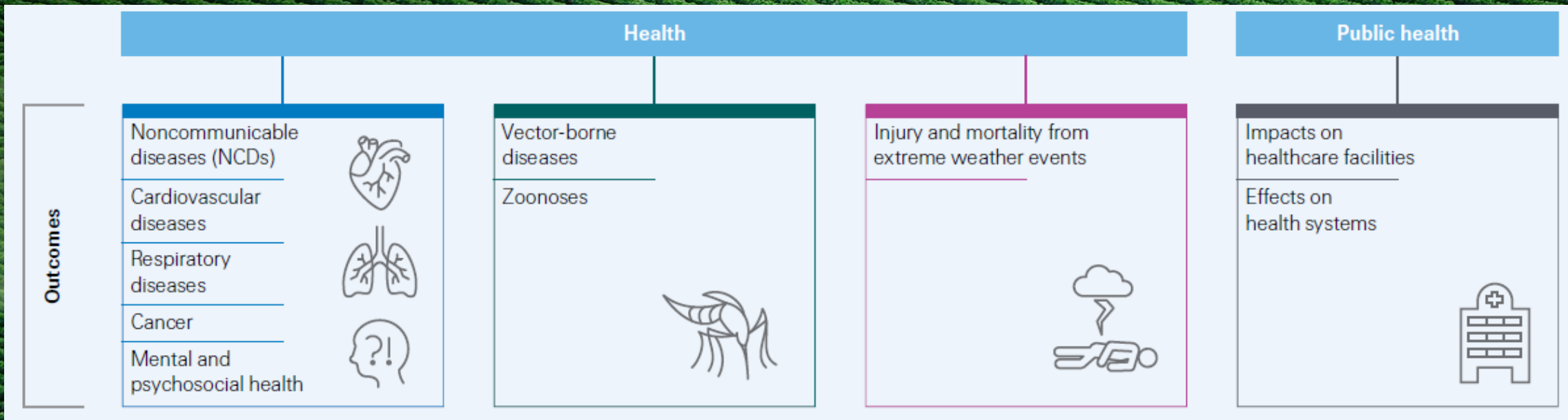












### Examples for changes in health outcomes:

- Heat stress induced heart attacks and strokes
- Increased allergy incidence (new invasive species)
- Pulmonary stress and asthma – Air pollution

### Disproportionate impact:

- Elderly or Infants
- Pregnant women
- Core morbidities
- Socioeconomically disadvantaged groups



# Extreme heat





# Extreme Temperatures

01

Contribute to  
estimated five million  
deaths worldwide  
annually

02

Represents 9.4% of  
total global mortality

03

Until now cold-rated  
deaths dominate

Source: Swiss Re Institute – [The risk of a lifetime](#)

2023 was the warmest year  
on record

Source: [NASA Analysis Confirms 2023 as Warmest Year on Record - NASA](#)

# Extreme heat and the wet-bulb effect:

The general limit of heat we should live in is 35°C wet-bulb temperature, which is a measure of both air temperature and humidity. Beyond this, the body struggles to cool itself.

*The greater the humidity, the greater the risk to life*

Source: Swiss Re Institute – [The risk of a lifetime](#)

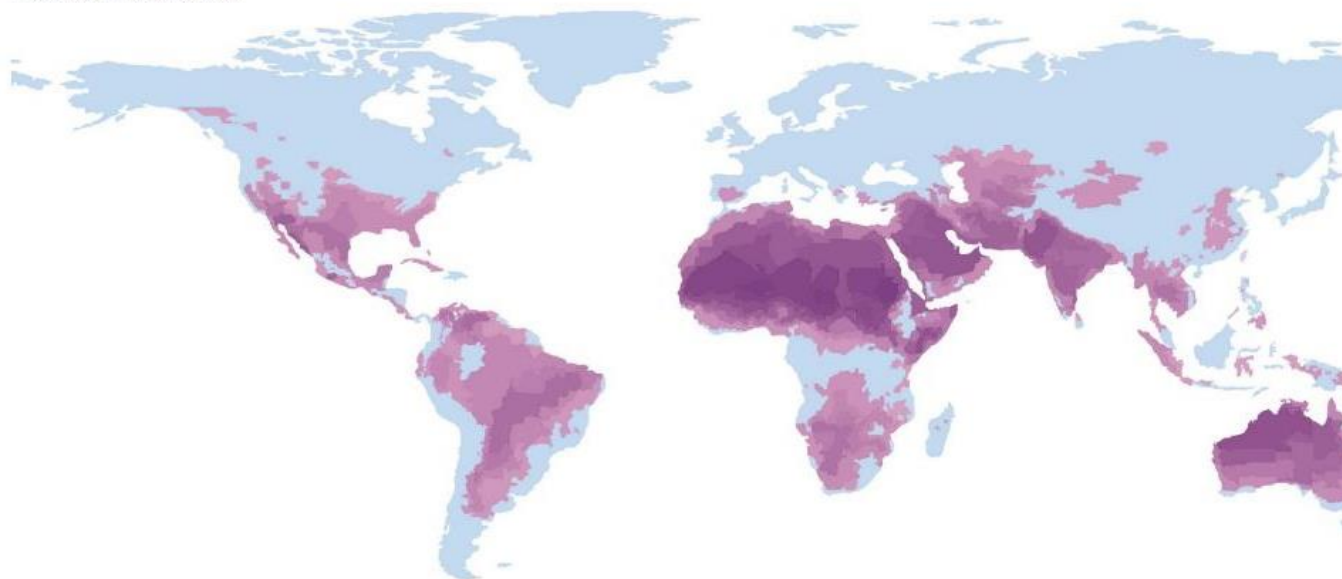




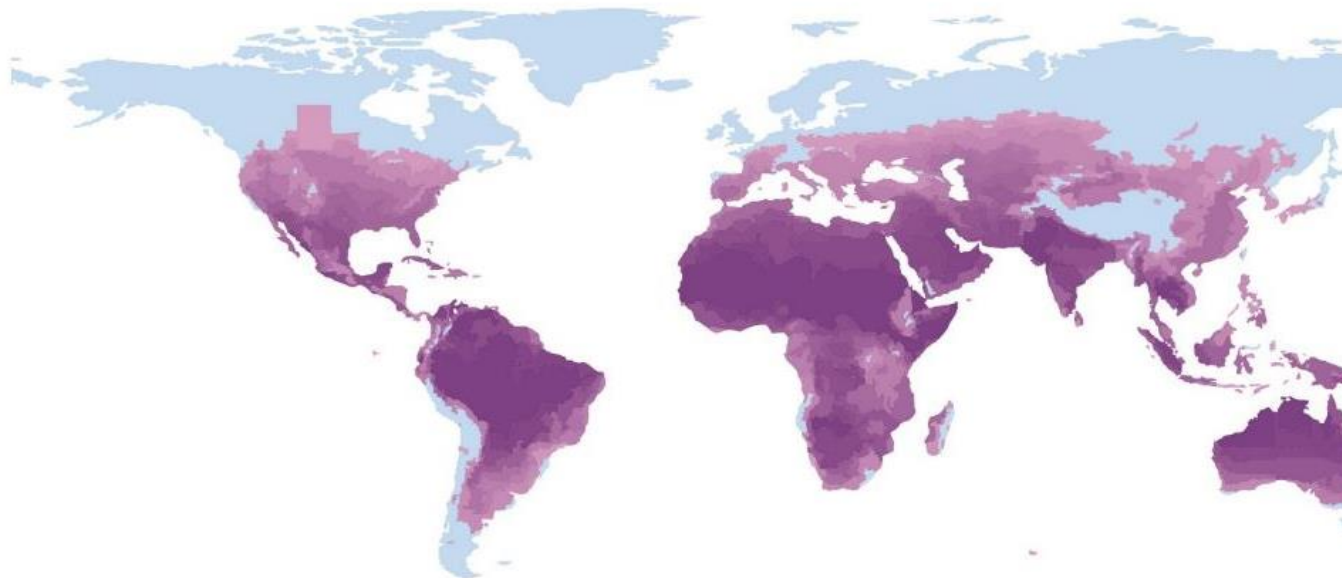
# Projected global increase of extreme heat days under a high emissions scenario

Compared to the historical scenario from 1986-2005, under a presumed high emissions climate (RCP 8.5), by 2080-2099, vast swathes of the globe are expected to experience **significantly greater days of extreme heat (>35 degrees Celsius)**

Historical 1986-2005



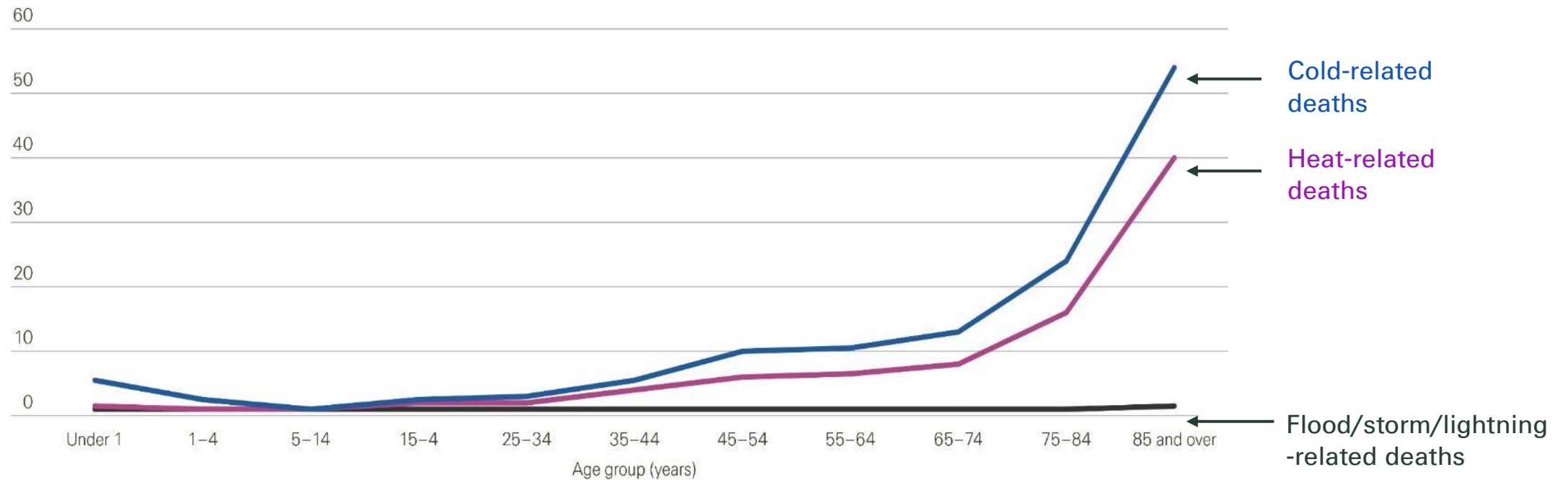
End of century 2080-2099 under high emissions (RCP 8.5)





# Extreme heat – United States

Crude death rates for weather-related mortality, by age: United States, 2006–2010 (CDC)



Deaths from extreme cold are expected to sharply decline

Stark variations within regions may become less pronounced if winters become milder.

# Extreme heat



## Africa

- Between 12 000 and 19 000 heat related child deaths between 2011 and 2020
- Climate change accounts for about half of these deaths

## India

- Experiencing increasing severe heatwaves
- Increased mortality: 2000 –2004 and 2017 – 2021 saw a 55% rise in deaths due to extreme heat
- Recently experienced hottest day on record

## United Kingdom

Government forecasts predict 7,000 annual deaths by 2050 if climate change does not substantially reduce

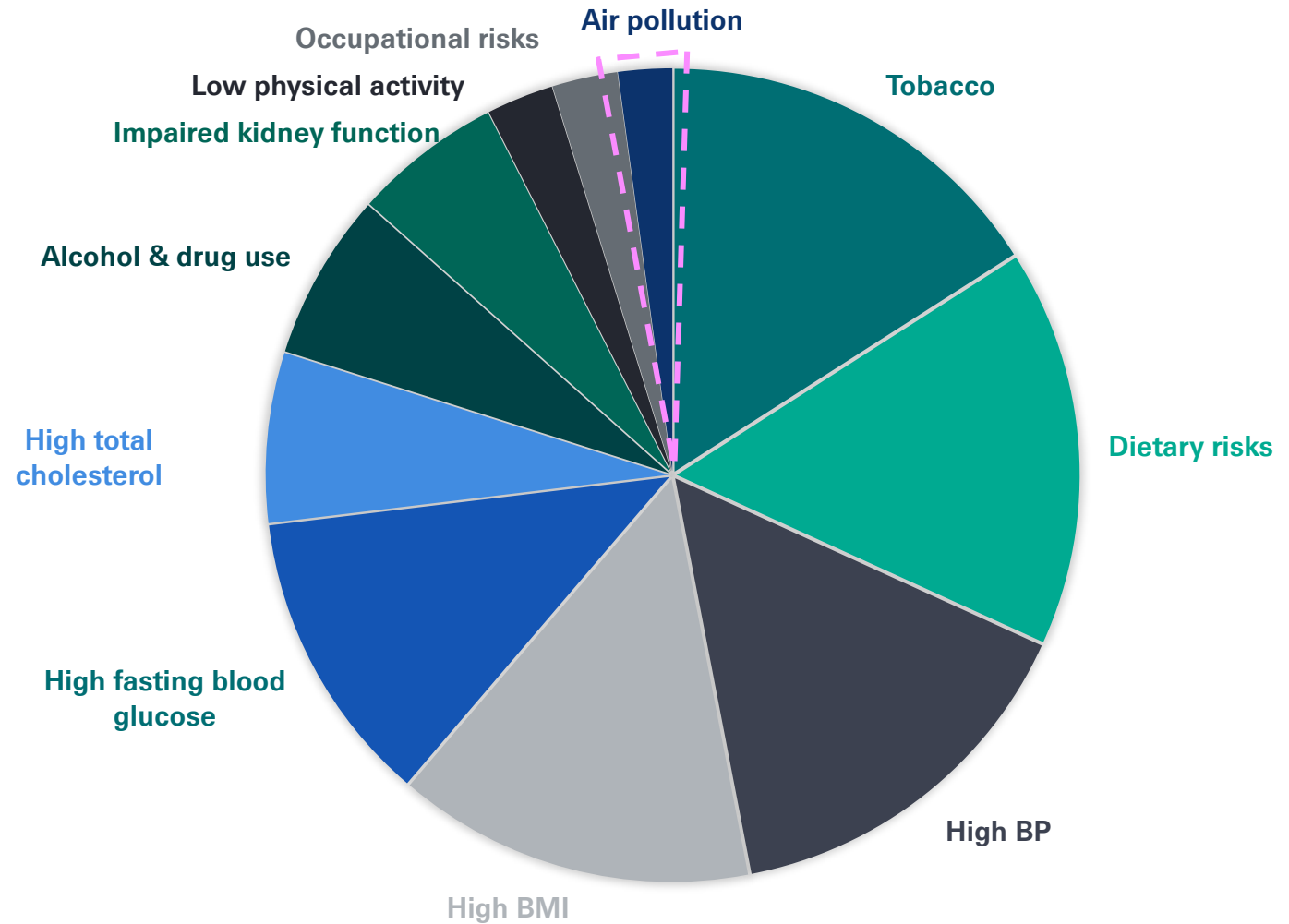
Source: Swiss Re Institute – [The risk of a lifetime](#),  
University of Witwatersrand – Climate change: the effects of extreme heat on health in Africa

# Air Pollution



Air pollution is likely to be responsible for 2.2% of all deaths in the USA in 2023

UNITED STATES, ALL GENDERS, AGE-STANDARDIZED, 2023 % OF TOTAL DEATHS

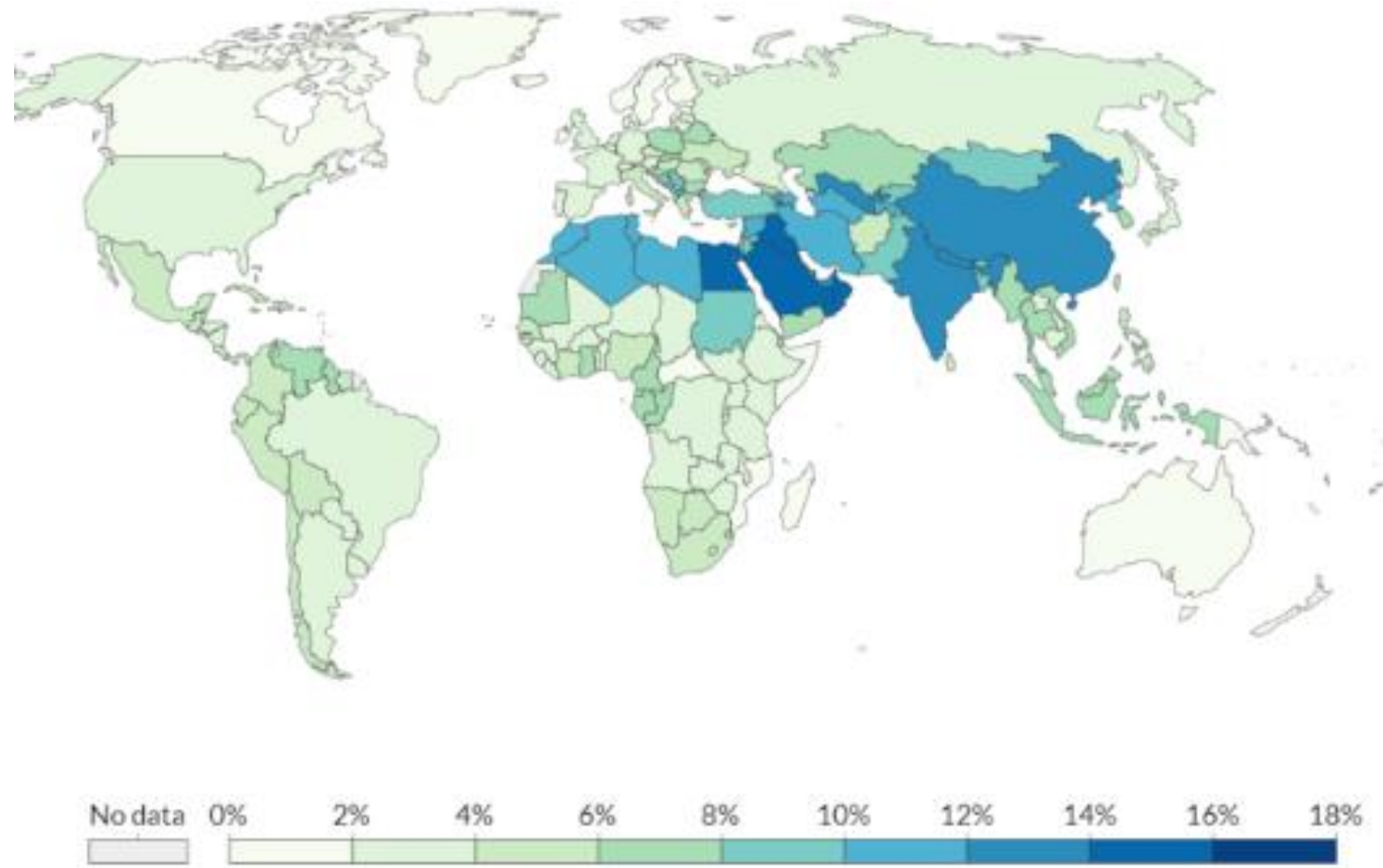


Source: GBD Foresight [VizHub](https://vizhub.healthdata.org/gbd-foresight) - GBD Foresight Visualization ([healthdata.org](https://healthdata.org))



# Air Pollution: Worldwide air pollution mortality distribution

**The largest air pollution impacts are in developing countries.** Under low emission scenarios, air pollution is expected to improve and improve longevity in high-income countries



Source: Hannah Ritchie and Max Roser (2019) - "Outdoor Air Pollution". Published online at OurWorldInData.org.  
<https://ourworldindata.org/outdoor-air-pollution>



# Vector-borne diseases



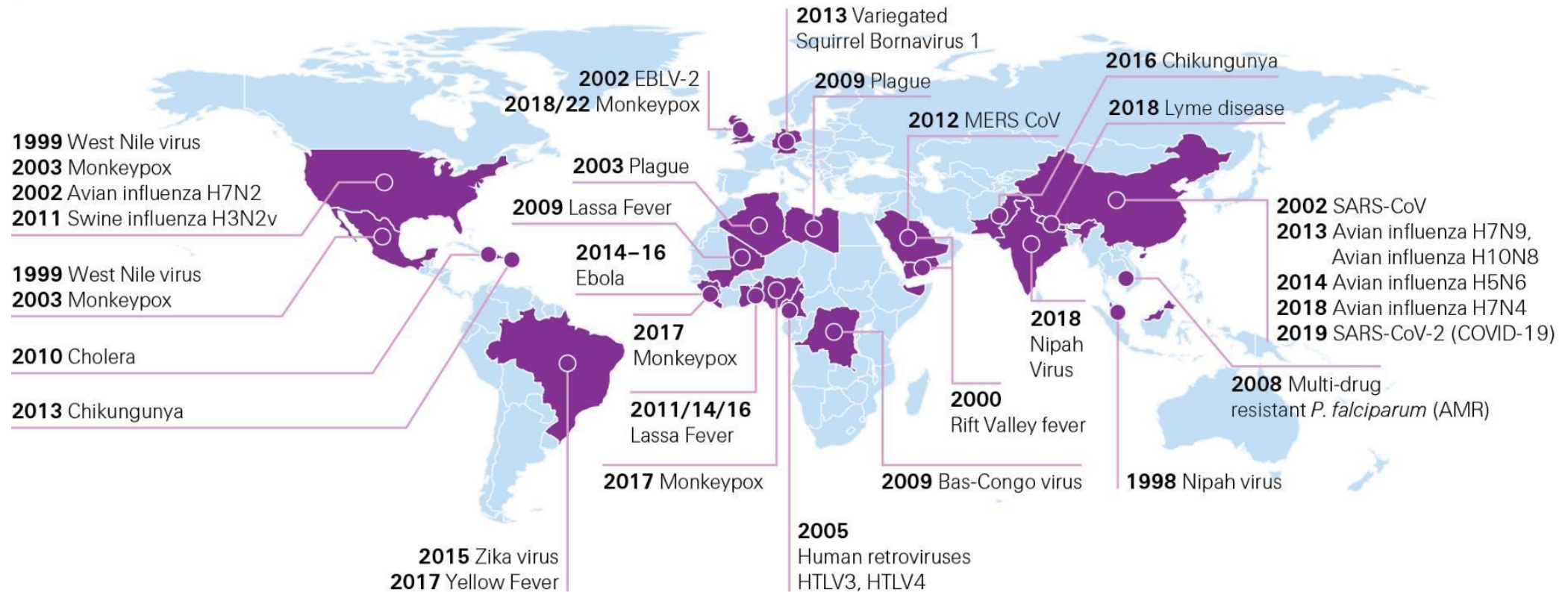


# Vector-borne diseases

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- Approximately 60-75% of human infectious diseases originate from other species
- Climate change is modifying transmission and geographical transmission
- The pandemic has shown how the healthcare systems can be overwhelmed by increasing numbers of patients

# Global spread of new and significant emerging disease outbreaks since 1998



Source: [Public Health England](https://www.phe.gov.uk) – reproduced by Swiss Re Institute



# Secondary impact of climate change

- Migration
- Food security & nutrition
- Water scarcity

Potential for conflict, economic shocks and systemic failures likely to be higher

Source: [Public Health England](#) – reproduced by Swiss Re Institute





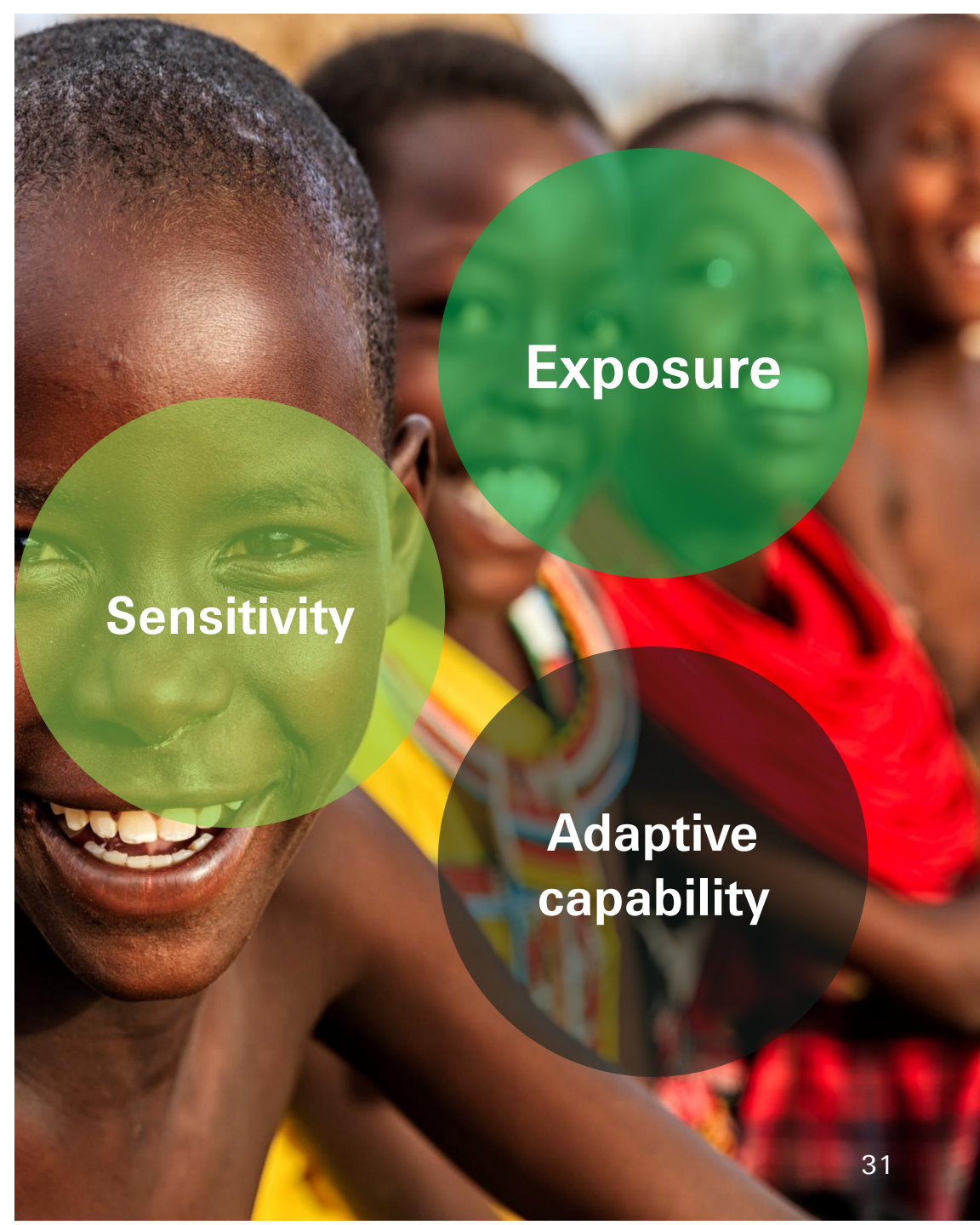
Who is affected most?



**Exposure** refers to how exposed an individual is to the elements

**Sensitivity** refers to underlying health conditions and age, which can be worsened by a less hospitable climate and natural environment

**Adaptive capability** refers to a person's ability to adjust to a changing climate by removing or mitigating the risk.



# Impact of climate change on emerging markets

**01** Researchers are expecting Climate change to push **100 million people** back into poverty over the **next 10 years**, hitting countries in Africa and Southeast Asia the firmest

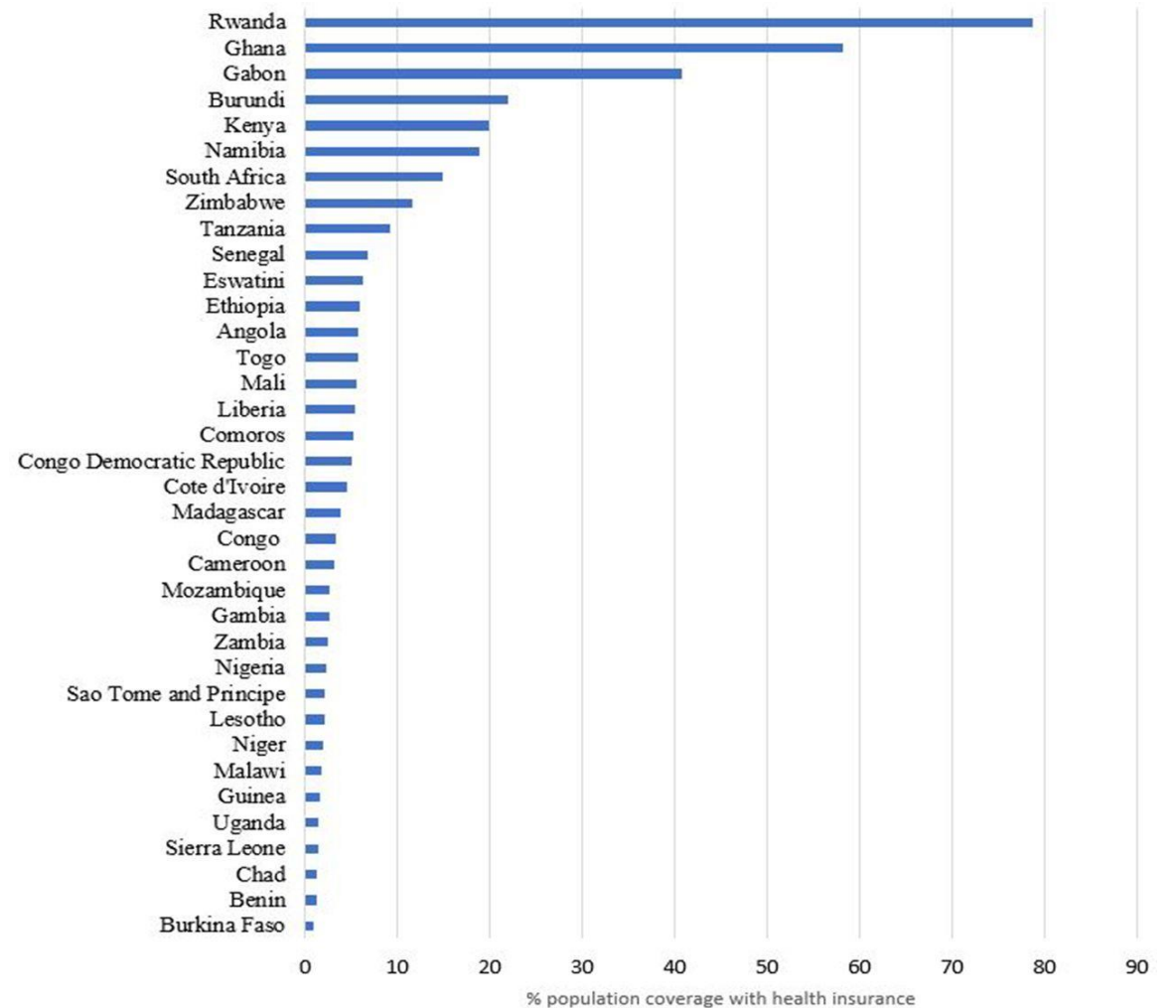
**02** The IPCC report estimates that approximately **75 to 250 million** people in Africa will be without adequate food and water by 2030, due to a decline in crop productivity because of droughts and changing rainfall patterns

**03** According to the UN, the populations of **countries who have contributed the least** to global warming **are the most vulnerable** to death and diseases brought by higher temperatures



# Health insurance penetration in Sub-Saharan Africa (SSA)

Health insurance coverage in **SSA is low**; only 8 of the 36 countries had an average level of insurance coverage above 10%





## Reasons to hold back

- Impact on the insured population is low
- Impacts of climate change are expected to play out gradually
- Adjustments to mortality and mortality rates can be made over time
- Opportunity cost

## Reasons to Push forward

- Regulatory and Compliance
- Reputation – Investors are becoming more concerned about climate change, impacting ability to raise capital
- Expansion and growth, closing the protection gap on the continent

## Where do the opportunities lie

- Where there is a risk there are opportunities:
- New products

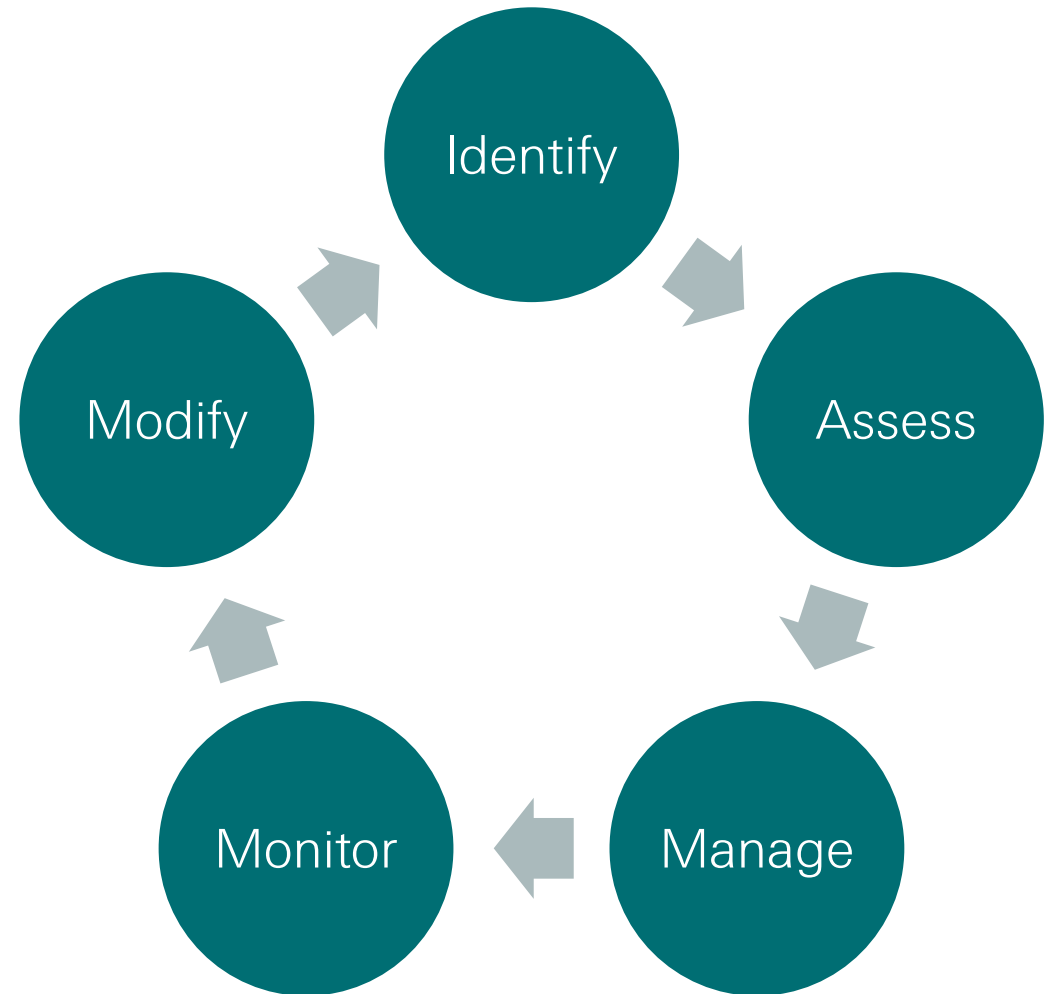


# How to integrate Climate change risks in your risk management framework



## South Africa working party – Methodology

*“Climate risk should be treated  
like any other risk”*

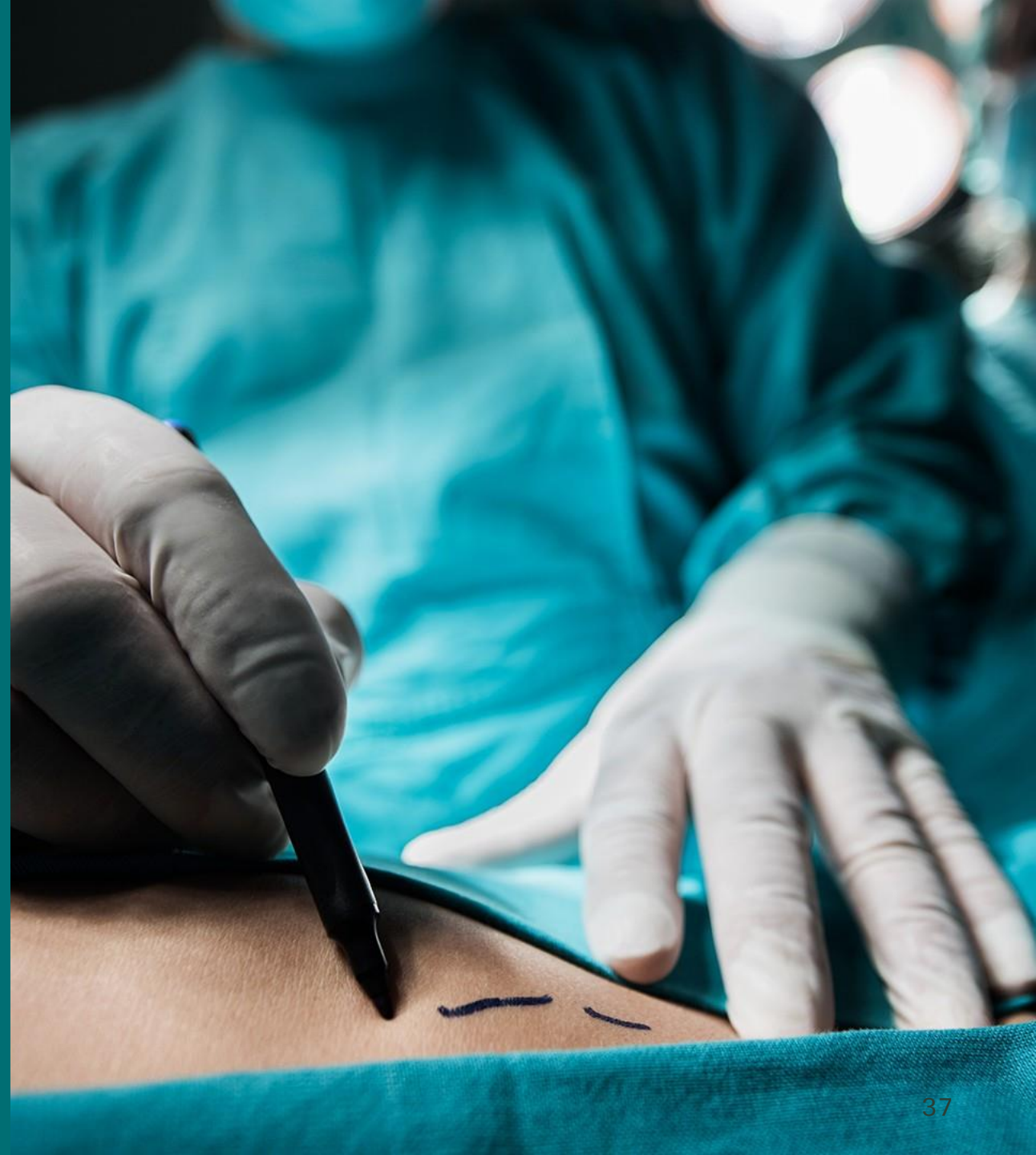




## AIO Nam Life



- Product: Life Cover, Critical Illness
- Country: Namibia
- Age Profile: 30 – 65



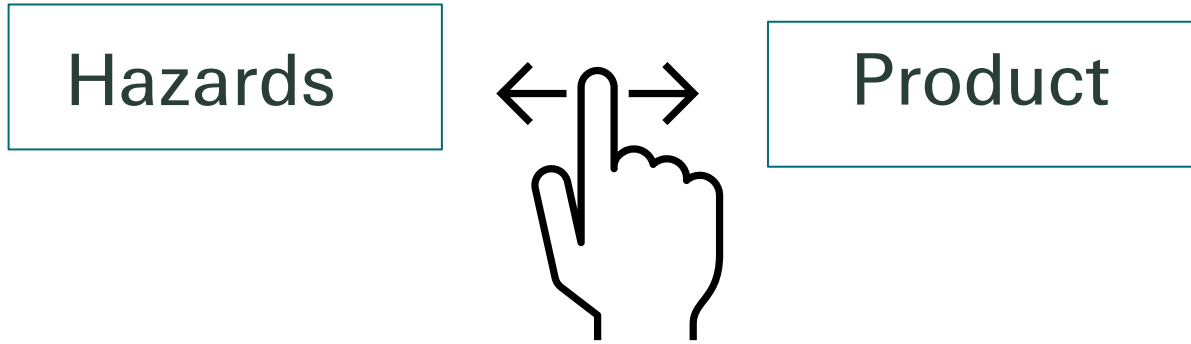
# Working Party Framework – Identify

- Consider Critical Illness risks:
  - Respiratory disease
  - Cardiovascular disease
  - Cancers
  - Mental Illness



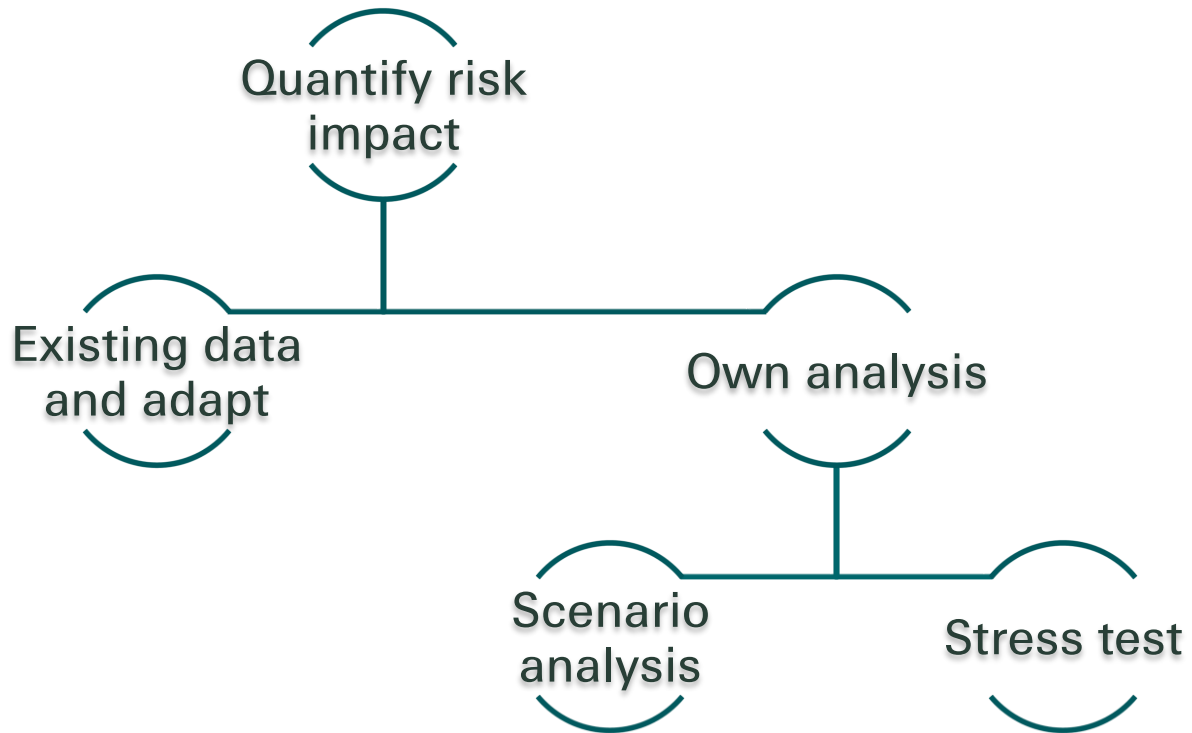


## Working Party Framework – Assess



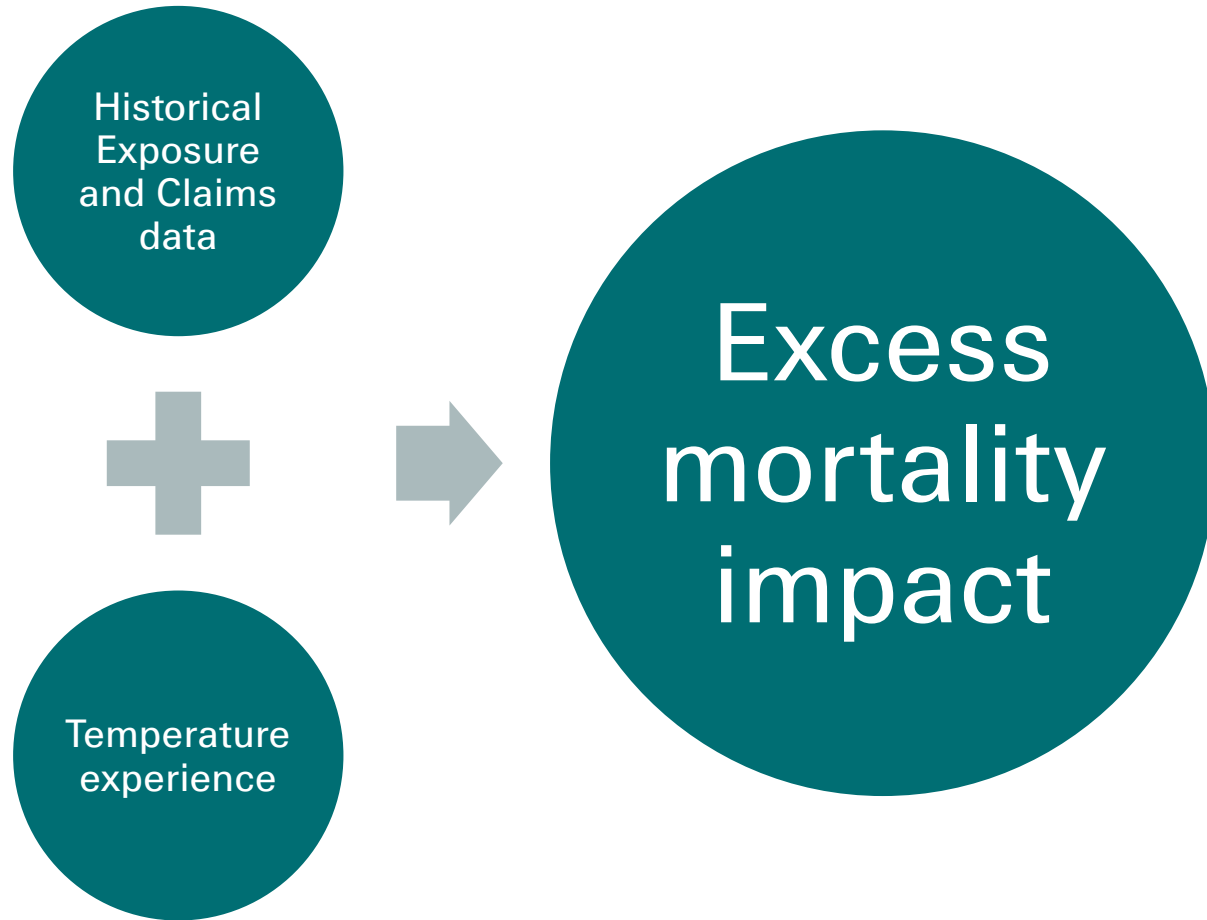
Product	Risk	Representative claim event	Climate change hazard and (risk indicator)
Critical Illness	Morbidity	<ul style="list-style-type: none"> <li>- Cardiovascular disease</li> <li>- Respiratory disease</li> <li>- Cancer</li> </ul>	Heat stress (Extreme heat days/max temp) Air pollution (Air Quality Index)

## Working Party Framework – Assess





## Working Party Framework – Assess



# Framework - Manage

## 1. Do nothing

- Impact immaterial
- Enough capital available to absorb risk

## 2. Transfer the risk

- Relook at reinsurance arrangement

## 3. Eliminate the risk

- Focus sales on the age groups that are least affected
- Stop selling the product in certain geographical locations





Using **parametric insurance** to protect women in the informal sector during extreme heatwaves

## Our challenge

- 21,000 Informal workers part of the *Self-Employed Women's Association* (SEWA) in India reported losing **40%-50%** of their income on extreme hot days.
- **Health:** unable to take time off from work to seek healthcare.
- **Access to food:** lower wages result in less food for them and families

## The Solution

- A **parametric heat** product for *SEWA members* in India to **provide protection** for them during **heatwaves**
- The **product** aims to **compensate** for the **daily loss of income** encountered during **extreme heat**
- **Pilot** was conducted 2023 for ~60 days





# Conclusion





## Lessons and way forward

- Climate change affects us all
- Insured and uninsured are impacted differently. However, because of climate change we may see a shift in impact.
- Insurers must change from managing silos to managing systemic risk
- It is key for insurers to be more forward looking rather than being reactive in allowing for risk

Insurers must  
change from  
managing silos to  
managing  
systemic risk

Any  
questions?





# Thank you!

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