



United Nations
Climate Change



COP29
Baku
Azerbaijan

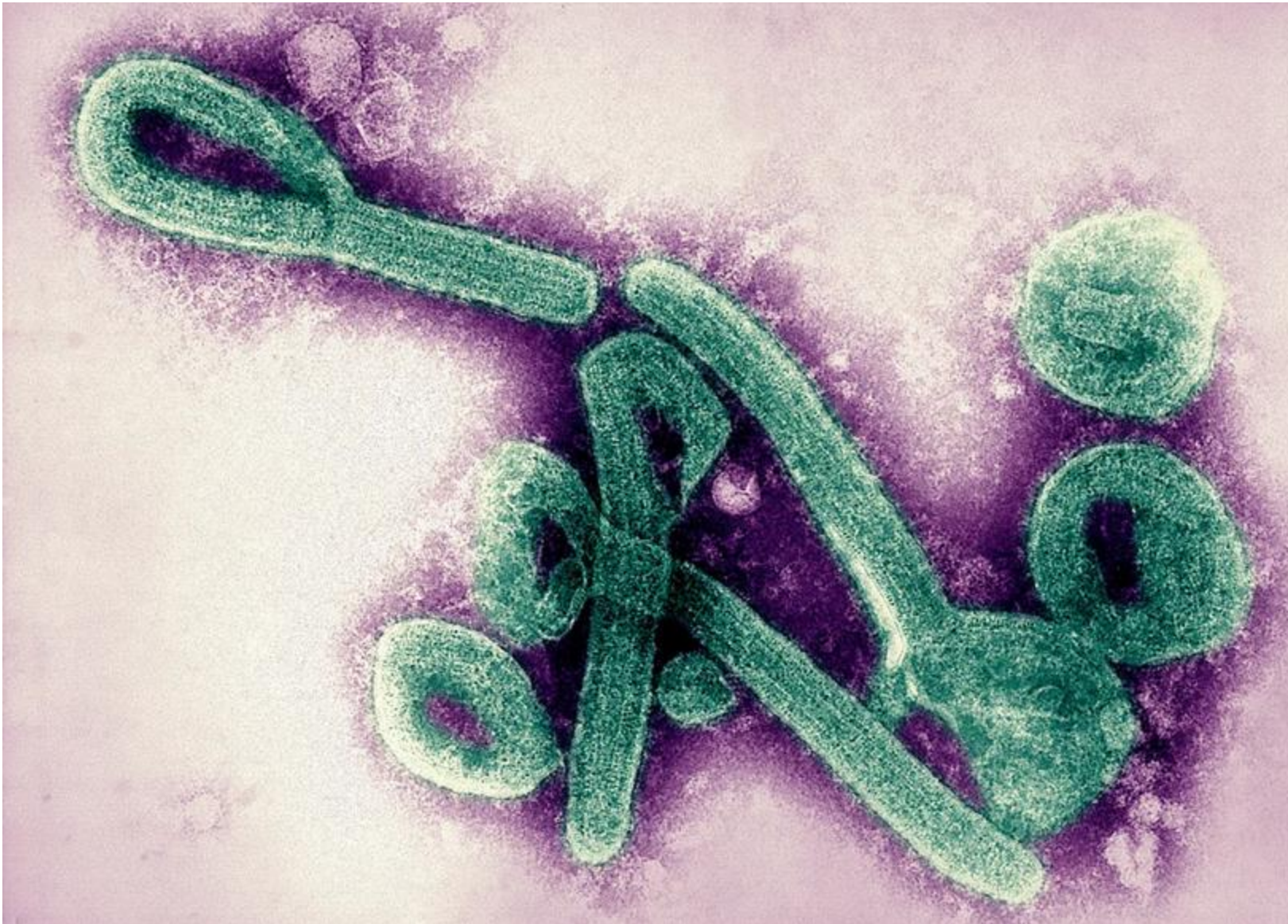
Climate Change & Epidemics Report 2024

How Epidemics are being Amplified by Climate Change

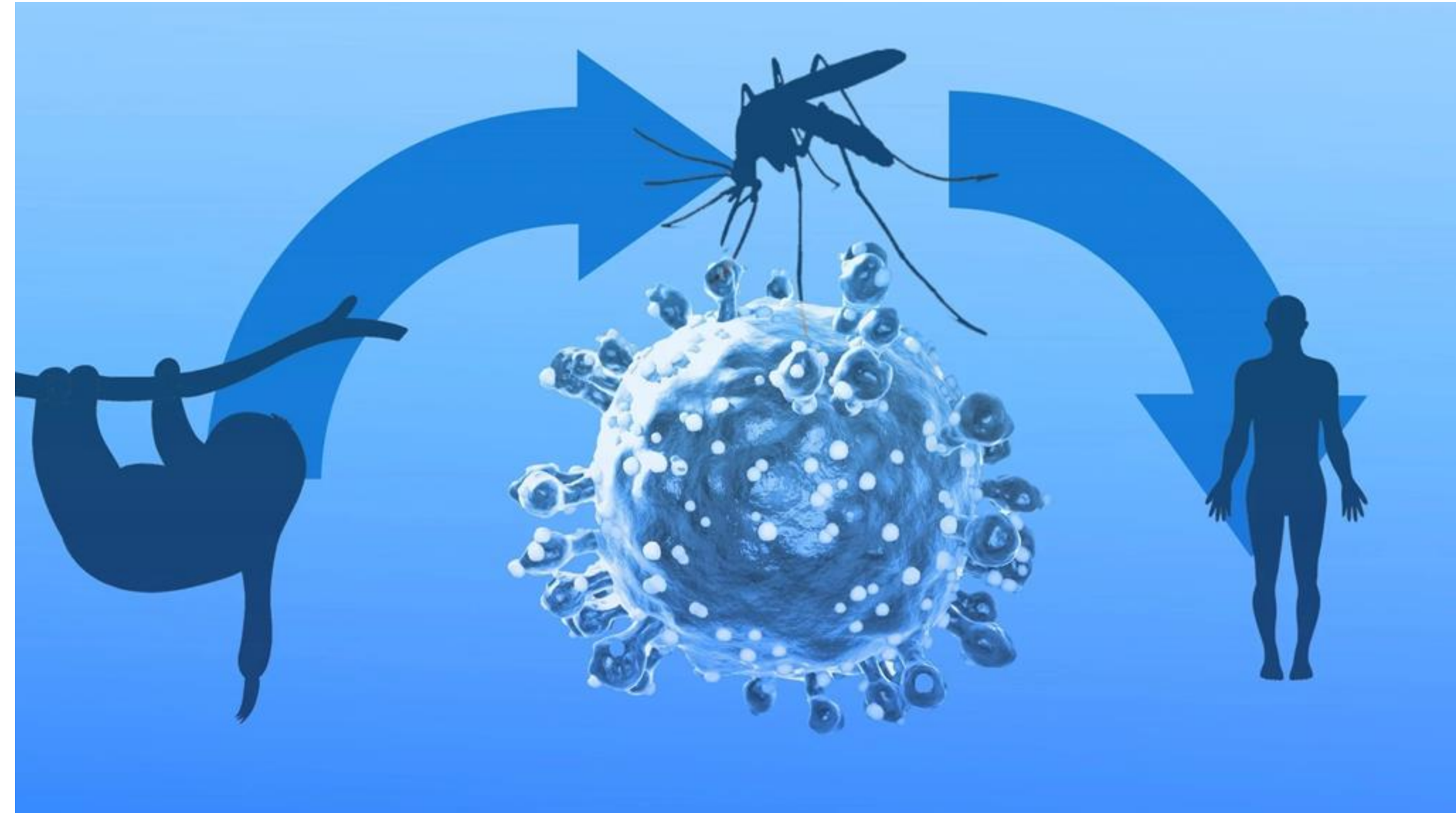
The warning

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

Emergence of new pathogens



Marburg Hemorrhagic Fever Virus
2024 outbreak, Rwanda



Oropouche Fever Virus
2024 Outbreak, Brazil, Colombia & Cuba

Exacerbation of ongoing epidemics

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

> 13 MILLION CASES OF DENGUE

>8,500 deaths from dengue reported from 70 countries globally, 2024 was the year with record cases of Dengue in the world

> 460,000 CASES OF CHIKUNGUNYA

Over 170 deaths of Chikungunya reported from 20 countries worldwide in 2024

> 19 EUROPEAN COUNTRIES WITH HUMAN CASES OF WEST NILE VIRUS

West Nile is spreading around the world, mostly undetected





Mechanisms of disease aggravation:

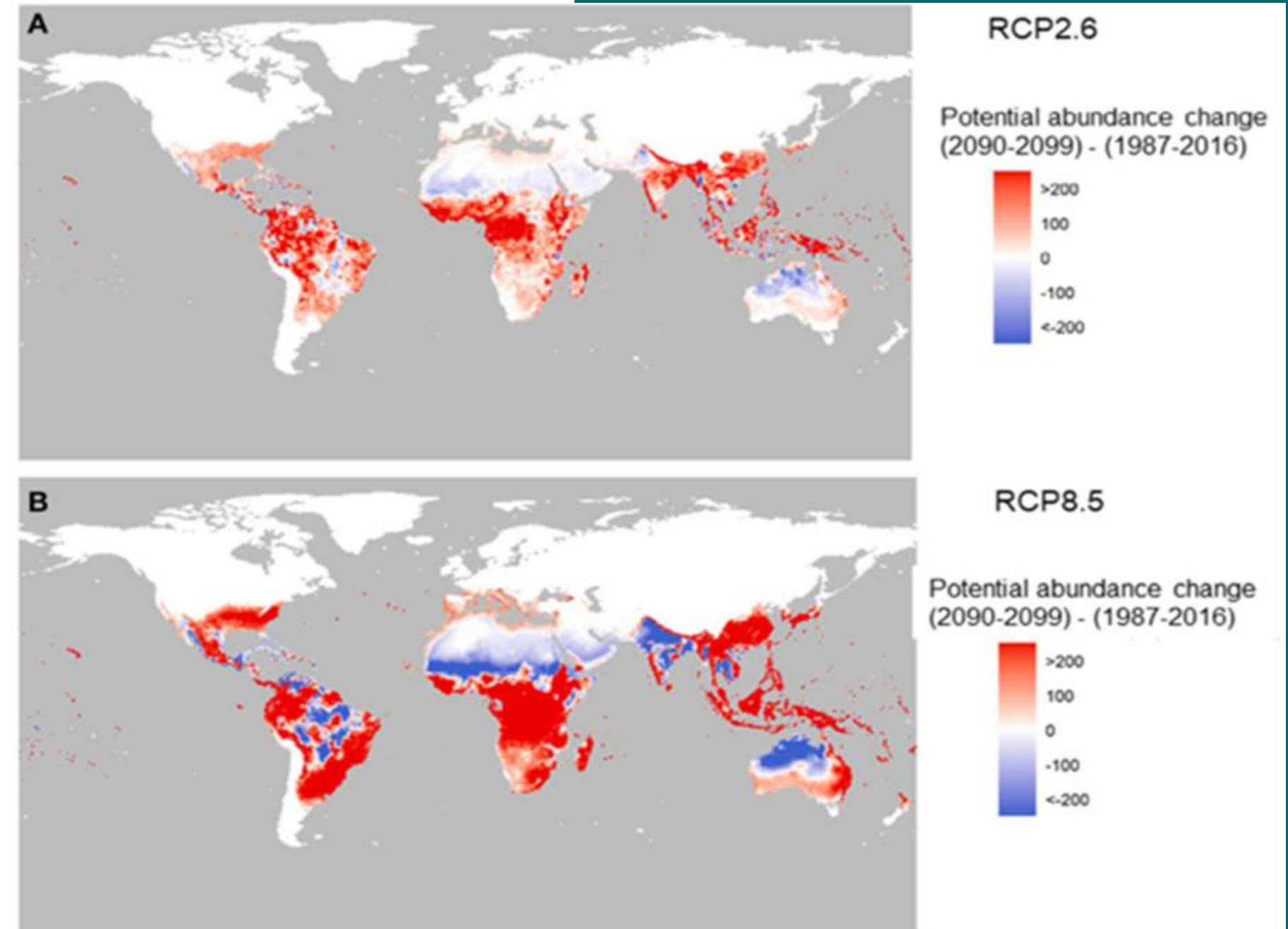
Rising temperatures



Mechanisms of disease aggravation:

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 Dengue, West Nile and Chikungunya have been recorded in Europe and North America.



Projected change in vector populations and suitability ranges



Mechanisms of disease aggravation:

Extreme Events

Mechanisms of disease aggravation:

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



Mechanisms of disease aggravation:

Climate Migrants and Epidemics



Mechanisms of disease aggravation:

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

Climate Change & Epidemics 2024

- Produced by over 200 scientists from 40 countries
- Provide clear evidence on the epidemics amplified by climate change
- Provide a call for action for government, private companies, academics and NGOs
- Introduce CLIMADE (Climate Amplified Diseases and Epidemics) Consortium



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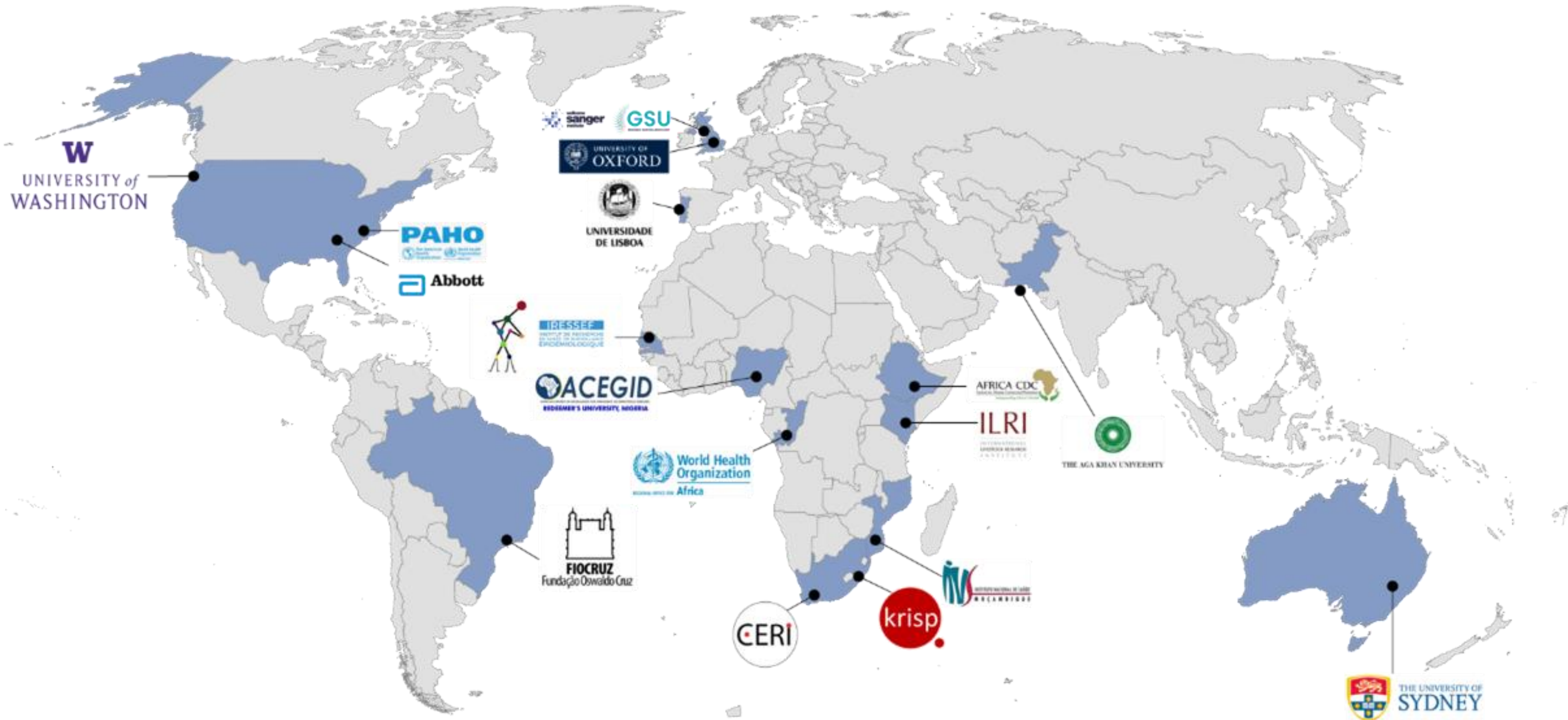
CLIMADE - Climate Amplified
Diseases & Epidemics

Climate Change & Epidemics 2024 Report



Global Collaboration lead by the Global South

CLIMADE: Climate Amplified Diseases and Epidemics



Capacity Building and Training

Fellowship Program on Genomics and data analysis

- Provided hands-on and virtual short-term training opportunities to **584 fellows** from **48** different African countries
 - **Short-term fellowships** (2 to 4 weeks) that provide hands-on individualized training
 - **Middle-term fellowships** (2 to 11 Months) that provide hands-on individualized training
 - **Long-term fellowships** (1 to 3 years) postgrad degrees of post-doctoral fellowships
- Sponsorship to **over 100 fellows** South & Latin Americana to attend the International Workshop on Virus Evolution & Molecular Epidemiology (VEME) 2023 & 2024 workshops.





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