Climate Change on the move

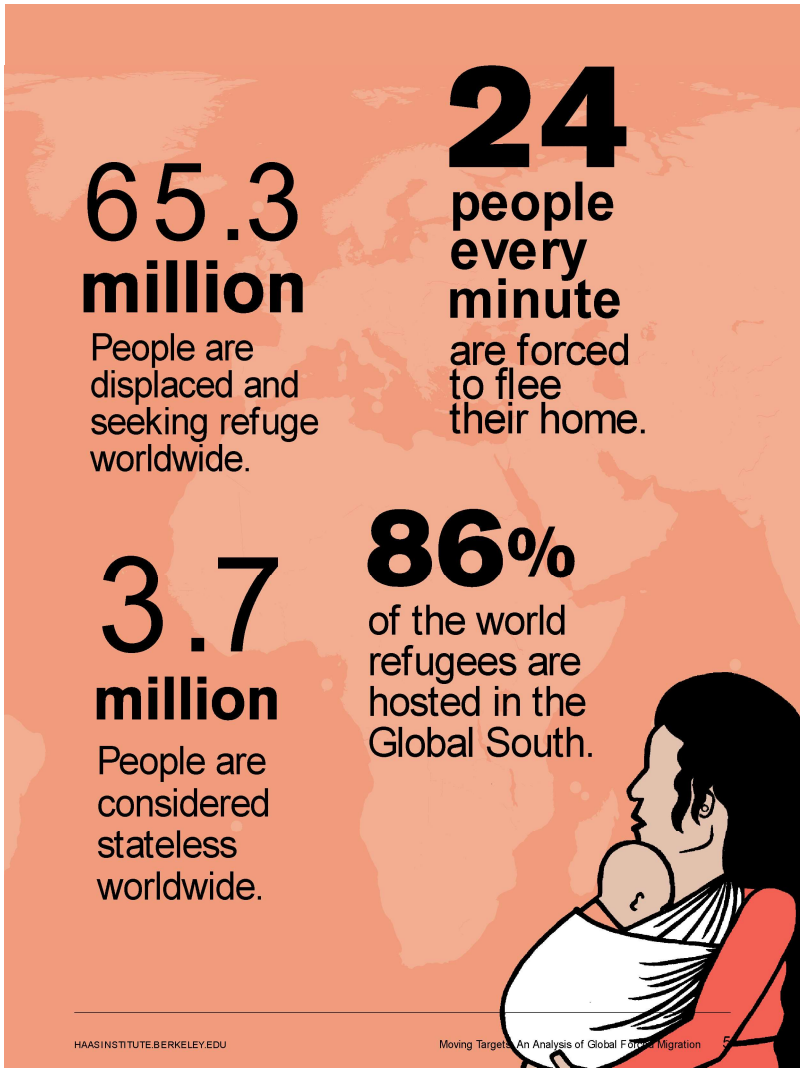
And Children's Public Health Issues

INCHES

Peter van den Hazel, MD, PhD, MPH

Introduction

- Climate change
- Health Impact
- Socio-economic Impact
- Displacement



Source: Haas Institute. 2017

Planetary, People, Political and environmental stress

Water, waste, food and war issues

Poverty, urbanisation, displacement

Climate change issues


WMO Climate Risks, Extreme Events and Related Impacts
ESTIMATED
821 MILLION
UNDERNOURISHED
PARTLY DUE TO
DROUGHT
(SOURCE: FAO)
+35 MILLION
PEOPLE
AFFECTED BY
FLOODS
(SOURCE: CRED)
+2 MILLION
PEOPLE
DISPLACED
BY WEATHER &
CLIMATE-LINKED
DISASTERS
(SOURCE: IOM)
OCEAN
ACIDIFICATION
IS ONGOING
(SOURCE: UNESCO-IOC)
DECREASE IN
GLOBAL OCEAN
OXYGEN
CONTINUES
CLIMATE CHANGE
THREATENS
PEATLAND
ECOSYSTEMS
(SOURCE: UN
ENVIRONMENT)
OUT OF
883,000 INTERNAL
DISPLACEMENTS,
32% ARE LINKED TO
FLOODS AND 29%
TO DROUGHTS
(SOURCE: UNHCR)
+1600 DEATHS
ASSOCIATED WITH
HEATWAVES AND
WILDFIRES
(SOURCE: WHO)

Water

Food

Waste

Water Availability

- 2.3 billion people live in water stressed areas
- 1.7 billion live in water scarce areas*

By 2025: 3.5 billion people projected to live in water stressed areas

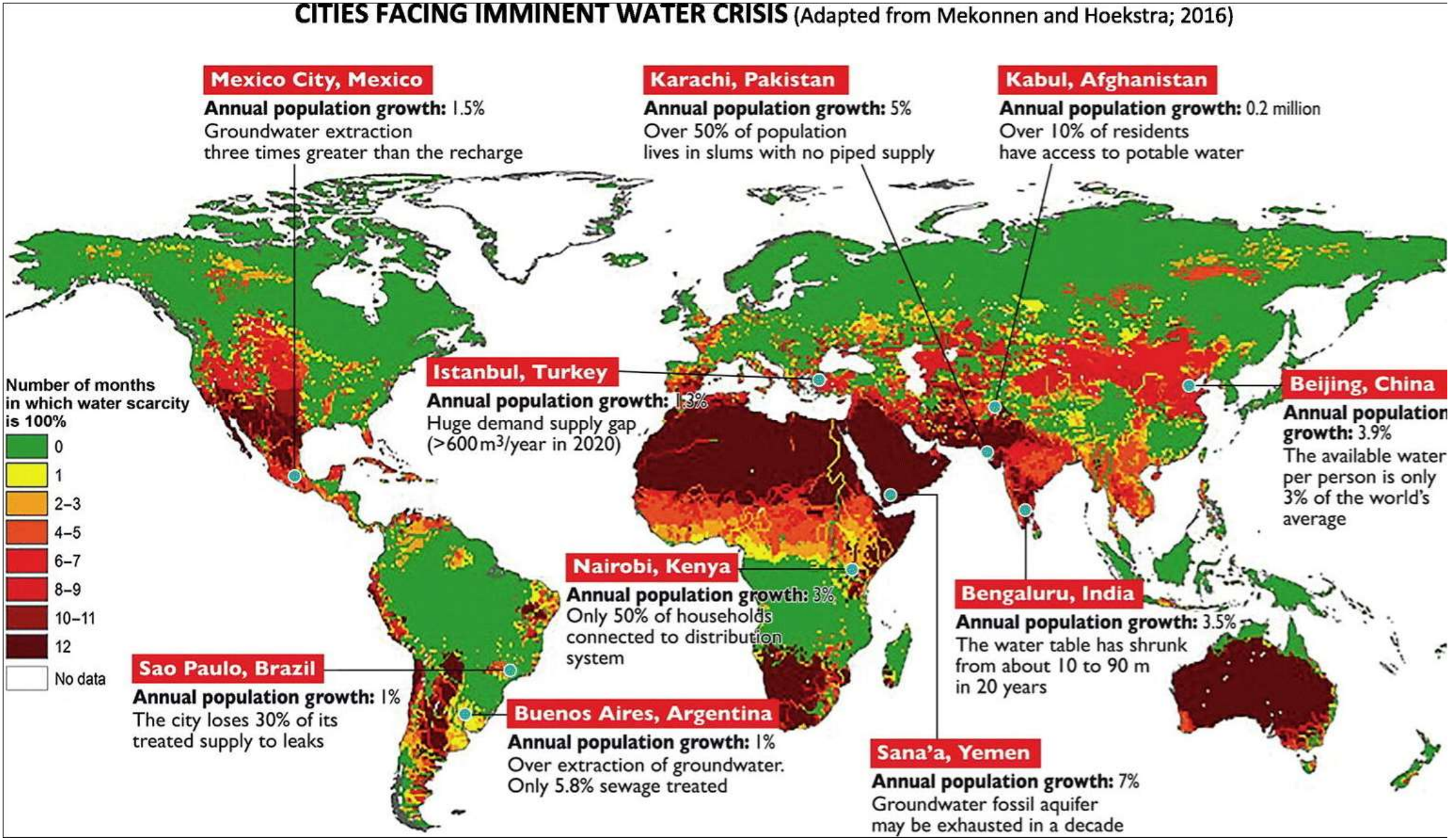
- 2.4 billion in water scarce areas*

By 2100: 1/3 world risk of extreme drought**

*UNEP // **Burke et.al. Journal of Hydrometeorology Sept. 2006

Slide c/o CL Parker, Johns Hopkins Bloomberg School of Public Health, 2013

CITIES FACING IMMINENT WATER CRISIS (Adapted from Mekonnen and Hoekstra; 2016)



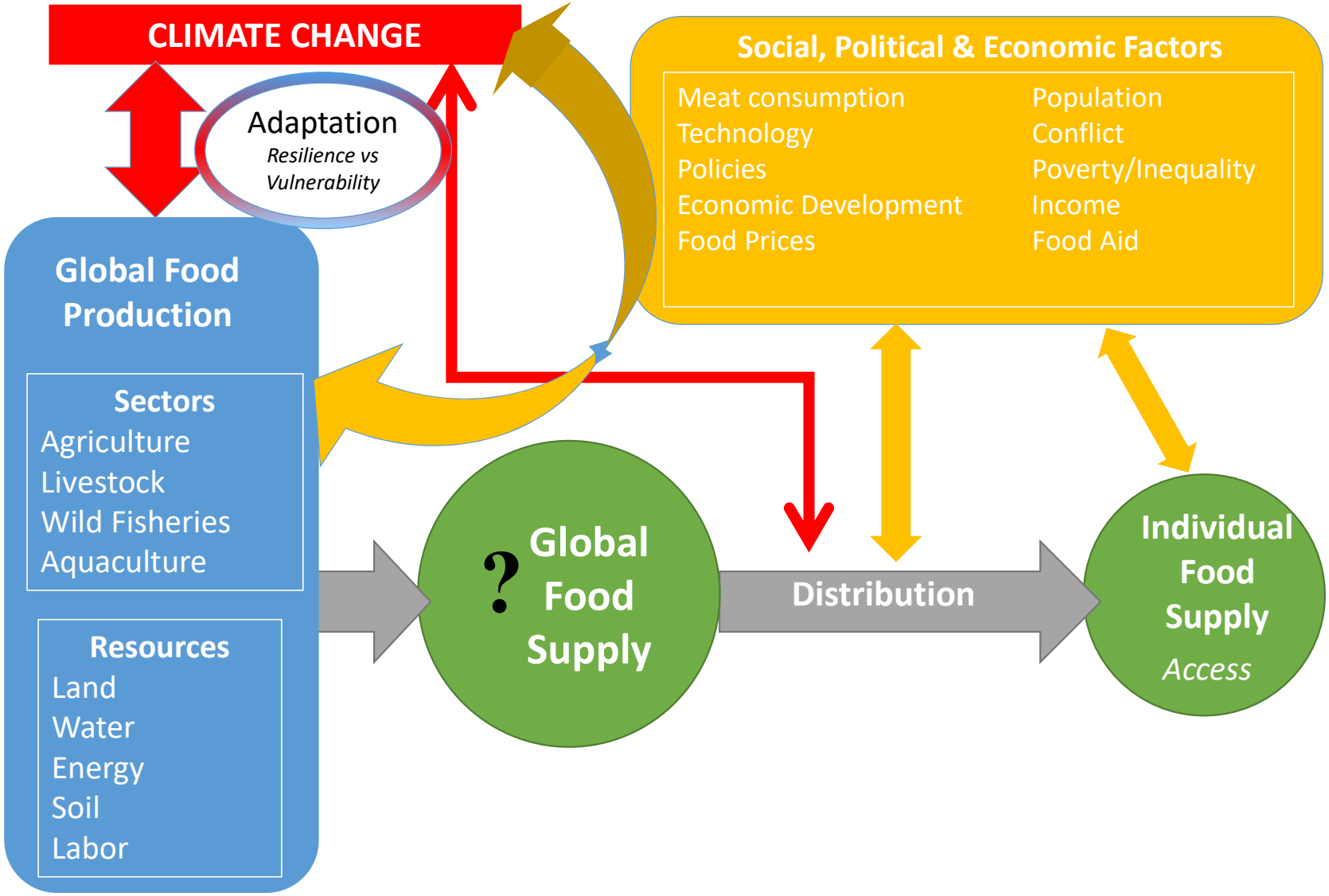
Food Supply and Climate Change

Grain yields ↓ by 10% for every 1°C ↑ in global average surface T°

2°C to 3°C ↑ likely; 3°C to 5°C ↑ possible

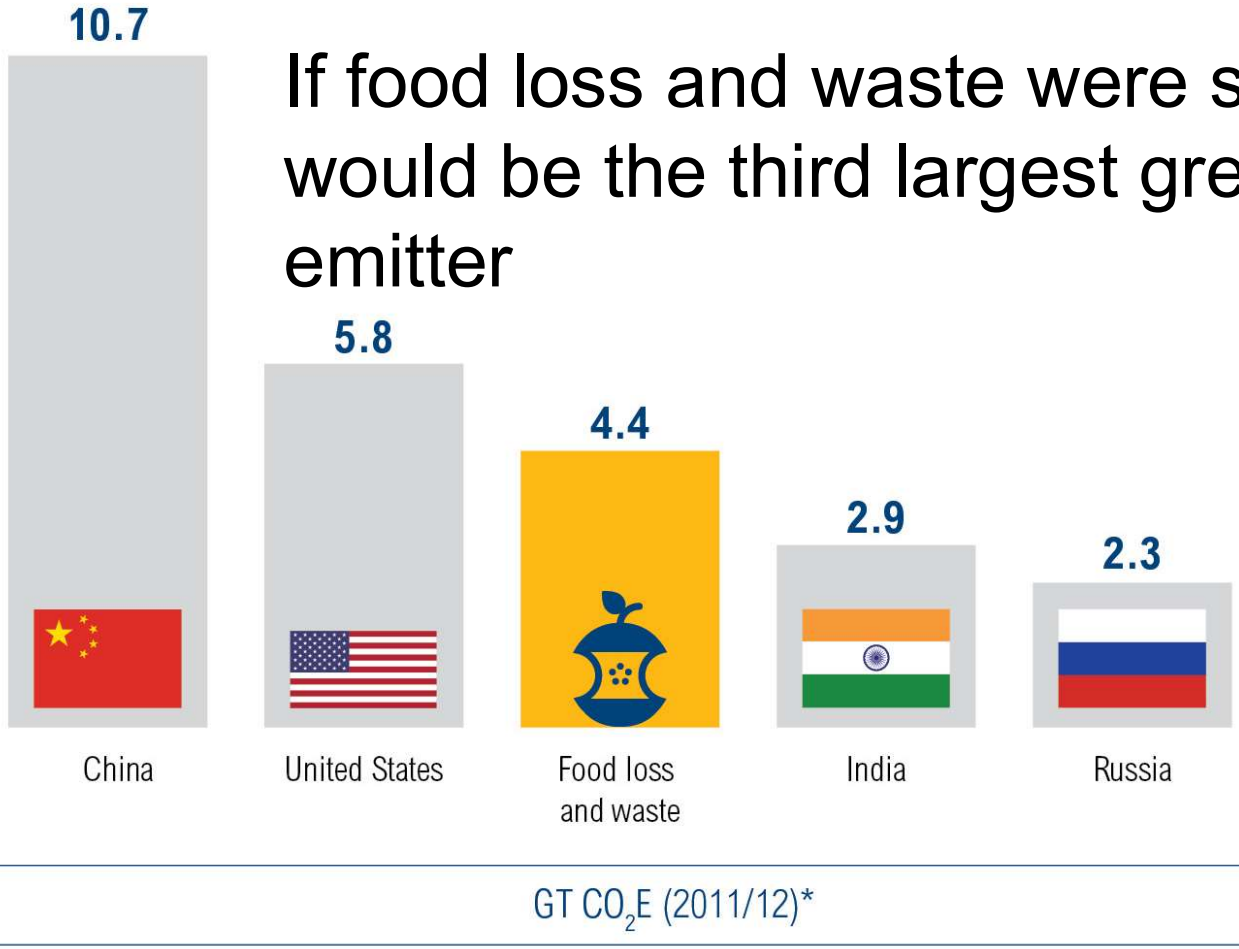
Therefore 20% to 30% reduction likely;

30% to 50% reduction possible


CLIMATE CHANGE
Adaptation
Resilience vs
Vulnerability
Social, Political & Economic Factors
Meat consumption
Technology
Policies
Economic Development
Food Prices
Population
Conflict
Poverty/Inequality
Income
Food Aid
Global Food Production
Sectors
Agriculture
Livestock
Wild Fisheries
Aquaculture
Resources
Land
Water
Energy
Soil
Labor
?
Global Food Supply
Distribution
Individual Food Supply
Access

Socio-economic impact | Waste

If food loss and waste were seen as a country it would be the third largest greenhouse gas emitter



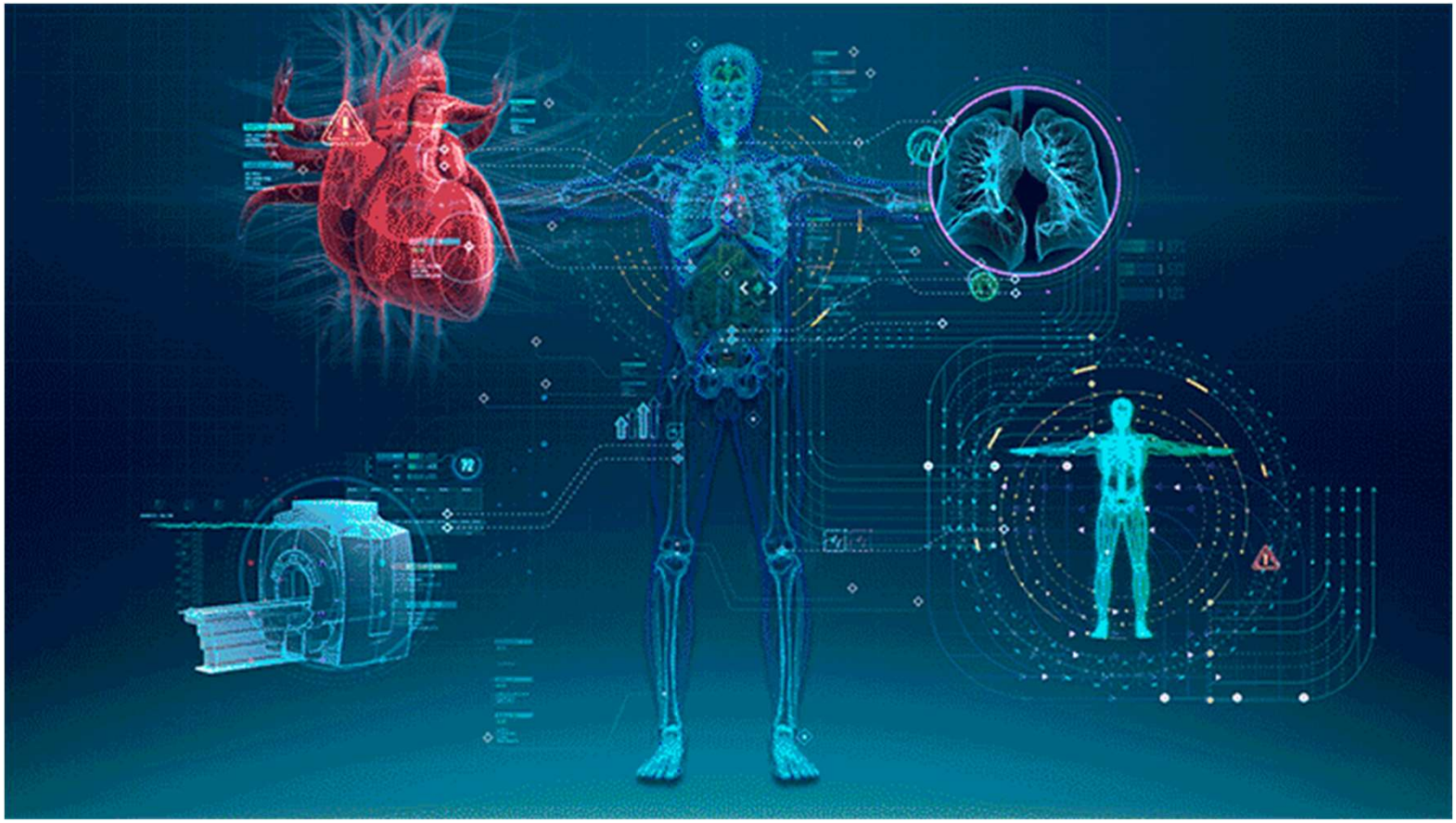
* Figures reflect all six anthropogenic greenhouse gas emissions, including those from land use, land-use change, and forestry (LULUCF). Country data is for 2012 while the food loss and waste data is for 2011 (the most recent data available). To avoid double counting, the food loss and waste emissions figure should not be added to the country figures.

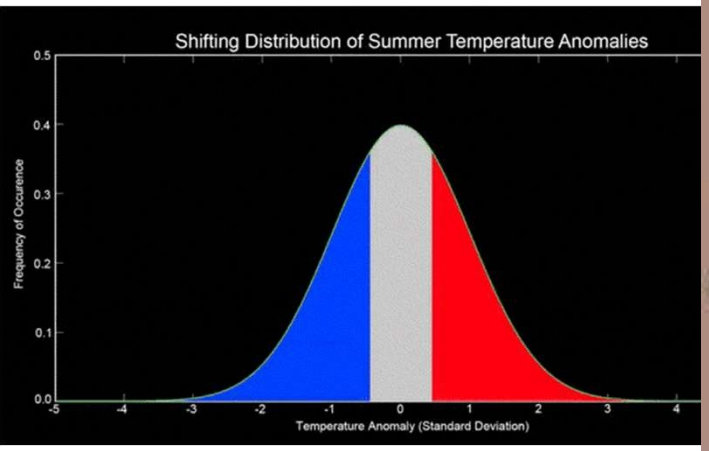
Source: CAIT. 2015; FAO. 2015. *Food wastage footprint & climate change.* Rome: FAO.

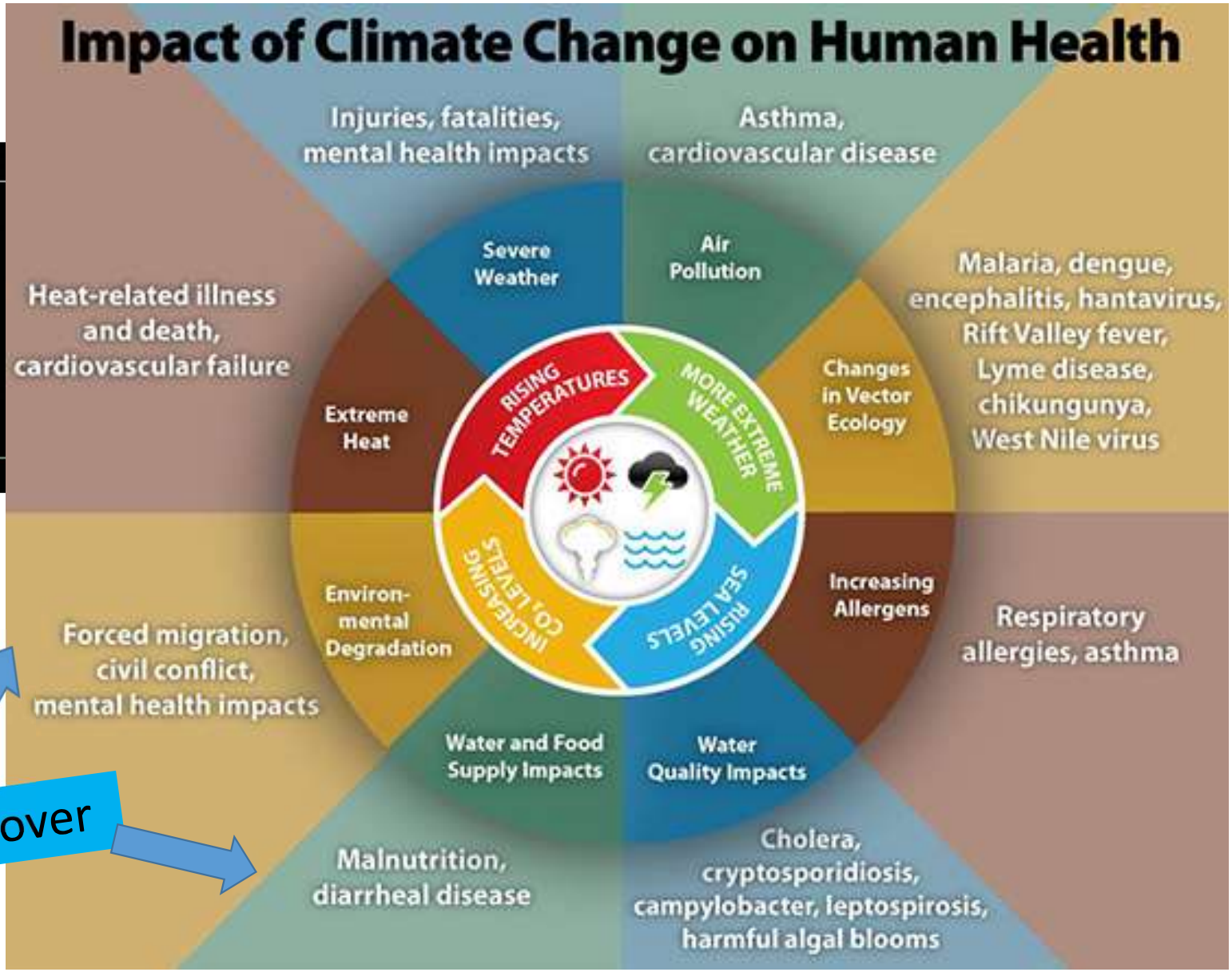
WORLD RESOURCES INSTITUTE

A million bottles a minute: world's plastic binge 'as dangerous as climate change' The Guardian

Health impact

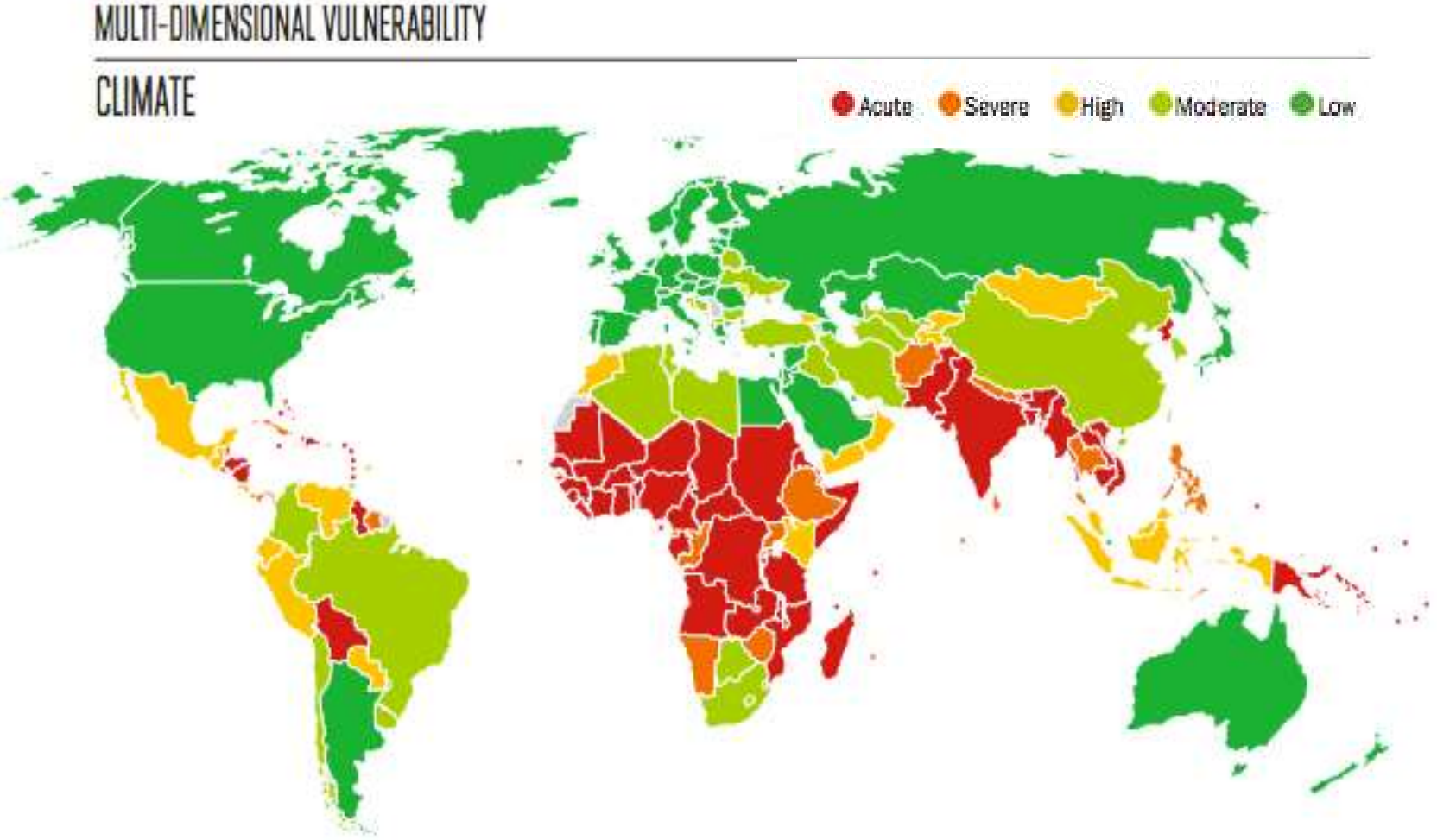






Children all over

100 mln will die by 2030 if world fails to act on



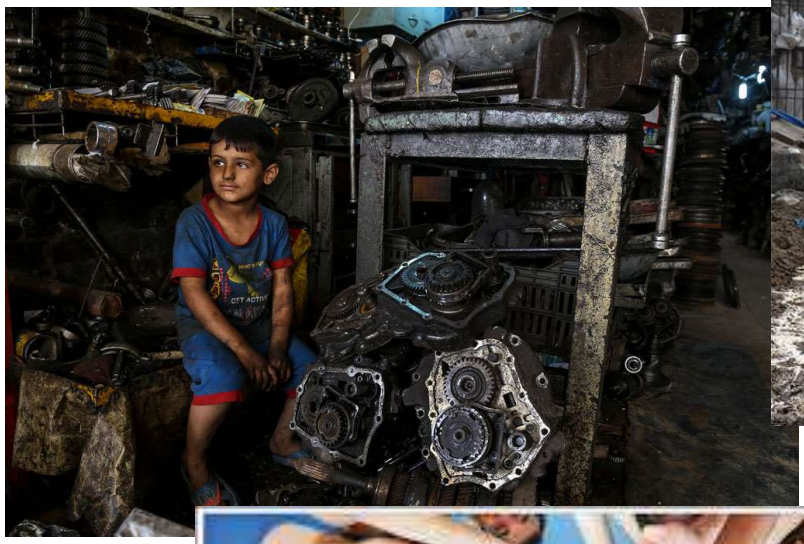
http://daraint.org/climate-vulnerability-monitor/climate-vulnerability-monitor-2012/

NUMBER OF DEATHS

		2010	2030
Climate	Diarrheal Infections	85,000	150,000
	Heat & Cold Illnesses	35,000	35,000
	Hunger	225,000	380,000
	Malaria & Vector Borne Diseases	20,000	20,000
	Meningitis	30,000	40,000
	Environmental Disasters	5,000	7,000
Carbon	Air Pollution	1,400,000	2,100,000
	Indoor Smoke	3,100,000	3,100,000
	Occupational Hazards	55,000	80,000
	Skin Cancer	20,000	45,000
World		**4,975,000**	**5,957,000**

Children as vulnerable group

Children live



And Children Die

5.2 million children died before age 5 years (2019)

1.5 million died in age group 1- 4 years

2.4 million died in the neonatal period.

Leading causes

- preterm birth complications
- pneumonia
- Congenital anomalies
- diarrhoea and malaria

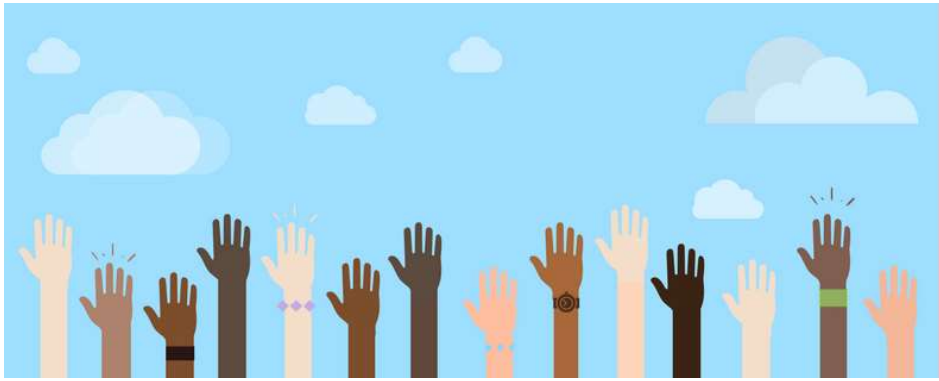
Climate change vulnerable groups

Increase children's exposure to extreme temperatures, polluted air and water, extreme weather events, wildfires, infectious disease, allergens, pesticides, and other chemicals.

Children carry the greatest disease burden.

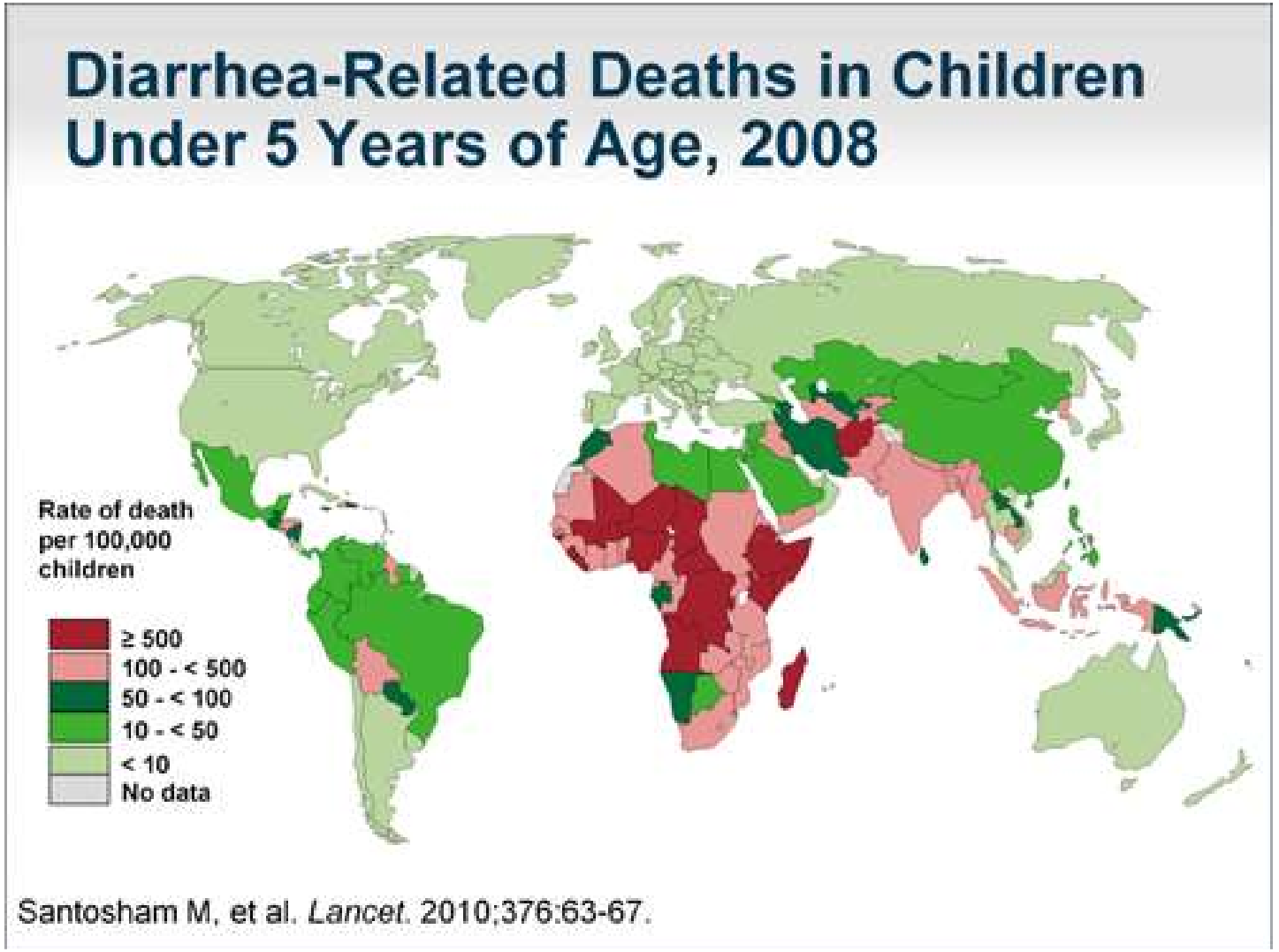
Young vulnerable to heat-related illness and death.

Poor families lack the resources, adequate shelter and access to air conditioning.



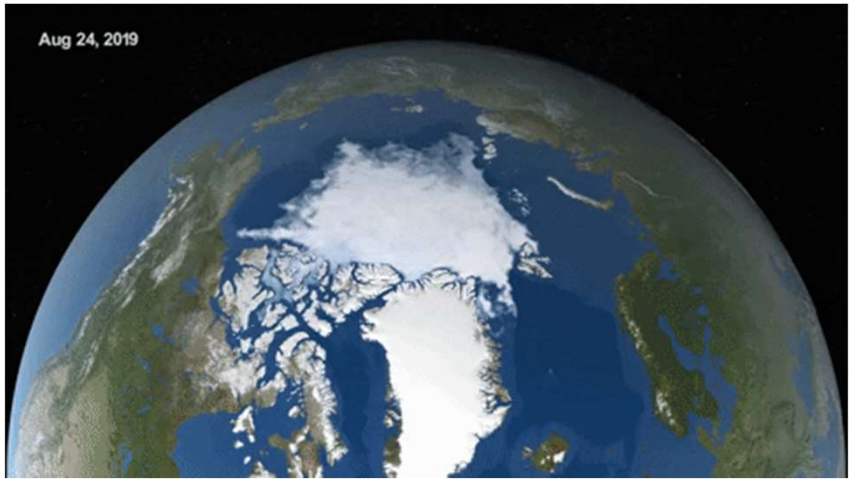
Source: U.S. Environmental Protection Agency. (2013). Americas Children and the Environment - Third Edition. Atlanta, Georgia.

Burden of disease perspective

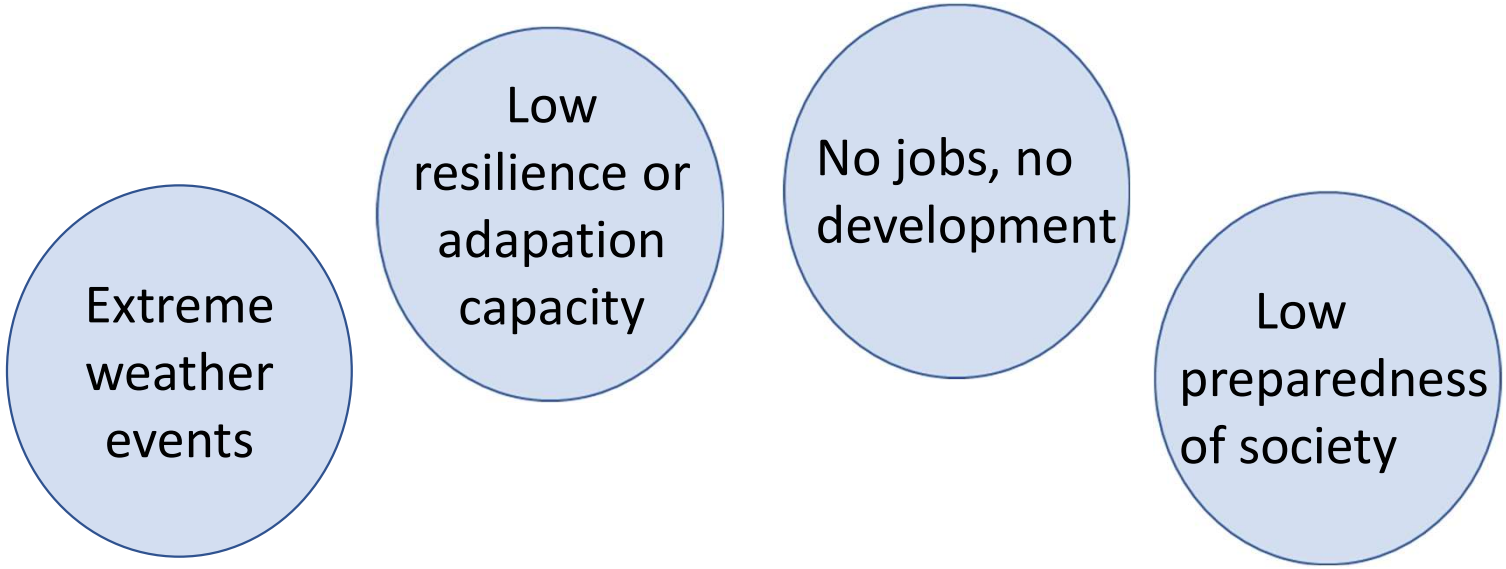


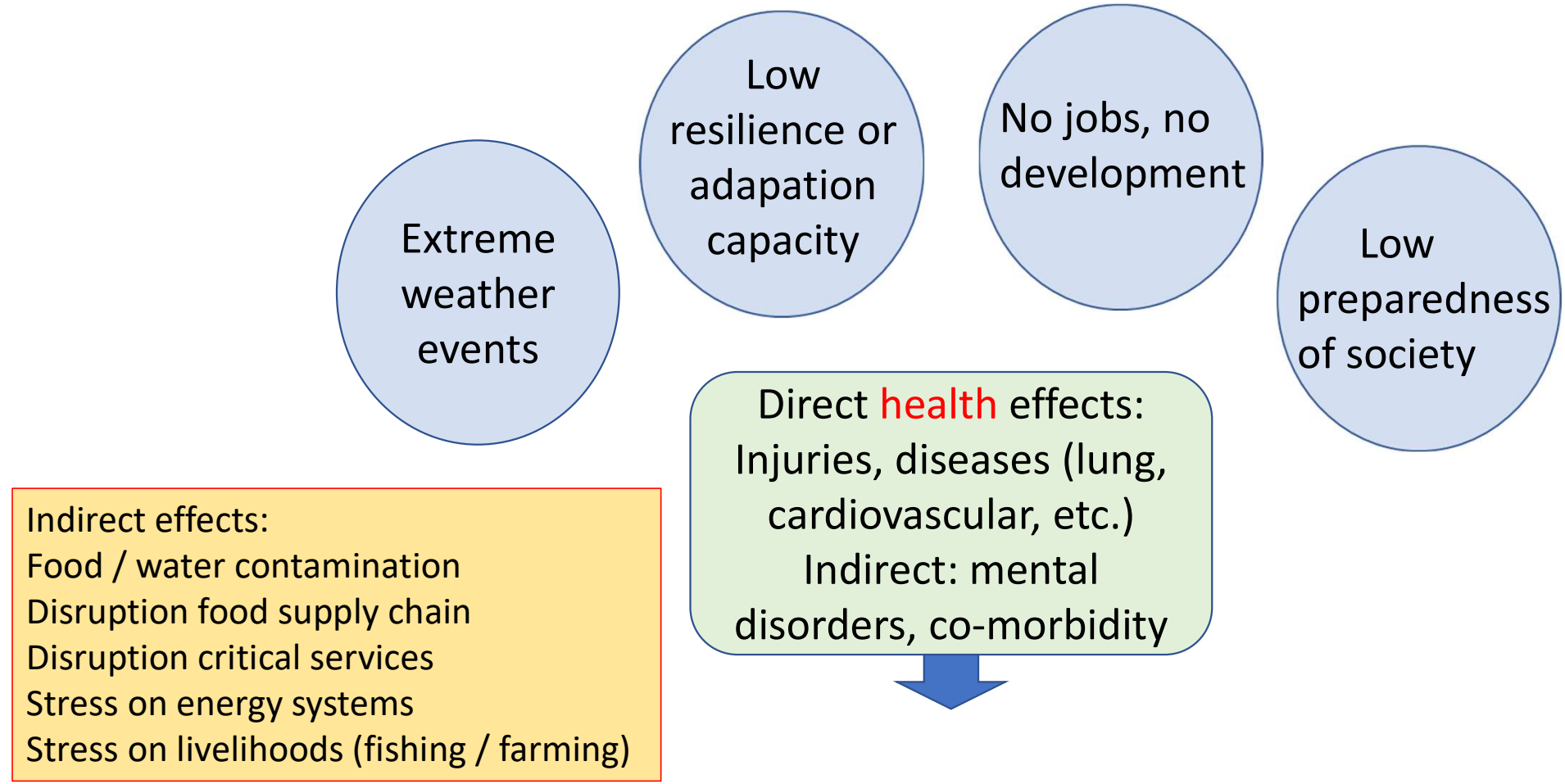
Hot topics

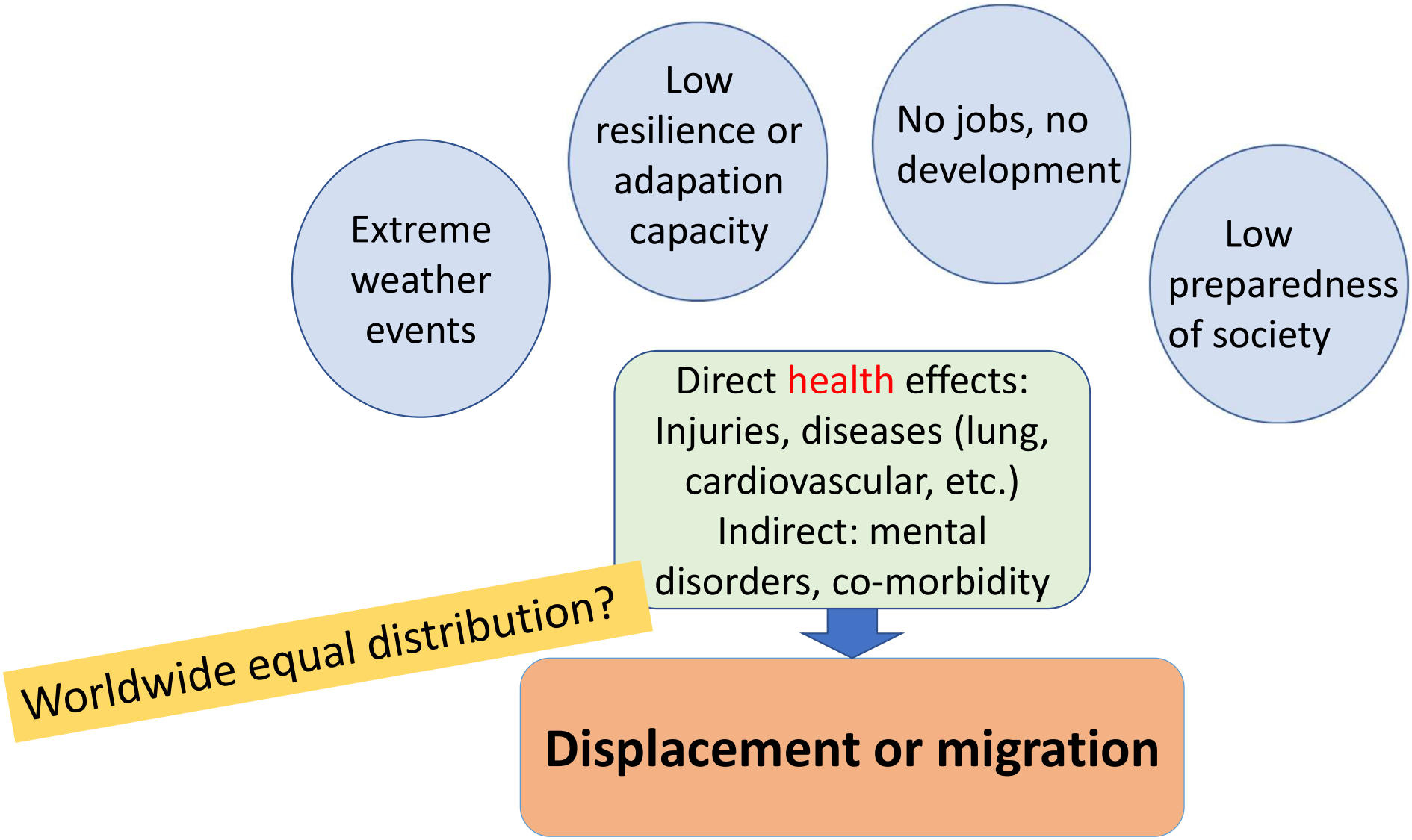
Climate and the changing planet

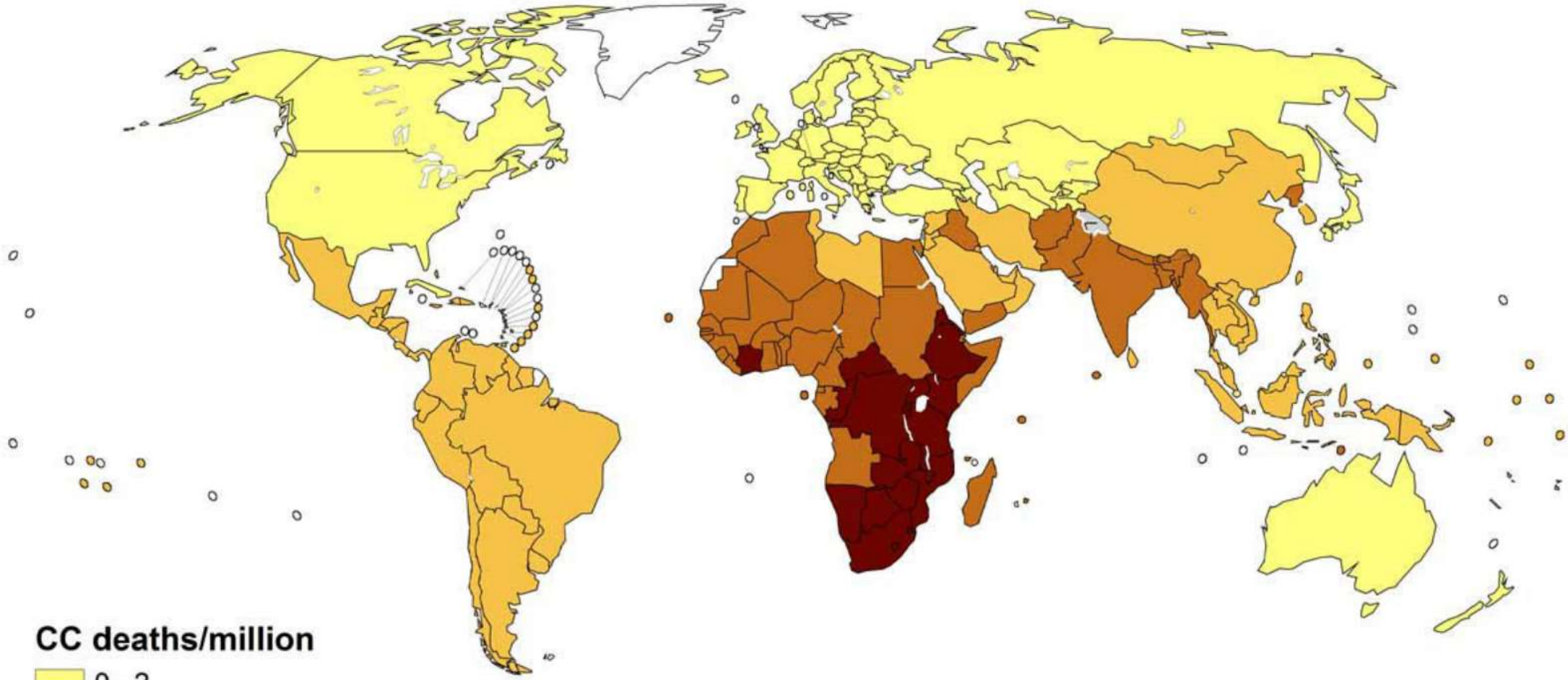


What can we expect?


Extreme weather events
Low resilience or adapation capacity
No jobs, no development
Low preparedness of society


Extreme weather events
Low resilience or adapation capacity
No jobs, no development
Low preparedness of society
Direct health effects: Injuries, diseases (lung, cardiovascular, etc.) Indirect: mental disorders, co-morbidity
Indirect effects:
Food / water contamination
Disruption food supply chain
Disruption critical services
Stress on energy systems
Stress on livelihoods (fishing / farming)


Extreme weather events
Low resilience or adapation capacity
No jobs, no development
Low preparedness of society
Direct health effects: Injuries, diseases (lung, cardiovascular, etc.) Indirect: mental disorders, co-morbidity
Worldwide equal distribution?
Displacement or migration

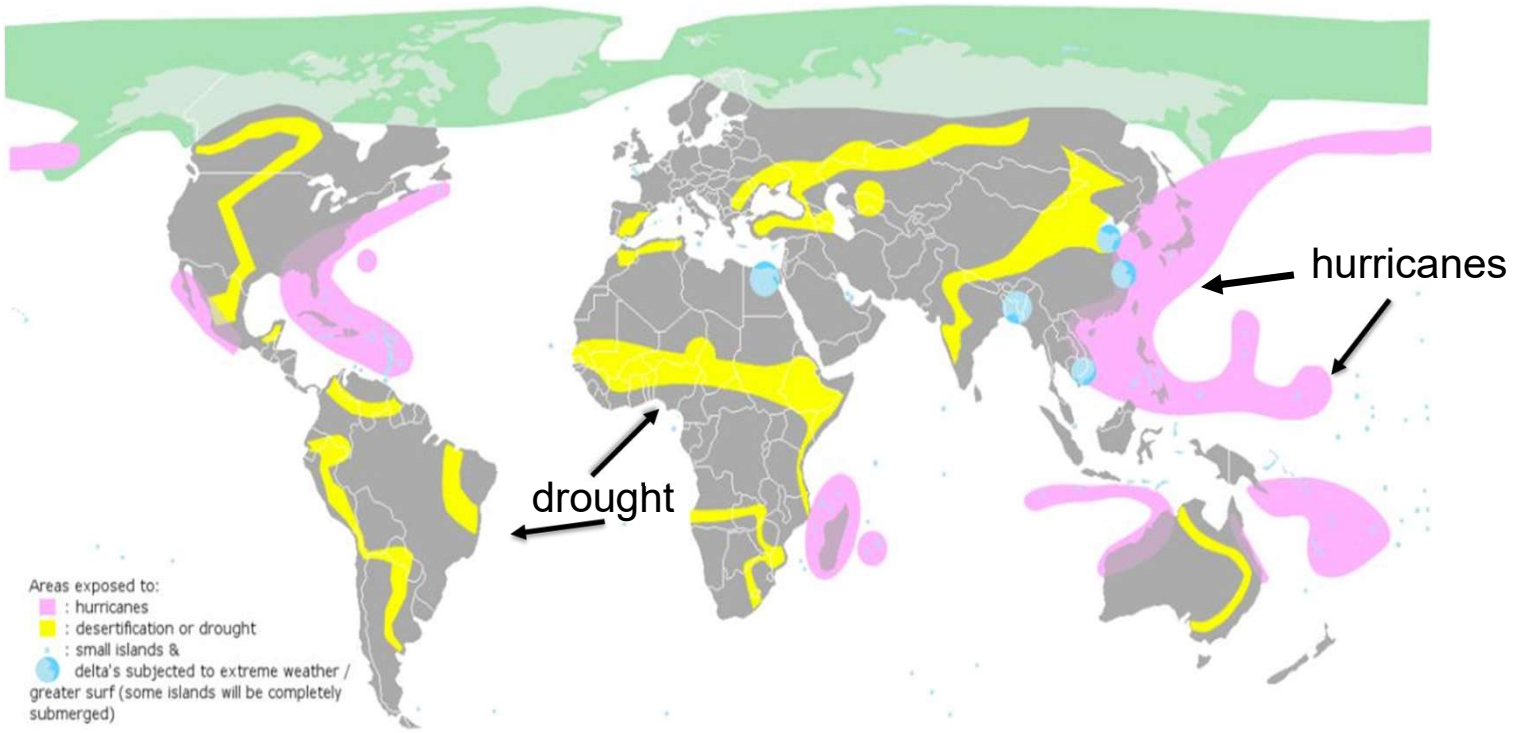


Estimates by WHO sub-region for 2000 (WHO World Health Report, 2002).

Unequal distribution of burden of disease

Macro ⇨ low- and middle-income countries
disadvantaged minority groups ⇨ air pollution
climate change

Vulnerable regions due to extreme weather events



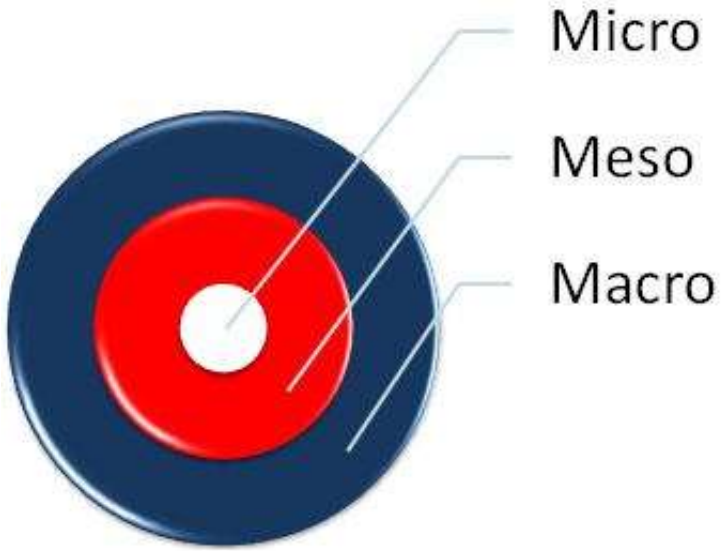
Unequal distribution of burden of disease

Macro	low- and middle-income countries	air pollution
	disadvantaged minority groups	climate change
Meso	ecologically fragile areas	air/water pollution
	polluted areas (air, water, soil, housing)	

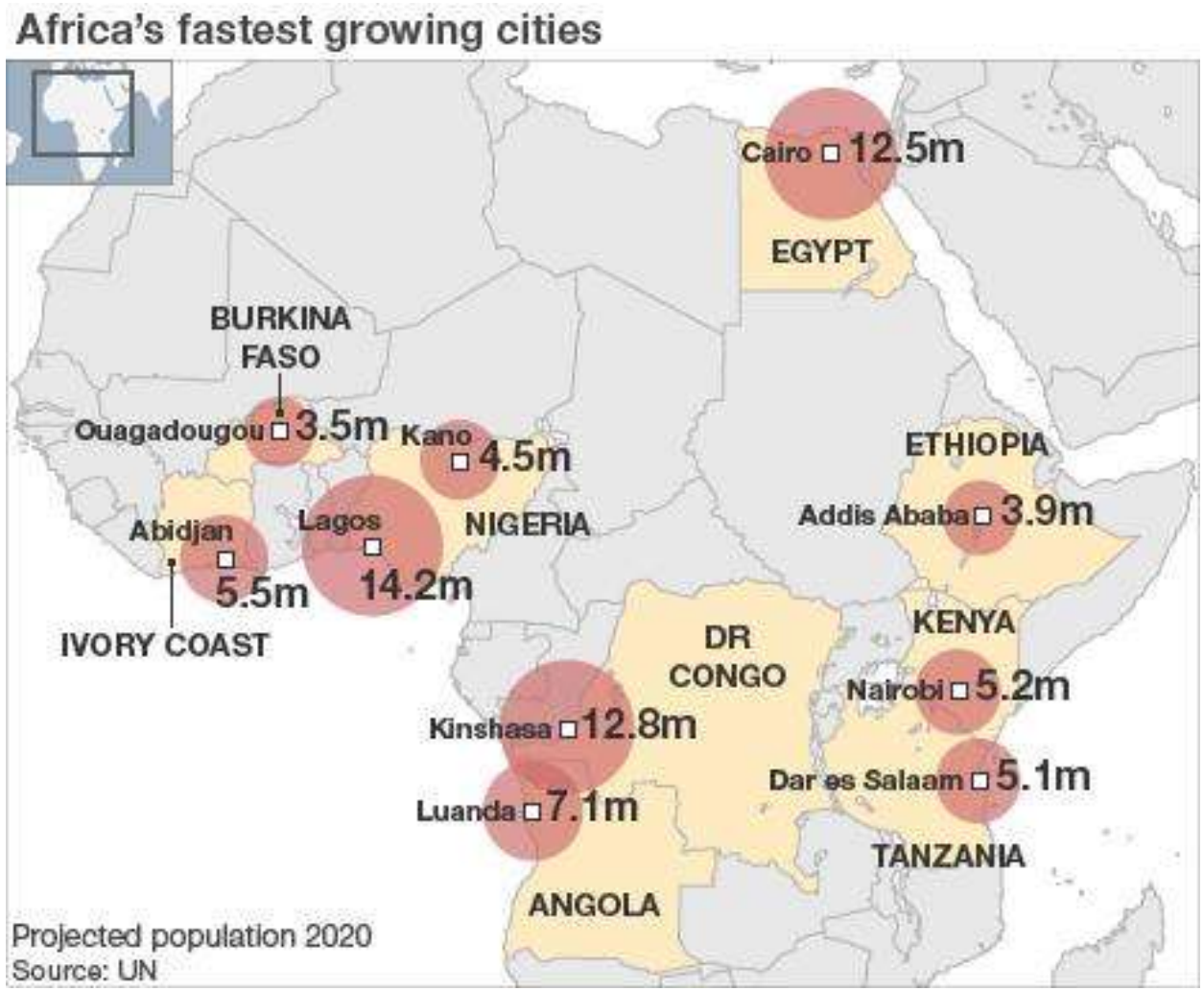
Behaviours and lifestyles, influence the (unequal) exposures to and experiences with these environments, creating health (inequity) impacts for current and future populations.

Meso level drivers

- Urbanization – over 50% of global population now resides in cities. Populations are exploding in third world mega-cities
- Increasing use of motor vehicles
- Industrialization (poor quality)
- Globalization. Relocation of hazardous industries to developing countries – steelmaking, chemical and pesticide production, shipbreaking, waste recycling



Focus on urbanization


Africa's fastest growing cities
Cairo 12.5m
EGYPT
BURKINA FASO
Ouagadougou 3.5m
Kano 4.5m
NIGERIA
Abidjan 5.5m
Lagos 14.2m
IVORY COAST
ETHIOPIA
Addis Ababa 3.9m
KENYA
Nairobi 5.2m
DR CONGO
Kinshasa 12.8m
Luanda 7.1m
ANGOLA
Dar es Salaam 5.1m
TANZANIA
Projected population 2020
Source: UN

Unequal distribution of burden of disease

Macro	low- and middle-income countries	air pollution
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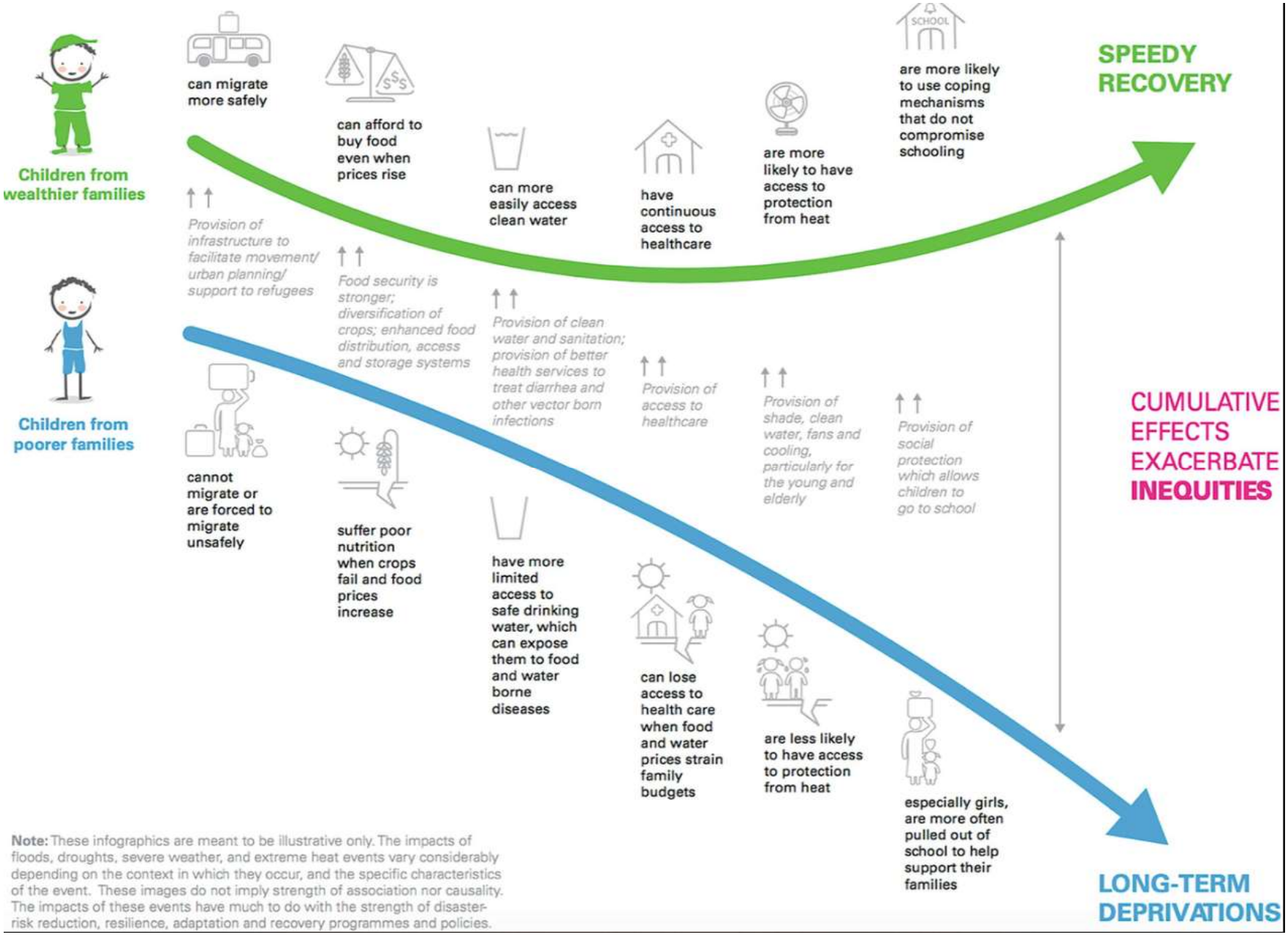
Micro ➡ personal environment (socio-economic) ➡ chemical, stress



Note: These infographics are meant to be illustrative only. The impacts of floods, droughts, severe weather, and extreme heat events vary considerably depending on the context in which they occur, and the specific characteristics of the event. These images do not imply strength of association nor causality. The impacts of these events have much to do with the strength of disaster-risk reduction, resilience, adaptation and recovery programmes and policies.

Children on the move - What reasons?

War

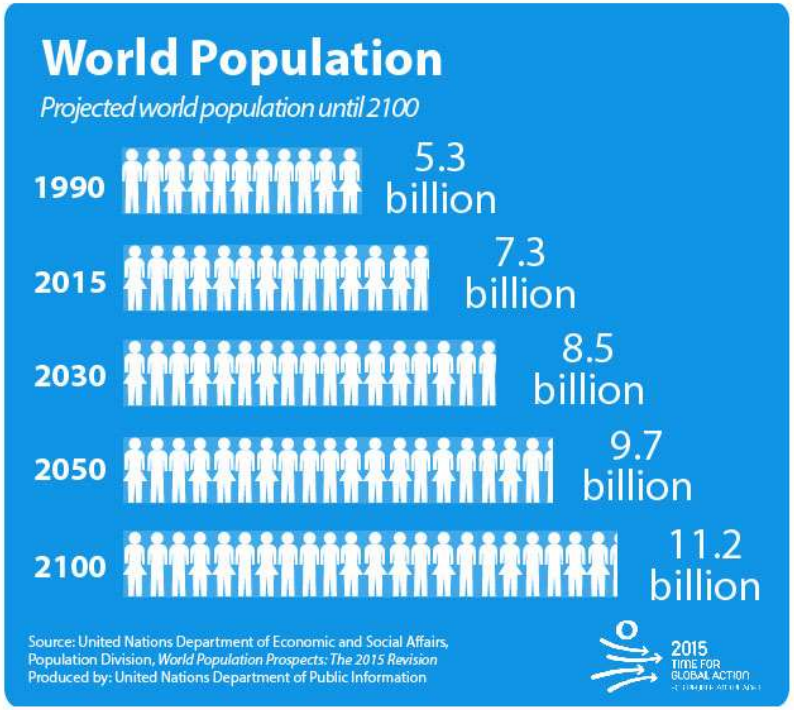
Water

Waste

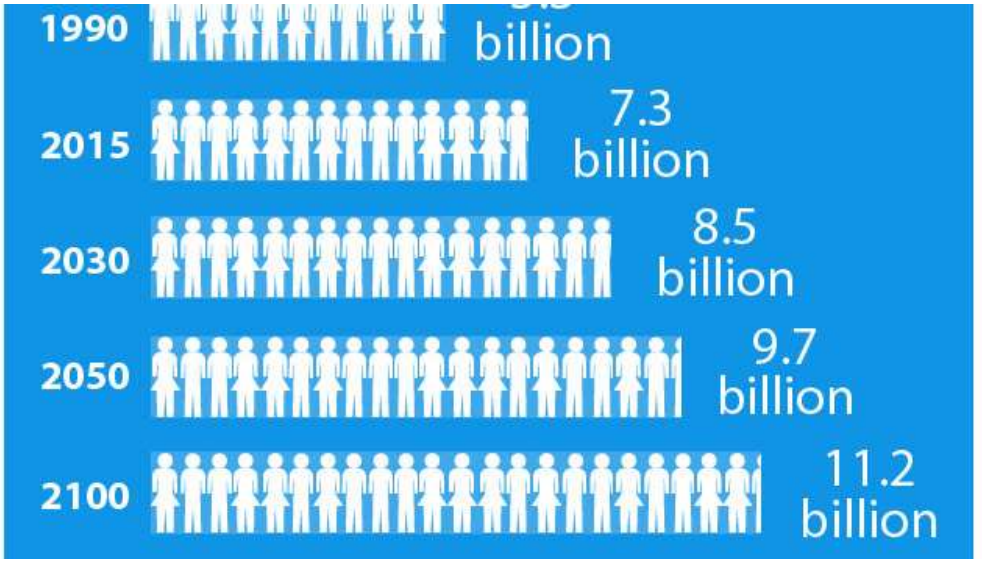
Poverty

Climate

Food



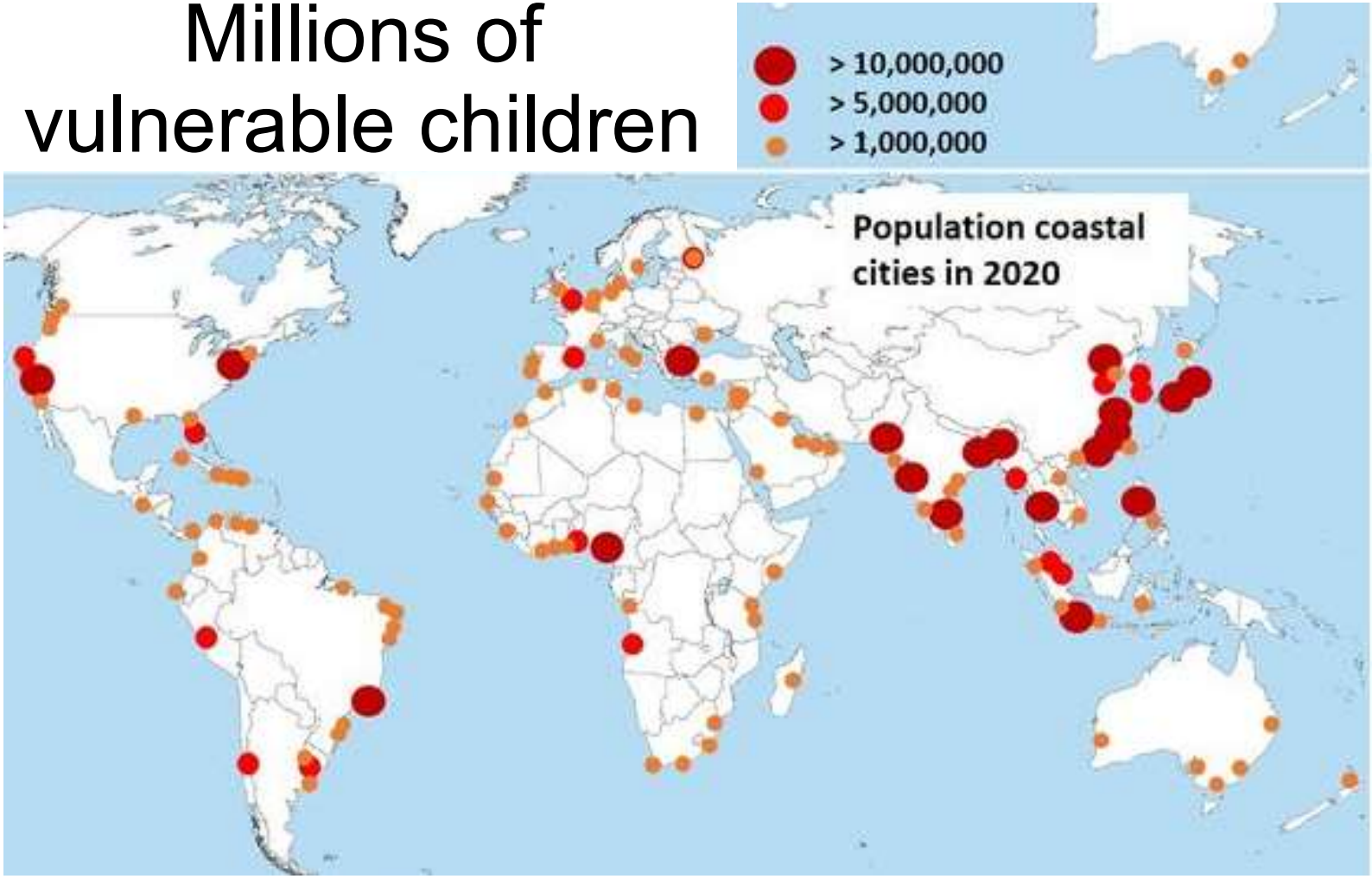
What is the potential consequence of this in numbers?



1 billion children in 2030 are potential environmental refugees

Focus on climate change

Millions of vulnerable children



Besides the socio-economic burden, stress is another global force to harm child health

Children are all potential environmental refugees

Children’s rights to a sustainable world

Final considerations

Health is long term benefit to society

Children are our insurance for prosperity

Their happiness lies in our hands and measures


Thank you for your attention
pvdhazel@upcmail.nl
INCHES