Planetary Health and Climate Justice:

Uniting Science, Ethics, and Communication in the Pursuit of Global Health Equity

12 July 2023

[● REC] Event is being **recorded**

We look forward to your questions, comments, and input using the **Q&A function**!

Follow-up:
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european public health alliance

@EPHA_EU

Climate Change and Health

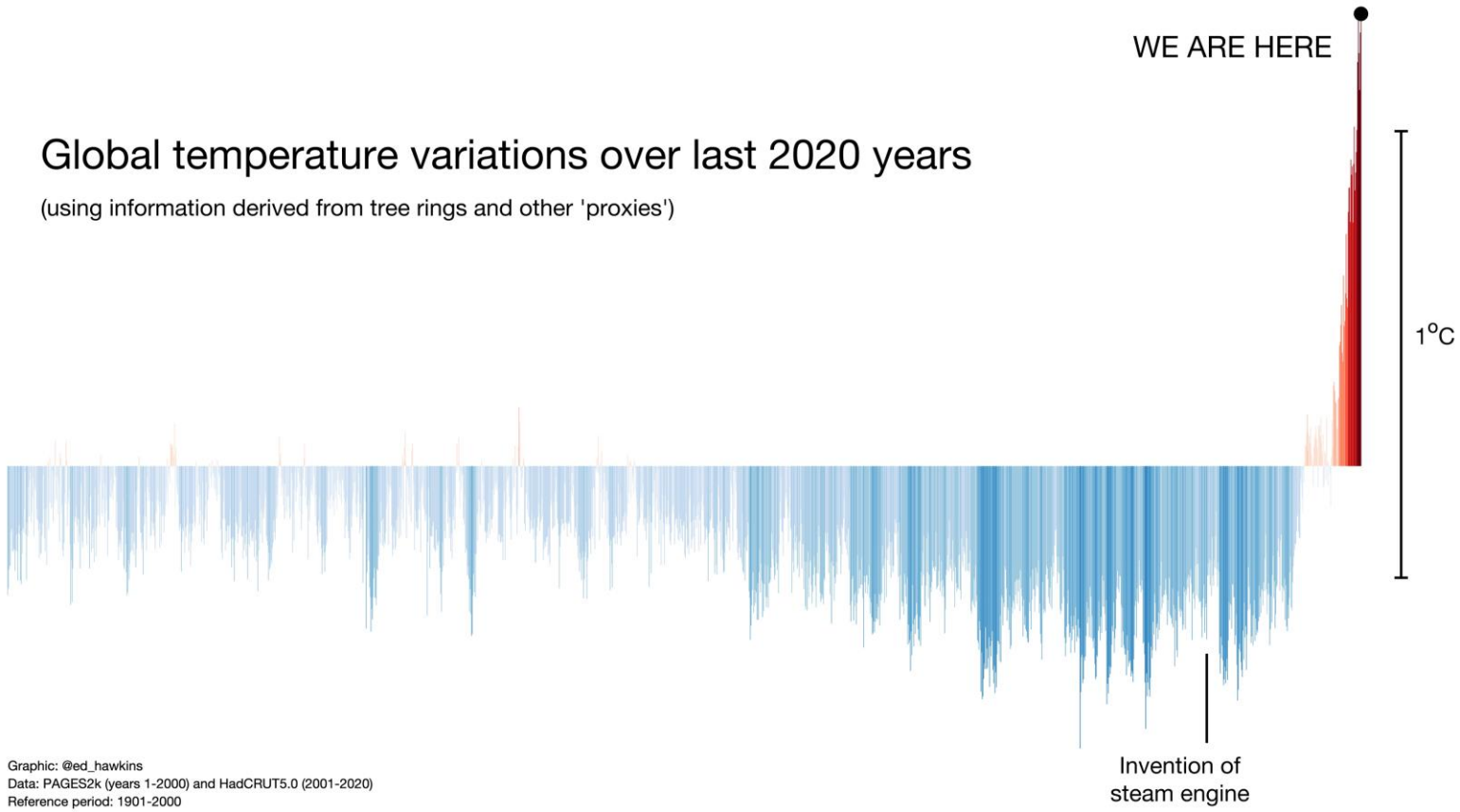
A triple planetary crisis and a triple billion global health burden

12 July 2023

I. CLIMATE SCIENCE

Climate science is settled:

Anthropogenic change is affecting the planet's climate



Global surface temperature has increased faster since 1970 than in any other 50-year period over at least the last 2000 years

IPCC, 2023

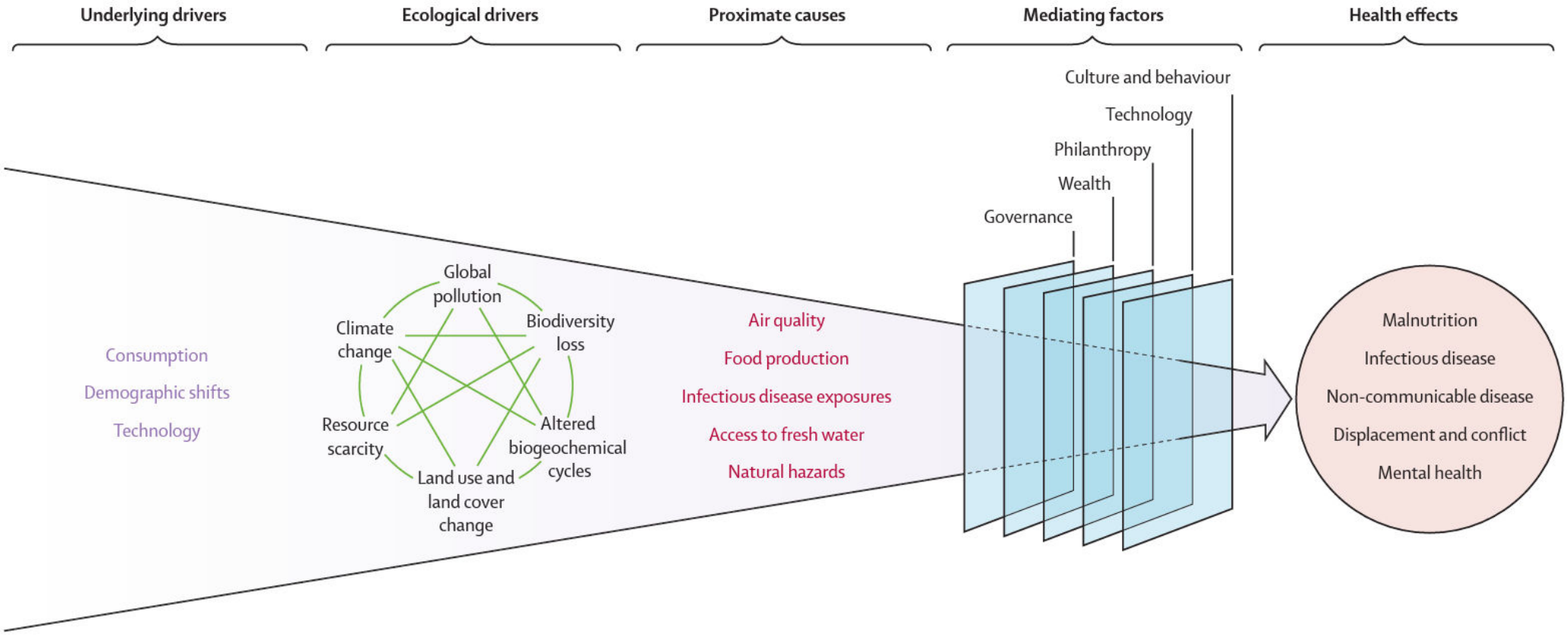
“1.5 degrees Celsius is a physical limit it is not a political target”

World Economic Forum, 2023

Planetary Health

Human health and the health of our planet are inextricably linked

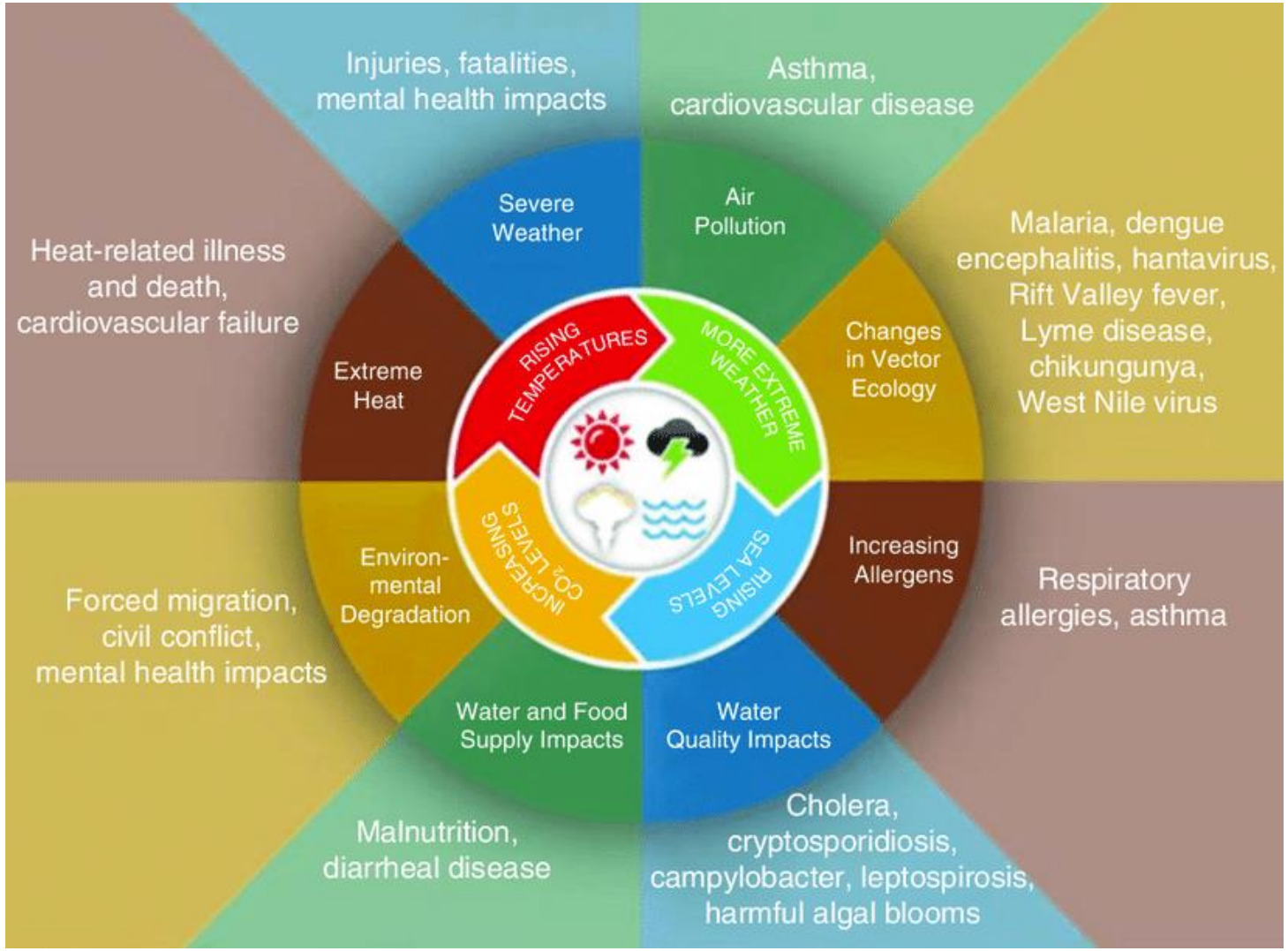
Our civilisation depends on human health, flourishing natural systems, and the wise stewardship of natural resources

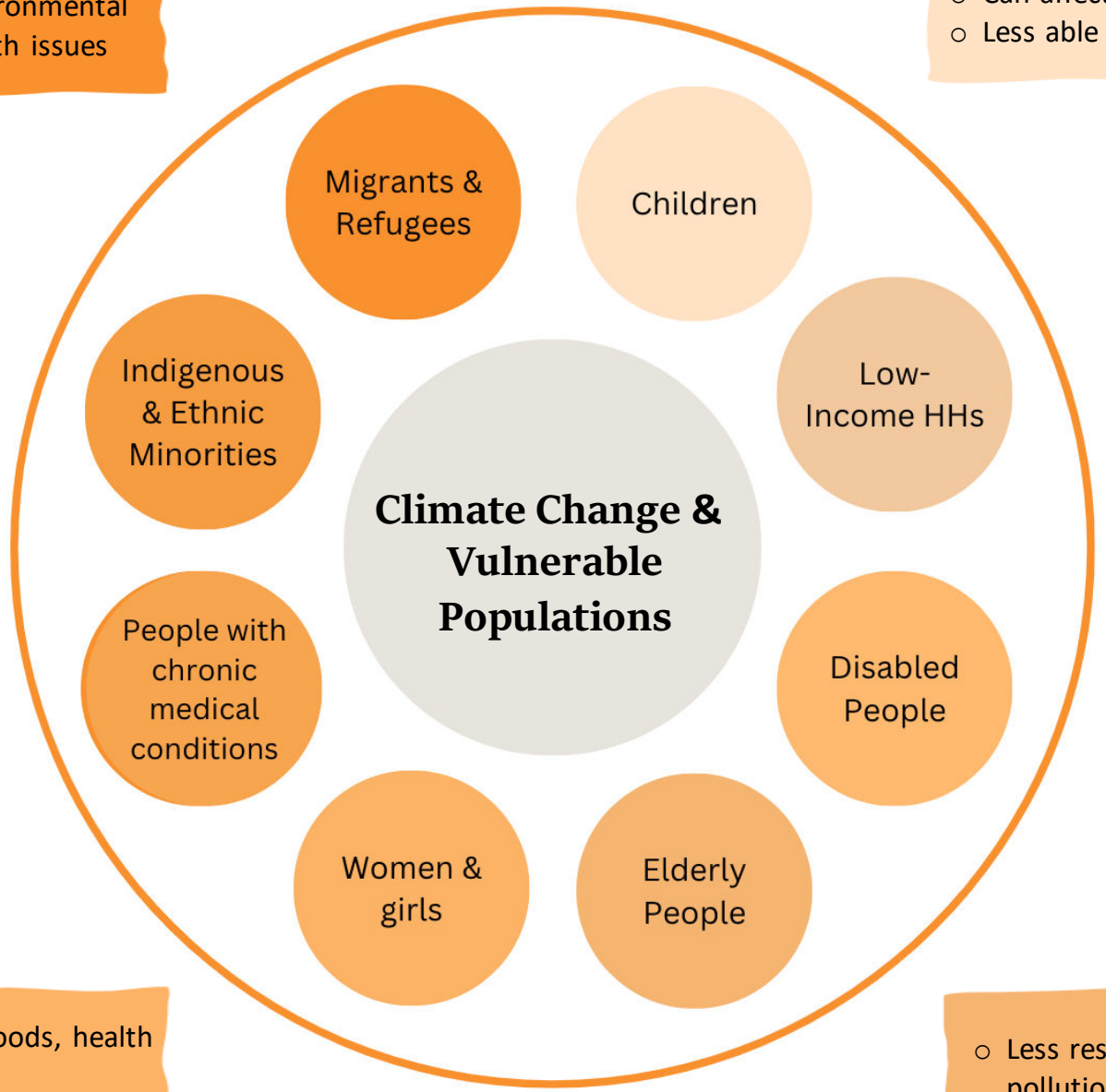


Myers, 2017. The Lancet

What are the impacts on human health?

I. Food security
II. Water security
III. Energy security
IV. Migration, planned and forced relocation
V. Communicable diseases
VI. Non-communicable diseases (NCDs)
VII. Mental health
VIII. Infrastructure and social strain





- Relocation may increase exposure to environmental stressors, increases risk of long-term health issues

- Exacerbates existing inequalities
- Limited access to infrastructure and resources to mitigate and adapt

- Medical comorbidities increase risk of infectious diseases
- Access to life-saving medications (e.g. insulin) may be compromised

- Amplifies inequalities, threatening livelihoods, health and safety (gender-based violence)
- E.g.: Extreme heat increases incidence of stillbirth

- Can affect children before birth
- Less able to survive extreme temperatures, diseases

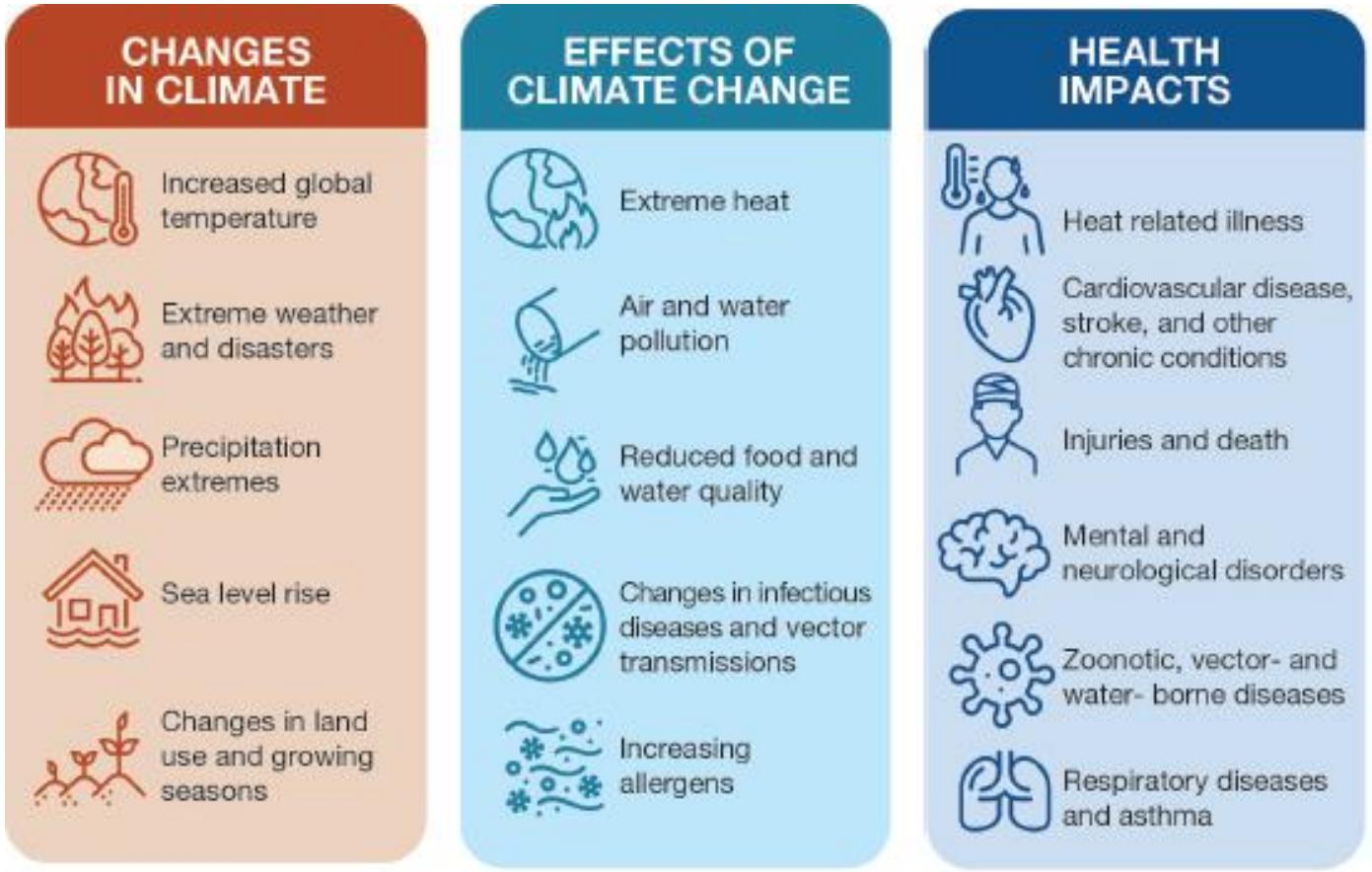
- Health shocks push around 100 million people into poverty every year, climate change is worsening this trend

- Only 35 of 192 parties to the Paris agreement referred to people with disabilities in their Determined Contributions

- Less resilience to environmental stressors: air pollution, heat, humidity, cold
- May worsen existing illnesses

Non-Communicable Diseases (NCDs)

7 out of 10 of the leading causes of deaths globally in 2019 were NCDs



Extreme climate extremes and changes in temperatures

↓

Altered food production and consumption (quantity & quality)

↓

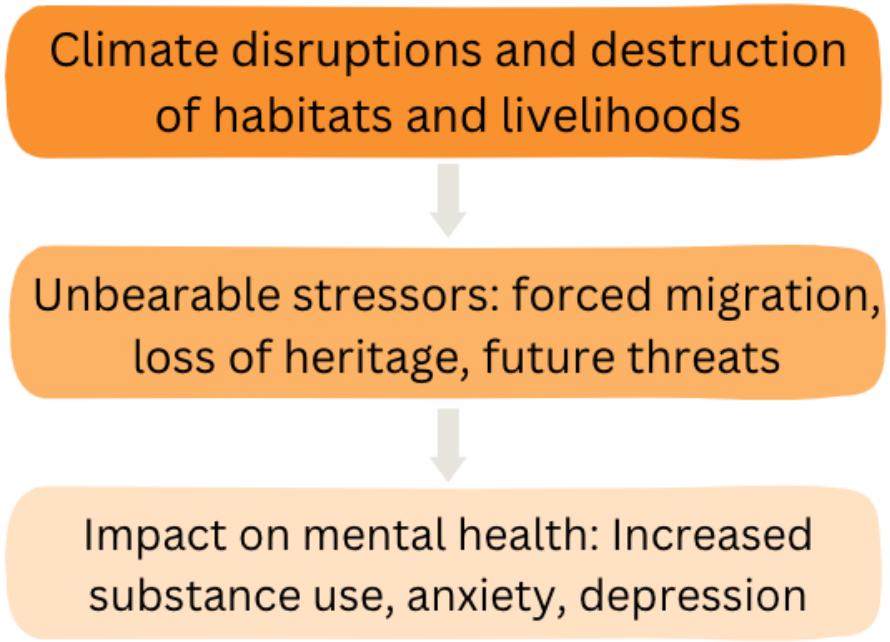
Malnutrition is estimated to cost the global economy over €3 trillion

↓

NCDs: Heart disease, cancer, diabetes, depression, increase blood pressure, higher risk of alcohol, smoking and substance use

WHO, 2021; EPHA, 2022

Mental Health



Who?

Low-income households & marginalised communities:

- Prone to being first impacted
- Lack the resources and emergency funds to recover and have fewer relocation options
- Face systemic barriers accessing mental health services

Indigenous communities:

- Strong cultural ties and way of life directly linked to nature
- Climate disruptions contributing to a sense of loss and disconnection

Youth

- Climate anxiety from threat of future impacts

People with existing mental disorders:

- People with schizophrenia have 3 times higher odds of mortality during heatwaves, as the medication makes them more vulnerable to temperature changes

Sidik, 2023; DREES, 2021

Extreme weather, climate events

What? Heat, cold, fire, sea level, tropical cyclones and storms, droughts and flooding

Mortality?

- Between 2030 and 2050, climate change is expected to cause approximately 250 000 additional deaths **per year,** from malnutrition, malaria, diarrhoea and heat stress
- Weather disasters have already caused 8 times more deaths than the Hiroshima and Nagasaki bombs, according to the UN

Cost? From 1970-2021: 12,000 severe weather events, 2 million deaths, US$ 4.3 trillion in economic losses

Elespanol, 2023; IPCC, 2023; WMO, 2023

Case: Heat & cold

Heat:

- *Virtually certain* increase in hot extremes
- Across 854 urban areas in Europe over 20,100 deaths annually were attributed to heat
- 2022 was the hottest year on record for Belgium, France, Germany, Ireland, Italy, Luxembourg, Portugal, Spain, Switzerland and the U.K

Cold:

- Across the 854 urban areas in Europe over 203,000 deaths annually were attributed to cold
- Worsened by a lack of efficient and affordable housing stock, energy insecurity

2023 Southeast Asian Heatwave

Causes?

- Record-breaking heatwaves in April throughout South-East Asia
- Temperature exceeded the 'dangerous' threshold of 41°C

Consequences?

- On one day in Navi Mumbai, India some sources mention 650 hospitalisations
- Power cuts, school closures
- March-April 2022 heatwave in India triggered forest fires, which worsened global shortages of wheat

Why?

- Likelihood of the event is at least a **factor of 30 due to climate change** in India and Bangladesh

IPCC, 2023; Lancet, 2023; WWA, 2023, Copernicus, 2023

Case: Severe Storms & Floods

- *High confidence* climate change will more than double the likelihood of strong cyclones by 2050
- *High confidence* of increase in the frequency and intensity of heavy precipitation -> increasing flooding
- Few countries have attributed resources for people with reduced mobility and other disabilities to adapt to cyclones and floods

2021 Western Europe Floods

Causes?

- Record daily precipitation in Belgium and Germany since 1950
- Unusually high temperature of the Baltic Sea bringing humid air

Consequences?

- Over 200 fatalities in Germany and Belgium
- Estimated total cost of €46 billion
- Damage to pharmacies, hospitals, sewerage, and disruption to health-care services including administration of COVID-19 vaccines

Why?

- Climate change made the likelihood of the event **9 times more likely** compared to a 1.2°C cooler climate
- **Monumental failure of information chain:** warnings came 4 days before and the European Flood Awareness System sent 25 warnings to public authorities

IPCC, 2023; Bloemendaal, 2022; Copernicus, 2021, Van Aalst, et al., 2021

Case: Drought

“Roughly half of the world’s population currently experience severe water scarcity” (IPCC)

Drought severity in Horn of Africa

Causes?

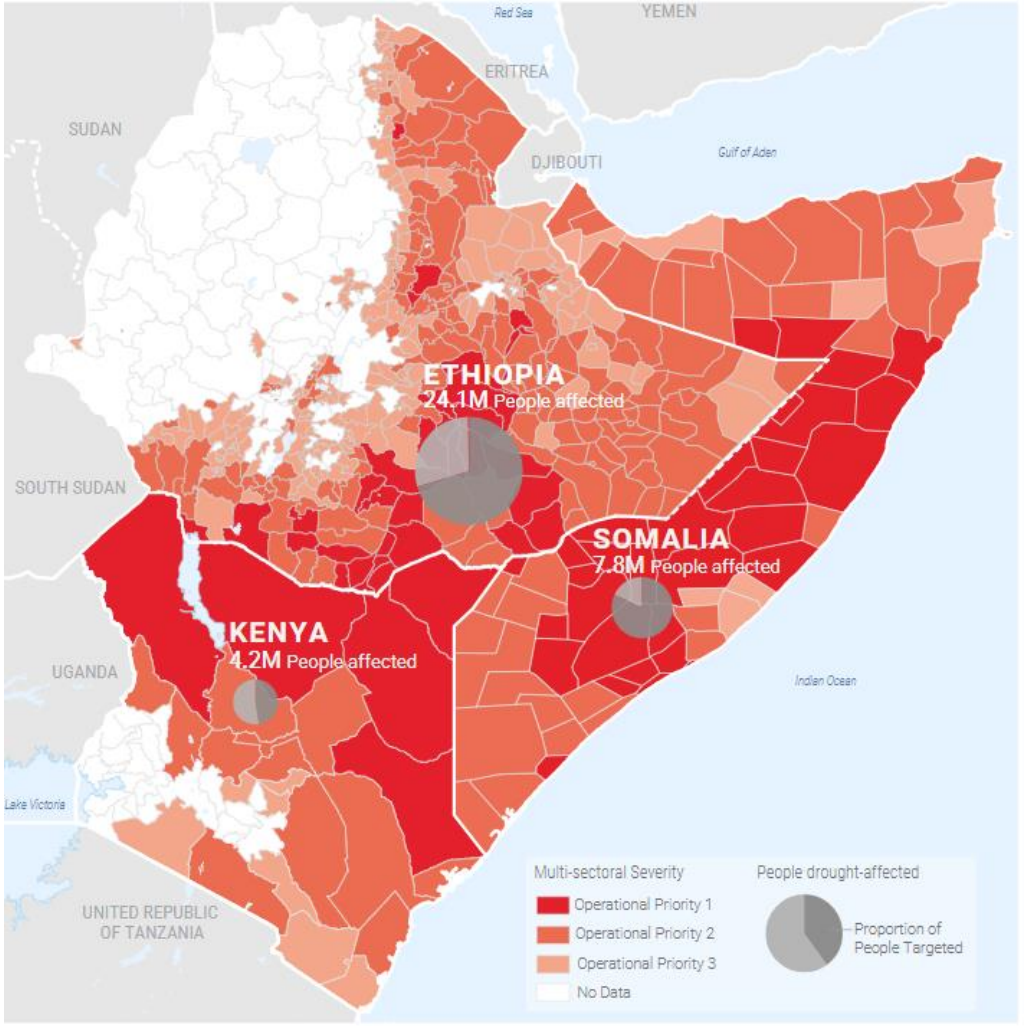
- 6th consecutive below average rainy season
- Compounded with heat extremes

Consequences?

- The 2020–2022 drought displaced 2.7 million people and killed 13 million livestock
- Water and food insecurity is **projected to deteriorate June 2023**
- Aprox. 1.2 million children will suffer from severe malnutrition
- Harvest failure, livestock losses, human conflicts, health decline

Why?

- Climate change made the likelihood of the event **100 times more likely** compared to a 1.2°C cooler climate (considered a conservative estimate)



IPCC, 2023; Copernicus, 2023

Justice Crisis

Climate change is causing a multitude of detrimental social, economic, health impacts on vulnerable communities who have historically contributed the least and are disproportionately affected

"3.3–3.6 billion people live in contexts that are *highly vulnerable* to climate change."

Between 2010 and 2020, human mortality from floods, droughts and storms was 15 times higher in highly vulnerable regions (Africa, Asia, Central and South America, LDCs, Small Islands)

By 2070, as many as 3 billion people will live in uninhabitable zones (mostly in LICs countries)

IPCC, 2023

Communication for Public Health

Communicating effectively the public health risks and opportunities is vital for the health community to advocate for mitigation and adaption

The key challenge is to

- Motivate change, but also to continue to engage in new and interesting ways

- Communicate the depth and complexity of public health effects that will be seen

Communication for Public Health

- EPHA ran a climate change and public health capacity building workshop
- Event had an introduction to climate science, public health impact, mitigation and adaption strategies, EU policy opportunities and health co-benefits
- This was followed by a session on creative communication and identifying new avenues for exploration
    - Novel ways of communicating
    - Novel tools for communication e.g. AI images

Outcomes

Brainstormed activities

- TV Talk Show on reducing meat consumption with discussion panel where diverse speakers throw twine to each other to display the interconnection of climate change risks and opportunities
- Train station installation on climate and air pollution
- Interactive public display where people can add physical or digital photos of medical waste
- Child-focused media to talk about the climate crisis and gain children's opinions, perspectives and actions
- Interactive game / app where players build a healthy city and need to take into consideration healthy urban policies, infrastructure and interventions

AI experimentation

- Brussels Grand Place subject to sea level rise
- The European Parliament and surrounding streets turned into green ways
- Climate concerned children read the news

Dr. Vladimir Kendrovski

Technical Officer (Climate Change and Health)
WHO Regional Office for Europe

Bonn, Germany

european public health alliance

World Health Organization
European Region

Climate-resilience and sustainability in WHO European Region

Dr Vladimir Kendrovski
WHO European Centre for Environment and Health
Bonn, Germany

EPHA: Planetary Health and Climate Justice: Uniting Science, Ethics, and Communication in the Pursuit of Global Health Equity

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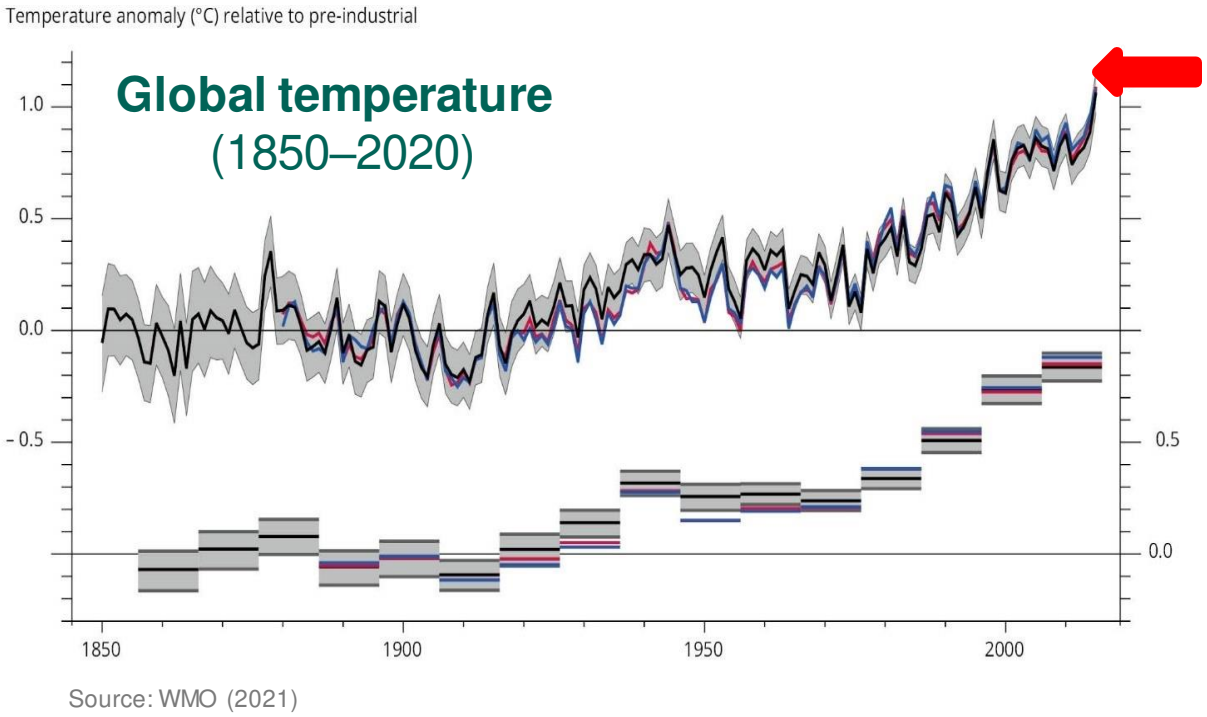
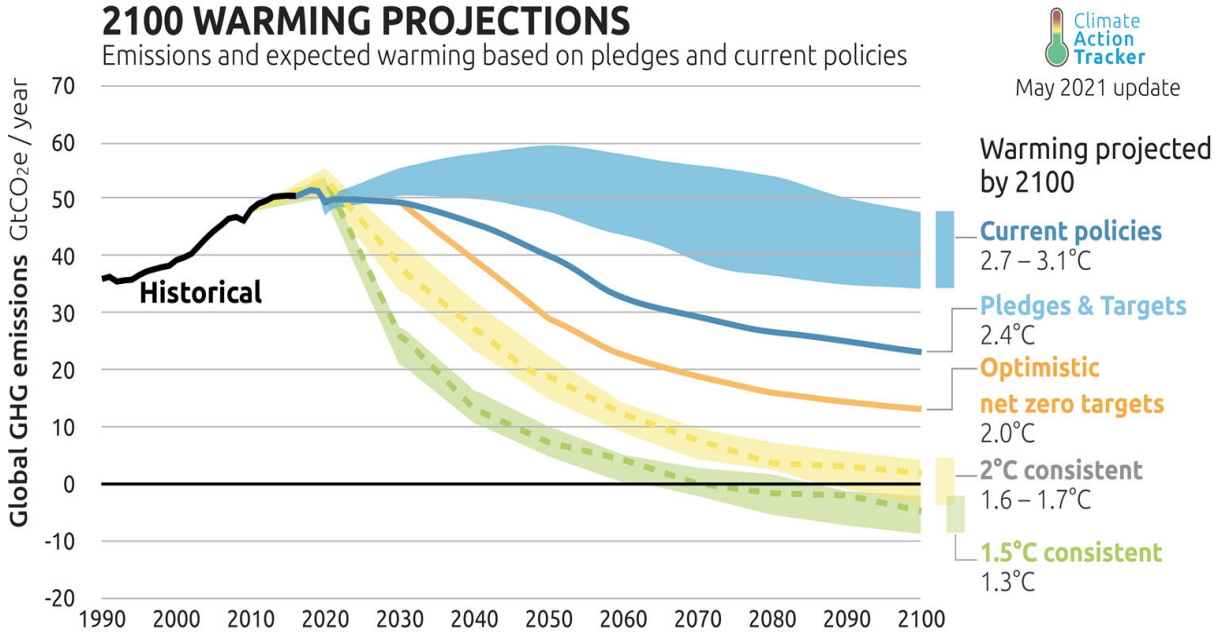
Climate change is breaking records



2022: 1.1-1.2 °C above pre-industrial level



World Health Organization
European Region

The climate crises is a health crises

World Health Organization
European Region

DIRECT IMPACTS

- Storm
- Drought
- Flood
- Heatwave
- Temperature Change
- Wildfires

INDIRECT IMPACTS

- Water Quality
- Air Quality
- Land Use Change
- Ecological change

HEALTH IMPACTS

- Mental Illness
- Undernutrition
- Injuries
- Respiratory Disease
- Allergies
- Cardiovascular Disease
- Infectious Diseases
- Poisoning
- Water-Borne Diseases
- Heat Stroke

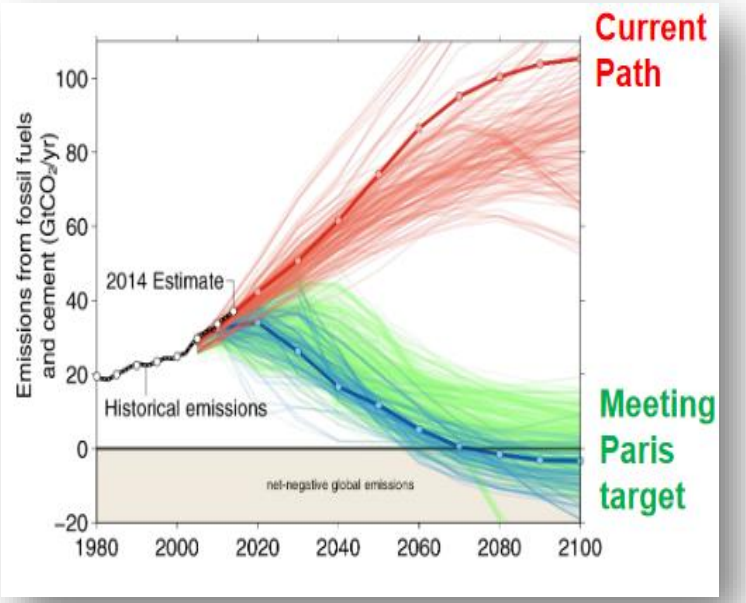
Source: https://www.nbcnews.com/id/wbna37193101

Climate actions by the health sector – leading by example

Protect health from full range of rising climate risks

Make healthcare facilities climate-resilient and environmentally sustainable

Reduce greenhouse gas emissions from health systems



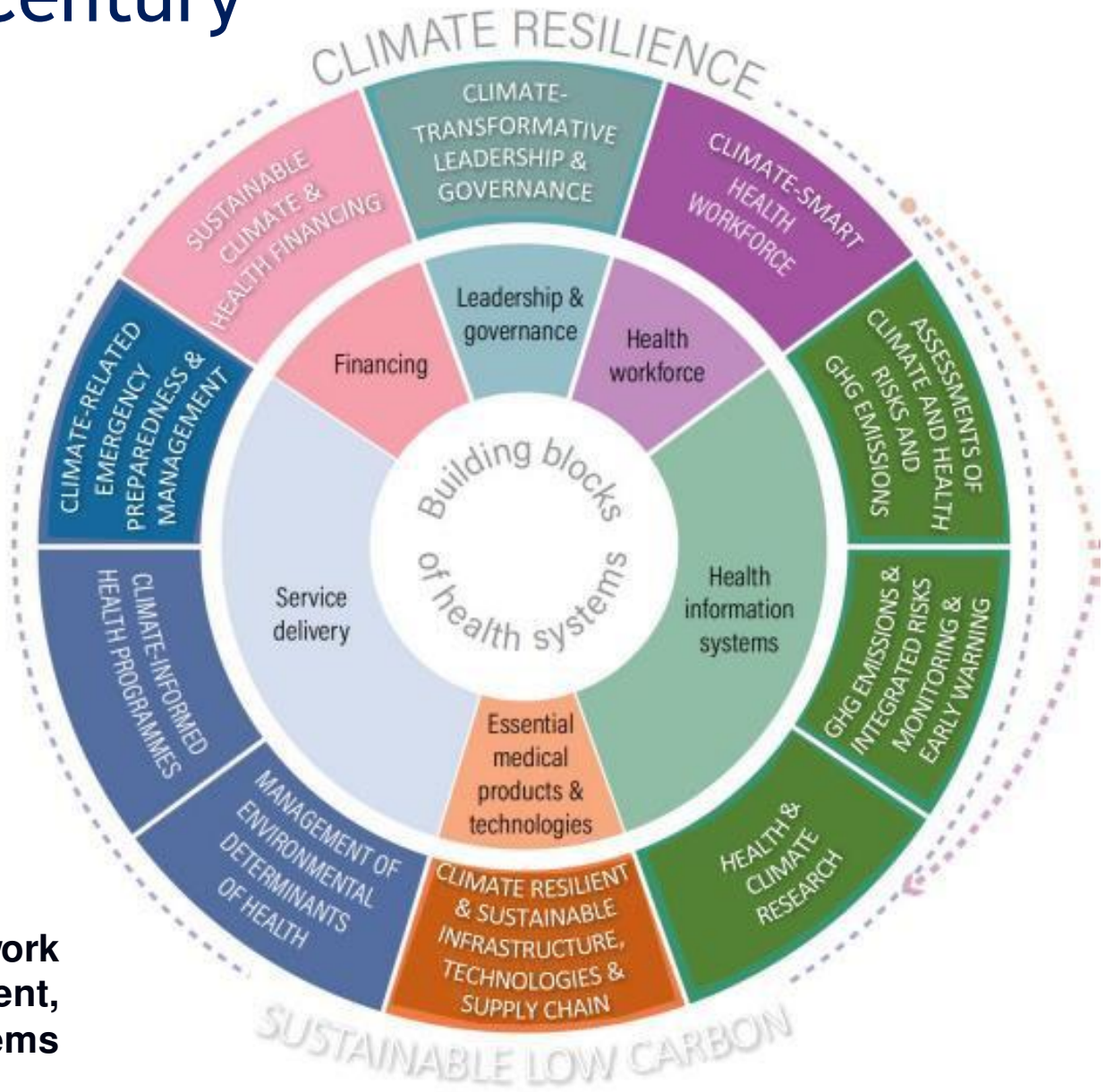
World Health Organization
European Region

Health systems fit for the 21st Century

Integration of climate considerations into building blocks of health systems

Reduction of the 5% of global carbon emissions due to healthcare

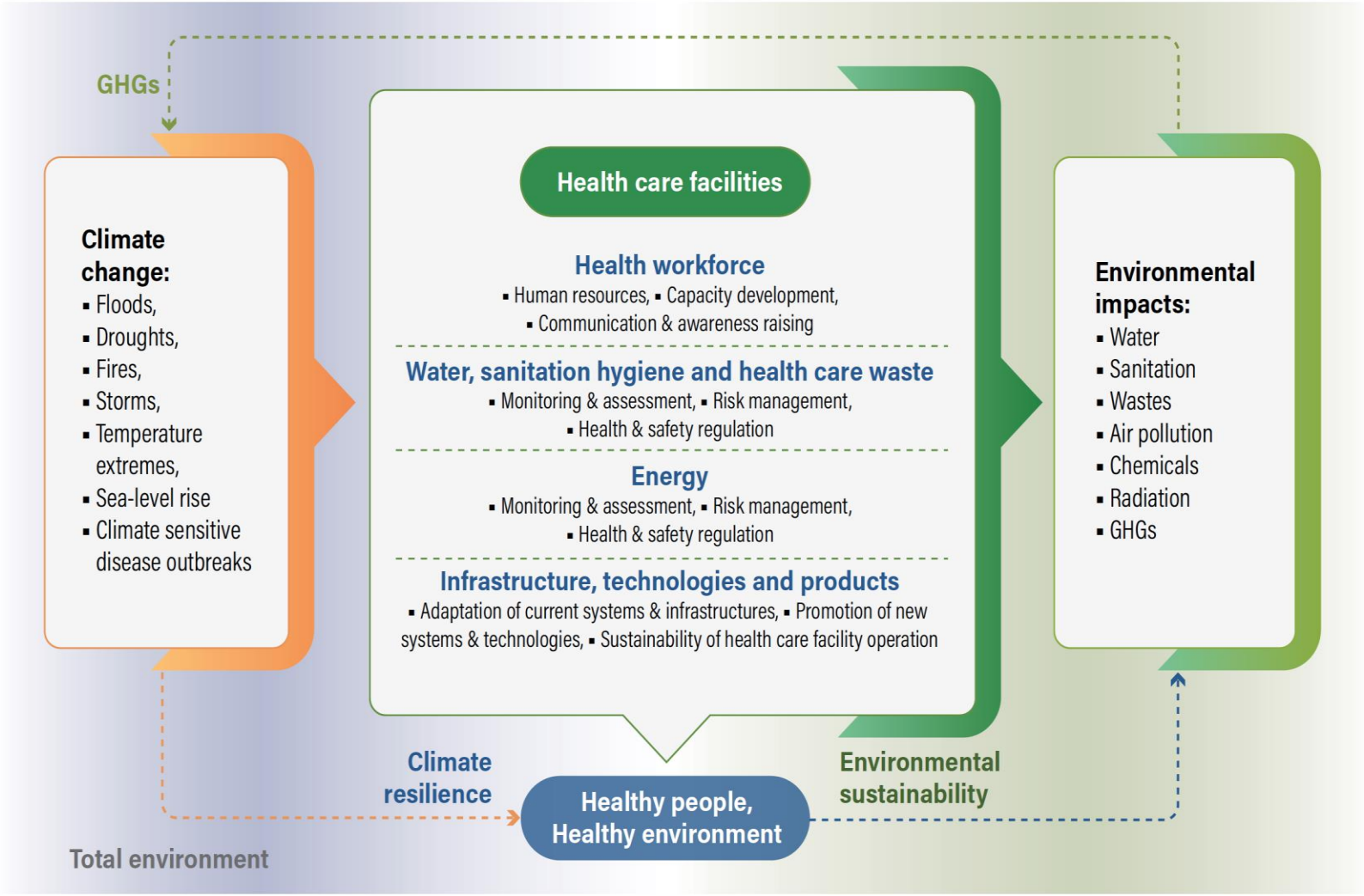
Over 70% of the health sector footprint is from health care supply chain



World Health Organization
European Region

WHO Operational framework for building climate resilient, low carbon sustainable health systems

Building climate resilient and environmentally sustainable health care facilities



World Health Organization
European Region

In the global policy space

THE COP26 HEALTH PROGRAMME

CLIMATE-RESILIENT HEALTH SYSTEMS …

- Conduct vulnerability and adaptation assessments
- Develop Health National Adaptation Plans

… SUSTAINABLE LOW-CARBON

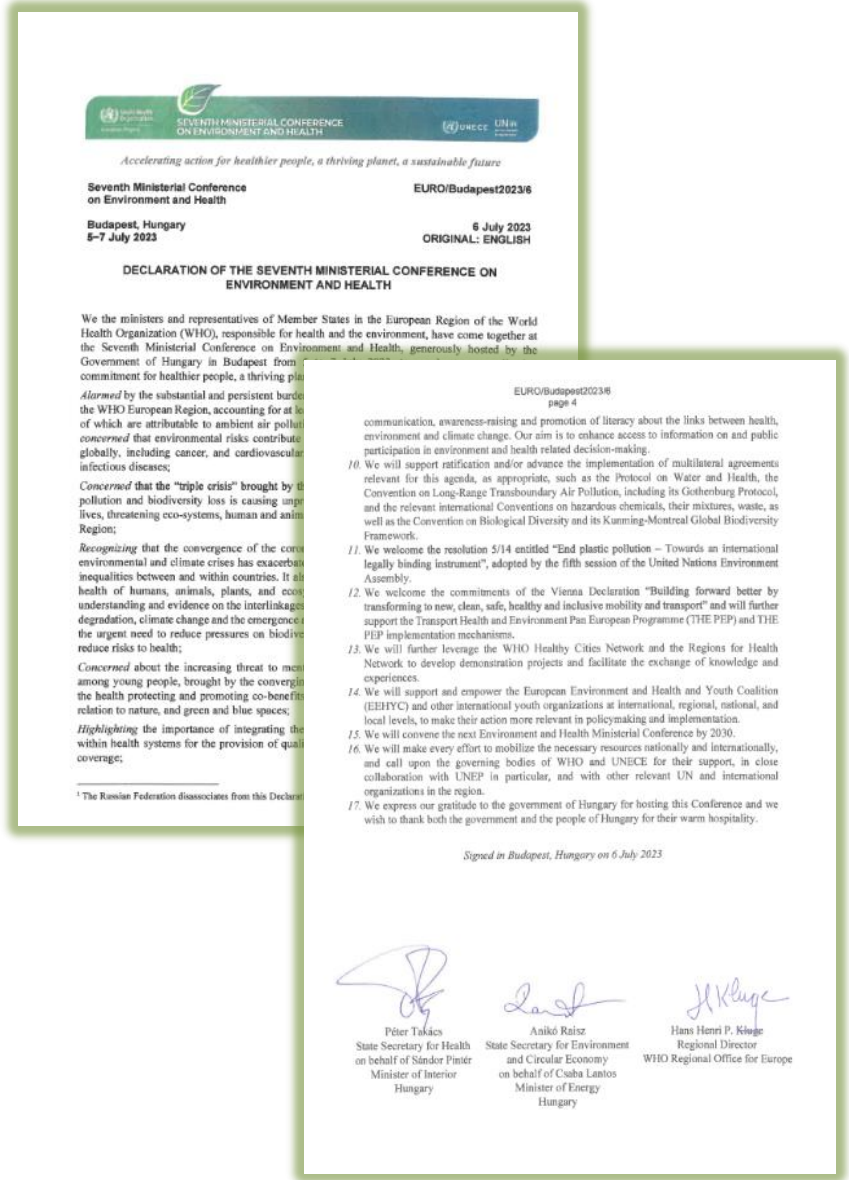
- Deliver baseline assessment of GHG emissions of the health system
- Develop an action plan to develop a sustainable low carbon health system

ATACH
Alliance for Transformative Action on Climate and Health
WHO hosted network

World Health Organization
European Region

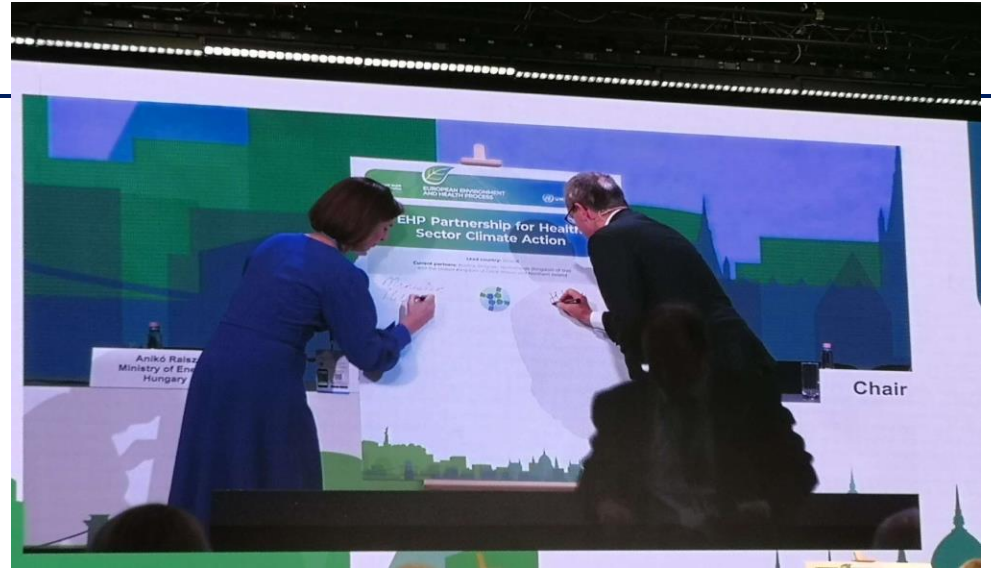
Seventh Ministerial Conference on Environment and Health

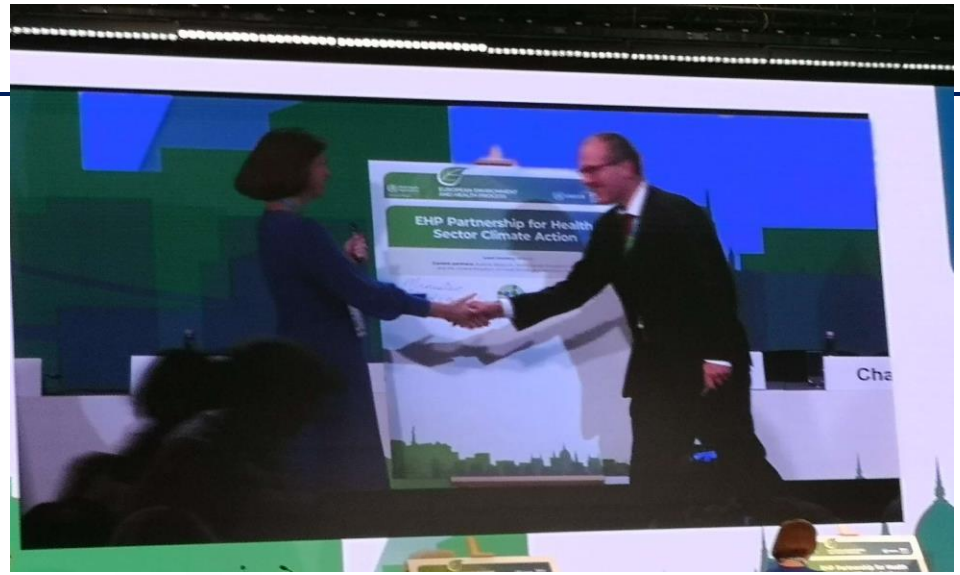
Budapest, 5-7 July 2023



World Health Organization
European Region

World Health Organization
European Region





EUROPEAN ENVIRONMENT AND HEALTH PROCESS

UNECE

EHP PARTNERSHIPS

EHP Partnership for health sector climate action

Tackling both existing and emerging environment and health challenges requires strong collaborative efforts, robust joint action, and concrete mechanisms to enhance coordination and cooperation across sectors.

To this aim, the Seventh Ministerial Conference on Environment and Health (5 – 7 July, Budapest, Hungary) is launching a new, agile, thematic, action-oriented mechanism, the "EHP Partnerships", to facilitate implementation of the commitments made in the Budapest Ministerial Declaration.

WHAT IS THE "EHP PARTNERSHIPS"?

"EHP Partnerships" is a new mechanism within the European Environment and Health Process (EHP) to accelerate national and international implementation of the commitments made at the Ministerial Conference. The Partnerships will bring together countries and partners with a shared interest in a specific thematic area to facilitate collaboration and leverage progress across the Region.

WHY THE "EHP PARTNERSHIPS"?

"EHP Partnerships" is a flexible, concrete, practical implementation mechanism that can be tailored to the interests and priorities of a country or group of countries. Countries and stakeholders interested in addressing common environment and health challenges would work together, mutually offering peer-to-peer support; sharing best practices, experiences and knowledge, while facilitating the transfer of know-how and expertise. "EHP Partnerships" could also serve as vibrant platforms for communities of practice, international advocacy and resource mobilization.

WHAT ARE THE AVENUES OF ACTION WITHIN THE "EHP PARTNERSHIPS"?

The activities within the EHP Partnerships are wide-ranging and encompass various collaborative opportunities for finding effective solutions for environment and health challenges. The activities could include joint projects, mutual capacity-strengthening through training and workshops, provision of technical assistance, collaboration in innovation and research, and dissemination of relevant WHO guidelines, tools and methodologies and promotion of their uptake.

WHAT IS THE GOVERNANCE OF THE "EHP PARTNERSHIPS"?

The EHP Partnerships are established by decisions of the European Environment and Health Task Force (EHTF) and operate in accordance with the Terms of Reference of the Partnerships, included as Annex 2 to the Budapest Ministerial Declaration on Environment and Health. An EHP Partnerships can be led by any Member State and/or recognized stakeholder of the EHP and is open to all 53 Member States and relevant stakeholders in the WHO European Region.

EHP Partnership for health sector climate action

Lead country: Ireland

Current partners: Austria, Belgium, Netherlands (Kingdom of the) and the United Kingdom of Great Britain and Northern Ireland

CLIMATE ACTION IN THE HEALTH SECTOR

By integrating climate action into health-care policies and practices, the sector can not only mitigate its own environmental footprint but also contribute to cross-sectoral action against climate change. These include advocating for policies to prioritize public health and climate resilience, foster research and innovation in sustainable health-care practices, and collaborate with other sectors to drive systemic change towards a low-carbon future.

The structures of national health systems vary considerably by country. While the **COP26 Health Programme** and the **Alliance for Transformative Action on Climate and Health (ATACH)** play a crucial role in advocating for national commitment to build low-carbon, climate-resilient health systems, our understanding of the details of such actions varies according to national policies and capacities. Furthermore, high-level commitment to climate challenges requires solutions adapted to unique national circumstances, including the specific impacts of the changing climate and the operational approaches of health systems.

SCOPE AND OBJECTIVES

This **EHP Partnership for health sector climate action** is intended to support countries in the WHO European Region, particularly those that have committed themselves or are considering committing themselves to the COP26 Health Programme and the ATACH initiative. The Partnership will facilitate building of a regional community of practice to share approaches, experience and research as countries unpack implementation challenges and chart pathways and solutions to developing climate-resilient, low-carbon health systems. While the work programme of the Partnership will evolve based on the needs and priorities of its Members, it will explore in detail the following climate-related health sector action areas:

Mitigation areas
- built environment and green environment
- transport and mobility
- sustainable procurement
- greener models of health care
- water conservation and management
- stakeholder engagement

Adaptation areas
- heat and related health effects
- flooding and other extreme weather events
- zoonotic and vector borne diseases
- water security and safety
- mental health

To maximize its effectiveness, countries that have not yet analysed their capacity to take climate action in their health systems are particularly encouraged to join the EHP Partnership. It will provide a regional platform for peer-to-peer conversations and support between countries with more advanced climate and health programmes and those in the initial stages. The Partnership complements the efforts of the **EHTF Working Group on Health in Climate Change (HIC)**.

EXPECTED BENEFITS AND OUTCOMES

- Greater, more detailed understanding of how health sectors can integrate and support climate action in its operations
- Sharing and promotion of good practices and solutions
- More countries committed to the COP26 Health Programme and ATACH initiatives.

For more information about the EHP Partnership for health sector climate action or if you are interested in getting involved, please contact the EHP secretariat at euceh@who.int.

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Health sector climate action partnership

Hospitals fit for purpose and the future

- Sustainable procurement
- Green environment
- Water & waste management
- Healthy diets
- Adaptation and resilience
- Transport and active mobility
- Sustainable buildings

Conclusions

- Climate change is **here and now**
- Its consequences become **more and more shrill**
- Health sector needs to walk the talk to become **climate-smart, climate-resilient and environmentally sustainable** while ensuring essential services
- This is not an additional burden – this brings **health co-benefits** and safeguards **quality of care**
- **Converging initiatives** in different policy domains: **“handshake”** is needed between healthcare/health system-oriented processes and climate/environment-oriented processes

Laurent Chambaud

ASPHER Representative
Former Dean of EHESP

Paris, France

european public health alliance

Climate Change and Health: The role of Schools of Public Health

- Better know: Developing Interdisciplinary research on impact of climate change on Health
- Better inform and disseminate: Setting up Training Programs and Information sessions
- Better mobilize and advocate: Participating in alliances and networks from local to global scale
    - **Conclusion**: Our Schools have to reinvent Public Health in order to address this challenge

Laurent Chambaud EPHA Webinar July 12, 2023

ASPHER
The Association of Schools of Public Health in the European Region

Dr. Ina Kelly

Health Service Executive

Dublin, Ireland

european public health alliance

Climate Change – what is Ireland doing?

Dr. Ina Kelly,

Consultant in Public Health Medicine

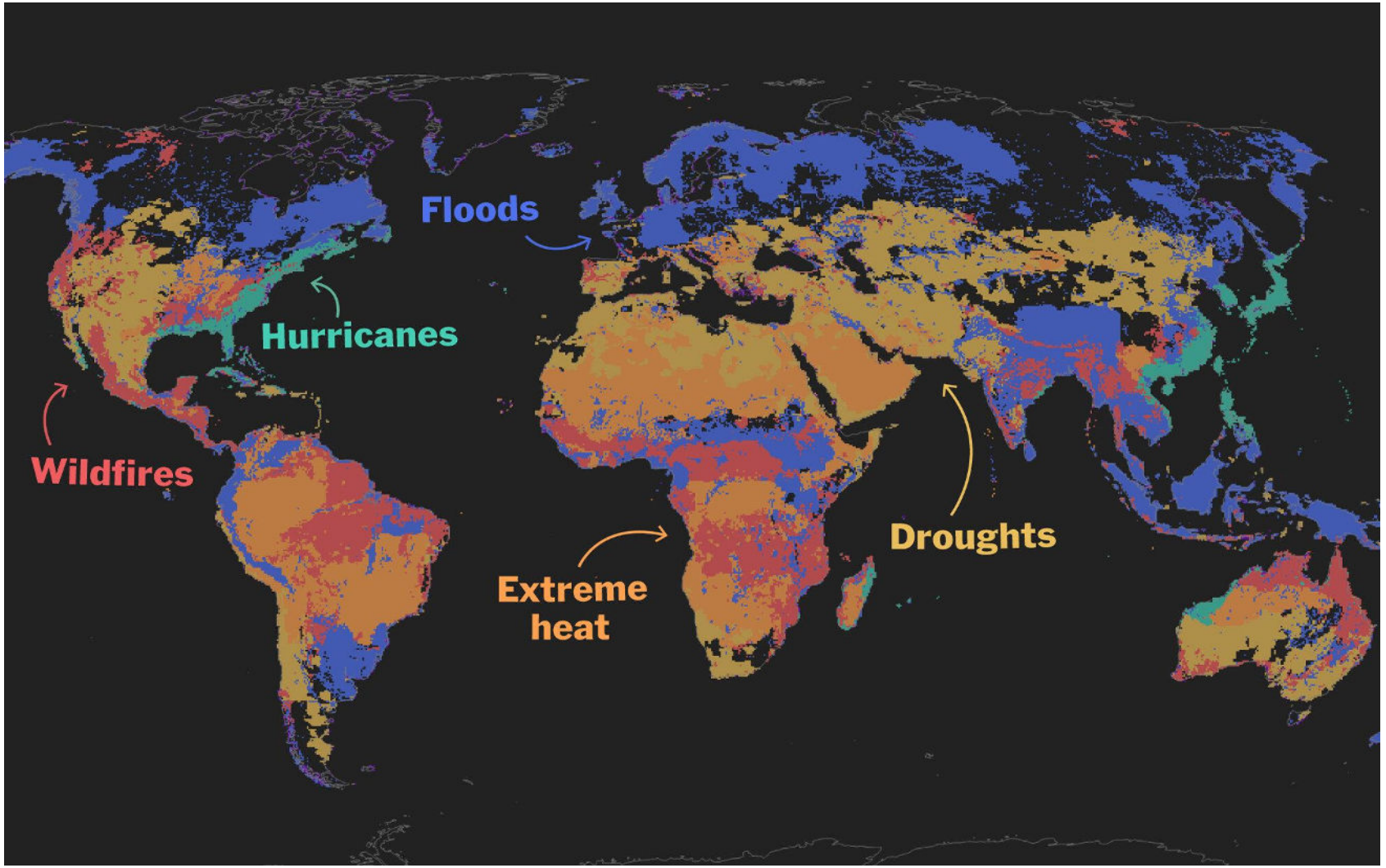
for Environment and Health

HSE National Health Protection Service of Ireland

European Public Health Alliance 12th July

Global Climate Change

- Droughts
- Extreme heat
- Floods
- Hurricanes
- Wildfires
- Sea level rise



In 2040:

- 41% of the global population will be exposed to the risk of inundations.
- Southern and south-eastern Asia would be among the places hardest hit, with more than **2 billion people** at risk.

New York Times https://www.nytimes.com/interactive/2021/01/28/opinion/climate-change-risks-by-country.html

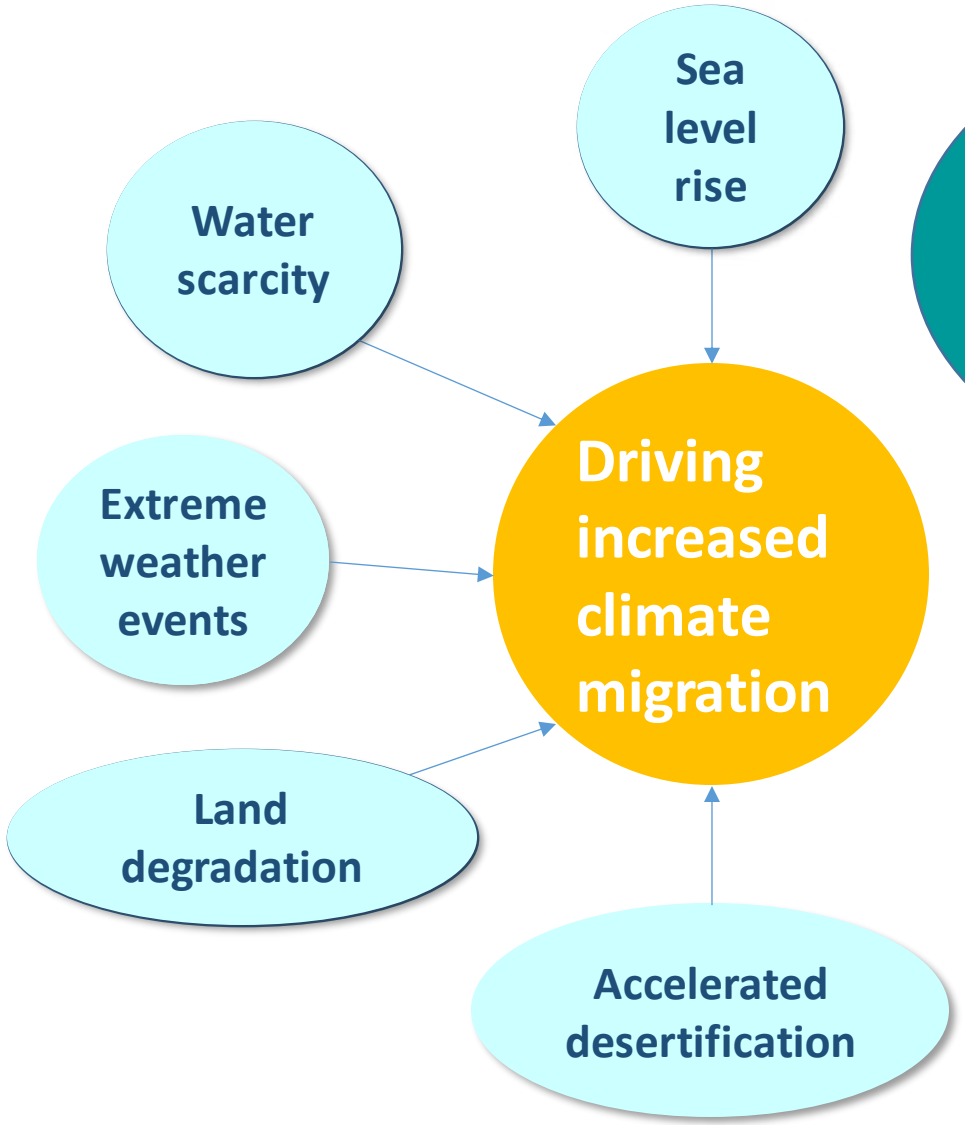
Tipping points

Large-scale singular events are components of the global Earth system that are thought to hold the risk of reaching critical tipping points under climate change, and that can result in or be associated with major shifts in the climate system

- the cryosphere: West Antarctic ice sheet, Greenland ice sheet
- the thermohaline circulation: slowdown of the Atlantic Meridional Overturning Circulation (AMOC)
- the El Niño–Southern Oscillation (ENSO) as a global mode of climate variability
- role of the Southern Ocean in the global carbon cycle

IPCC - SPECIAL REPORT: GLOBAL WARMING OF 1.5 ºC

Climate change and demography



Water stress could displace 700 million people by 2030 (UN estimate)

European Parliament

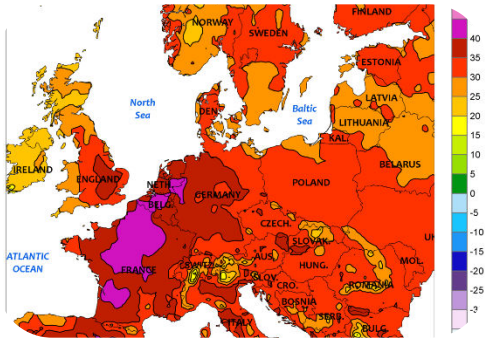
EU Parliament discussion paper on need for

- Support to vulnerable countries
- Joint research
- EU support for a legal framework for 'climate refugees'

European Parliament – the future of climate migration

https://www.europarl.europa.eu/RegData/etudes/ATAG/2022/729334/EPRS_ATA(2022)729334_EN.pdf

Ireland's future weather ….
depends on the degree of global temperature rise



Heatwaves

Storms

Floods - winter

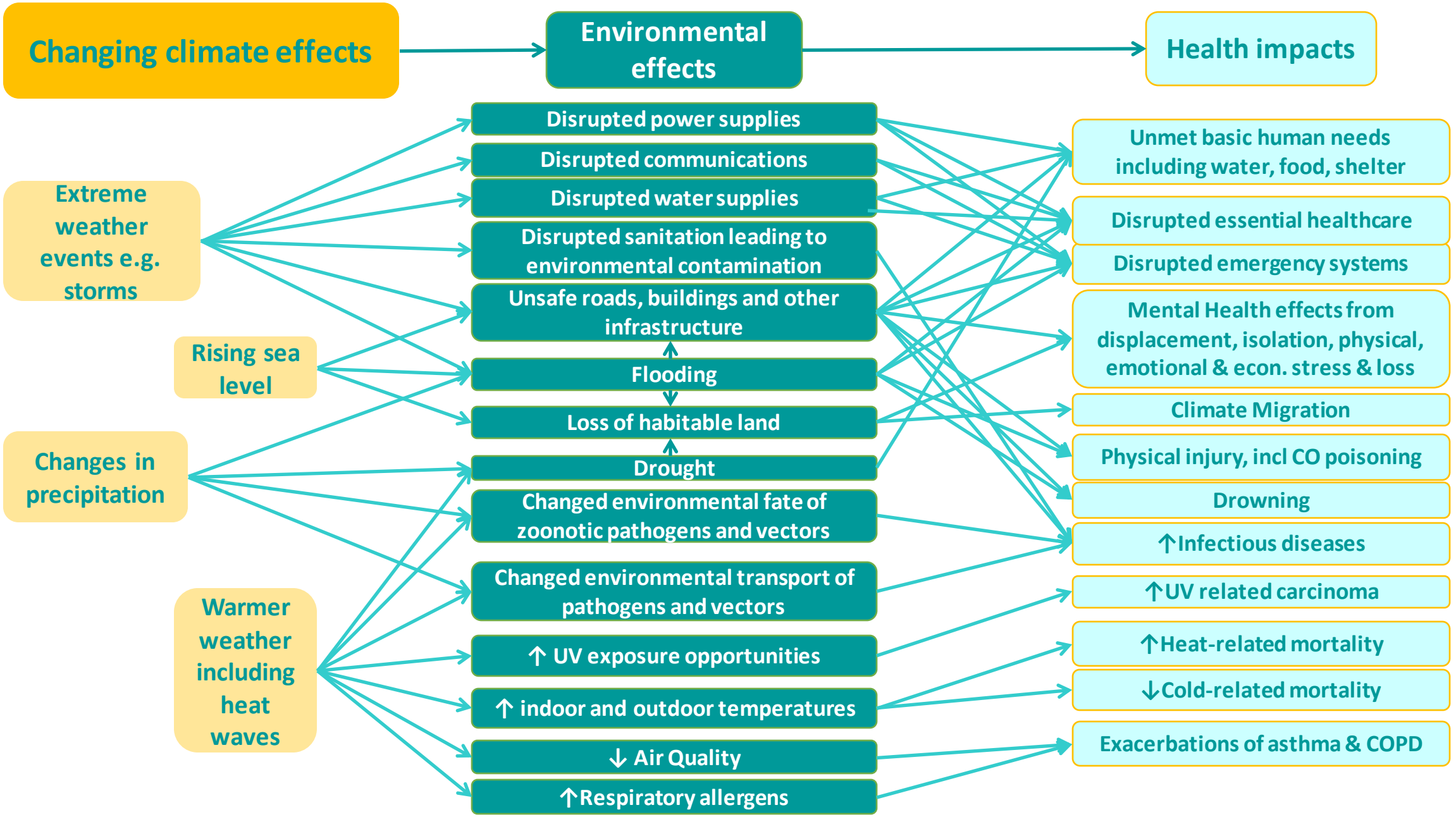
Drought - summer

Sea Level Rise –

- Globally approximately 3 mm per year between 1980 and 2010. Sea level is projected to continue to rise at this rate or greater.
- All major cities in Ireland are in coastal locations subject to tides, any significant rise in sea levels will have major economic, social and environmental impacts.
- Rising sea levels around Ireland would result in **increased coastal erosion, flooding and damage to property and infrastructure**.

Source: Met Eireann https://www.met.ie/climate/climate-change

Predicted health impacts for Ireland include:



Health impacts predicted for Ireland

Existing vulnerabilities include:

Asthma

- Most common chronic respiratory disease ROI affecting people of all ages and all socio-economic groups; fourth highest prevalence of asthma worldwide (Asthma National Clinical Programme)
- **Pollen season increase may increase exacerbations**

Zoonotic GI illness

- EU leader in STEC and Cryptosporidium.
- 10% population exposed to untreated water from wells (EPA) that are often incorrectly constructed (Hydrogeology sources), in high GW vulnerability (GSI) and large reservoir of cattle and sheep.
- **Winter flooding may increase the contamination and illness**

Skin cancers

- Most people living in Ireland have fair skin, the type which burns easily and tans poorly, so are at high risk of UV damage and skin cancer (NCCP). 13,000 cases in ROI each year.
- **May result in increased UV exposure e.g. during heatwaves**

Other predicted impacts include:

Severe weather events

Disrupted power, transport, communications, essential services

Exacerbations of chronic diseases, delayed care for emergencies

Examples – flooded ED, power cuts impacting CT scanning, overheated hospitals

Increasing mean temperatures

Survival of introduced vectors

Increased imported cases or even indigenous transmission of vectorborne diseases

Climate change will severely exacerbate the risk and burden of *Aedes*-transmitted viruses, including dengue, chikungunya, Zika.

Ryan SJ et al. https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0007213

Climate disruption and destruction of our habitat and livelihoods

Unbearable stressors

Mental Health - Anxiety, depression, suicide

Example - Increased suicide risk in young men during drought in rural Australia

Hanigan I & Chaston T https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9266200/


So what are we doing in Ireland?

Mitigation planned for Ireland

Power renewables

75% - Reduction in emissions by 2030 to decarbonise power sector and enable electrification of other technologies.

Build better

Commercial 45% Public/ residential 40% - Reduction in emissions by 2030

Transform how we travel

50% - Reduction in emissions by 2030

Make family farms more sustainable

25% - Reduction in emissions by 2030

Green business and enterprise

30% - Reduction in emissions by 2030

Change our land use

Exact reduction target for this sector is yet to be determined.

Government of Ireland *CLIMATE ACTION PLAN 2023 Changing Ireland for the Better*

National Adaptation Planning

Theme	Sector Level	Lead Department for Sectoral Adaptation Plans
Natural and Cultural Capital	Seafood	Department of Agriculture, Food and the Marine
	Agriculture	
	Forestry	
	Biodiversity	Department of Housing, Local Government and Heritage
	Built and Archaeological Heritage	
Critical Infrastructure	Transport Infrastructure	Department of Transport
	Electricity and Gas Networks	Department of the Environment, Climate and Communications
	Communications Networks	
Water Resource and Flood Risk Management	Flood Risk Management	Office of Public Works
	Water Quality	Department of Housing, Local Government and Heritage
	Water Services Infrastructure	
Public Health	Health	Department of Health

Finance

DPER

Housing

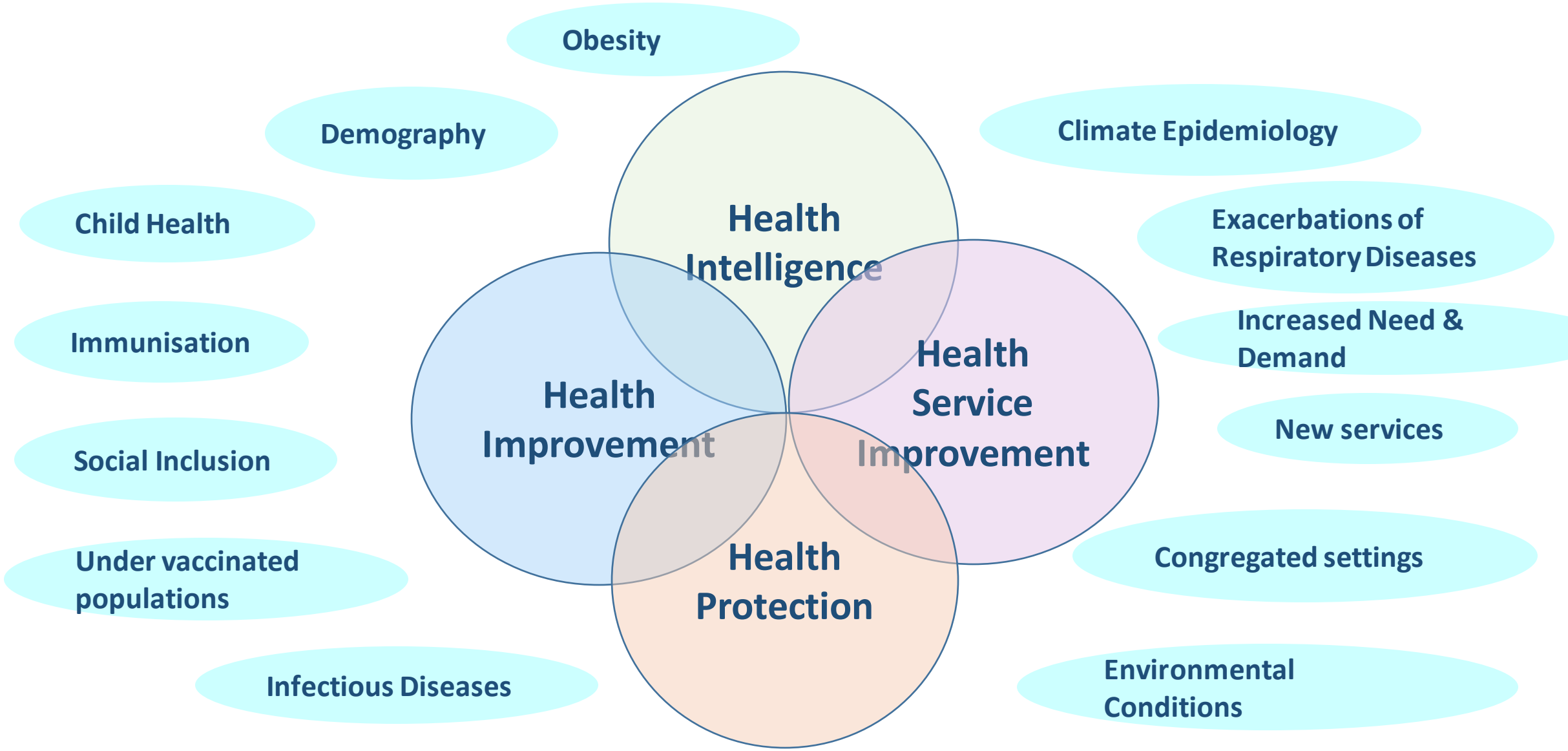
Foreign Affairs

Justice

Health sector actions to date ……..

- Public Health Medicine Environment and Health Group & DCMO since 2012
  - Advocacy, collaborative work, PHRA and advice to other sectors
- Department of Health *"Climate Change Adaptation Plan for the health sector (2019 – 2024)"*
- DoH Climate Unit set up 2021
- HSE Climate Unit set up 2022
- **HSE Climate Action Strategy** – developed 2022- launching June 2023
- Health Protection Strategy including
  - Objective 3: Hazards related to the Environment *and*
  - Objective 7: Global Health

Public Health implications for Ireland



Climate epidemiology

- All Hazards Surveillance development – *"Expand surveillance of environmental hazards" HPS 2022-2027*
- May have some influence on changing epidemiology of many diseases
- Classification
- Attribution……

Asthma exacerbations?

Vectorborne Infections?

Mental health?

Foodborne infections?

Waterborne infections?

Heatwave deaths -Excess mortality

Climate Change and Justice

- Homeless
- Underserved communities
- Migrants – both resulting from and vulnerable to impacts of climate change

- Children are voiceless – affected most
- Mental health
  - Flooding – distress, PTSD, disrupted treatment
  - Extreme heat – increased risk of violence
  - Indirect – eco-anxiety, economic losses, solastalgia, suicide

Need for Just Transition and Just Resilience

- Poverty
- Deprived areas
- Environmental planning

Barriers and Opportunities

BARRIERS include

- Lobby groups
- Powerful interests
- Greenwashing
- Fear
- Inertia
- Lack of resources
- Unclear path to just transition and resilience – not communicated clearly

OPPORTUNITIES include

- Science
- Population interest & demand
- Solidarity during COVID-19
- External drivers esp. EU
- Public Health
  - Ethical obligation
  - Trust
  - Collaboration
  - Solutions
  - Support for decision-makers

- Profound effects of climate change are impacting and will increasingly impact human health
- Ireland is challenged in providing for basic needs – housing, clean water, healthy food
- Urgent action is required

- Science
- Trust
- Solidarity
- Increasingly strong Public Health **leadership** and involvement to tackle the challenges
- Engagement with all stakeholders
- Opportunity for health in all policies

Stevan Savic

Full Professor
University of Novi Sad

Novi Sad, Serbia

Webinar on Planetary Health and Climate Justice: Uniting Science, Ethics, and Communication in the Pursuit of Global Health Equity

INTERACTION OF CLIMATE CHANGE-URBAN CLIMATE-PUBLIC HEALTH IN CITIES OF WESTERN BALKANS

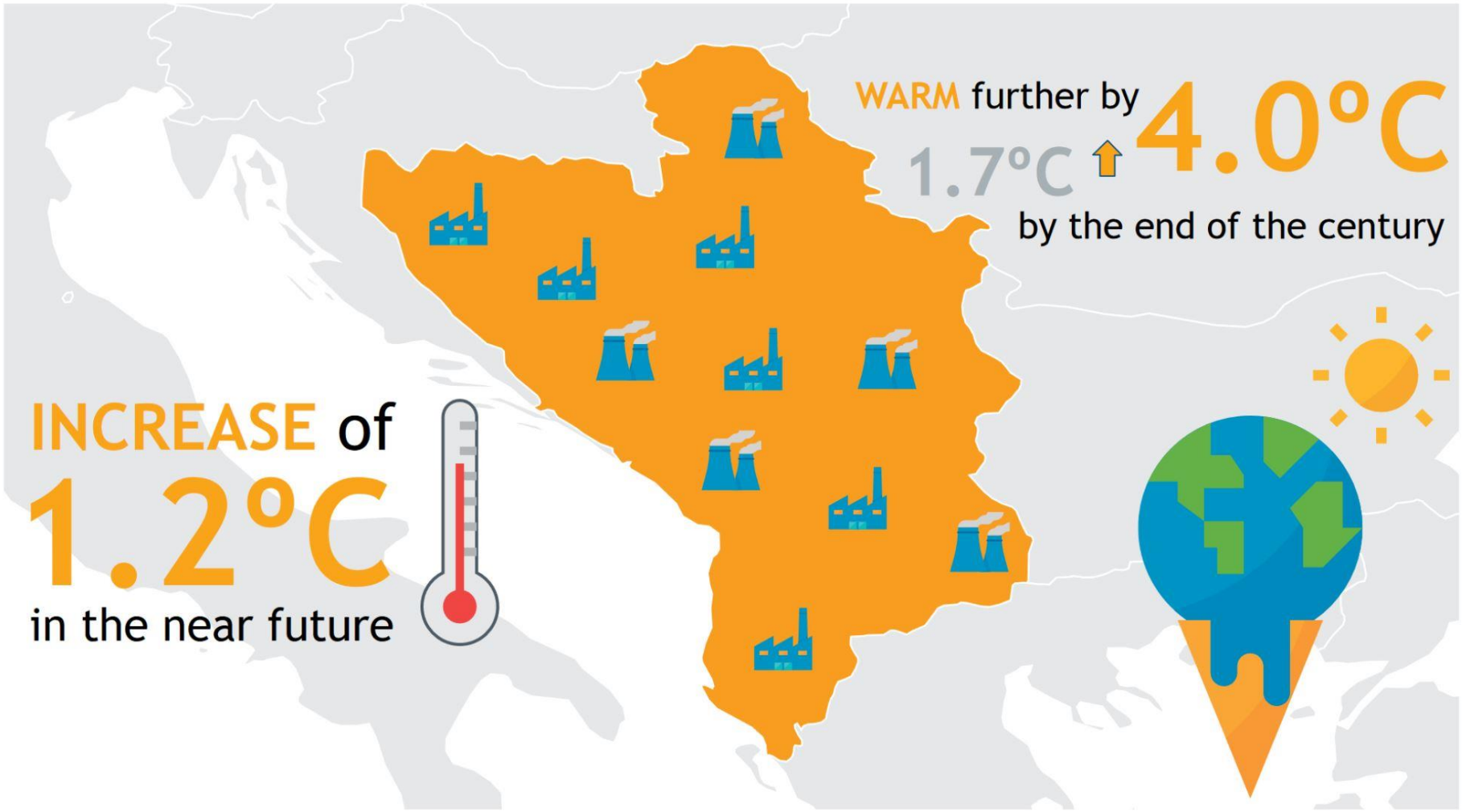
Dr Stevan Savić
Chair of Geoecology, Faculty of Sciences, University of Novi Sad (Serbia)

July 12, 2023, Brussels-Novi Sad

CLIMATE CHANGE IN WESTERN BALKANS

- pluvial or river floods
- extreme droughts
- extreme heat conditions

CLIMATE CHANGE IN WESTERN BALKANS



Basic information on climate change in the Western Balkans show alarming increase of temperature over the whole territory with observed temperature increase of 1.2°C in the near future and destined to warm further by 1.7 - 4.0°C by the end of the century, depending on the global effort in GHG emission reduction.

CLIMATE CHANGE IN WESTERN BALKANS

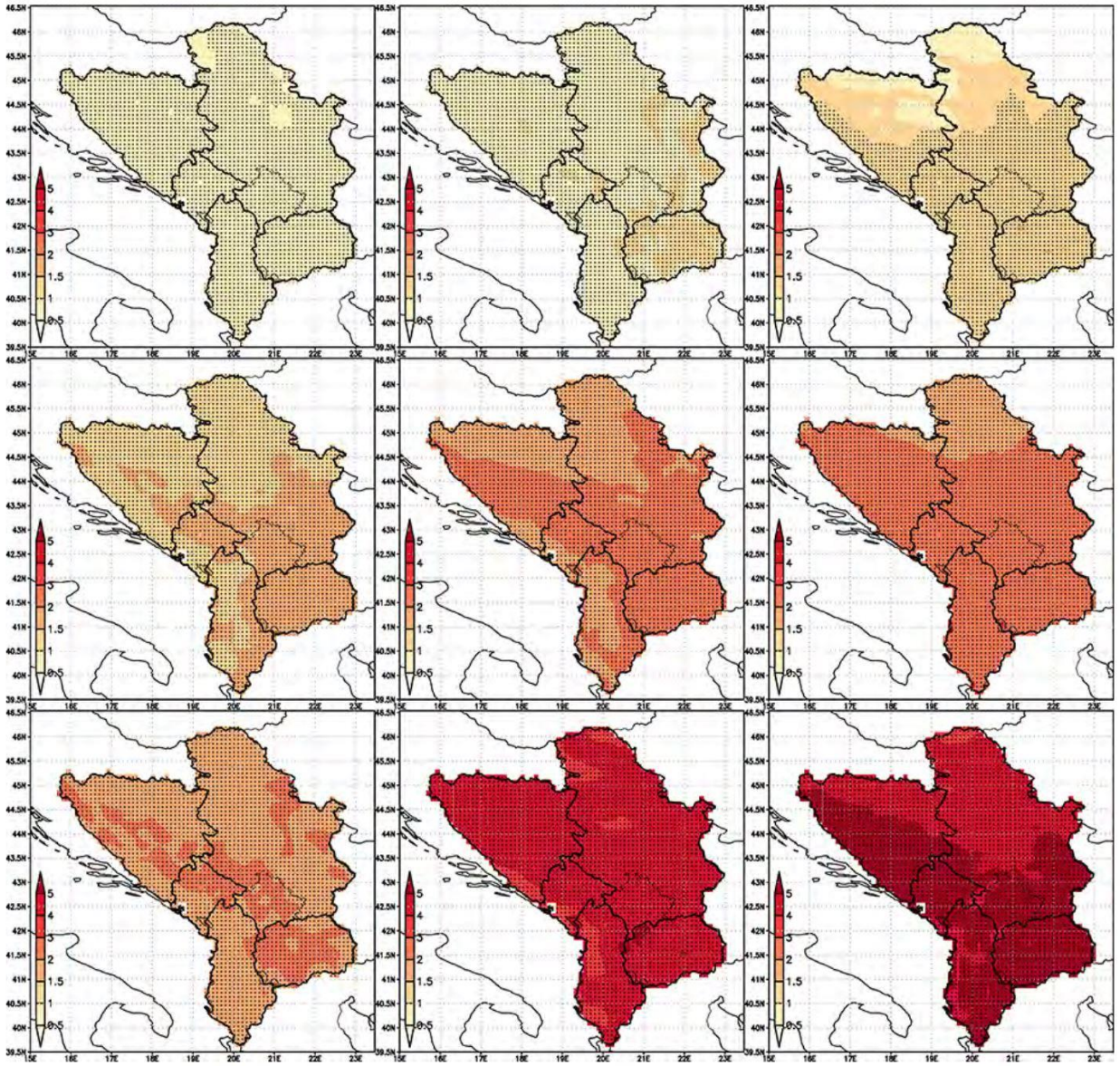


***Figure 5**. Temperature change (°C) for the near future (top row), mid-century (middle row) and end of the century (bottom row) periods with respect to the baseline period for mean annual values according to RCP4.5 (left), to RCP8.5 (middle) and mean JJA maximum temperature according to RCP8.5 (right); statistical significance is marked with dots.*

CLIMATE CHANGE AND PUBLIC HEALTH

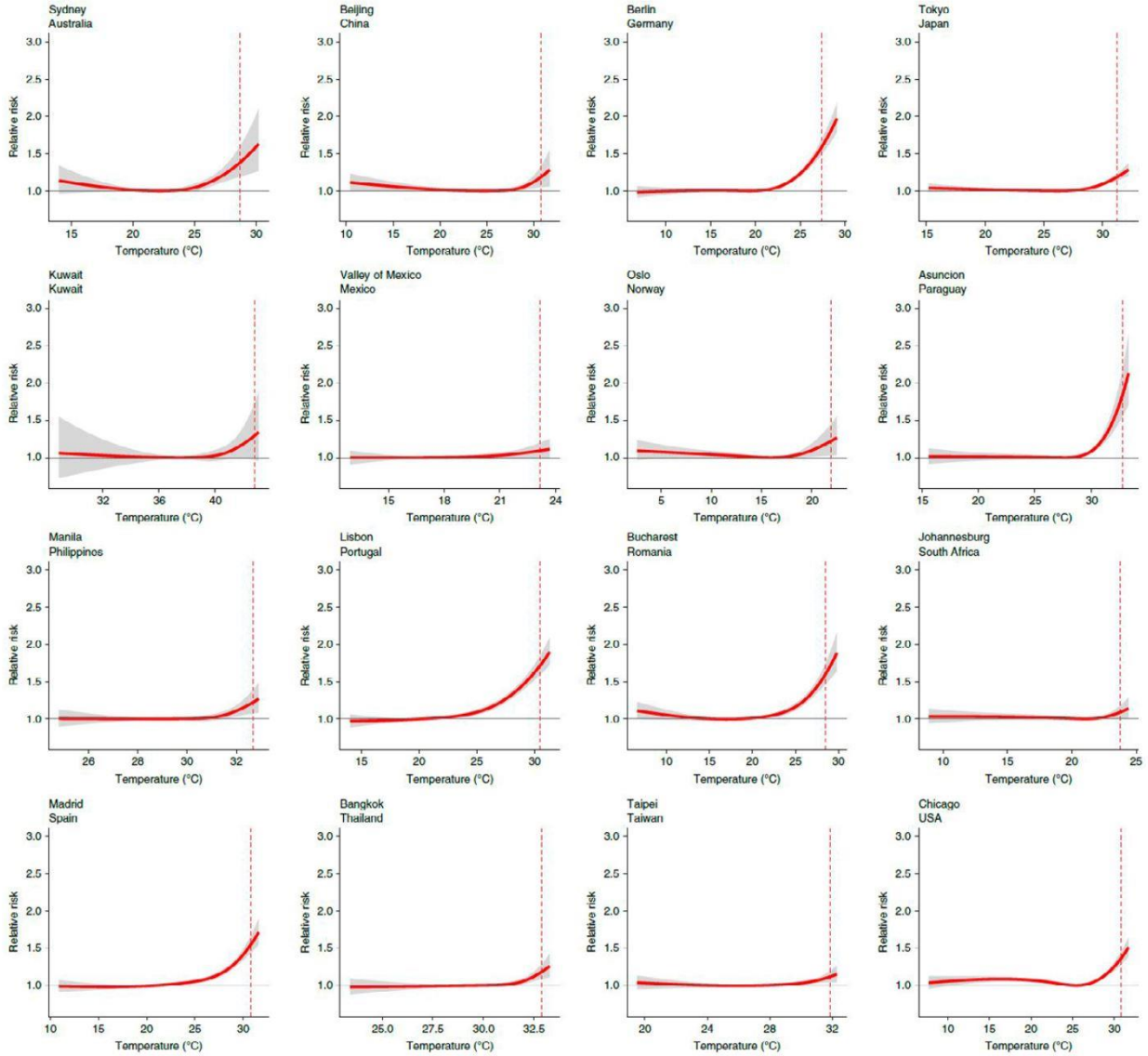
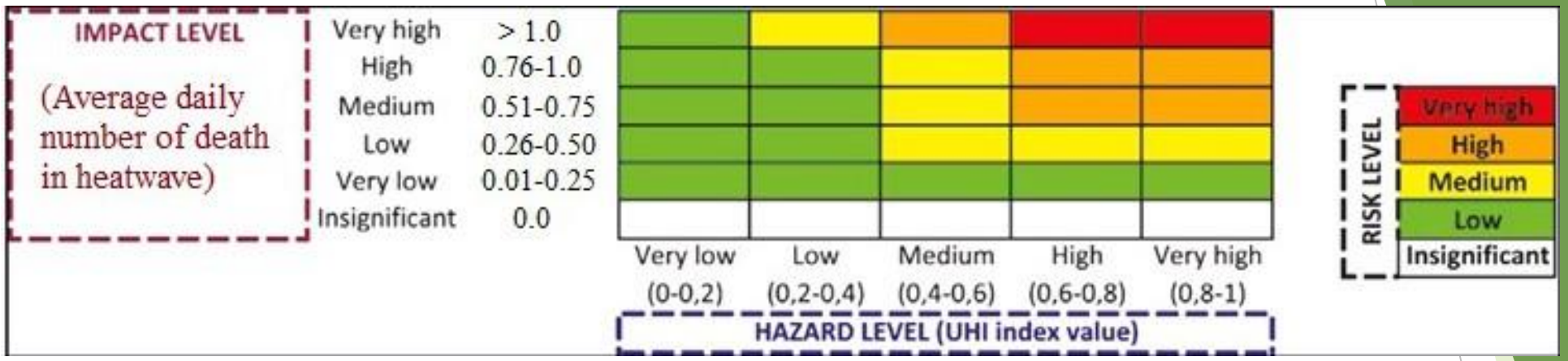
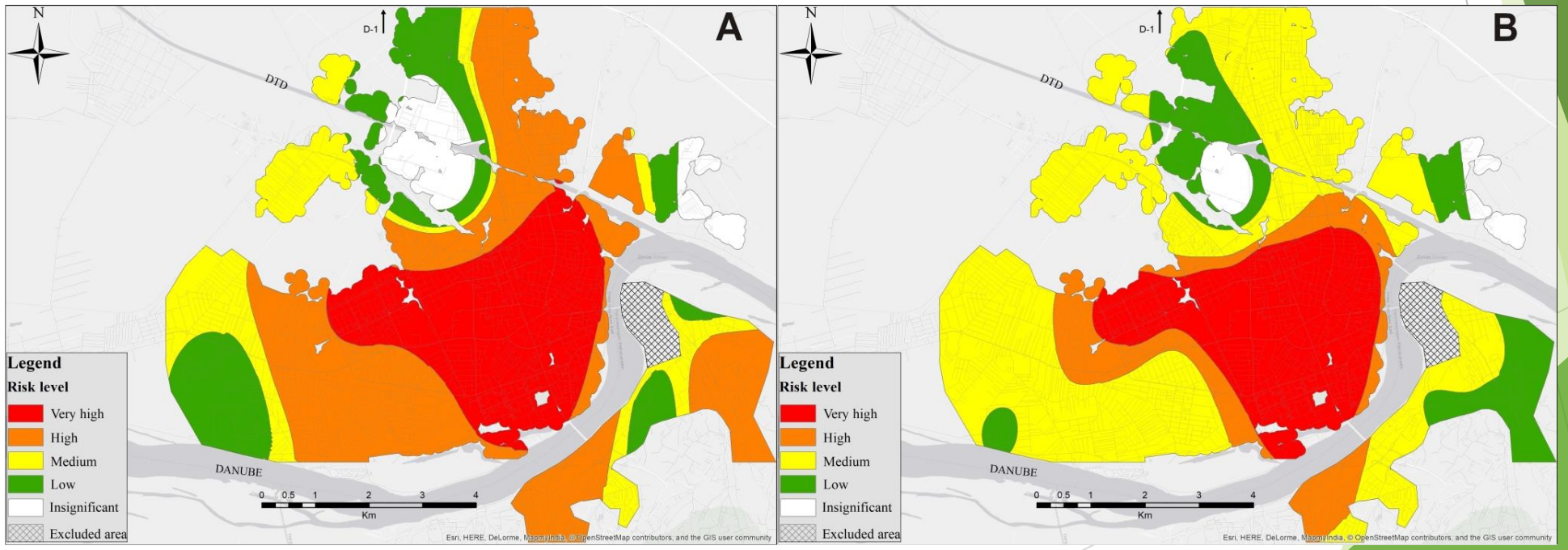


Figure 3. A) Heat-mortality relations for 16 representative cities where the functions represent the cumulative relative risk of death over a 10-days lag period for each temperature value. Exposure-response associations are estimated as best linear unbiased predictions and reported as relative risk (with 95 % CI, shaded grey) for a cumulative 10-days lag of warm-season temperature, versus the optimum temperature (temperature of minimum mortality)

Source: Vicedo-Cabrera et al., 2021

URBAN CLIMATE AND PUBLIC HEALTH





CLIMATE CHANGE AND PUBLIC HEALTH

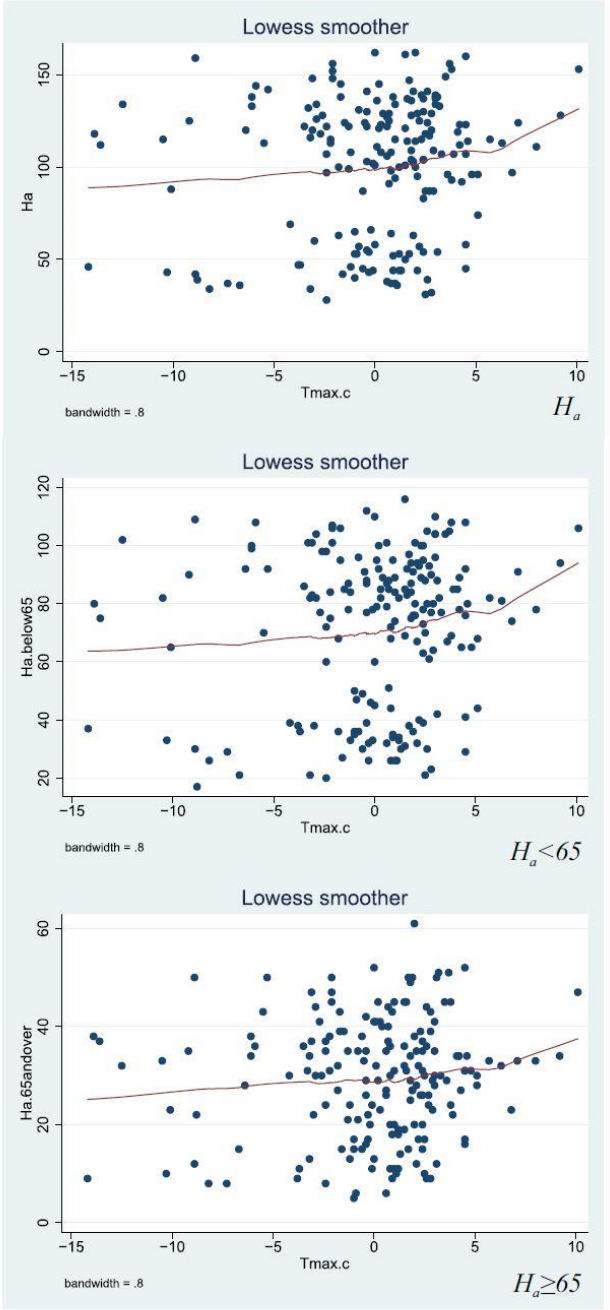


Fig. 2 Scatter diagram of all-cause hospital admissions (H_a, H_a<65, H_a≥65) vs. $T_{max,c}$ (lowess smoother, bandwidths=0.8)

THERMAL CONDITIONS IN CITIES OF WESTERN BALKANS

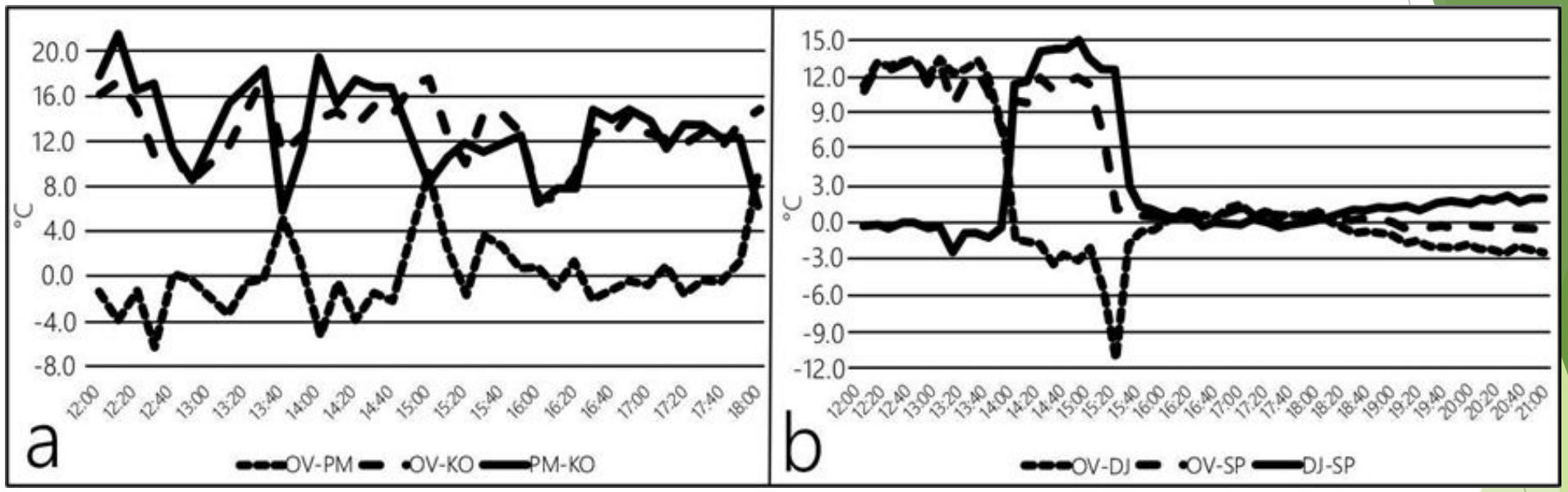
1

2

3

THERMAL CONDITIONS IN CITIES OF WESTERN BALKANS

Temporal variation of *Tg* in Belgrade (Serbia) during the measuring campaigns



a) June 18th –12:00-18:00h CEST

(b) August 23rd – measuring time 12:00-21:00h CEST

OPPORTUNITIES AND BARRIERS

- climate-conscious urban designs
- green infrastructures

Trg Republike

Project description

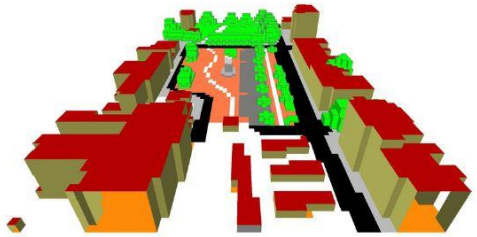
Former parking lot that was turned into a town square.

Project qualities

- Trees and green spaces
- Unsealed paving

© National Green Roof Association Serbia

South view



East view

Models

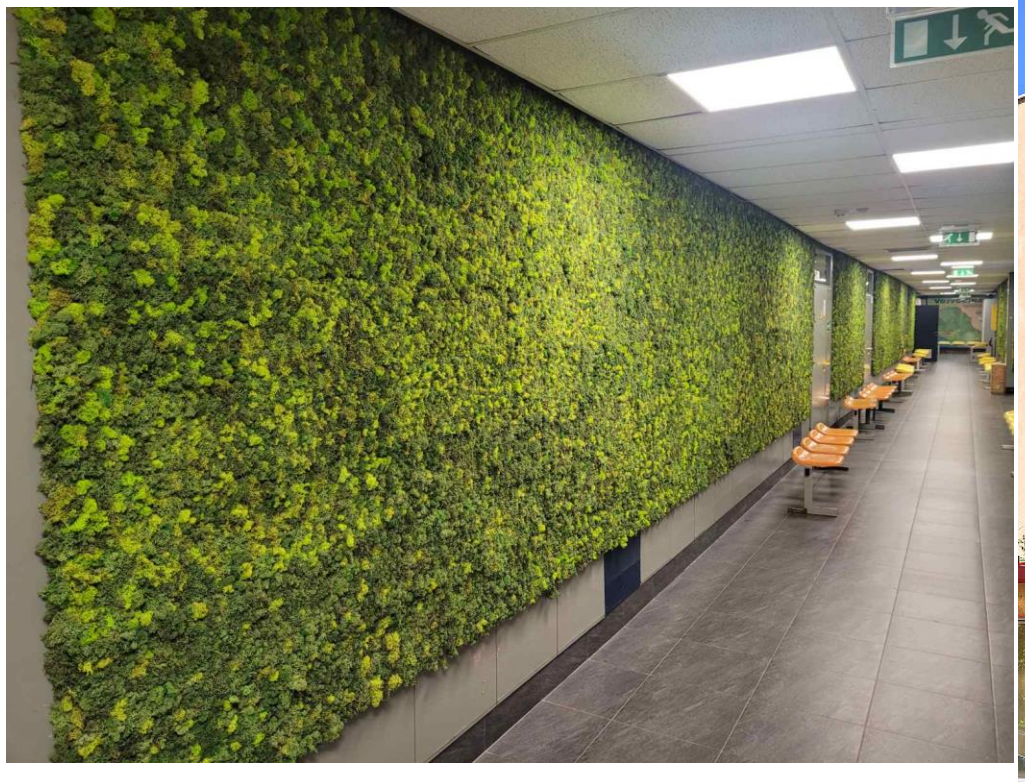
SQ STATUS QUO

Top view

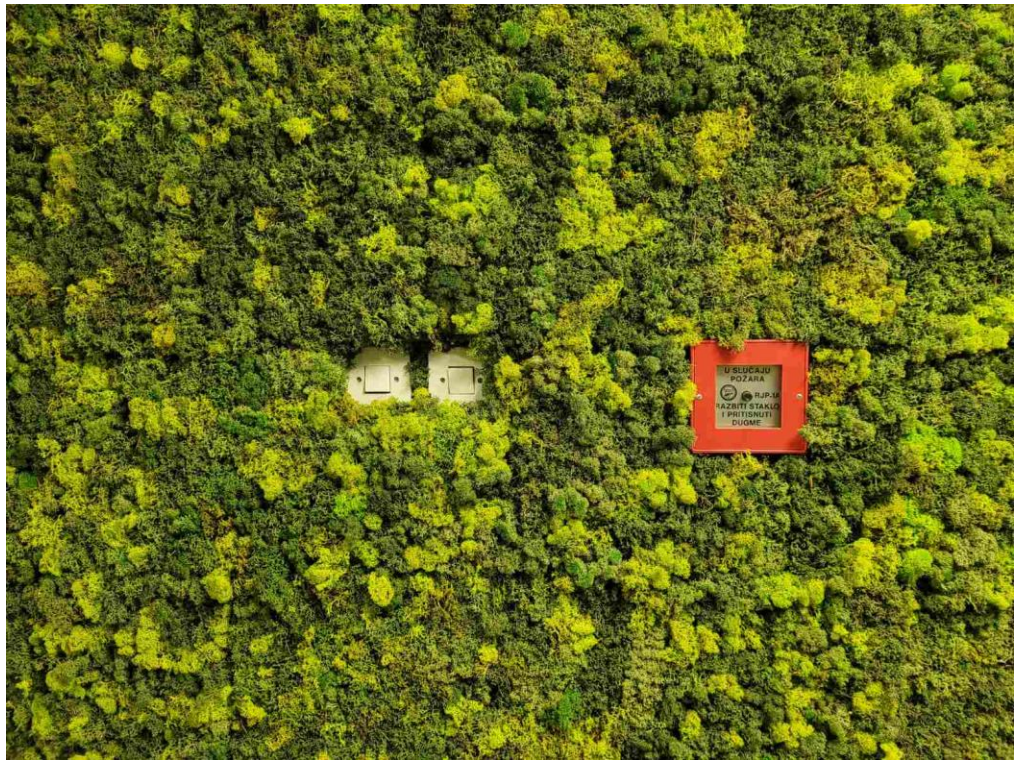
Digital simulation models (Level of Detail I) **for expert simulation systems built with the GREENPASS Editor (GP.e) Software.**

OPPORTUNITIES AND BARRIERS

- climate-conscious urban designs
- green infrastructures



Webinar on Planetary Health and Climate Justice: Uniting Science, Ethics, and Communication in the Pursuit of Global Health Equity



We should push more climate monitoring and NBS implementations in urban and non-urban areas to better assess interactions of climate change-public health, and to provide sustainable solutions for environment and society.

Contact:

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european public health alliance

REGIONAL ENVIRONMENTAL CENTRE FOR THE CAUCASUS

Ana Berdzenishvili
Sustainability and Environmental Policy Expert

REC CAUCASUS

PLANETARY HEALTH AND CLIMATE JUSTICE:

UNITING SCIENCE, ETHICS, AND COMMUNICATION IN THE PURSUIT OF GLOBAL HEALTH EQUITY

THE CAUCASUS REGION

- Land between the Black and Caspian Seas.
- Land dominated by the Caucasus Mountains.
- Home to many ethnic groups.

MAJOR PRESSING ISSUES RELATED TO CLIMATE CHANGE

Water Security

Agriculture and Food Security

Biodiversity Loss

Natural Disasters

SPECIFIC ISSUES IN THE CAUCASUS

- **Transboundary Water Management**
- **Decreased Snow and Glacier Cover**
- **Heatwaves**

REGIONAL ENVIRONMENTAL CENTRE FOR THE CAUCASUS

- Drafting multiples Strategies for Transboundary Waters such between Georgia and Azerbaijan and Georgia and Armenia.
- Projects in Land degradation such as land restoration and sustainable management .
- Establishment of Biosphere reserves for climate mitigation.
- Contribution to drafting actions for various climate change related convention that the Caucasus regions are a part of.

OPPORTUNITIES

- **Climate Adaptation and Disaster Risk Reduction**
- **Education and Awareness**

BARRIERS

- **Border Tension**
- **High levels of Urbanization**
- **Lack of awareness**
- **Need for stronger legal framework**

THANK YOU

REC CAUCASUS

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european public health alliance

CENTRAL ASIA vs CLIMATE CHANGE :

Background, challenges and **opportunities**

Background information:

Central Asia is one of the most vulnerable regions to the effects of the climate change and has the least adaptation capacity (World Bank, 2013)

- The effects already observed:
  - rise of average temperatures;
  - degradation of ecosystems and loss of biodiversity;
  - deforestation and desertification;
  - increased dust storms;
  - melting of glaciers (both for temperature rise and air pollution);
  - water scarcity;
  - decrease/loss of crops.

The impacts on public health:

The direct impact of climate change to public health is enormous:

- Extreme weather conditions (heatwaves, floods);
- Malnutrition in low-income families (due to reduce of crops and economic loss);
- Air pollution: PM 2.5 levels 11 times higher than WHO guidelines (Source: WHO Health and environment scorecard for Tajikistan);
- Unstable socio-economic conditions, leading to migration.

The level of impact of climate change to public health in Central Asia is yet to be analyzed, since there no comprehensive research data.

The measures being taken:

The governments of CA countries put significant efforts to deal with climate issues. Some examples:

- CA countries put joint efforts on saving Aral Sea;
- Tajikistan initiated International year of glaciers – 2025;
- Tajikistan initiated Water action decade 2018-2028.

The majority of climate change mitigation are being implemented with the help of international organizations and financial institutions, in partnership with local governments and NGOs.

Challenges:

The main challenges in effective tackling of climate issues in CA region:

- Limited access to/availability of environmental information;
- Lack of experts/reseraches;
- Low level of awareness of climate related issues among the population (from 15% to 45% according to different sources);
- Low level of climate knowledge and mechanisms among decision-makers;
- Insufficient capacity/funding.

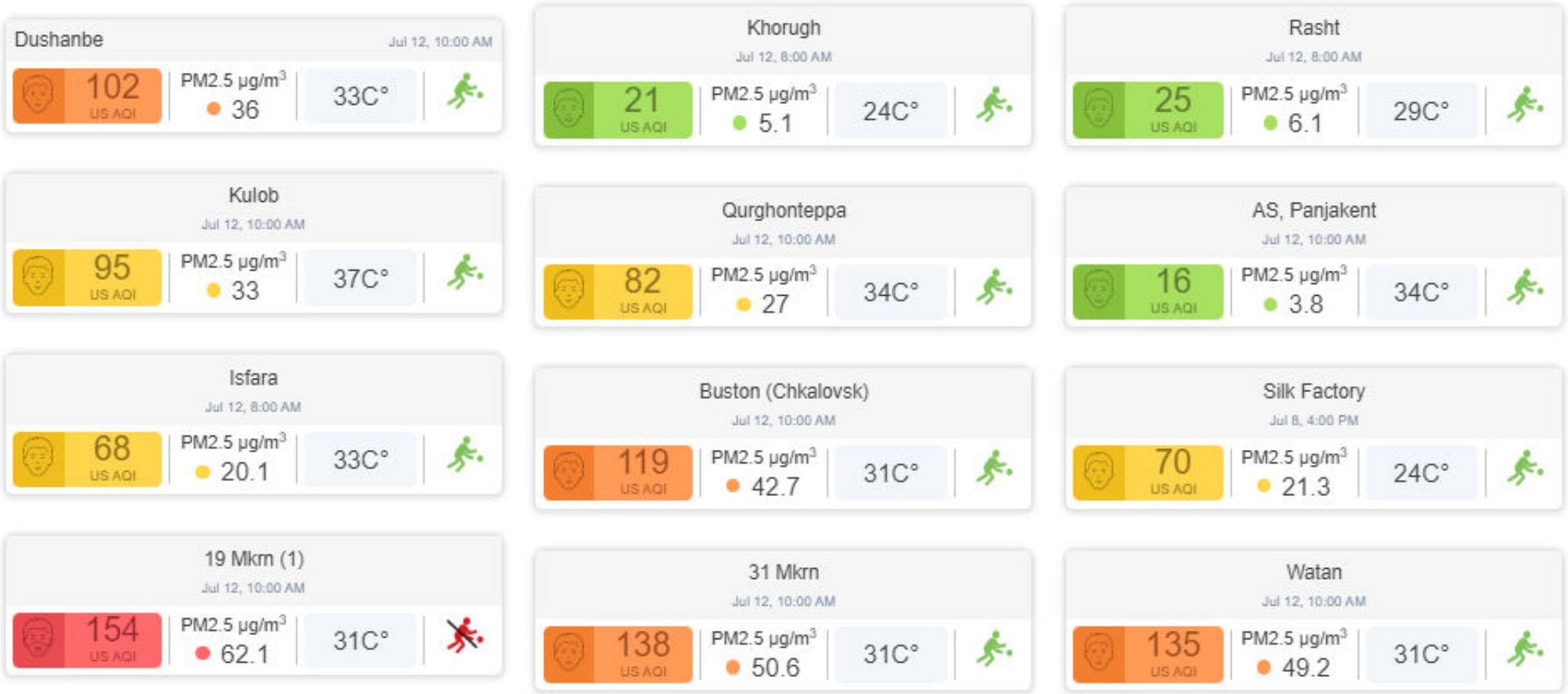
Opportunities:

CA region is under accelerating pressure of climate change now. However, with the recent developments, there is a hope for a positive scenario in coming years. The opportunities as we see:

- Now we understand that climate change is beyond country level and needs to be dealt globally, by joint efforts of every institution/person;
- CA region can learn from the experience of other countries/regions;
- CA region can learn from 50yrs+ experience of EU countries and “leapfrog” to most effective solutions.

YGPE experience:

Air quality monitoring network:



Youth involvement:

Stakeholder involvement :

Ecosystems restoration:

Adaptation measures in households:

Next steps (our vision):

- Development of monitoring systems (air quality, ecosystems);
- Involvement of young researches/universities;
- Involvement and coordination of stakeholders;
- Integration of environmental subjects to school and university programs;
- Providing access to information + awareness rising campaigns;
- Integration of adaptation measures at different levels;
- Promotion of sustainable entrepreneurship and agriculture;
- Promotion of energy efficient systems and renewable energy sources.

Thank you!

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https://www.instagram.com/po.ygpe.tj

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Thank you for attending!

european public health alliance

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