



Climate Amplified Diseases & Epidemics

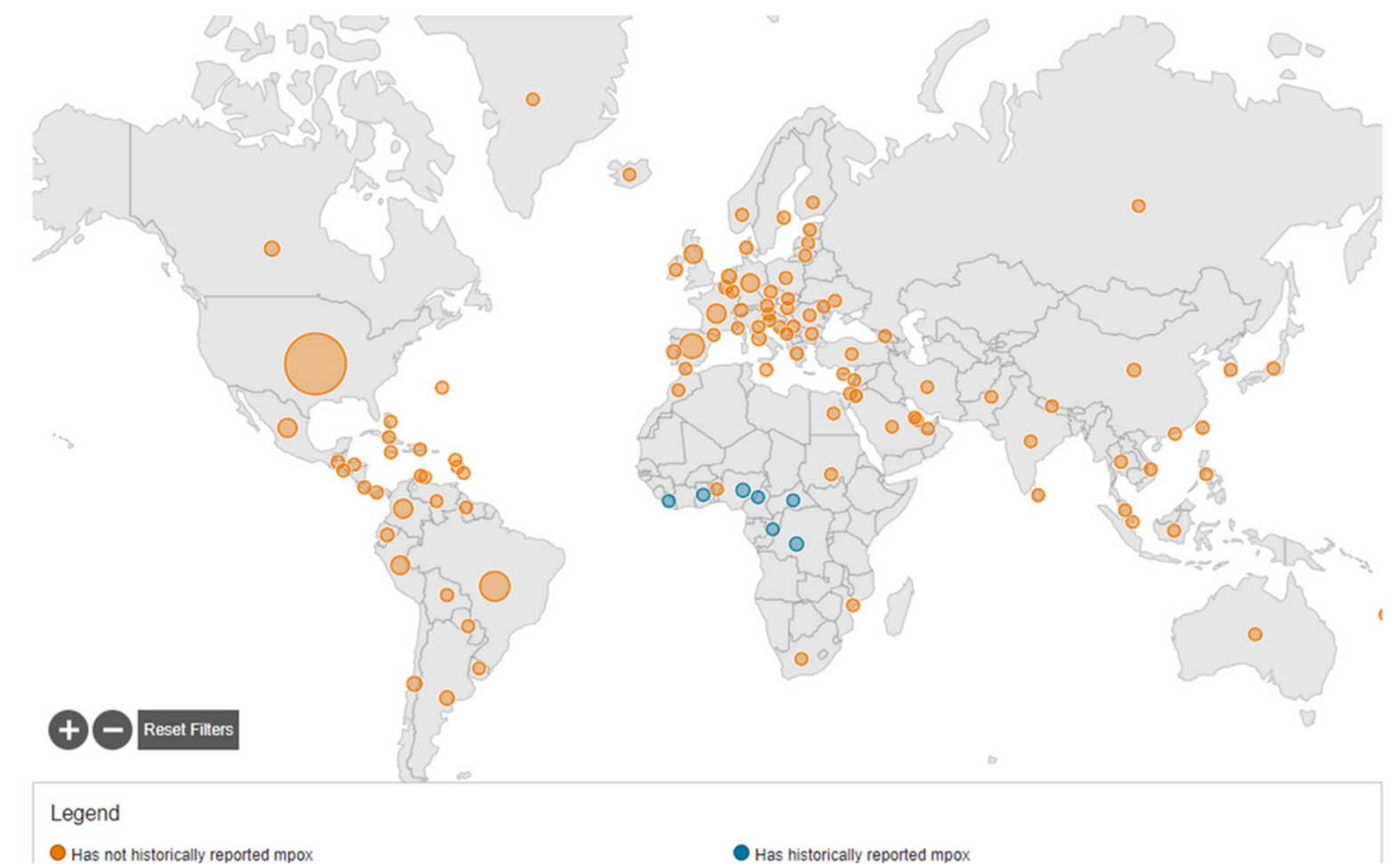
Synthesis Report 2023

climade.health

The warning

**Climate change has the
potential to aggravate over 50%
of known human pathogens**

Emergence of new pathogens



89,581 cases of mpox in 2022 outbreak,
98% not historically reported mpox

2022 Mpox Outbreak Global
Map |Mpox | Poxvirus

Exacerbation of ongoing epidemics

Infectious diseases outbreaks becoming more common, including in regions where they did not historically occur

> **3.7 MILLION CASES OF DENGUE**

>2,000 deaths from dengue reported from 70 countries globally, including six non-travel associated dengue cases in Europe in 2023

> **200,000 CASES OF YELLOW FEVER**

30,000 deaths from of yellow fever occur annually

> **320,000 CASES OF CHIKUNGUNYA**

Over 340 deaths of Chikungunya reported from 20 countries worldwide in 2023

> **32,000 CASES OF ZIKA**

4 deaths of from Zika virus infection reported from 13 countries in the Americas and Caribbean in 2023





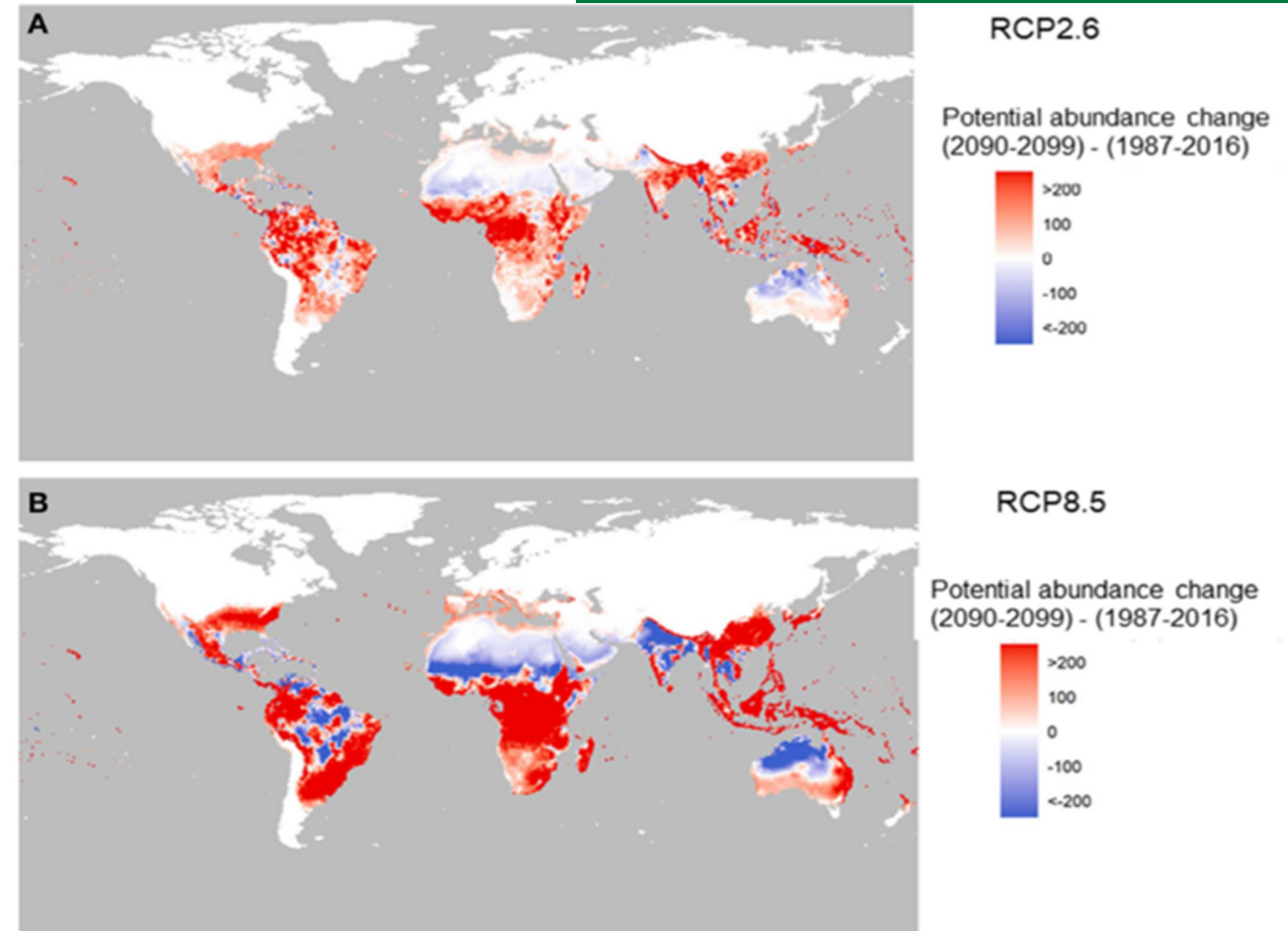
Mechanisms of disease aggravation:

Rising temperatures

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Rising temperatures

- Rising global temperatures creates a conducive environment for disease vectors by facilitating their proliferation and extending their geographical range.
- Dispersal of disease vectors is also enhanced through altered rainfall patterns that can create breeding grounds for mosquitoes, thereby increasing the incidence of vector-borne diseases.
- With global climate change, more areas—even those away from the equator or at relatively high elevations—are becoming susceptible to mosquitoes.
- Large outbreaks of Chikungunya and Dengue are occurring in South Asia and South America in areas previously unaffected.
- Increasing rates of transmission of Malaria, Dengue and Chikungunya have been recorded in Europe and North America.



Projected change in vector populations and suitability ranges



Mechanisms of disease aggravation:

Extreme Events

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Extreme events

- **Extreme climate events are driving the rise in epidemics.**
- **Disease outbreaks occur as microbes, vectors, and reservoir animal hosts take advantage of the disrupted social and environmental conditions resulting from such weather extremes.**
- **Extreme events, such as floods contaminate drinking-water sources, causing outbreaks of diseases, and trigger the displacement of humans and animals.**
- **World is facing an acute upsurge of the 7th cholera pandemic - characterized by the number, size and occurrence of multiple outbreaks, the spread to areas free of cholera for decades and alarming high mortality rates.**



Flooding in Malawi 2022



Mechanisms of disease aggravation:

Climate Migrants and Epidemics

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Climate Migrants and Epidemics

- **Movement of people, animals, and cargo can further compound the challenges of climate change and epidemics.**
- **Climate change can drive populations to migrate, causing more interactions with wildlife and increasing the risk of spillover of pathogens.**
- **Highly transmissible pathogens can also easily cross borders.**
- **El Niño will likely produce severe drought in some regions of the world, potentially spurring mass temporary and permanent migrations.**



Call to Action:

Governments, academic institutions, private sector industries, and health organizations must unite to combat the threat of climate change on health by:

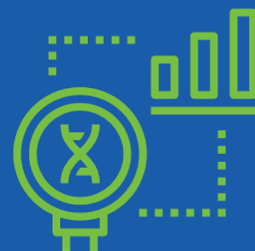
1.

Reporting
Outbreaks
Timely



2.

Strengthening
Genomic
Surveillance



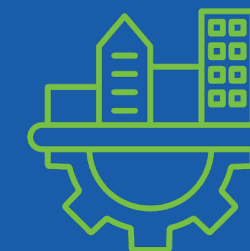
3.

Prioritizing
Vulnerable
Populations



4.

Promoting
Climate
Resilience



5.

Committing
Sustainable
Funding

