



 World Health
Organization
REGIONAL OFFICE FOR Europe

EUROPEAN ENVIRONMENT
AND HEALTH PROCESS

Surviving the climate change

Dr Vladimir Kendrovski
*WHO Regional Office for Europe,
European Centre for Environment and Health
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European Region health landscape

We are dealing with complexity and uncertainty

Health challenges are multi-faceted and require active involvement of all levels of government (international, national and local) and various sectors

People live longer and have less children.

People migrate within and between countries, and towards cities.

Noncommunicable diseases dominate the disease burden.

Environmental fraction of BoD is not well understood

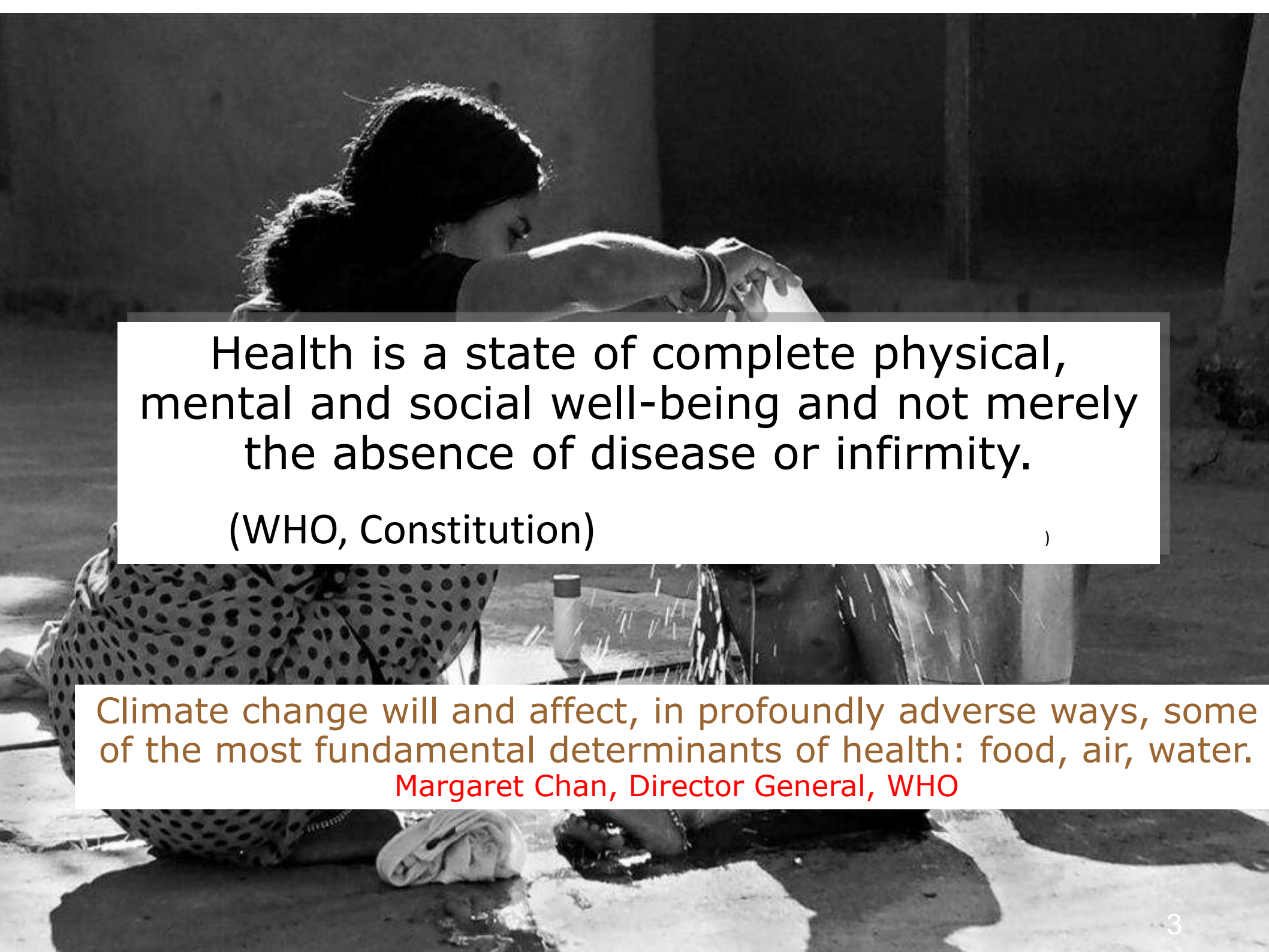
Public health capacities are outdated

Essential public health skills and infrastructures are lacking

Health systems face rising costs.

Primary health care systems are weak and lack preventive services.





Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

(WHO, Constitution)

Climate change will and affect, in profoundly adverse ways, some of the most fundamental determinants of health: food, air, water.

Margaret Chan, Director General, WHO

No "safe limit" of climate change for health: current climate risks are unacceptable



Each year:

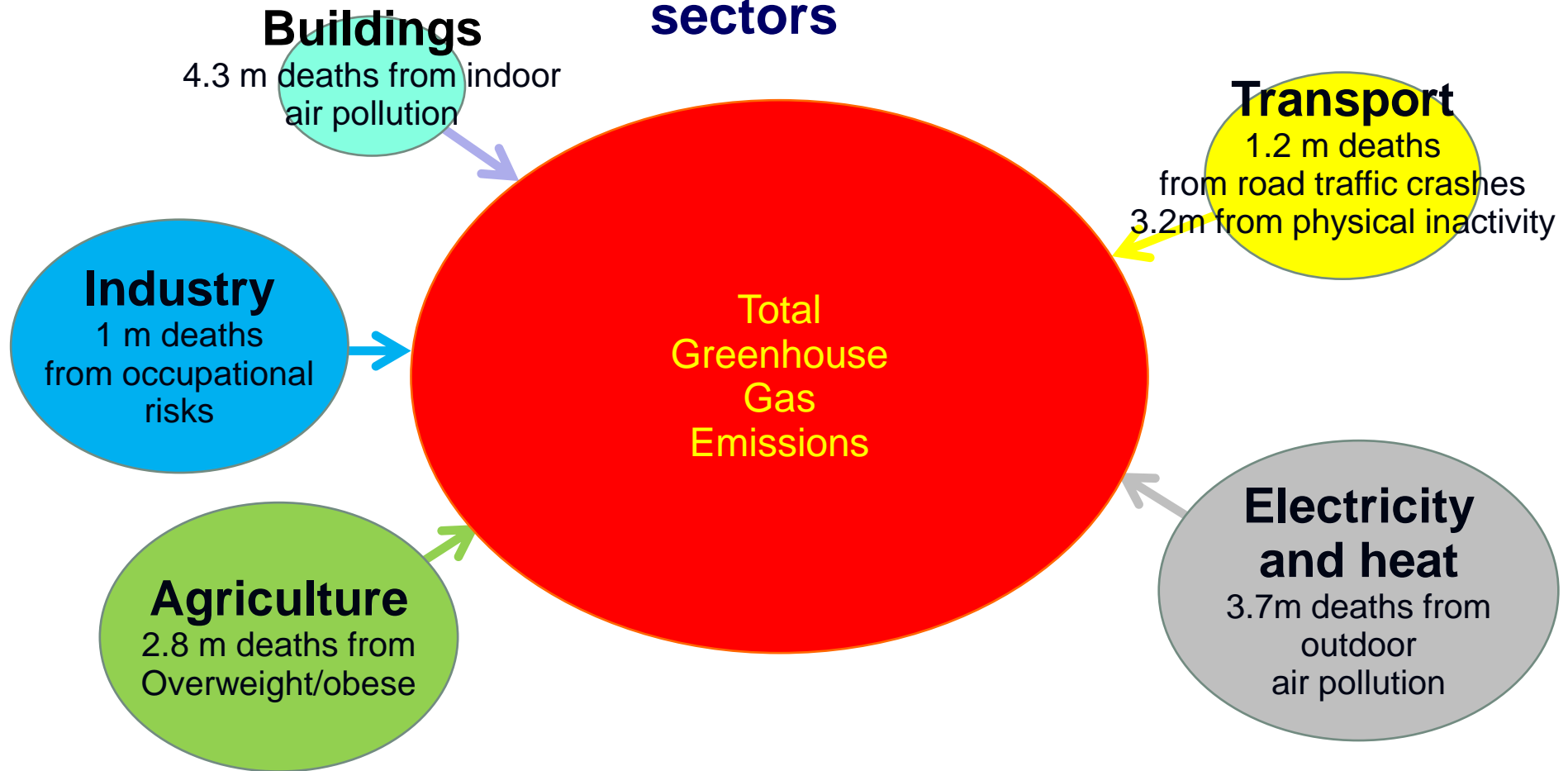
- **Undernutrition kills 3.1 million**
- **Malaria kills over 600,000**
- **Diarrhoea kills almost 600,000 children**
- **Extreme weather events kill tens of thousands**

These, and others, are highly sensitive to a changing climate



Health impacts of the causes of climate change

Health progress should be tracked and monitored, including effects from other health-determining sectors



Circle size proportional to GHG emissions in 2010 (tonnes CO₂ equivalent).
Changes proportional to projections of changes by 2050. All data from IPCC, 2014.



Number of deaths per million due to extreme weather events by European subareas (1980-2014)

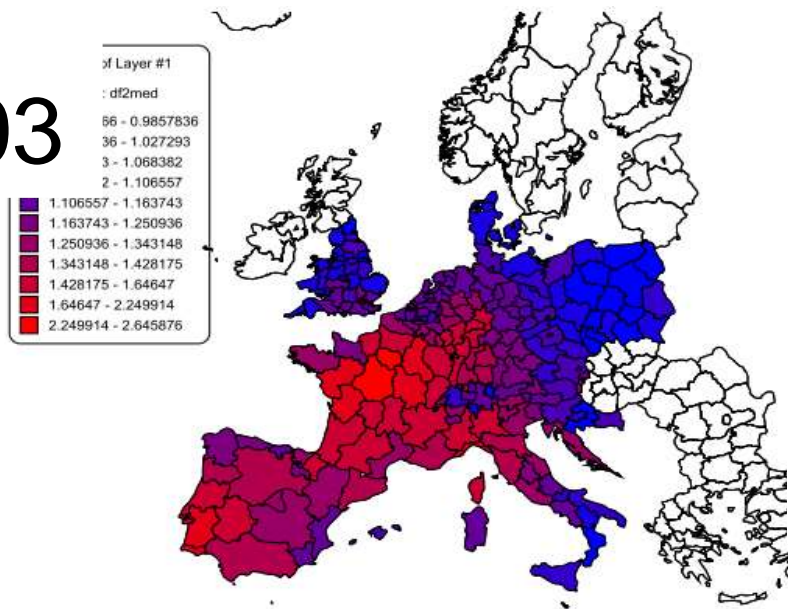
	Flood and wet mass movement (a)	Cold event	Heat wave	Storm	Wildfire
Eastern Europe	3.55	29.02	11.69	1.82	0.56
Northern Europe	1.11	1.62	10.85	4.30	0.01
Southern Europe	10.50	1.50	177.52	1.78	1.30
Western Europe	2.80	0.87	187.68	3.81	0.17
Total	17.96	33.01	387.74	11.71	2.03

(a) including landslides

Note: Numbers are per 1000 000 people.



Heatwave: August 2003



70,000 excess
deaths in 12
European
countries over
three months

Source: Robine JM, Cheung SL, Le Roy S, Van Oyen H, Herrmann FR (2007). Report on excess mortality in Europe during summer 2003 (EU Community Action Programme for Public Health). Brussels: Directorate General for Health and Consumer Protection, European Commission

Russia 2010:

1 month heat wave and
fires
approx 11,000 excess
deaths



Source: Rahmstorf S, Coumou D (2011). Increase of extreme events in a warming world. PNAS. 108(44):17905–9.



Heatwave: Serbia

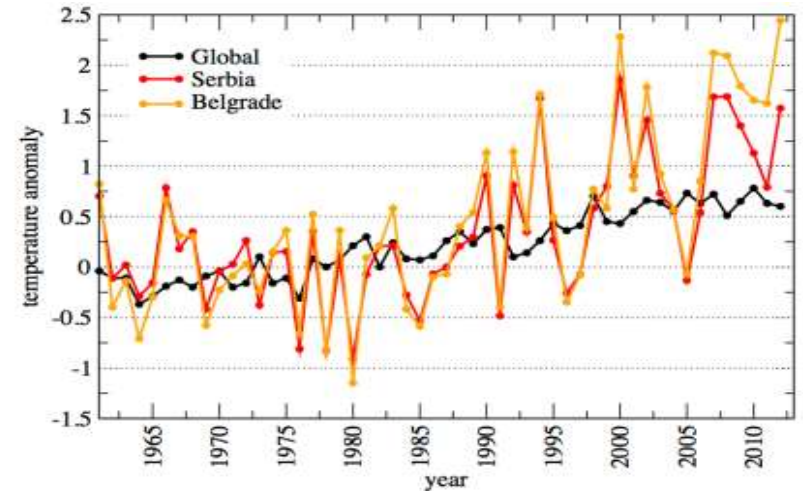


Figure 1.1. Annual mean temperature anomalies in °C relative to period 1961-1990, for global domain, Serbia and Belgrade. Global data are taken from GISSTEMP database and it is calculated using only observation from meteorological stations around the globe.

2007 Bg 16-24 July

T: 90 **95** **99**

M: 15,3% **22,4%** **32%**

Stojanovic, 2014

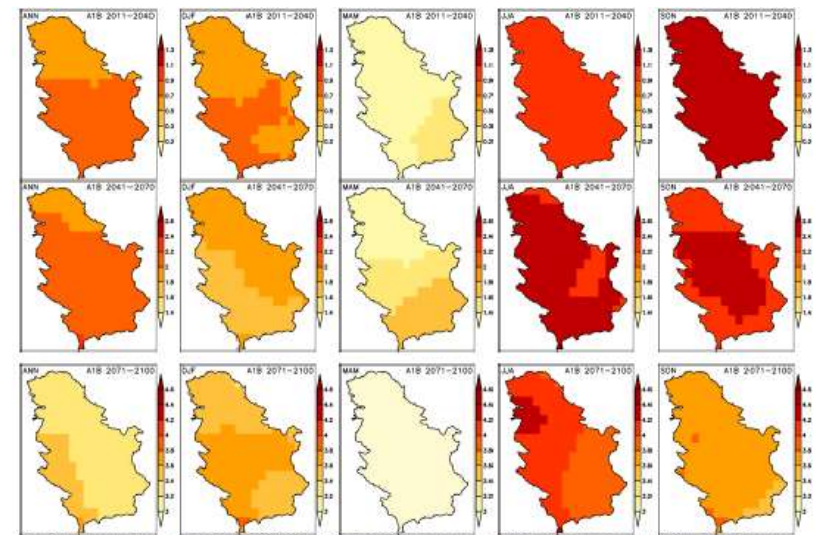
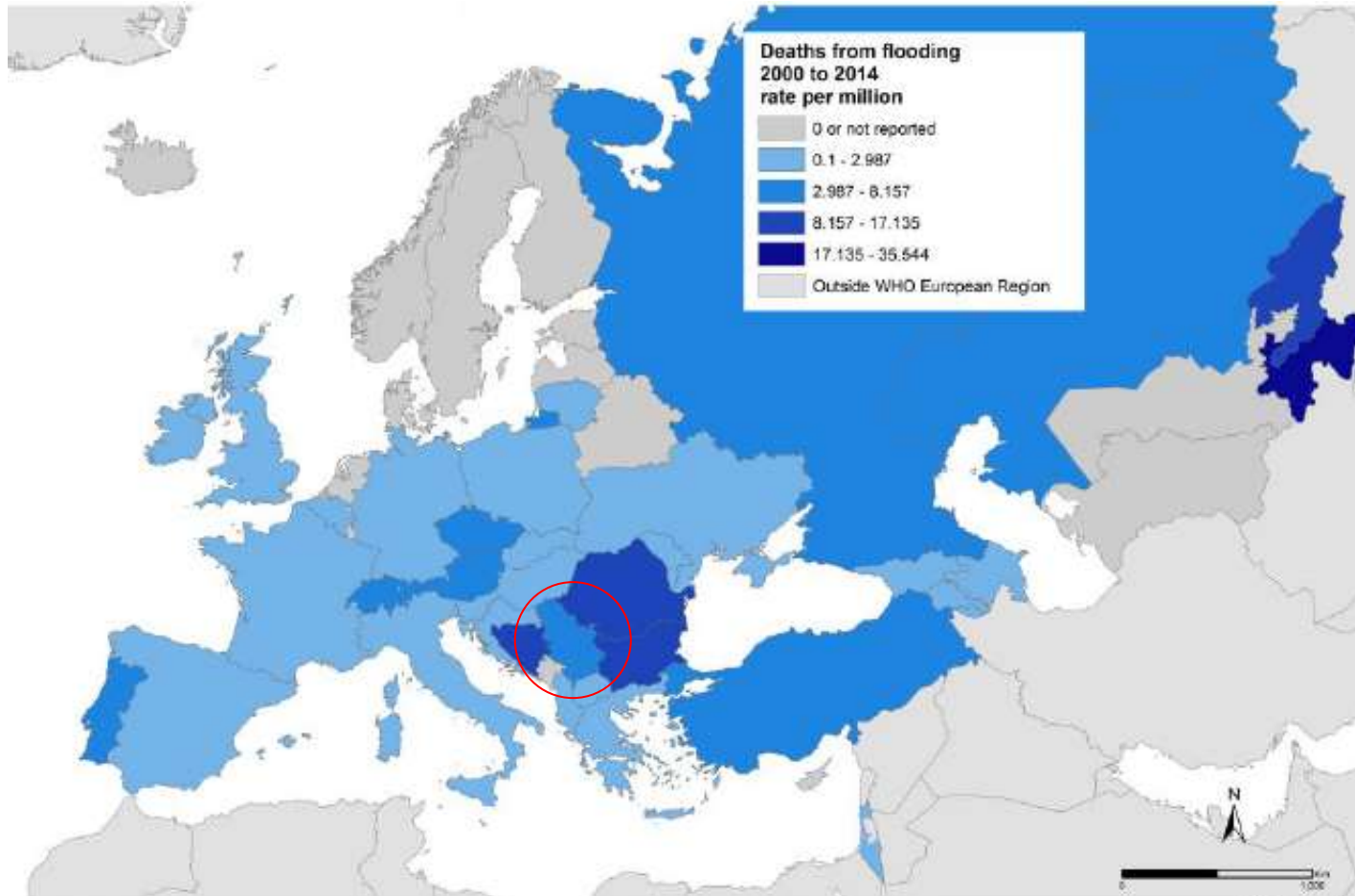


Figure 2.1. Temperature change for the periods 2011-2040, 2041-2070 and 2071-2100 compared to 1961-1990; A1S scenario, on annual level (ANN) and for four seasons.



Flooding and health



Flooding is the most common natural disaster in the European Region: between the years 2000-2014, floods killed more than 2000 people and affected 6.4 million in Europe.

Boundaries and names shown on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines show unrepresented administrative boundaries for which there may not yet be full agreement.

Data source and map production:
Tope Røed
Climate change, green health services and sustainable development (CCG)
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Sources: EM-DAT, 2015

Floods in Serbia

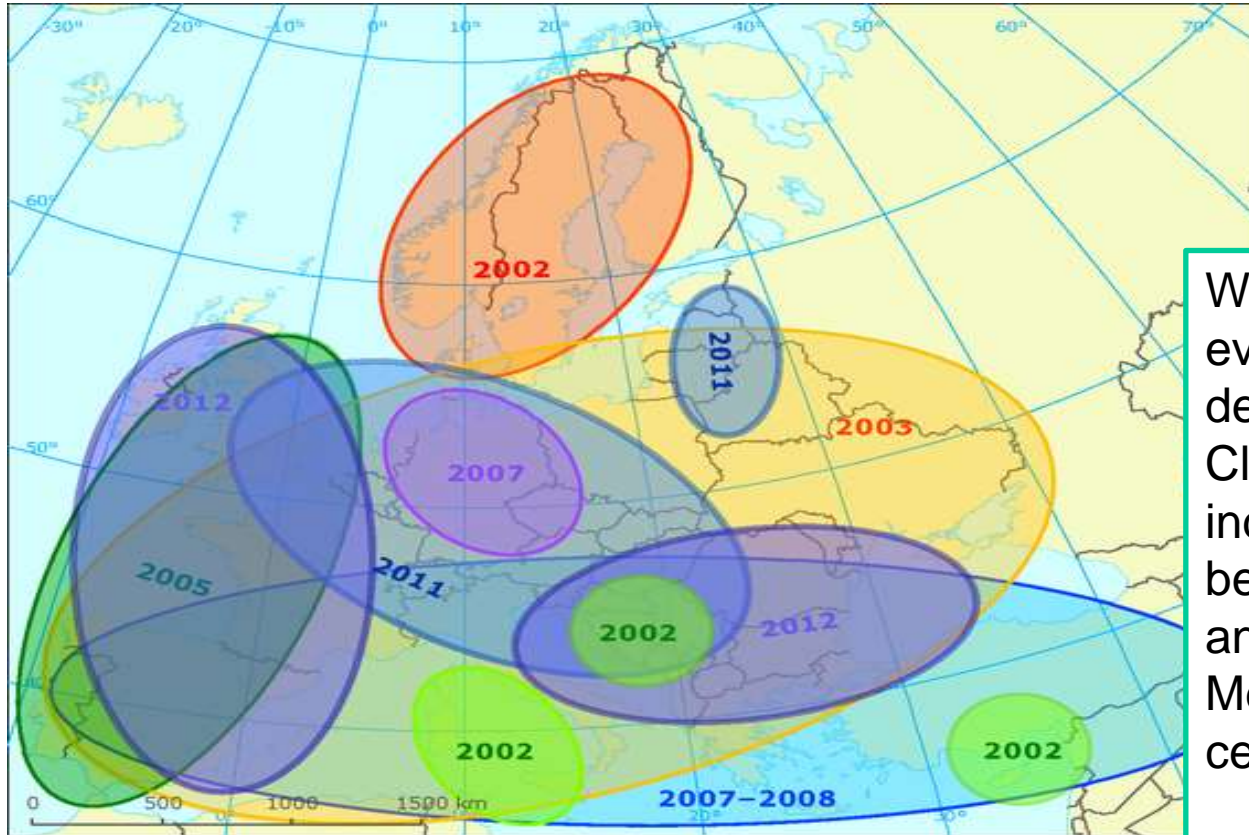


4th EPR, UNECE, 2015



As a result of the flooding in May 2014, 34 persons died – 13 by drowning – and over 30,000 were evacuated from their homes.

Water scarcity and drought events



Water scarcity and drought events in Europe during the last decade

Water scarcity and drought events in Europe during the last decade. Climate change projections indicate that droughts are likely to become more intense in central and southern Europe and the Mediterranean area in the 21st century

Source: EEA (2012). Climate change, impacts and vulnerability in Europe 2012. Copenhagen: European Environment Agency (EEA Report No.12/2012; <http://www.eea.europa.eu/publications/climate-impacts-and-vulnerability-2012>, accessed 19 November 2014)



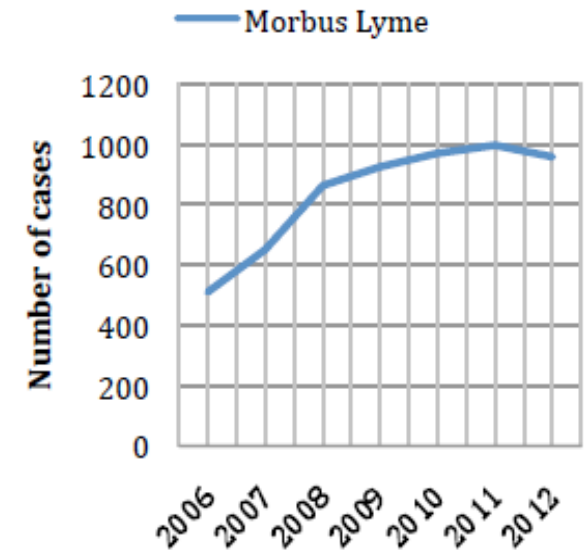
Examples of vector-borne diseases in the WHO European Region

Mosquito-borne

- Dengue fever
- Chikungunya
- Malaria
- West Nile fever (WNF)
- 2012, 71(9)
- 2013, 302(35)

Tick-borne

- Lyme disease
- Tick-borne encephalitis (TBE)
- Crimean–Congo haemorrhagic fever

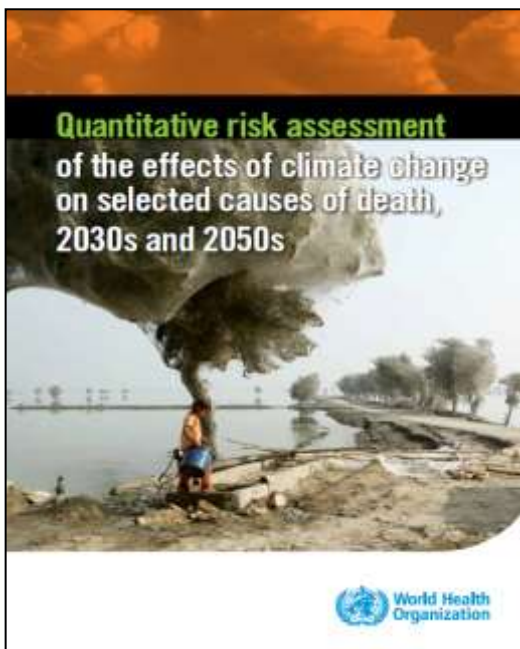


77 000 Europeans on average fall sick from vector-borne diseases every year.

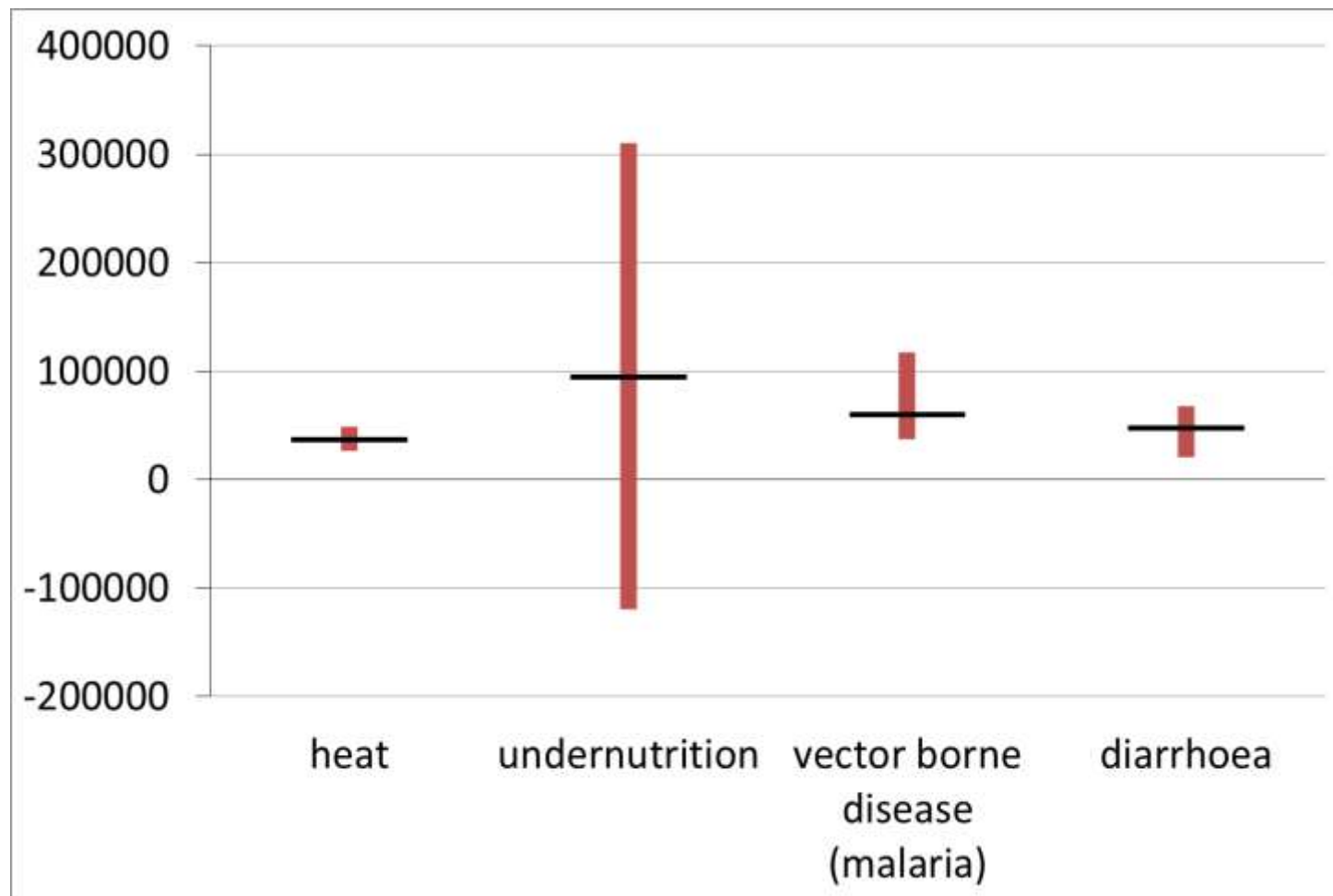
Mosquito species, such as *Aedes aegypti*, are re-emerging, and *Ae. albopictus* is emerging.



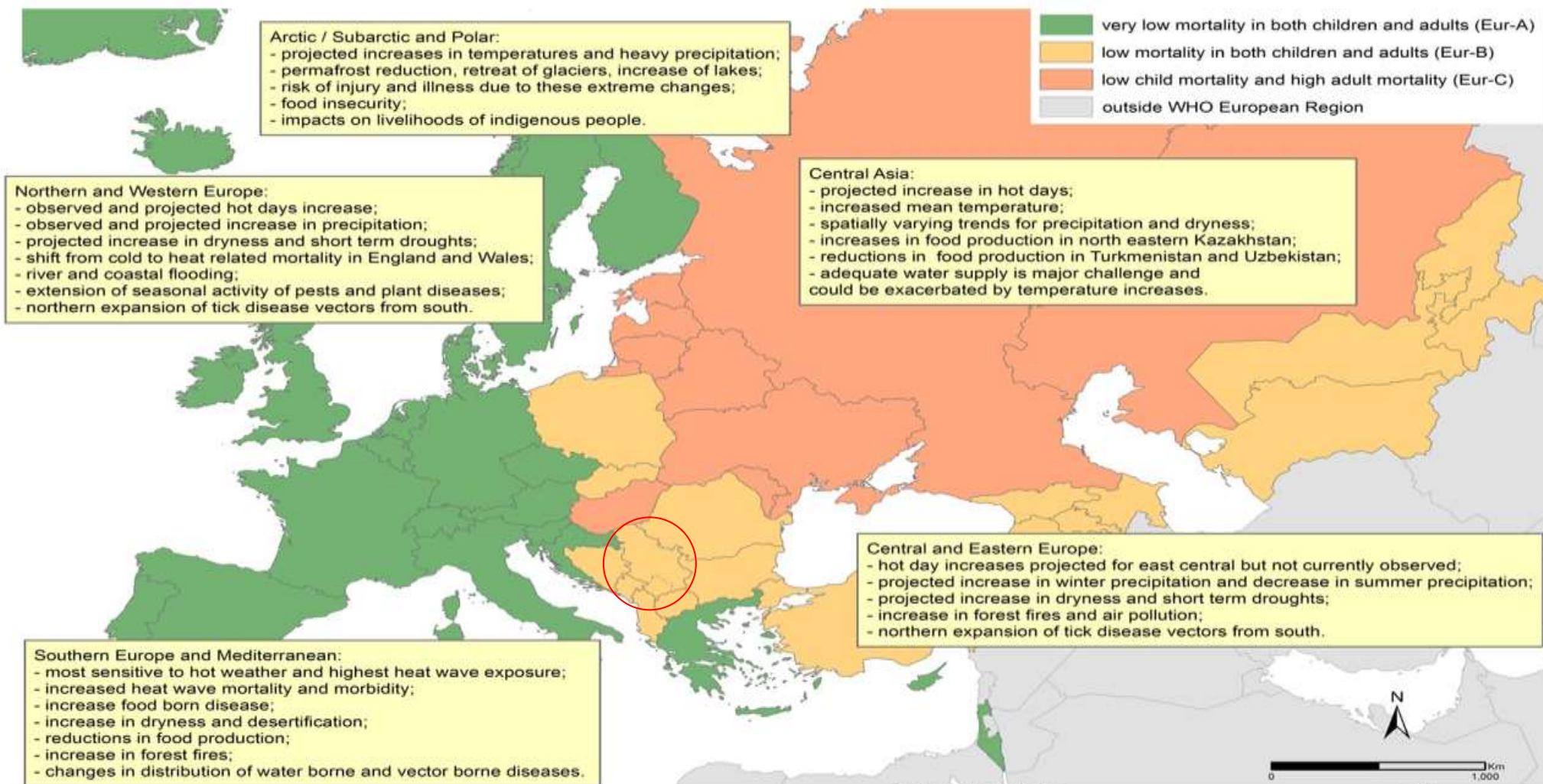
Health Impacts of Climate Change: Approximately 250,000 excess deaths/year by 2030s



WHO, 2014.



High level of diversity



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Data Source and map production:
Compiled based on EEA and IPCC reports and the WHO mortality strata
Tanja Wolf, Climate change, green health services and sustainable development (CGS),
World Health Organization,
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Procena ranjivosti na klimatske promene i Akcioni plan adaptacije



Институт за јавно здравље Србије
„Др Милан Јовановић Батут“



Najava toplotnih talasa na teritoriji Srbije za period od 22. septembra do 1. oktobra 2015. godine

Toplotni talas je pojava od najmanje tri uzastopna dana kada je maksimalna dnevna temperatura vazduha iznad definisane kritične vrednosti za zdravlje ljudi.

Na teritoriji Srbije u periodu od 22. do 26. septembra ne očekuje se pojava toplotnog talasa.

Na teritoriji Srbije u periodu od 22. septembra do 1. oktobra ne očekuje se pojava toplotnog talasa.

Očekivani termički uslovi i nivoi upozorenja za period od 22. do 26. septembra 2015. godine

Na teritoriji Srbije prognozirane vrednosti maksimalne dnevne temperature vazduha nisu u kategoriji opasnih pojava – nema upozorenja.

Očekivane maksimalne dnevne temperature vazduha po okruzima, kao i nivoi upozorenja na očekivane termičke uslove za period od 22. do 26. septembra 2015. godine prikazani su u tabeli i na kartama.





Republic of Serbia
MINISTRY OF AGRICULTURE
AND ENVIRONMENTAL
PROTECTION

No. 353-01-927/2015-06
Date: 25 June 2015
Belgrade

United Nations Framework Convention on Climate Change Secretariat
Ms. Christiana Figueres, Executive Secretary

Hans Carstanjen
Martin-Luther-King-Strasse 8
53175 Bonn, Germany

Subject: Republic of Serbia – INDCs

Dear Ms. Christiana Figueres,

Allow me to express gratitude to You and the UNFCCC Secretariat for the effort made during the negotiation process under the UNFCCC.

Recognizing the crucial importance of the global joint effort in combating climate change, I am pleased to announce that Republic of Serbia has developed the INDCs (attached), showing the willingness to contribute to global agreement and mitigation efforts.

Beside the mitigation, as a country hit by the catastrophic floods in 2014, we found very important to highlight the damages and losses caused by climate change, as well as our national needs in developing and implementing adaptation measures.

Please, accept assurance of my highest consideration.

Sincerely Yours,
Olivera Bogdanović
Olivera Bogdanović Bošković, PhD
MINISTER

On Friday 2 October, 146 countries set out their roadmap

Intended Nationally Determined Contribution of the Republic of Serbia

Type	Overall emission reductions compared to GHG base-year emissions
Scope	GHGs which are not controlled by the Montreal Protocol: <ul style="list-style-type: none"> • CO₂ • CH₄ • N₂O • HFCs • PFCs • SF₆
Base year	1990
Period	1 January 2021 – 31 December 2030
Level of GHG emission reduction	GHG emission reduction by 9,8% until 2030 compared to base-year (1990) emissions
Percentage of GHG emissions covered	100%
Planning process	Climate change strategy with an action plan, that should be finalized in 2017, will further define the precise activities, methods and implementation deadlines
Fair and ambitious	In 2010, the Republic of Serbia, as a developing country, associated with the Copenhagen Accord and in the letter of support expressed readiness for voluntary GHG emission limitation until 2020 by 18% compared to emissions in 1990. The Republic of Serbia, as an EU candidate country, harmonizes

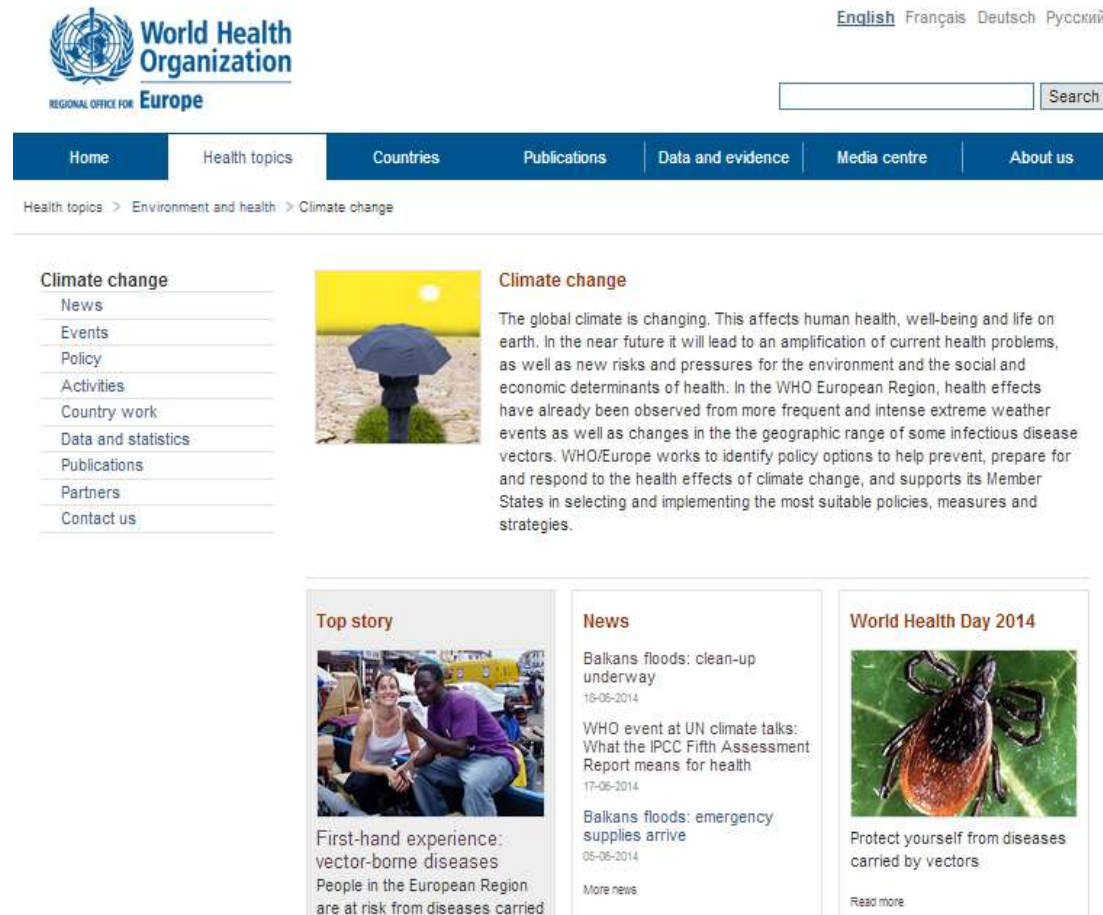


The impact on human health is among the most significant measures of the harm done by climate change – and health can be a driving force for public engagement in climate solutions.



Supporting tools developed by Euro and WHO

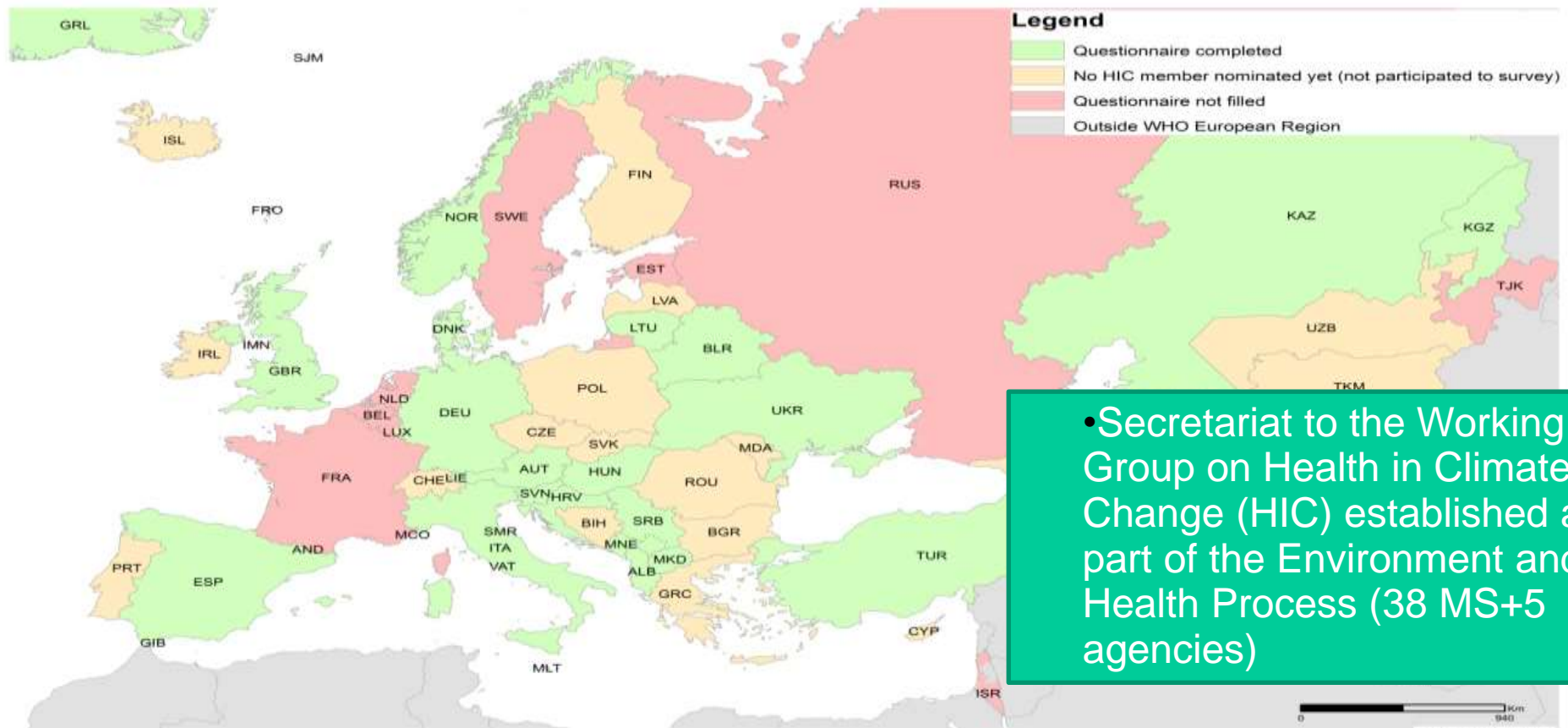
1. Assessment tools
 1. Health impacts (hVIA)
 2. Risk assessment
 3. Economic costs
2. Specific risk tools
3. Public health adaptation framework
4. Policy impact assessment



The screenshot shows the WHO Regional Office for Europe website. At the top, there is the WHO logo and the text 'World Health Organization REGIONAL OFFICE FOR Europe'. To the right, there are language options: English, Français, Deutsch, and Русский. Below this is a search bar. The main navigation menu includes: Home, Health topics, Countries, Publications, Data and evidence, Media centre, and About us. The current page is 'Health topics > Environment and health > Climate change'. On the left, there is a sidebar menu for 'Climate change' with links to: News, Events, Policy, Activities, Country work, Data and statistics, Publications, Partners, and Contact us. The main content area features a large image of a person holding an umbrella under a bright sun, with the heading 'Climate change' and a paragraph of text: 'The global climate is changing. This affects human health, well-being and life on earth. In the near future it will lead to an amplification of current health problems, as well as new risks and pressures for the environment and the social and economic determinants of health. In the WHO European Region, health effects have already been observed from more frequent and intense extreme weather events as well as changes in the the geographic range of some infectious disease vectors. WHO/Europe works to identify policy options to help prevent, prepare for and respond to the health effects of climate change, and supports its Member States in selecting and implementing the most suitable policies, measures and strategies.' Below this, there are three news sections: 'Top story' with a photo of a man and a woman and the text 'First-hand experience: vector-borne diseases People in the European Region are at risk from diseases carried'; 'News' with two items: 'Balkans floods: clean-up underway' (18-05-2014) and 'WHO event at UN climate talks: What the IPCC Fifth Assessment Report means for health' (17-06-2014); and 'World Health Day 2014' with a photo of a tick and the text 'Protect yourself from diseases carried by vectors'.



European Working group on health in climate change (HIC)



• Secretariat to the Working Group on Health in Climate Change (HIC) established as part of the Environment and Health Process (38 MS+5 agencies)

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Data Source and map production: Climate change, green health services and sustainable development (CGS)
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EUROPEAN ENVIRONMENT AND HEALTH PROCESS

Well-designed policies to increase resilience, and mitigate greenhouse gas emissions, can also greatly enhance health, health equity and gender equality



Health impacts and co-benefits should be valued in selecting and financing climate change adaptation and mitigation policies.



And.....

- The World is changing..... and adaptation is already occurring
- It is about managing the risk rather than waiting to see if things get worse!
- Otherwise:
 - ... nobody is going to be untouched
 - ... food production will be threatened
 - ... urban areas are at risk and impacts on water, food and agriculture incomes will affect rural areas
 - ... human health will be impacted and the risks of violent conflicts will increase
- Summarising risks helps us judge when risks become dangerous
- Many risks are manageable through adaptation and clever development, should we get our act together!
- Our climate resilient future depends fundamentally on what we accomplish on mitigation!



WHO calls

“The evidence is overwhelming: climate change endangers human health. Solutions exist and we need to act decisively to change this trajectory.”

Dr Margaret Chan, WHO Director-General

WHO calls on the global health community to add its voice to the call for a strong and effective climate agreement that will save lives, both now and in the future.

<http://www.who.int/globalchange/global-campaign/en/>



We call for a climate change agreement that promotes:

- Strong and effective action to limit climate change, and avoid unacceptable risks to global health:
- Scaling up of financing for adaptation to climate change: including public health measures to reduce the risks from extreme weather events, infectious disease, diminishing water supplies, and food insecurity.
- Actions that both reduce climate change and improve health, including reducing the number of deaths from cancer, respiratory and cardiovascular diseases that are caused by air pollution (currently over 7 million each year).



We commit to leading by example, by:

- Raising awareness of the health effects of climate change and the potential health co-benefits of low carbon pathways, among health professionals and the general public;
- Contributing to the development and implementation of measures to limit climate change and protect our countries, workplaces, and communities;
- Working to minimize the environmental impacts of our own health systems, at the same time as improving health services.



PLEASE TAKE ACTION NOW:

Sign the call and pass it on to fellow health professionals and your wider networks.

Our collective voice will be spotlighted at COP-21 as a clarion call for the critical contribution of health to more meaningful climate action.

NAME:

REPRESENTING WHICH ORGANIZATION:

JOB TITLE:

CITY:

COUNTRY:

WEB LINK:



Questions:

- **How do we engage the stakeholders to work together more efficiently on climate change and health topic?**
- **Are the measures, policies and strategies in this area currently available sufficient?**
 - **What needs to be strengthened?**
 - **What needs to be developed?**

