

Impacts of climate change on the health of the EU population

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Structure of the Presentation

1. Heat-related effects on health

An inequal distribution of the health risk among the EU population

→ Greater exposure in EU cities

Case study: The elderly, an increasingly vulnerable population

2. Infectious diseases

Climate change as one of the drivers of the EU's increasing infectious disease threat

→ Antimicrobial resistance

→ Vector-borne diseases

Case study: Vibrio infections in the Baltic area

3. The health impact of air pollution

→ Air pollution: the greatest environmental threat to the EU

Introduction

- 1/8 deaths in the EU is caused by environmental factors
 - The effects of climate change on human health are harmful and health risks will increase over time
 - Elderly people, people with medical conditions, children and socially disadvantaged communities are at greater risk
- ➔ Need for adaptation and mitigation strategies

1. Heat-related effects on health

An inequal distribution of the heat-related risk among the European population:

The elderly: stakes and adaptation strategies for a particularly vulnerable population

An inequal distribution of the heat-related risk among the European population:

31 million additional heatwave exposures in 2018

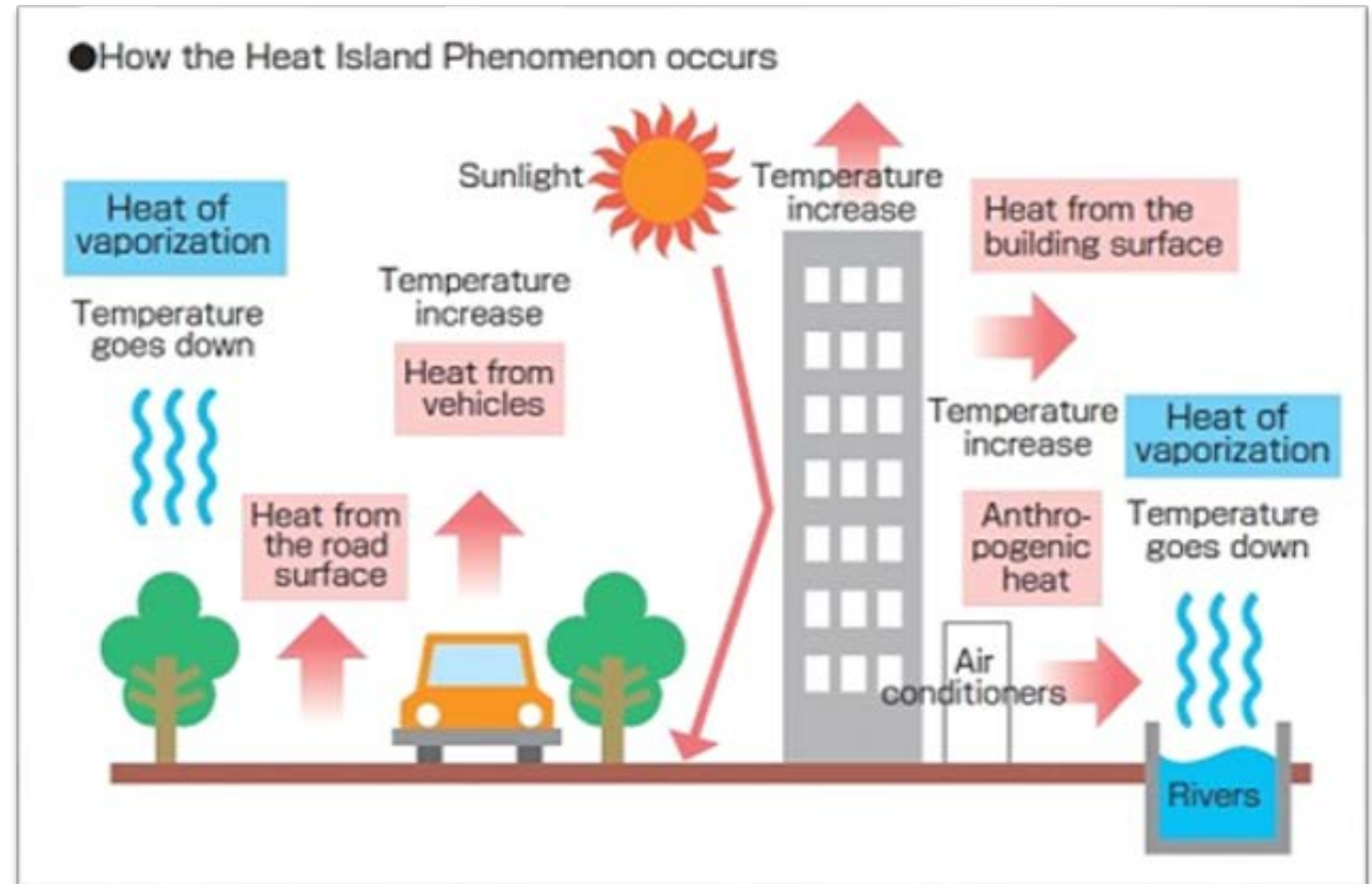
- Don't affect everyone the same way
- Southern Europe more at risk

Increase $>2^{\circ}\text{C}$ would cause additional 132,000 deaths/year
→ only 58,000 if $<2^{\circ}\text{C}$

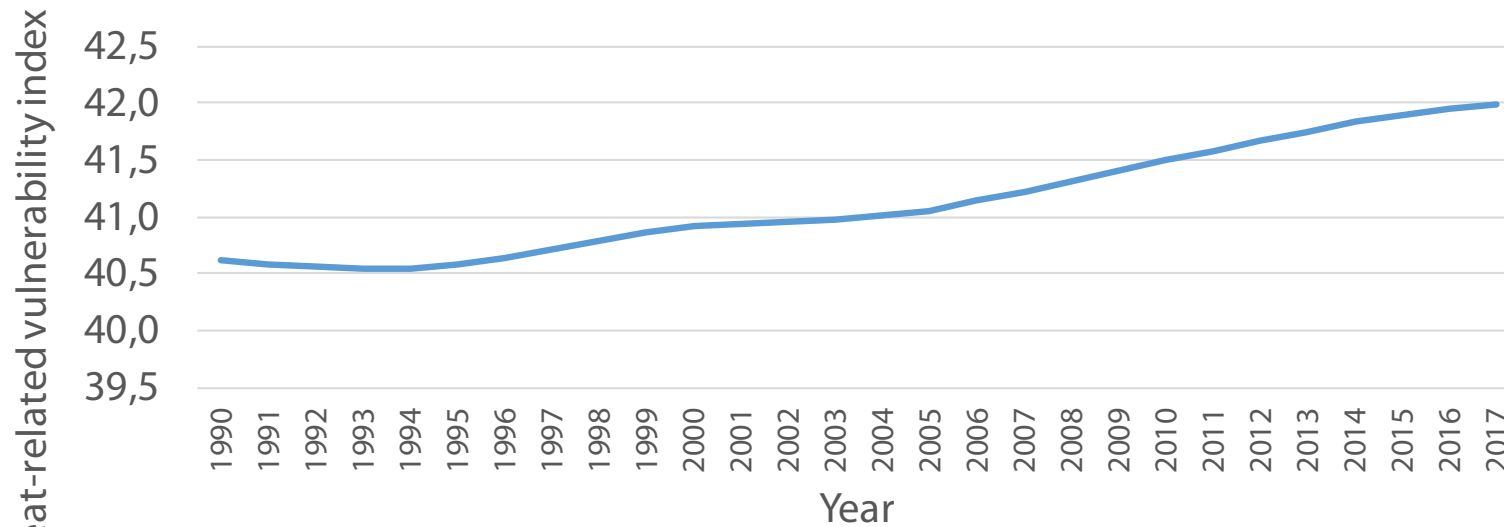
Greater exposure in EU cities

The Urban Heat Island Phenomenon:

- temperature increases of 4 to 7°C in EU cities
- exacerbate health impacts :
 - affects rainfall patterns
 - interacts with and worsens air pollution
 - increases flood risk
 - decreases water quality



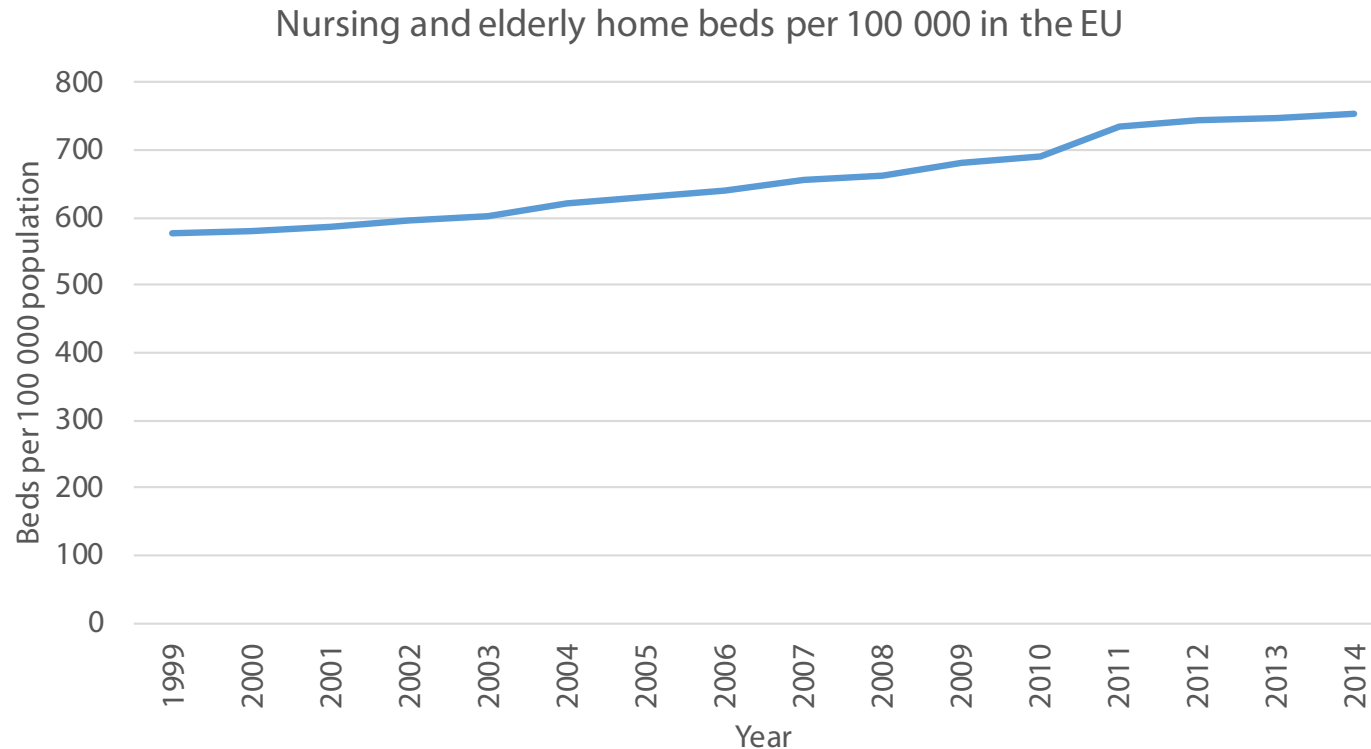
The elderly, an increasingly vulnerable population



People >65 : 31% of the EU-27
population by 2100

Trend in heat-related vulnerability for populations over 65 years in the European Region. This is based on an index ranging from 0 to 100.

Adapting long term care facilities to a warmer climate



Adapting long term care facilities to a warmer climate



2. Infectious diseases

Climate change as one of the drivers of the EU's increasing infectious disease threat

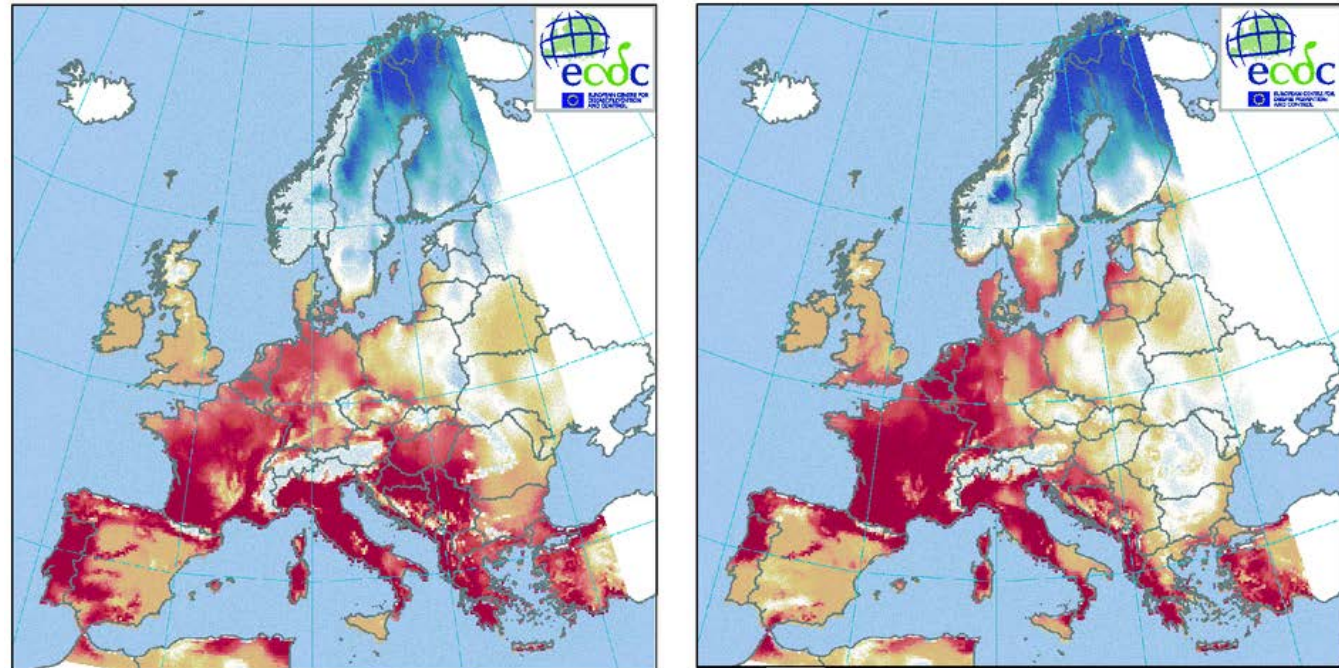
- a. Antimicrobial resistance
- b. Vector-borne diseases

Case study : Vibrio infections in the Baltic area

Climate change as one of the drivers of the EU's increasing infectious disease threat

Seasonal and geographical
distribution affected by climatic
conditions

➔ Establishment of diseases
formerly not present in the EU



Areas of possible establishment of *Aedes albopictus* (the tiger mosquito) in Europe for 2010 and 2030

Left: maximum-change scenario for 2010; right: minimal-change scenario for 2030

Less suitable areas



0



25.5



51



76.5



102



127.5



153



178.5



204



229.5



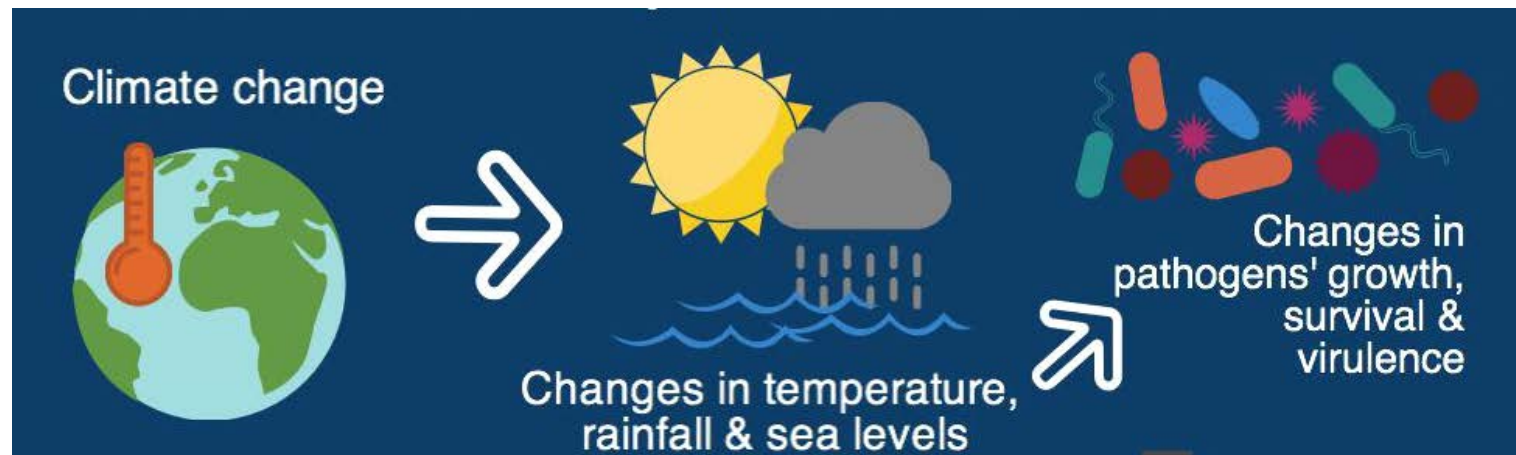
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Most suitable areas

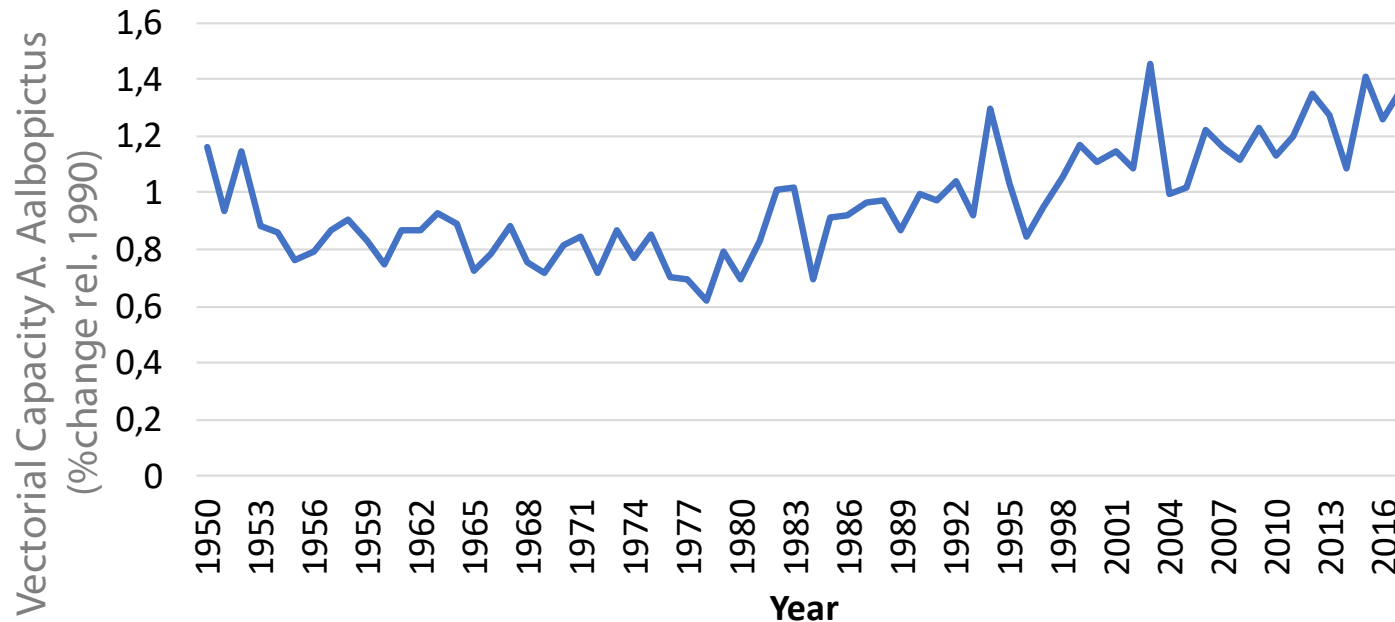
Source:
EEA

Antimicrobial resistance

- Antibiotic-resistant bacteria are more likely to be found at warmer times of the year
- 33 000 deaths/year in the EU



Vector-borne diseases

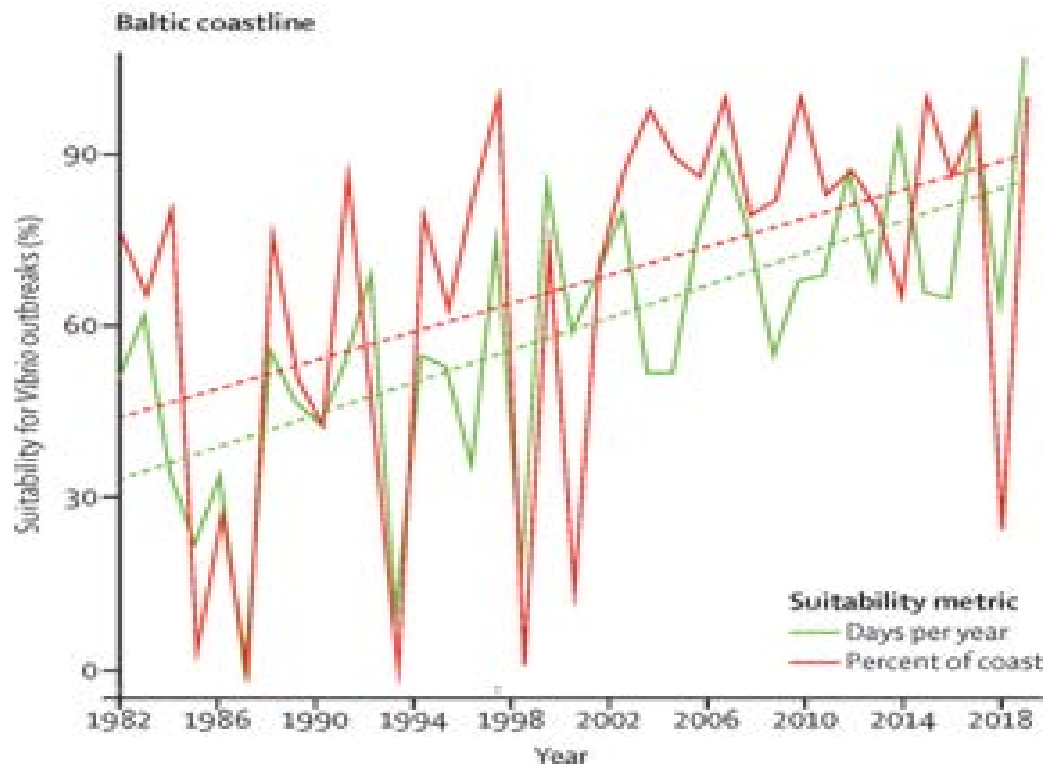


Southern and Western Europe will become favourable habitat in the coming decades for:

- Zika
- Dengue
- Malaria
- Chikungunya
- West Nile fever
- ...

Changes in global vectorial capacity for the dengue virus vector *A. albopictus* since 1950 in 15 EU countries.

Vibrio infections in the Baltic area



Source: Lancet Countdown

- Immunocompromised people and the elderly
→ population at risk
- 31% increase of coast suitable for Vibrio since the 1980s
→ 107 days in 2017

Adaptation strategies:

- Risk assessment: mandatory case notification
- Adapted prevention
- Temporary beach access prohibition

3. The health impact of air pollution

Air pollution: the greatest environmental threat to the EU

400,000 premature deaths due to air pollution every year in the EU

→ Causes various diseases and medical conditions

Europeans affected unequally:

→ East/West and North/South division

→ Urban dwellers, children, pregnant women, the elderly, people with pre-existing health problems, people of lower socio-economic status

Thank you for your attention!