



Resilient Cities & Human Settlements Working Group

Martyn Clark, GEO Secretariat





Resilient Cities & Human Settlements



Global Heat Resilience Service

➤ Building the foundation for heat resilient communities

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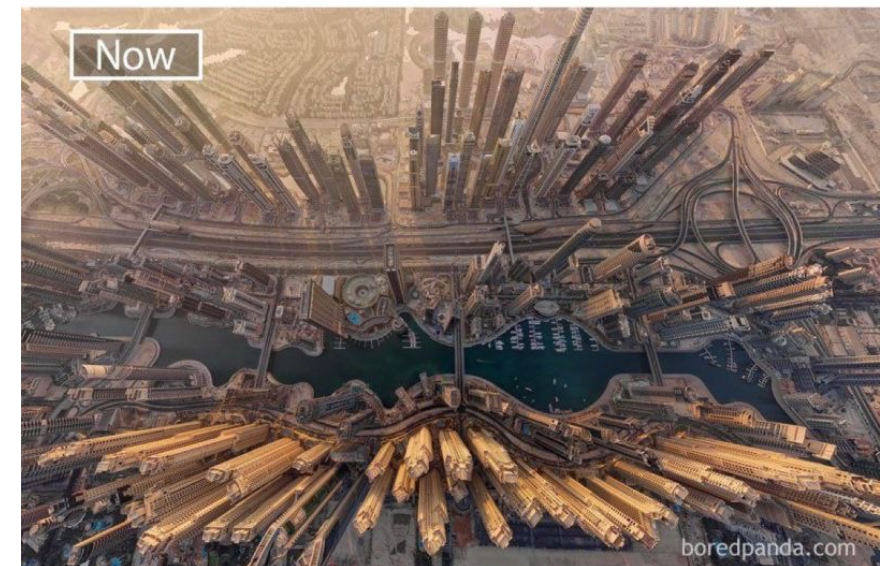
By 2050, **7 billion people** will live in cities.

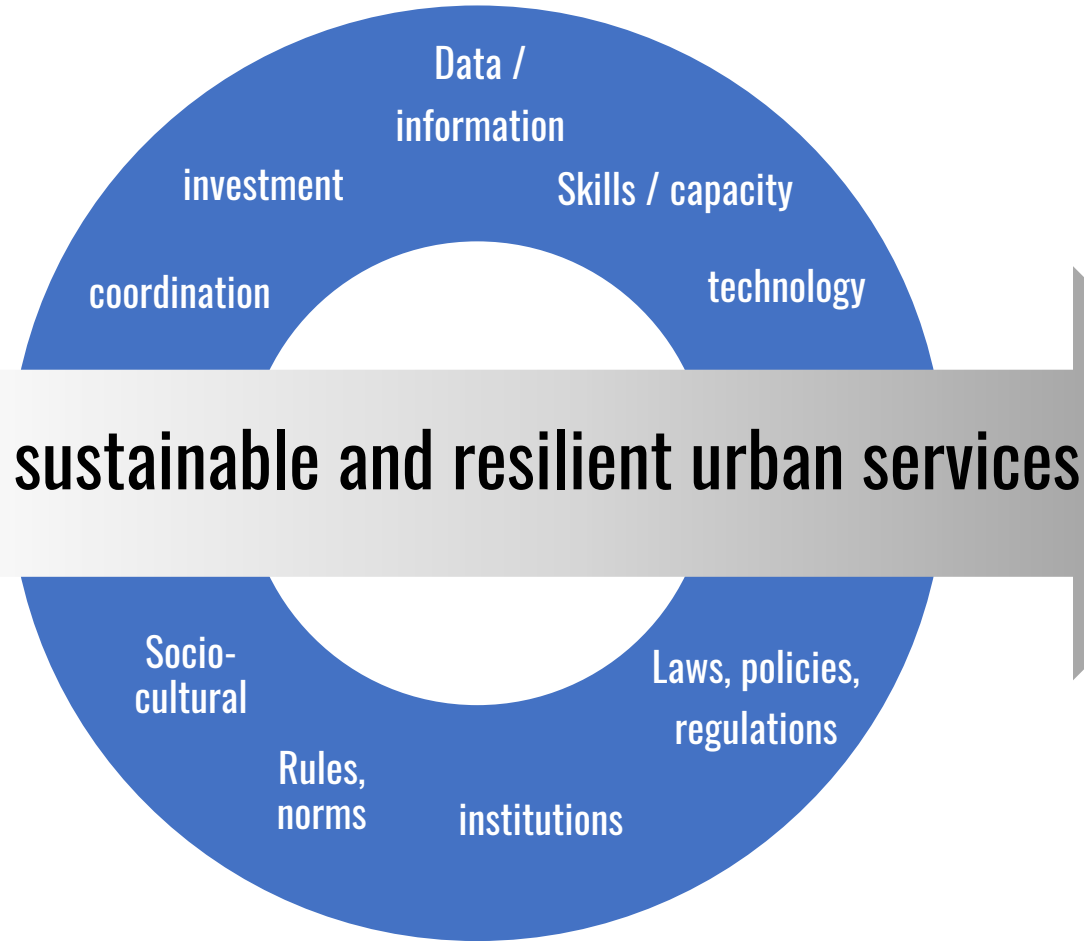
That means that for the next 30 YEARS, we have to accommodate **2 million people in cities. Every. Week.**

We cannot carry on with business as usual. The planet can't take it.

UN-HABITAT

LinkedIn post for World Habitat Day, October 2nd



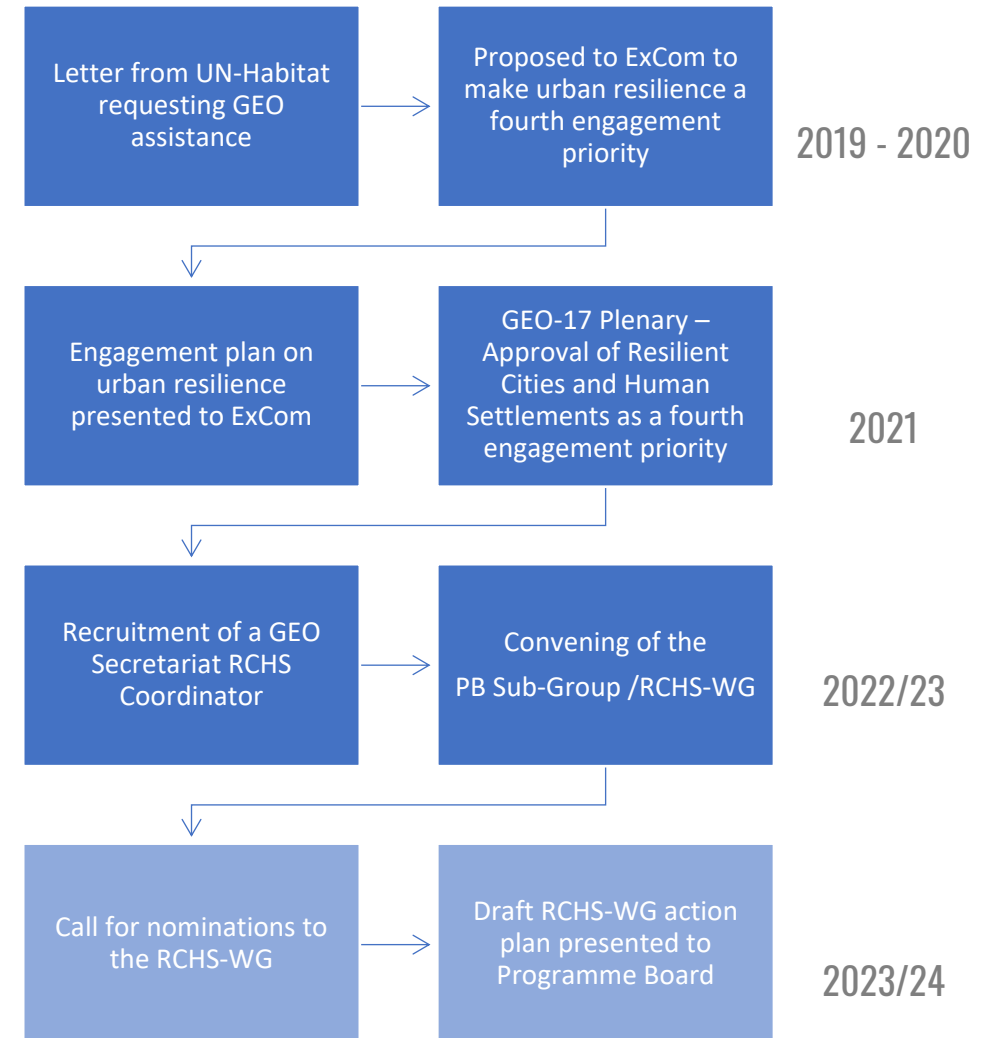


urban resilience: the capacity of a city's systems, businesses, institutions, communities, and individuals to **survive, adapt, and grow**, no matter what chronic stresses and acute shocks they experience



Resilient Cities & Human Settlements

- Most recent nengagement priority: DRR, CC, Cap. Dev, SDGs
- Many urban-themed activities across GEOs Work Programme
- Recent survey of five WGs (including RCHS)
 - Flexible modes of operation
 - Revised ToRs / annual workplans
 - Review membership
 - Standing joint WG meeting
 - GEO Post-2025 Strategy > incubated projects



Mapping of urban-related activities throughout the GEO work programme 2023-25

GEO Biodiversity Observation Network
GEO BON

GEO Global Agricultural Monitoring
GEOGLAM

Global Forest Observation Initiative
GFOI

Global Observation System for Mercury
GOS4M

AquaWatch
AQUAWATCH

Data Access for Risk Management
GEO-DARMA

Data Integration and Analysis System
DIAS

Digital Earth Africa
DE-AFRICA

Earth Observations for Ecosystem Accounting
EO4EA

Earth Observations for Health
EO4HEALTH

Earth Observations for the Sustainable Development Goals
EO4SDG

GEO Capacity Building in North Africa, Middle East, Balkans and Black Sea Region
GEO-CRADLE

GEO Global Water Sustainability
GEOGLOWS

GEO Human Planet
HUMAN-PLANET

GEO Land Degradation Neutrality
GEO-LDN

GEO Vision for Energy
GEO-VENER

GEO Wetlands
GEO-WETLANDS

Geohazard Supersites and Natural Laboratories
GSNL

Global Drought Information System
GDIS

Global Network for Observations and Information in Mountain Environments
GEO-MOUNTAINS

Global Observation System for Persistent Organic Pollutants
GOS4POPS

Global Urban Observation and Information
GUOI

Global Wildfire Information System
GWIS

Oceans and Society: Blue Planet
BLUE-PLANET

Advancing Communication Infrastructure and Services
ACIS

Arctic GEOSS

Chinese High-resolution Satellite Data Resources
CSDR

Climate Observation, Simulation and Impacts
CLIMATE-OBS

Copernicus Atmosphere Monitoring Service
CAMS

Copernicus Climate Change Service
C3S

Digital Earth Pacific
DE-PACIFIC

Earth Observation and Copernicus in support of Sendai Monitoring
EO4SENDAI-MONITORING

Earth Observation Industrial Innovation Platform for Sustainable Development
EO-IIP

Earth Observations for Disaster Risk Management
EO4DRM

Earth Observations for Managing Mineral and Non-Renewable Energy Resources
EO4MIN

Earth Observations for the Atlantic Region
ATLANTIC-EO

Earth Observations for the Water-Energy-Food Nexus
EO4WEF

Enhancing Food Security in African Agricultural Systems with the Support of Remote Sensing
AFRICULTURES

Forest Biomass Reference System from Tree-by-Tree Inventory Data
GEO-TREES

GEO Citizen Science
GEO-CITSCI

GEO Essential Variables
GEO-EV

GEO Global Ecosystems
GEO-ECO

Geodesy for the Sendai Framework
GEODESY4SENDAI

Global Agricultural Drought Monitoring
AGRI-DROUGHT

Global Crop Pest and Disease Habitat Monitoring and Risk Forecasting
CROP-PEST-MONITORING

Global Ecosystems and Environment Observation Analysis Research Cooperation
GEOARC

Global Flood Awareness System
GLOFAS

Global Flood Risk Monitoring
GFRM

Global Land Cover
LAND-COVER

Global Observation of Deltas and Estuaries
DELTA-ESTUARY

In-Situ Observations and Applications for Ecosystem Status of China and Central Asia
IN-SITU-ESC

Multi-source Synergized Quantitative Remote Sensing Products and Services
MUSYQ

Next Generation Earth Observation Services
NEXT-EOS

Night-Time Light Remote Sensing for Sustainable Development Goals
NIGHT-LIGHT

Open Earth Alliance
OEA

Space and Security
SPACE-SECURITY

Space Climate Observatory
SCO

The International Grand Global Ensemble
TIGGE

Understanding the Impacts and Value of Earth Observations
GEO-VALUE

Urban Heritage Climate Observatory
UHCO

African Group on Earth Observations
AFRIGEO

Americas Group on Earth Observations
AMERIGEO

Asia-Oceania Group on Earth Observations
AOGEO

European Group on Earth Observations
EUROGEO

GEO Engagement Priorities Coordination

GEOSS Data, Information and Knowledge Resources

GEOSS Infrastructure Development

GEO Work Programme Support

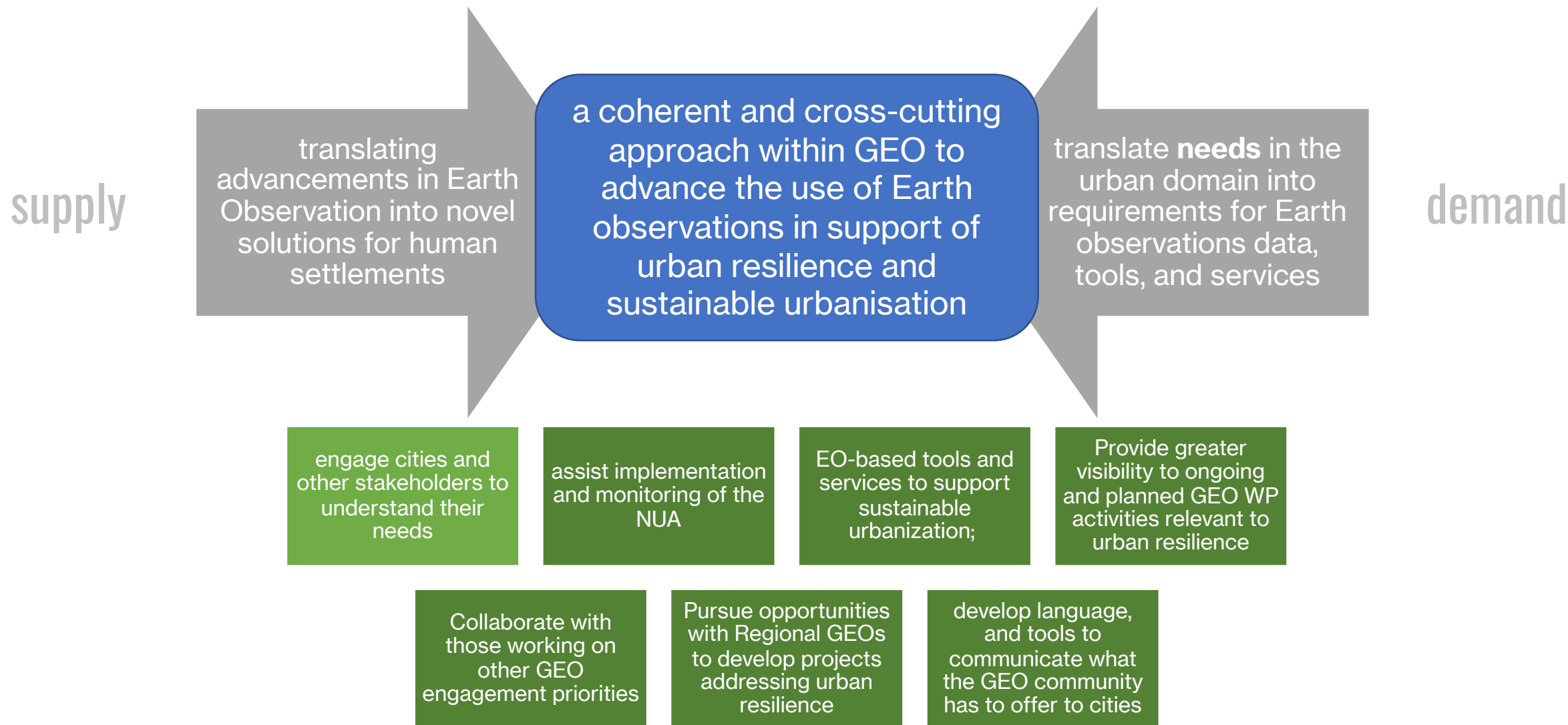
GEO Secretariat Operations

urban-themed

Some urban focus

Resilient Cities & Human Settlements Working Group

What - the Engagement Plan:





Resilient Cities & Human Settlements Working Group How: Opportunities & incentives

Activate city-level partners / users

- Raising awareness of GEO, regional GEOs, GWP
- engaging with cities and city networks through discussion on heat resilience
- Co-design of data, tools, and services

Ensure relevance

- Engagement at important regional and global events
- Enable cities to understand links and contributions to global, national, and regional policy issues
- Strengthen links between evidence, policy and investment

Flexible, operating model

- Keep WG to optimum size, scope and participation required to be effective
- Cross-working with Regional GEOs and other GEO Working Groups
- Per cause onboarding of members



Next steps

- Implement recommendations from WG survey
- Workshop session at GEO Week 2023: coordination
- Longlist, and call for members
- Convene first RCHS-WG meeting and agree workplan / ToR
- First anticipated task: to guide the development of the **Global Heat Resilience Service**





Global Heat Resilience Service

➤ Building the foundation for heat resilient communities

a co-designed service that will provide **every** urban area in the world with data and knowledge on the health risks from exposure to extreme heat. These insights will help cities develop plans to adapt to heat and reduce the impact on citizens' health and local economies.



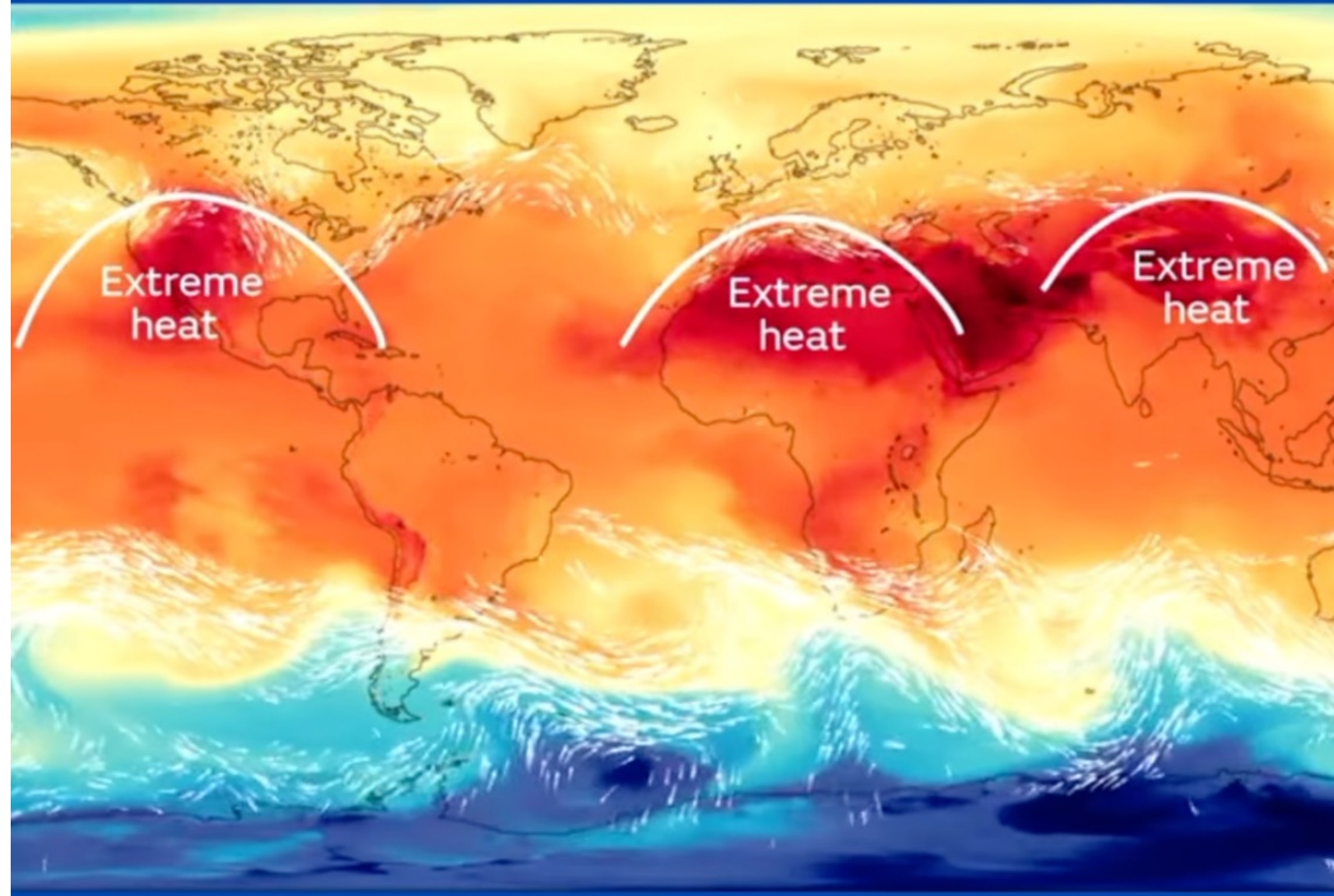
Early Warnings to All

Why heat resilience?

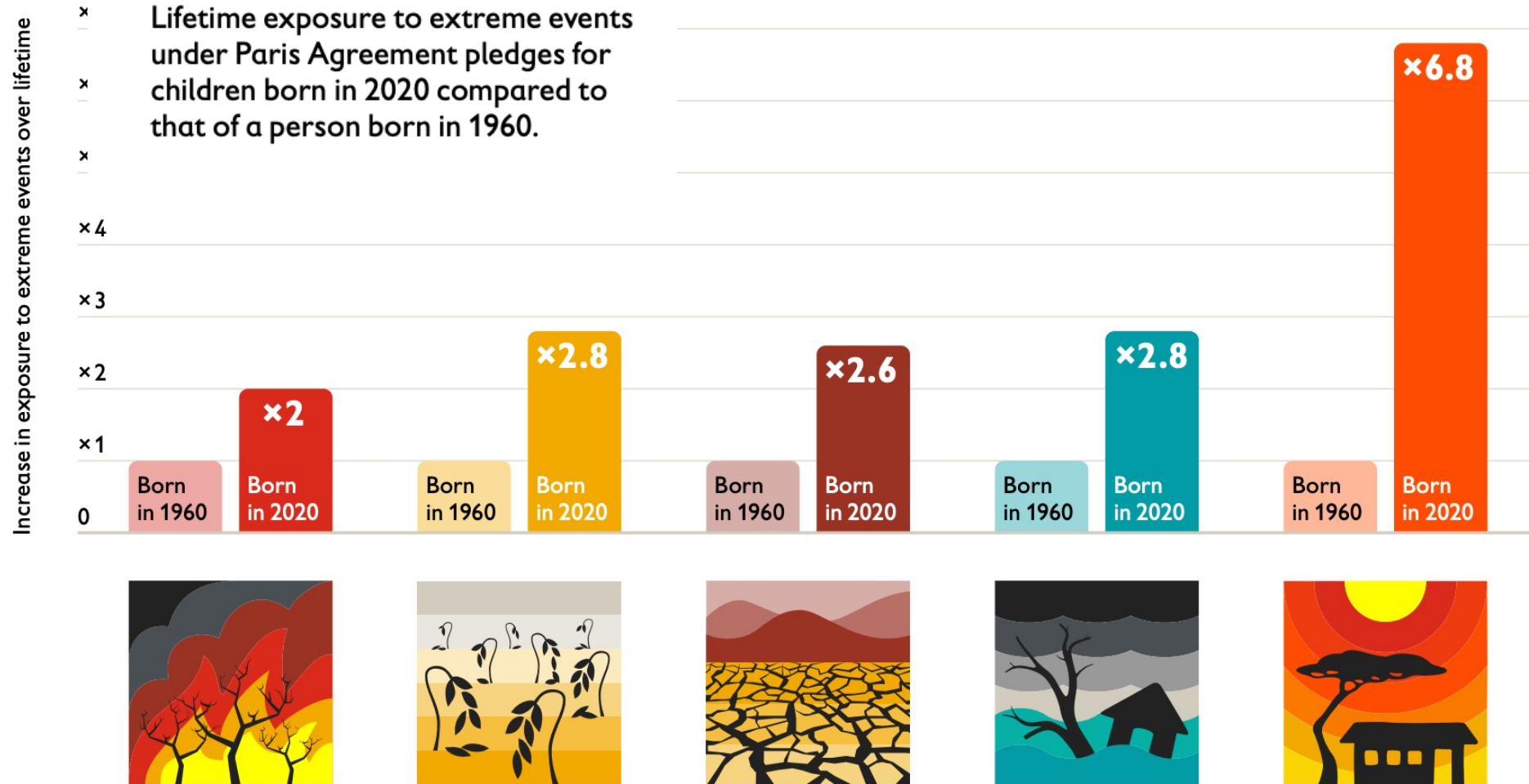
Persistent heatwaves in the Northern Hemisphere

Simultaneous heatwaves are occurring across the northern hemisphere

prolonged daytime temperatures well above 40°C (104°F). Extreme heat is a major hazard, and we must step up (WMO July, 2023)



Born into a climate crisis

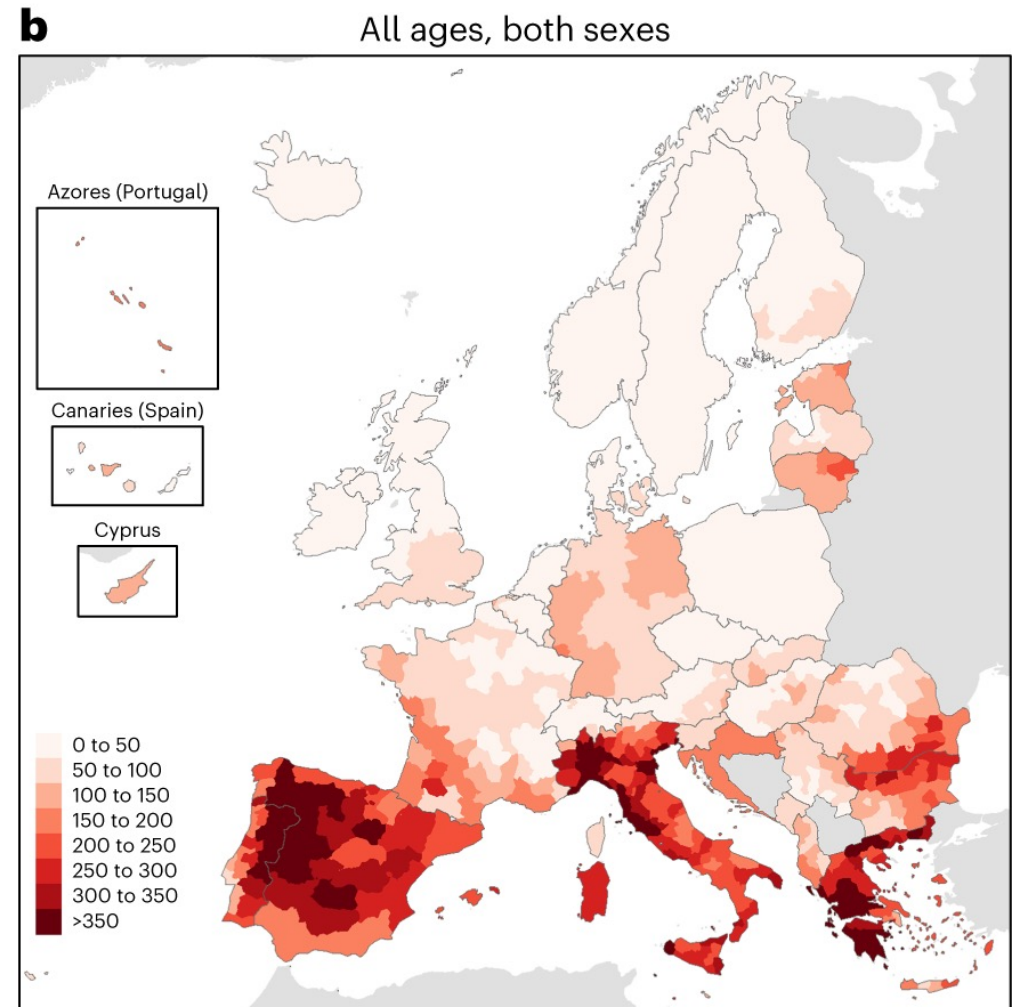




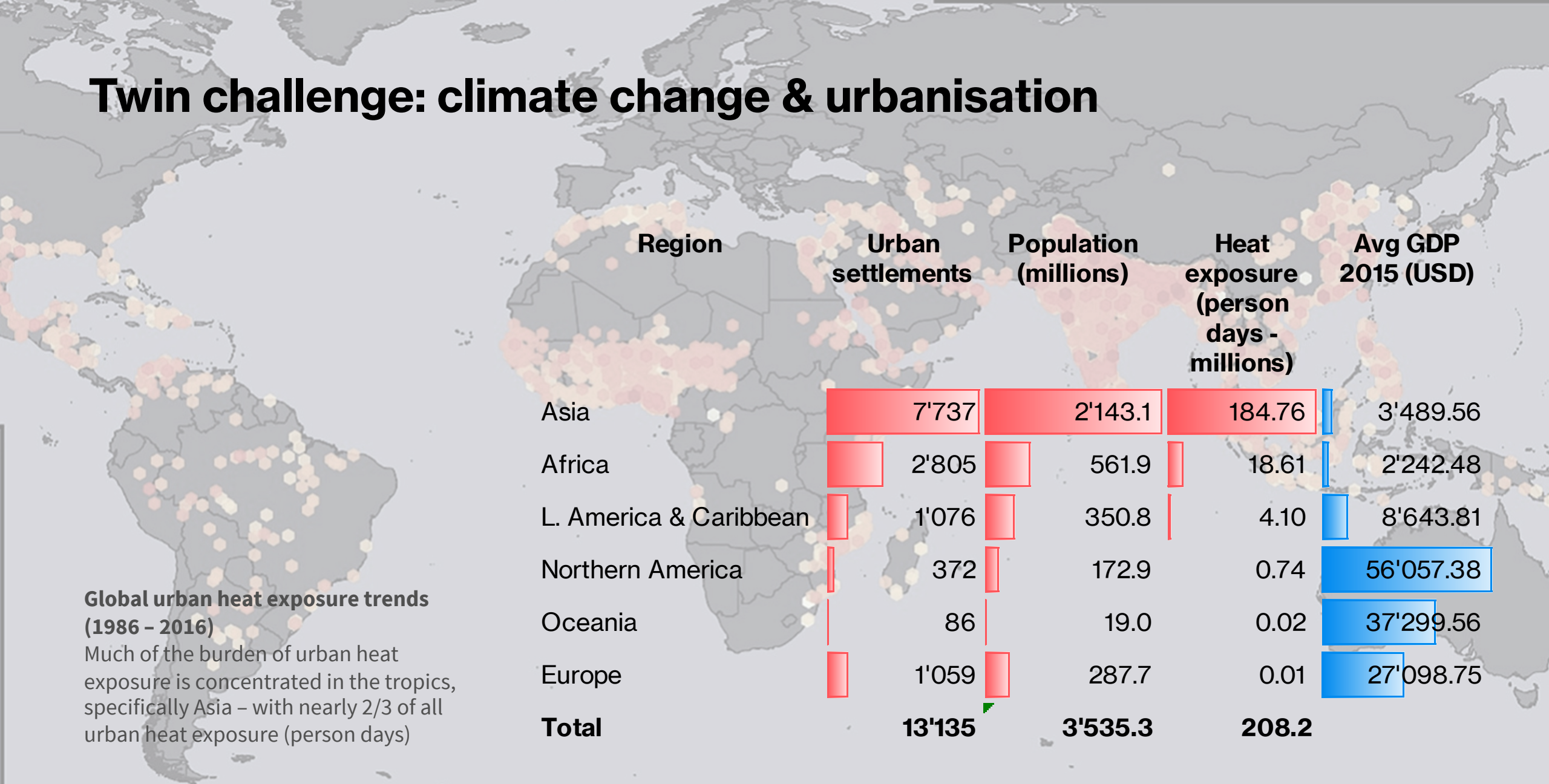
Heat-related mortality Europe Summer, 2022

An estimated 61,672 heat-related deaths in Europe between 30 May and 4 September 2022. Italy, Greece, Spain, Portugal and the highest heat-related mortality rates – Italy the highest heat-related mortality numbers (18,000+).

Data from Eurostat mortality database



Twin challenge: climate change & urbanisation

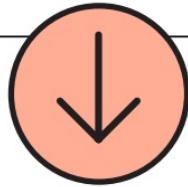


Global urban heat exposure trends (1986 - 2016)

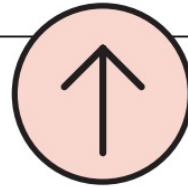
Much of the burden of urban heat exposure is concentrated in the tropics, specifically Asia - with nearly 2/3 of all urban heat exposure (person days)

Region	Urban settlements	Population (millions)	Heat exposure (person days - millions)	Avg GDP 2015 (USD)
Asia	7'737	2'143.1	184.76	3'489.56
Africa	2'805	561.9	18.61	2'242.48
L. America & Caribbean	1'076	350.8	4.10	8'643.81
Northern America	372	172.9	0.74	56'057.38
Oceania	86	19.0	0.02	37'299.56
Europe	1'059	287.7	0.01	27'098.75
Total	13'135	3'535.3	208.2	

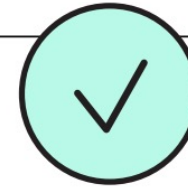
Global Heat Resilience Service



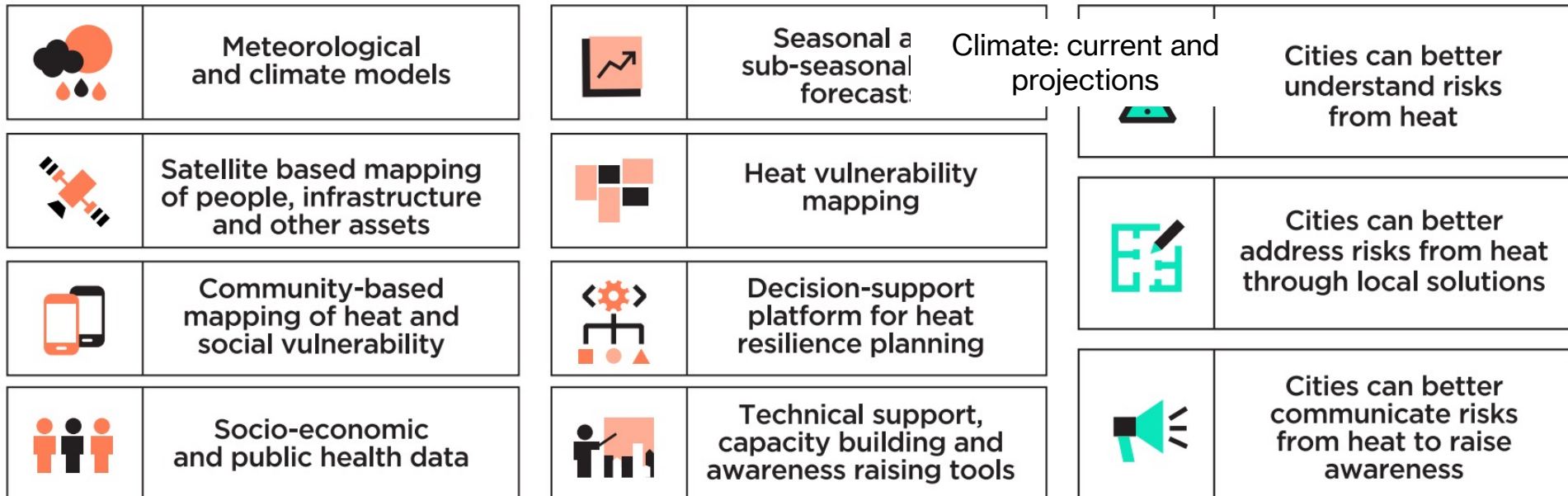
inputs



outputs



outcomes



Engagement, partnerships, & capacity building



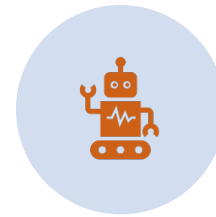
What needs, opportunities and challenges do we foresee in developing a Global Heat Resilience Service?



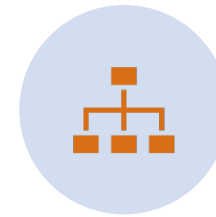
Existing initiatives that could be leveraged?



Data related challenges?



Technical capacity / other types of support?



Resources and sustainability needed for an operational service?



Governance and partnership arrangements?



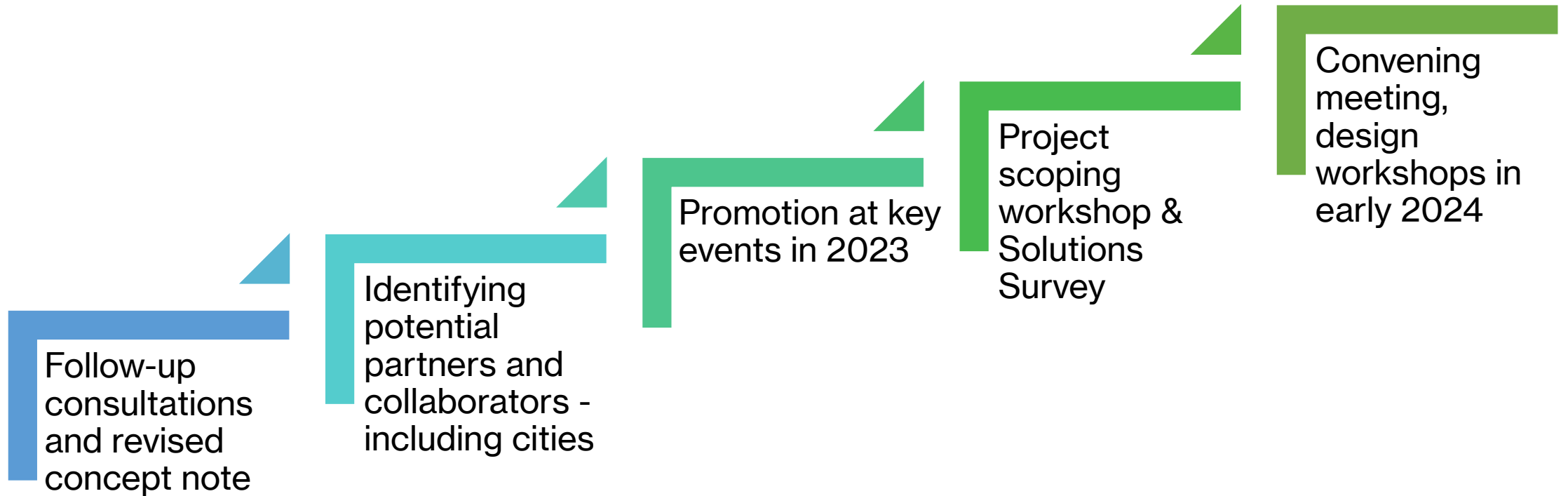
Policy and advocacy?



Awareness raising and communications?



Next steps





Thank you!



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