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

12 July 2023
Event is being recorded

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

Follow-up:
cale.lawlor@epha.org
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
Climate Change & Vulnerable Populations

- Migrants & Refugees
- Children
- Indigenous & Ethnic Minorities
- Low-Income HHs
- Disabled People
- People with chronic medical conditions
- Women & girls
- Elderly People

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

- 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
- Exacerbates existing inequalities, threatening livelihoods, health and safety (gender-based violence)
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Non-Communicable Diseases (NCDs)

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

WHO, 2021; EPHA, 2022

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).
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 adaptation 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
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

12 July 2023
Climate change is breaking records

Global temperature (1850–2020)

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

Source: WMO (2021)
The climate crisis is a health crisis.
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

[Images and charts related to health and climate action]
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

WHO Operational framework for building climate resilient, low carbon sustainable health systems
Building climate resilient and environmentally sustainable health care facilities
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
Seventh Ministerial Conference on Environment and Health

Budapest, 5-7 July 2023

Accelerating action for healthier people, a thriving planet, a sustainable future

The Seventh Ministerial Conference on Environment and Health will define the future directions and health priorities and commitments.

Budapest, 5-7 July 2023

Convened under the Chairmanship of the Government of Hungary

The Conference will take into account the impact of the COVID-19 pandemic and opportunities for a healthy recovery in the path towards achieving the 2030 Agenda for Sustainable Development

Bold action on climate mitigation and adaptation

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World Health Organization European Region

European Region
Health sector climate action partnership

Sustainable procurement

Green environment

Water & waste management

Healthy diets

Adaptation and resilience

Transport and active mobility

Sustainable buildings

Hospitals fit for purpose and the future

EHP Partnership for health sector climate action

Current partners: Austria, Belgium, Denmark, France, the United Kingdom of Great Britain and Northern Ireland, the Netherlands, Norway, Sweden, and Switzerland.

CLIMATE ACTION IN THE HEALTH SECTOR

By supporting climate action in the health sector, patients and provide the sector with the tools to reduce greenhouse gas emissions and mitigate and adapt to climate change. The partnership will work to promote climate-friendly practices, support the development of policies and initiatives, and provide a platform for stakeholders to discuss and share knowledge.

SCOPES AND OBJECTIVES

This EHP Partnership for health sector climate action is managed in support of the EU's EHP Partnership for Health sector, which focuses on actions to reduce greenhouse gas emissions and enhance health outcomes, focusing on five key scopes:

1. Green Environment
2. Water & Waste Management
3. Healthy Diets
4. Adaptation and Resilience
5. Transport and Active Mobility

EHP Partnership for health sector climate action partnership
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
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
Dr. Ina Kelly
Health Service Executive
Dublin, Ireland
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

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.

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

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

**Heatwaves**
- Temperature increases of 1–1.6°C in mean annual temperatures, largest increases east...
- Warming extremes - highest daytime temperatures rise by 0.7–2.6°C in summer and lowest night-time temperatures to rise by 1.1–3°C in winter.
- Frost days decrease...
- Average increase in the length of the growing season by mid-century of 35 to 40 days per year...
- Reduced cold related mortality rates among elderly and frail but this may be offset by increases due to heat stress in the warmer summers...

**Storms**

**Rainfall**
- Decreases are largest for summer...
- Heavy precipitation events increases of approximately 20% during the winter and autumn months.
- The number of extended dry periods is projected to increase substantially during autumn and summer... increases in dry periods are largest for summer, with values ranging from 12% to 40% for both emission scenarios...

**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:

**Changing climate effects**
- Extreme weather events e.g. storms
- Rising sea level
- Changes in precipitation
- Warmer weather including heat waves

**Environmental effects**
- Disrupted power supplies
- Disrupted communications
- Disrupted water supplies
- Disrupted sanitation leading to environmental contamination
- Unsafe roads, buildings and other infrastructure
- Flooding
- Loss of habitable land
- Drought
  - Changed environmental fate of zoonotic pathogens and vectors
  - Changed environmental transport of pathogens and vectors
- ↑ UV exposure opportunities
- ↑ indoor and outdoor temperatures
- ↓ Air Quality
- ↑ Respiratory allergens

**Health impacts**
- Unmet basic human needs including water, food, shelter
- Disrupted essential healthcare
- Disrupted emergency systems
- Mental Health effects from displacement, isolation, physical, emotional & econ. stress & loss
- Climate Migration
- Physical injury, incl CO poisoning
- Drowning
- ↑ Infectious diseases
- ↑ UV related carcinoma
- ↑ Heat-related mortality
- ↓ Cold-related mortality
- Exacerbations of asthma & COPD
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

- **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

*References*

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

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%
  - Reduction in emissions by 2030
- 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

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<thead>
<tr>
<th>Theme</th>
<th>Sector Level</th>
<th>Lead Department for Sectoral Adaptation Plans</th>
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<td>Natural and Cultural Capital</td>
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<td>Department of Agriculture, Food and the Marine</td>
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<td>Transport Infrastructure</td>
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<td>Flood Risk Management</td>
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<td>Department of Housing, Local Government and Heritage</td>
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<td>Water Services Infrastructure</td>
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<tr>
<td>Public Health</td>
<td>Health</td>
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**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

- Health Intelligence
- Health Service Improvement
- Health Improvement
- Health Protection

- Obesity
- Demography
- Climate Epidemiology
- Exacerbations of Respiratory Diseases
- Increased Need & Demand
- New services
- Congregated settings
- Environmental Conditions
- Under vaccinated populations
- Social Inclusion
- Immunisation
- Child Health
- Infectious Diseases
- Obesity
- Congregated settings
- New services
- Environmental Conditions
- Under vaccinated populations
- Social Inclusion
- Immunisation
- Child Health
- Infectious Diseases
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……..
Climate Change and Justice

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

Need for Just Transition and Just Resilience

- Poverty
- Deprived areas
- Environmental planning

- 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
**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-Novı Sad
CLIMATE CHANGE IN WESTERN BALKANS

- pluvial or river floods
- extreme droughts
- extreme heat conditions
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.
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.
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
Fig. 2 Scatter diagram of all-cause hospital admissions ($H_0$, $H_0<65$, $H_0\geq65$) vs. $T_{max}$ (lowess smoother, bandwidth=0.8)
THERMAL CONDITIONS IN CITIES OF WESTERN BALKANS
THERMAL CONDITIONS IN CITIES OF WESTERN BALKANS

Temporal variation of \( T_g \) 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**

1. **Project description**
   Former parking lot that was turned into a town square.

2. **Project qualities**
   - Trees and green spaces
   - Uncovered paving

**Models**

Digital simulation models for project implementation created with the CHEM PLUS Datal (TOP3) Software.
OPPORTUNITIES AND BARRIERS
- climate-conscious urban designs
- green infrastructures
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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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
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
Khurshed Alimov
Project Manager
Youth Group Protection of Environment
Khujand, Tajikistan
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/researches;
- 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:

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

<table>
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<th>Location</th>
<th>AQI</th>
<th>PM2.5 μg/m³</th>
<th>Temperature</th>
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<td>102</td>
<td>36</td>
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</tr>
<tr>
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</tr>
<tr>
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<td>20.1</td>
<td>33°C</td>
</tr>
<tr>
<td>19 Mkm (1)</td>
<td>154</td>
<td>62.1</td>
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<tr>
<td>Khorugh</td>
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<td>34°C</td>
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<td>Buxton (Chkalovsk)</td>
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<td>24°C</td>
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<td>135</td>
<td>49.2</td>
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<tr>
<td>31 Mkm</td>
<td>138</td>
<td>50.6</td>
<td>31°C</td>
</tr>
</tbody>
</table>
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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Thank you for attending!