



UK Health
Security
Agency



Climate Change and Health

Impacts on HCWs and Resilience

ZMA Scientific Conference 2023

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Outline

- ▶ Introduction to the concept of climate change
- ▶ How climate change affects human health
- ▶ Health worker resilience toolkit

What is Climate?

- ▶ *The weather conditions prevailing in an area in general or over a long period
- ▶ **The long-term pattern of weather in a particular area
- ▶ **Weather can change from hour-to-hour, day-to-day, month-to-month or even year-to-year. A region's weather patterns, usually tracked for at least 30 years, are considered its climate

*Oxford Dictionary

**National Geographic Society

Important Definitions

Weather

- ▶ *the state of the atmosphere at a particular place and time as regards heat, cloudiness, dryness, sunshine, wind, rain, etc”.

Meteorology

- ▶ *the branch of science concerned with the processes and phenomena of the atmosphere, especially as a means of forecasting the weather

El Niño

- ▶ **A natural phenomenon wherein the ocean temperatures rise especially in parts of the Pacific Ocean

*Oxford Dictionary

** [El Nino - Causes and Effects](#)

What is Climate Change*?

- ▶ Long-term shifts in temperatures and weather patterns
- ▶ Since 1800, human activities main driver of rising temperature mainly due to burning fossil fuels like coal, oil and gas
- ▶ Burning fuels = greenhouse gas emissions = blanket = sun's heat trapped = rising temperatures

*United Nations Climate Action (UNCA)

Green House Gases

#	Gases	Sources
1	Carbon Dioxide	<ul style="list-style-type: none">• Cutting down trees and clearing forests• Gasoline fuelling cars• Heating coal for thermal powered electricity
2	Methane	<ul style="list-style-type: none">• Landfill emissions
Major emitters		Energy Industry Transport Buildings Agriculture

The Difference

Global Warming vs. Climate Change

The **gradual** increase of Earth's surface temperature.

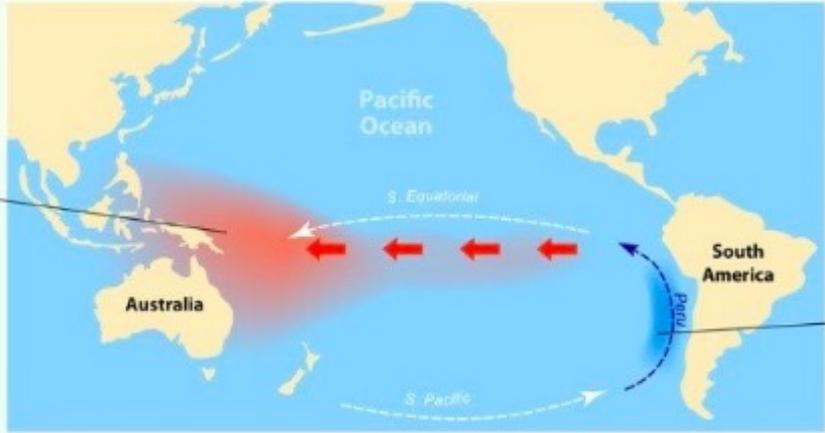
The **long-term** change in global weather patterns.





El Niño Declared - WMO July 2023

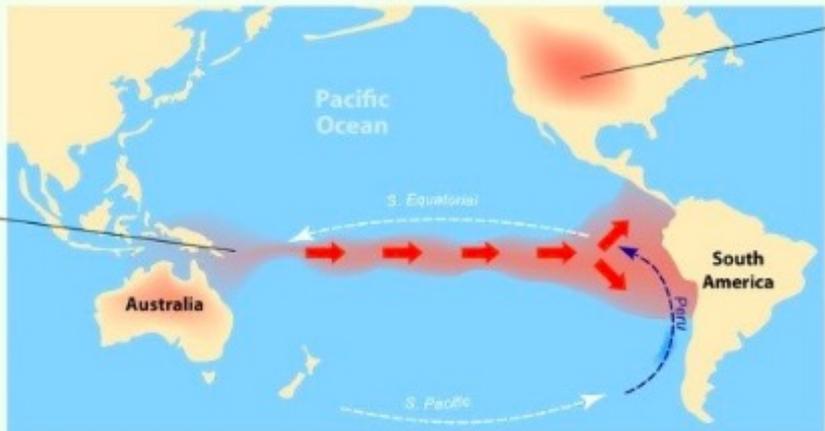
NORMAL YEAR



Equatorial winds gather warm water pool toward the west.

Cold water along South American coast.

EL NIÑO YEAR

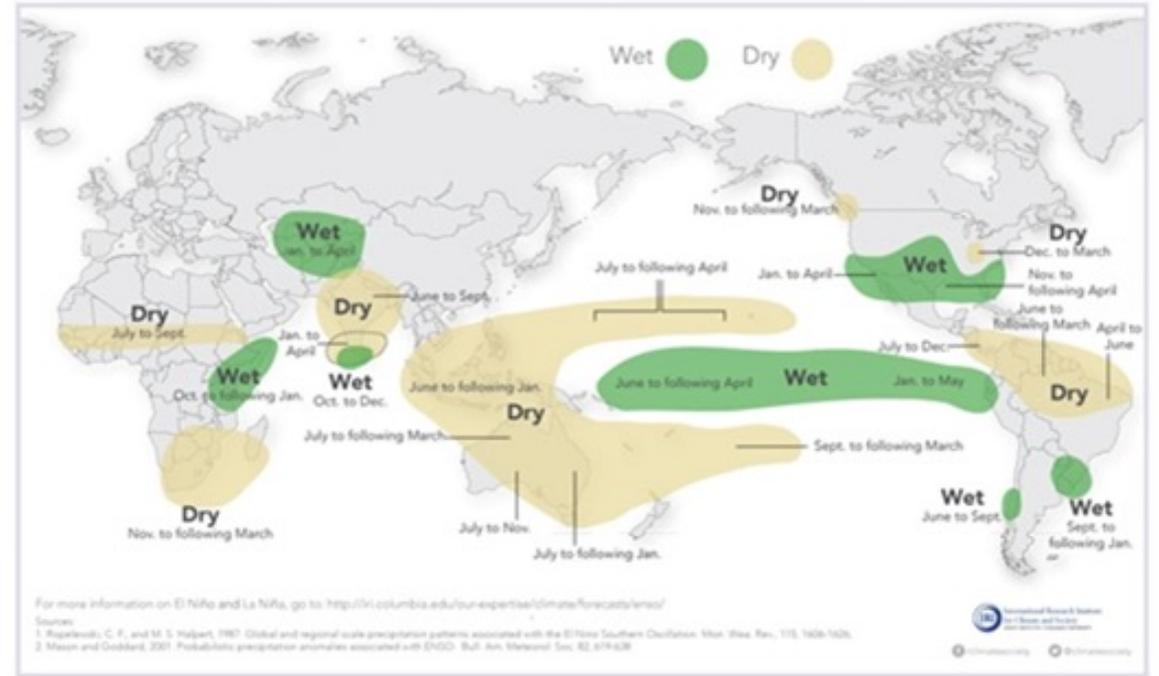


Easterly winds weaken. Warm water to move eastward.

Warmer winter

El Niño and Rainfall

El Niño conditions in the tropical Pacific are known to shift rainfall patterns in many different parts of the world. Although they vary somewhat from one El Niño to the next, the strongest shifts remain fairly consistent in the regions and seasons shown on the map below.

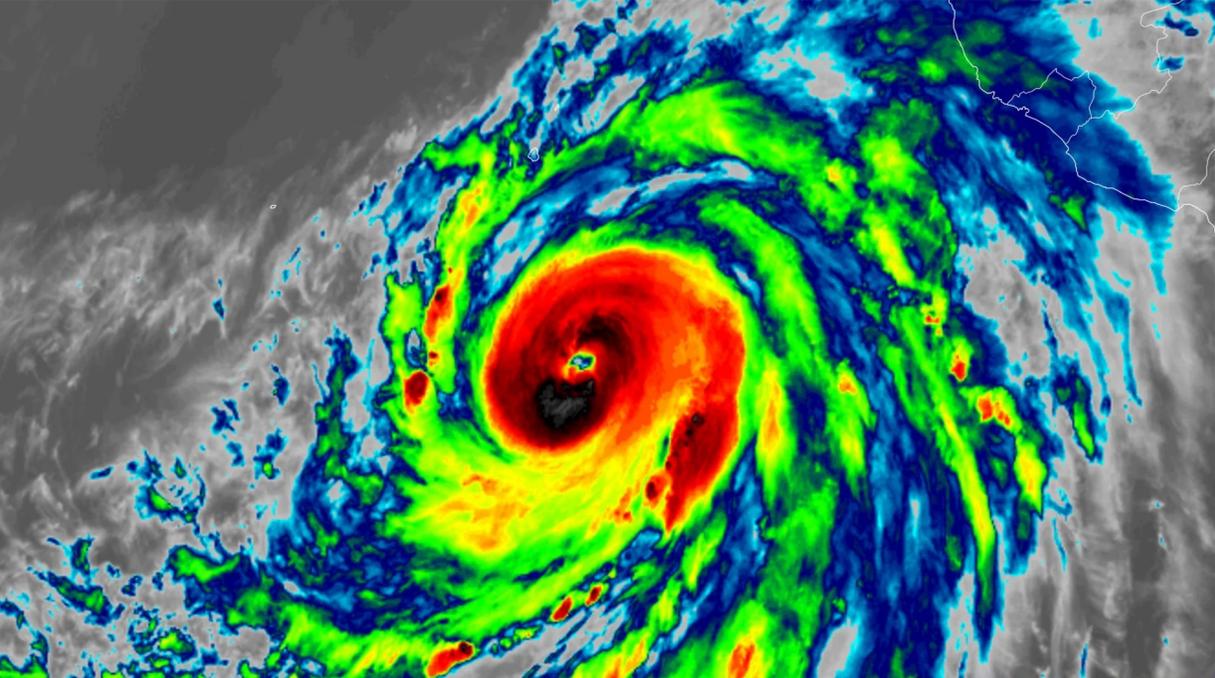


Typical rainfall patterns during El Niño events. Such teleconnections are likely during El Niño events, but not certain.

Map from IRI Data Library Maprooms.

Zambia - Food insecurity leading to malnutrition, livestock deaths, low dam water levels, sanitation and hygiene

Hurricane Hillary (live)



 **HILARY IMPACTS**
SATURDAY - TUESDAY

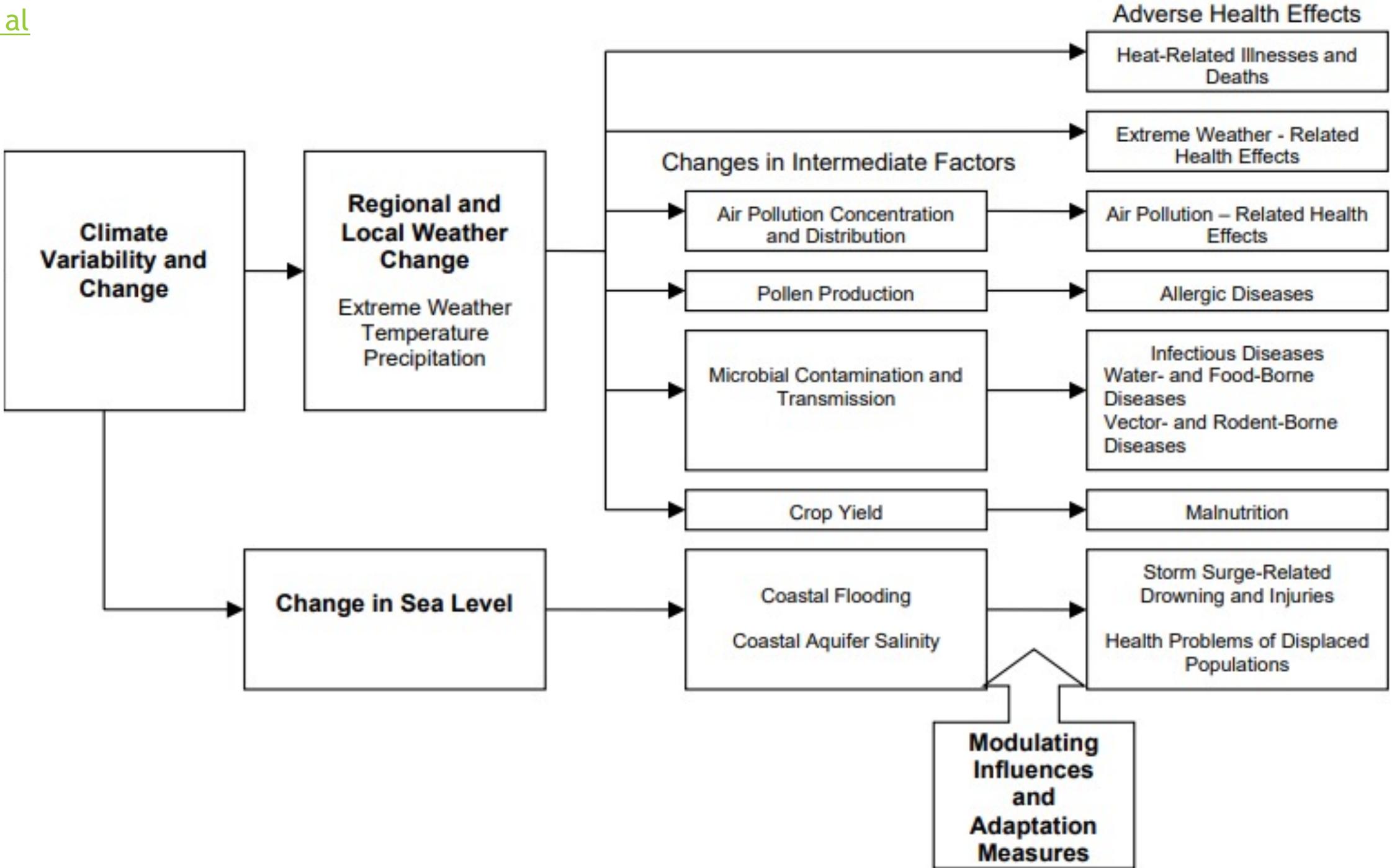
- Flash flooding
- Mudslides & washouts
- Power outages
- Rough surf/coastal erosion
- **AccuWeather RealImpact™**
Scale: 2 for Mexico, 2 for U.S.

Exclusive AccuWeather Forecast

RISK TO LIVES & PROPERTY

- Catastrophic
- Extreme
- High
- Moderate
- Some

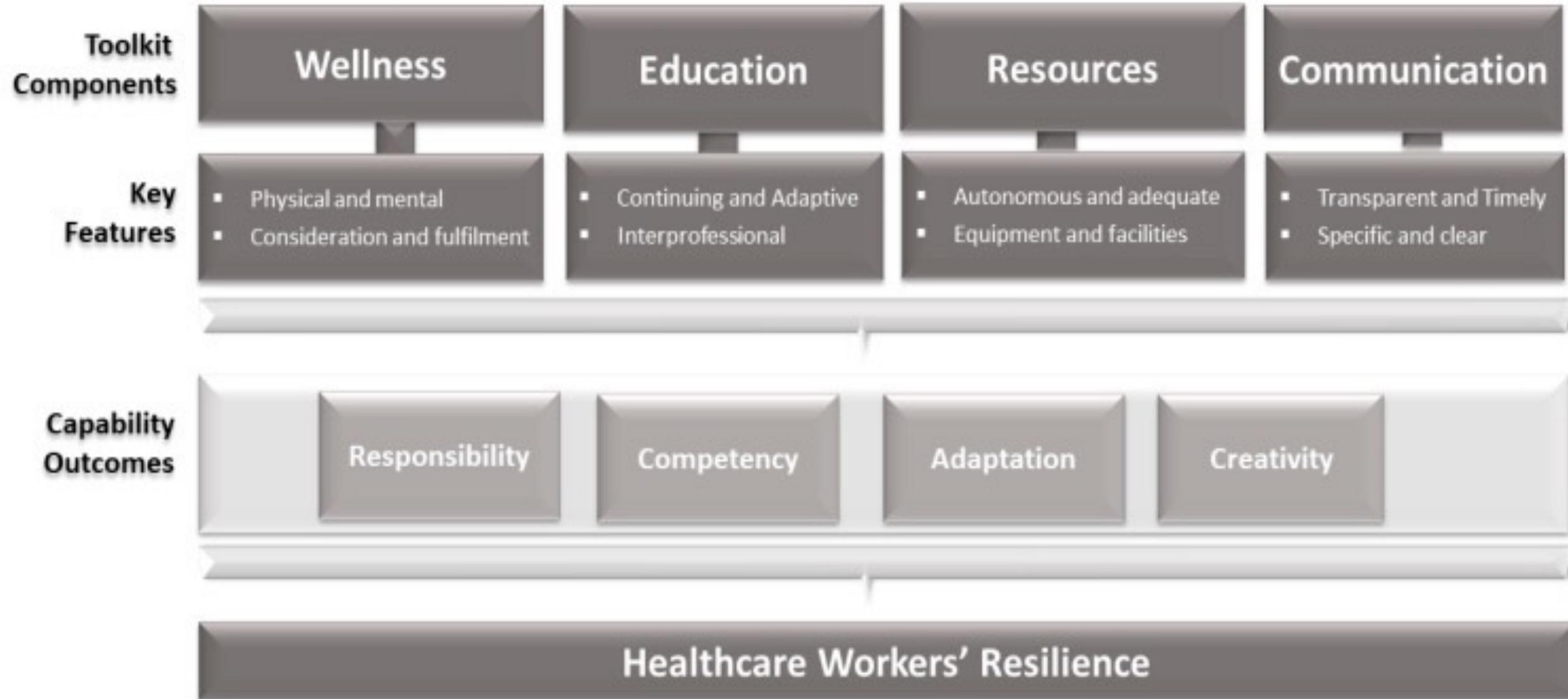




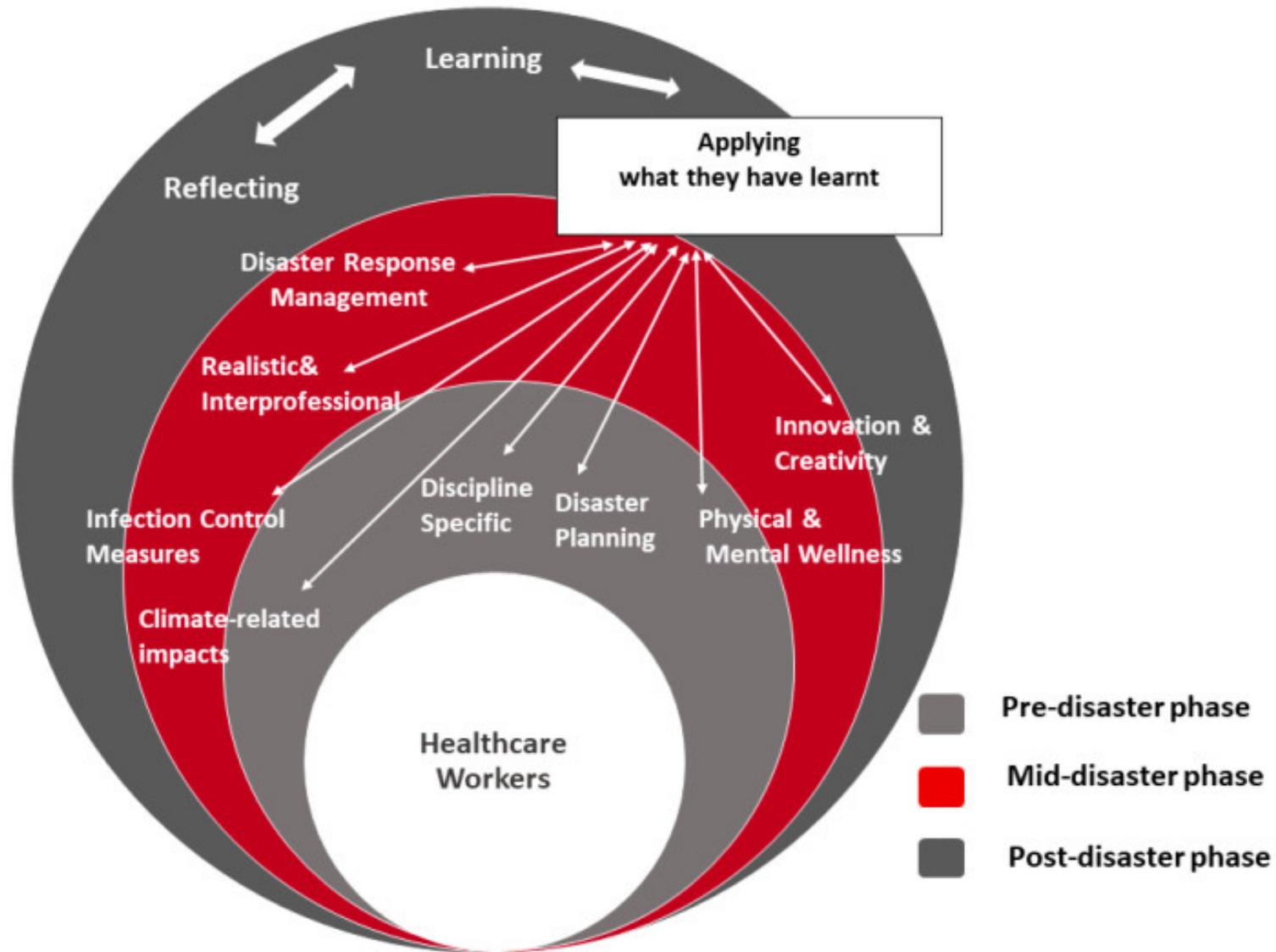
Impacts on HCWs

- ▶ Disasters are immensely stressful events for HCWs as they provide patient care to a population undergoing the impacts of the disaster while experiencing such impacts to their personal lives themselves
- ▶ High workload - physical exhaustion
- ▶ Effects on Mental health - including increased rates of burnout, anxiety and depression

HCW Resilience Toolkit- Ali, et al (2022)



Suggested HCW Disaster Education Phases



Information Sources

- ▶ Human Health Effects of Climate Change
https://www.bu.edu/sph/files/2012/08/Haines_2006_Climate_Change_and_Human_Health_-_Impacts_Vulnerability_and_Public_Health.pdf
- ▶ Climate Change Effects on Health Care Workers
<https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-13761-1>
- ▶ Resilience - [Healthcare Workers' Resilience Toolkit for Disaster Management and Climate Change Adaptation](#)

THANK YOU

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the frame, creating a modern, layered effect against the white background.