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REGIONAL OFFICE FOR Europe

EUROPEAN ENVIRONMENT AND HEALTH PROCESS

Global Climate Observing System

Health issues

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Bonn, 10–12 February 2015

Needs from health sector perspective

- **Information for anticipation of extreme events and meteorological trends**
- **Climate information for vulnerability, impact and adaptation assessment**
- **Climate information to develop standards and norms**
- **Climate information for adaptation planning, e.g. heat early-warning systems for health adaptation**
- **Climate information for mitigation, e.g. air quality**

GFCS GLOBAL FRAMEWORK FOR CLIMATE SERVICES

Vision

To enable better management of the risks of climate variability and change and adaptation to climate change, through the development and incorporation of science-based climate information and prediction into planning, policy and practice on the global, regional and national scale."

Priority Areas

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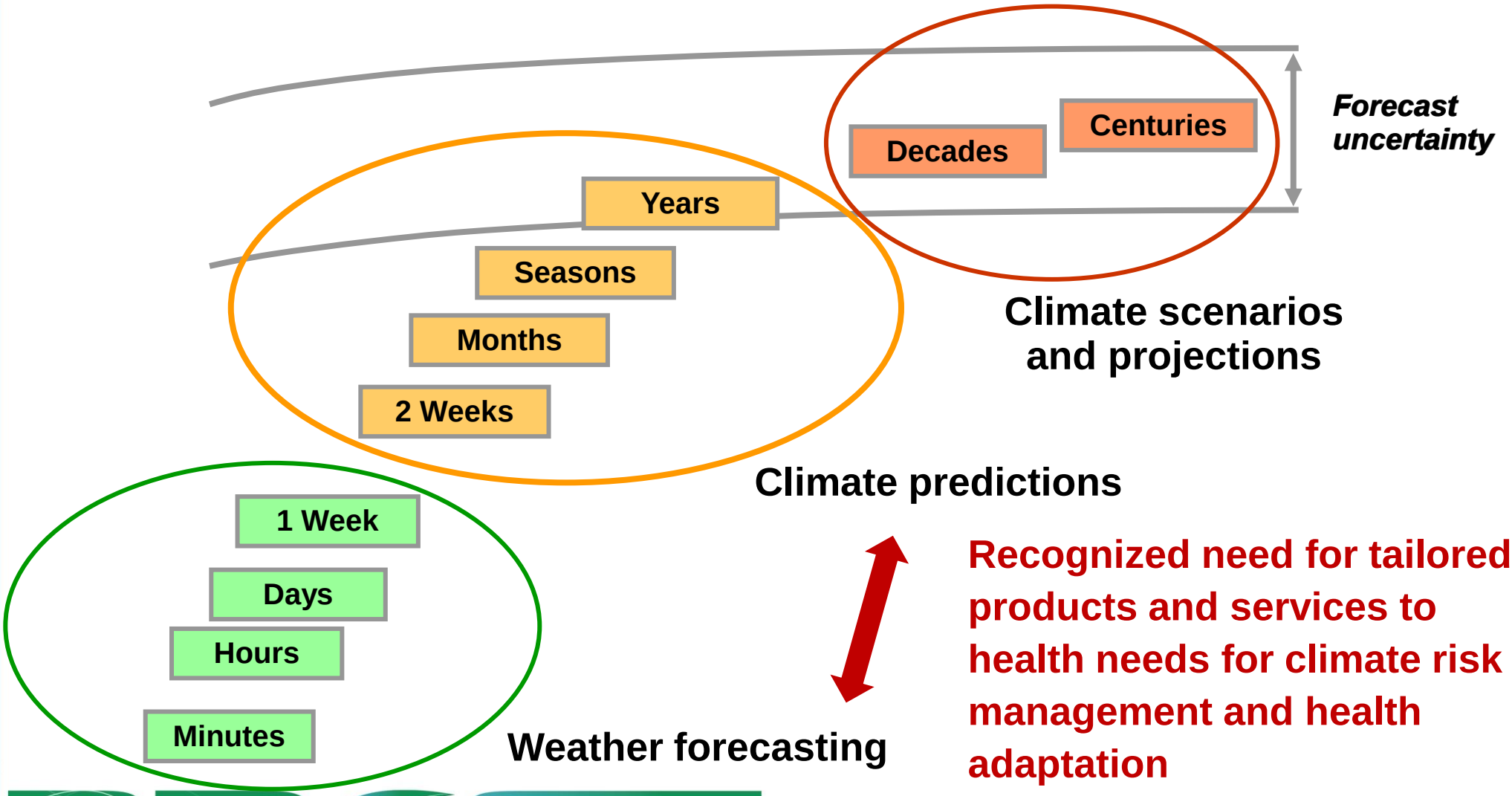
Untapped potential: Health-relevant climate and weather data is available across timescales



Recognized need for tailored products and services to health needs for climate risk management and health adaptation

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Health users' perception (EUPORIAS)

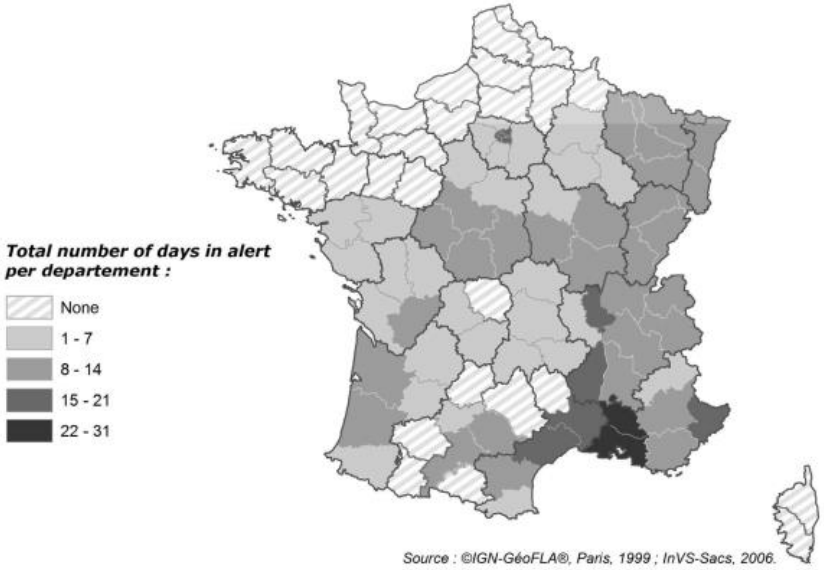
- Short term weather forecasts
- S2D climate information
  - Variable (and limited) experience of use
  - Seasonal
    - Used by some organisations - anticipate health system requirements
  - Decadal
    - Perceived as unreliable
    - Limited use for budget/workforce/activity planning
- Retrospective/historical weather/climate information also used for hindcasting

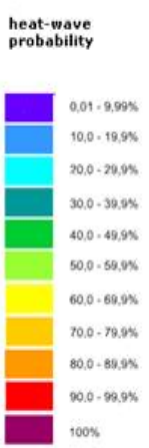
Regional Opportunities

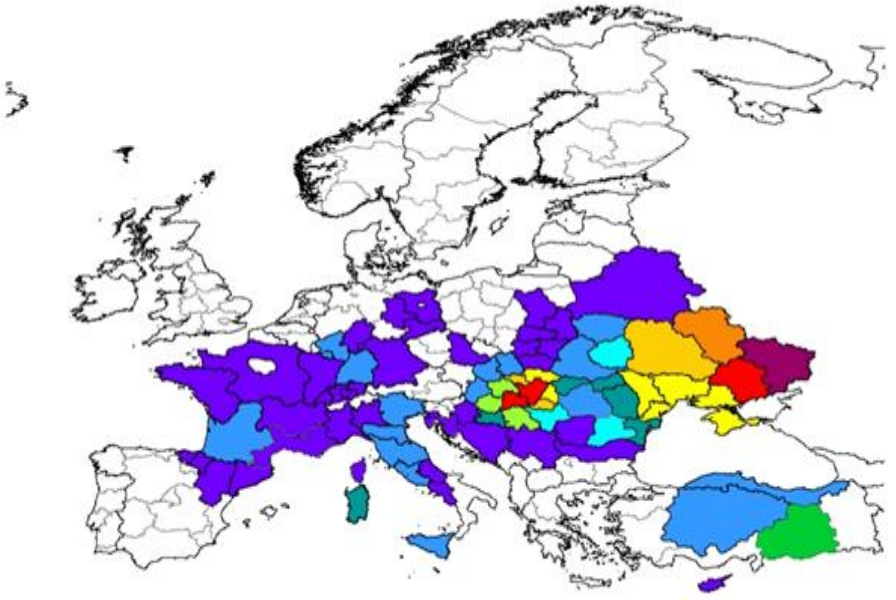
Heat–Health Warning Systems

Short–medium-range heat-wave probability tool

"During the 2006 heat wave (from 11th to 28th July), about 2065 excess deaths occurred in France. Considering the observed temperatures and with the hypothesis that heat-related mortality had not changed since 2003, 6452 excess deaths were predicted for the period. The observed mortality during the 2006 heat wave was thus markedly less than the expected mortality (approximately 4400 less deaths)." — Fouillet *et al.* (2009) Int J Epidemiol. 37(2): 309–317







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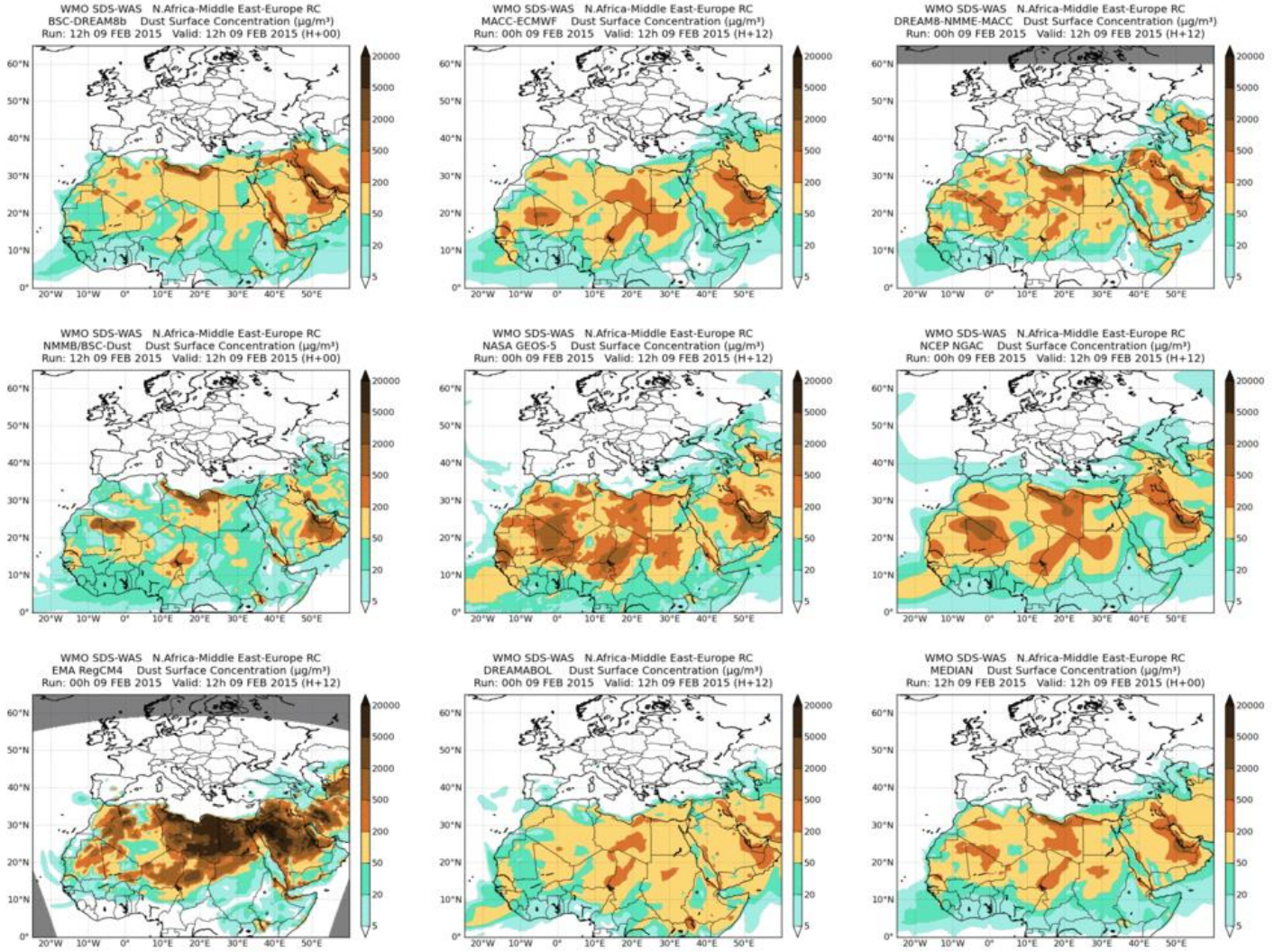
Regional Example
Unexplored: Sand and Dust Storm Warning and Advisory



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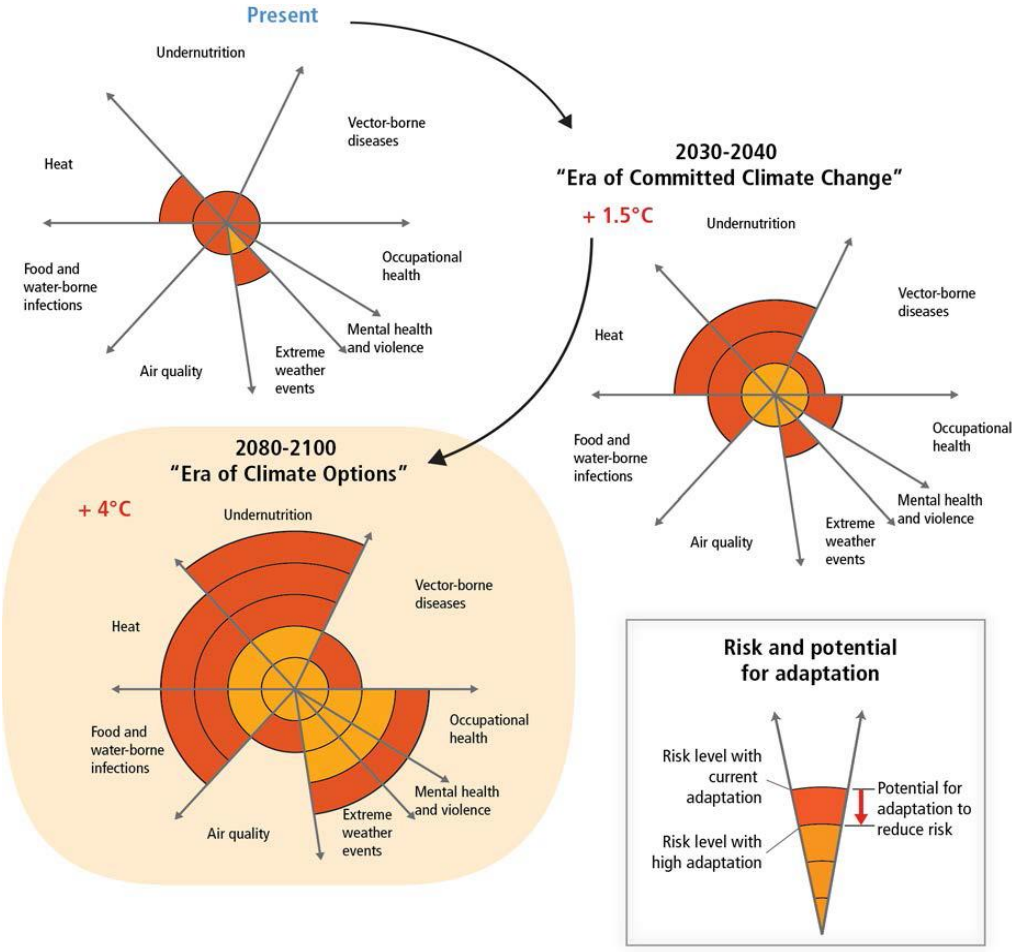
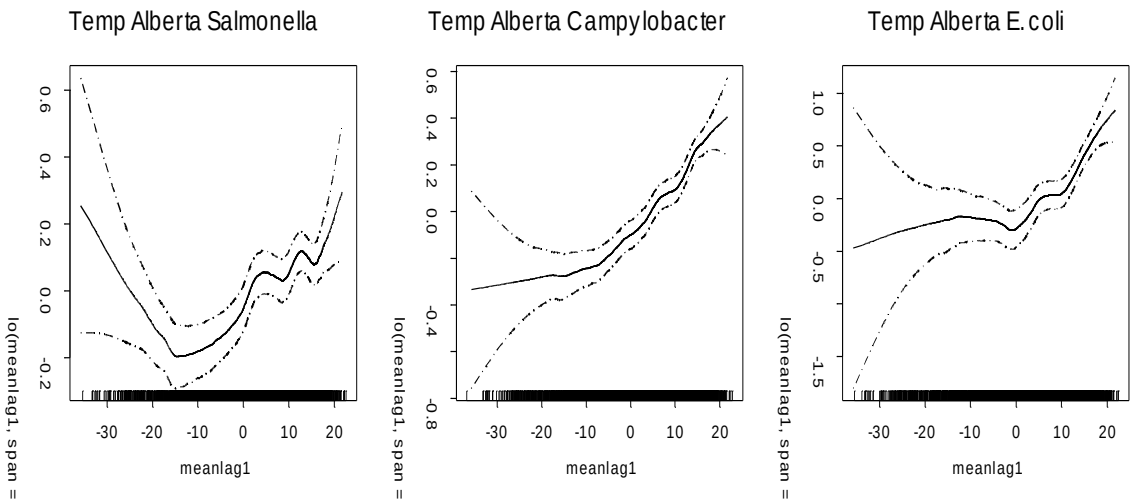
Climate information for assessing vulnerability and impacts

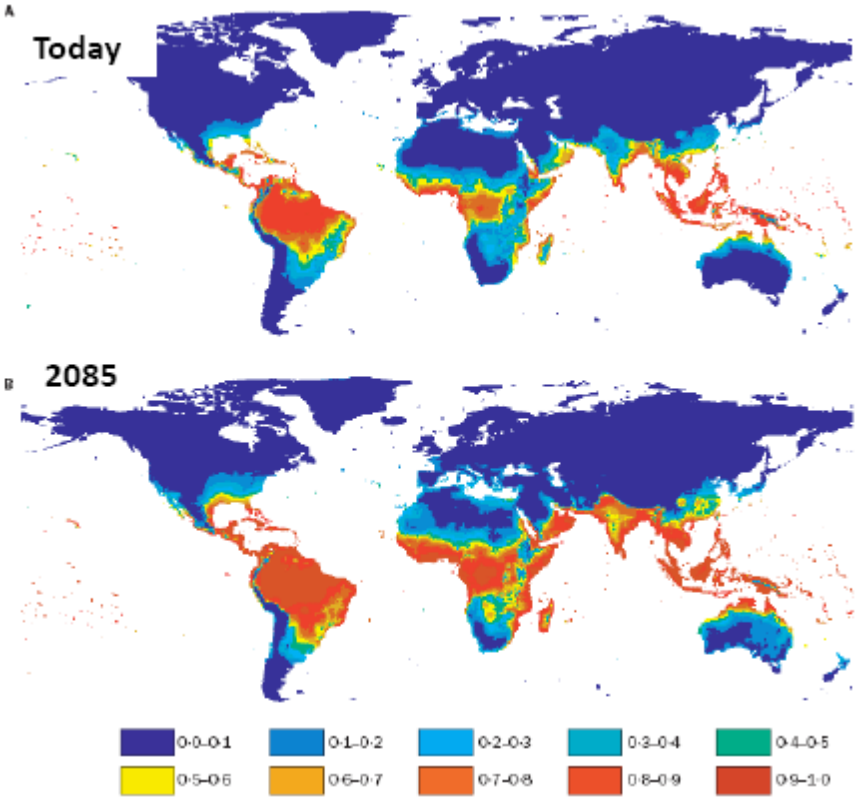
Main health impacts by 2050	Confidence
Injury, death, disease due to more intense heat waves and fires	Very high
Respiratory diseases from combination of local air pollution & cc	Very high
Increased risk of undernutrition in children	High
Increased risk of food-, water- &vector-borne infectious diseases	High
Reduced health and labor capacity due to heat	High



Smith et al, 2014

Examples of other research





***Salmonella* increased by 1.2% per degree above - 10˚C**
***RR of Campylobacter* increased by 2.2% (4.5% in Newfoundland) per degree above - 10˚C**
***RR of E. coli* increased by 6.0% per degree above - 10˚C**

Research

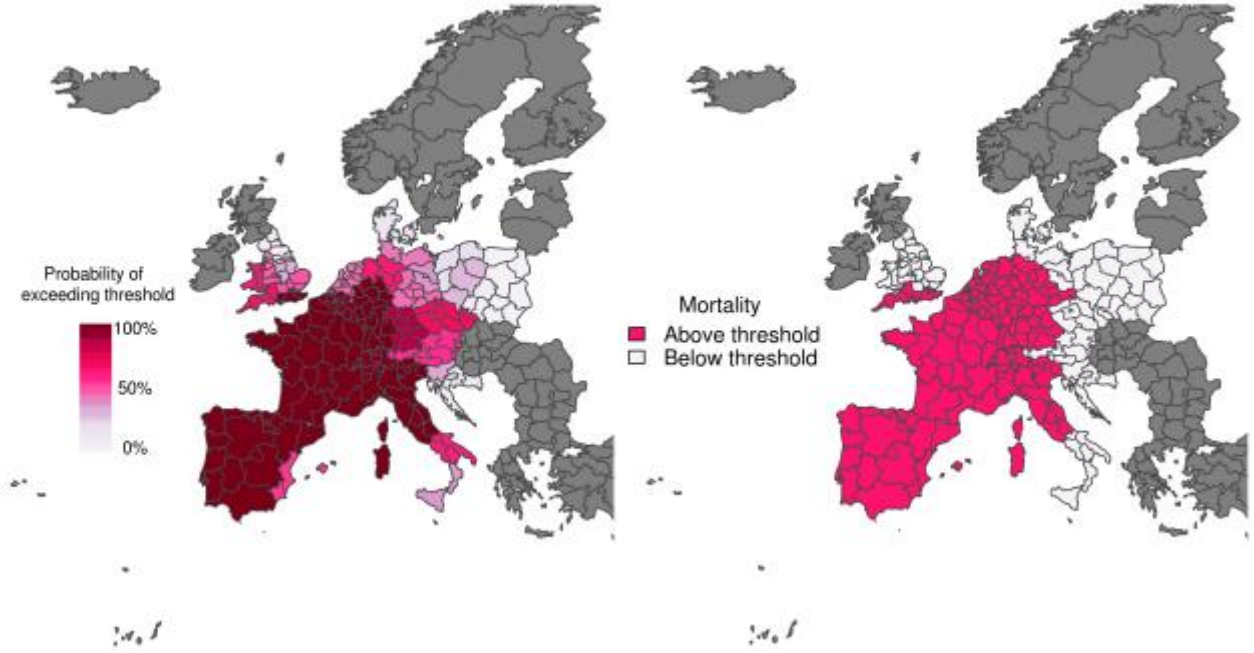
EUPORIAS

EUPORIAS: European Provision Of Regional Impacts Assessments on Seasonal and Decadal Timescales

Aims to assess key **knowledge gaps** of important **sectors** and develop a few **prototype** predictions systems

Climate-driven model for temperature-related mortality

www.euproias.eu



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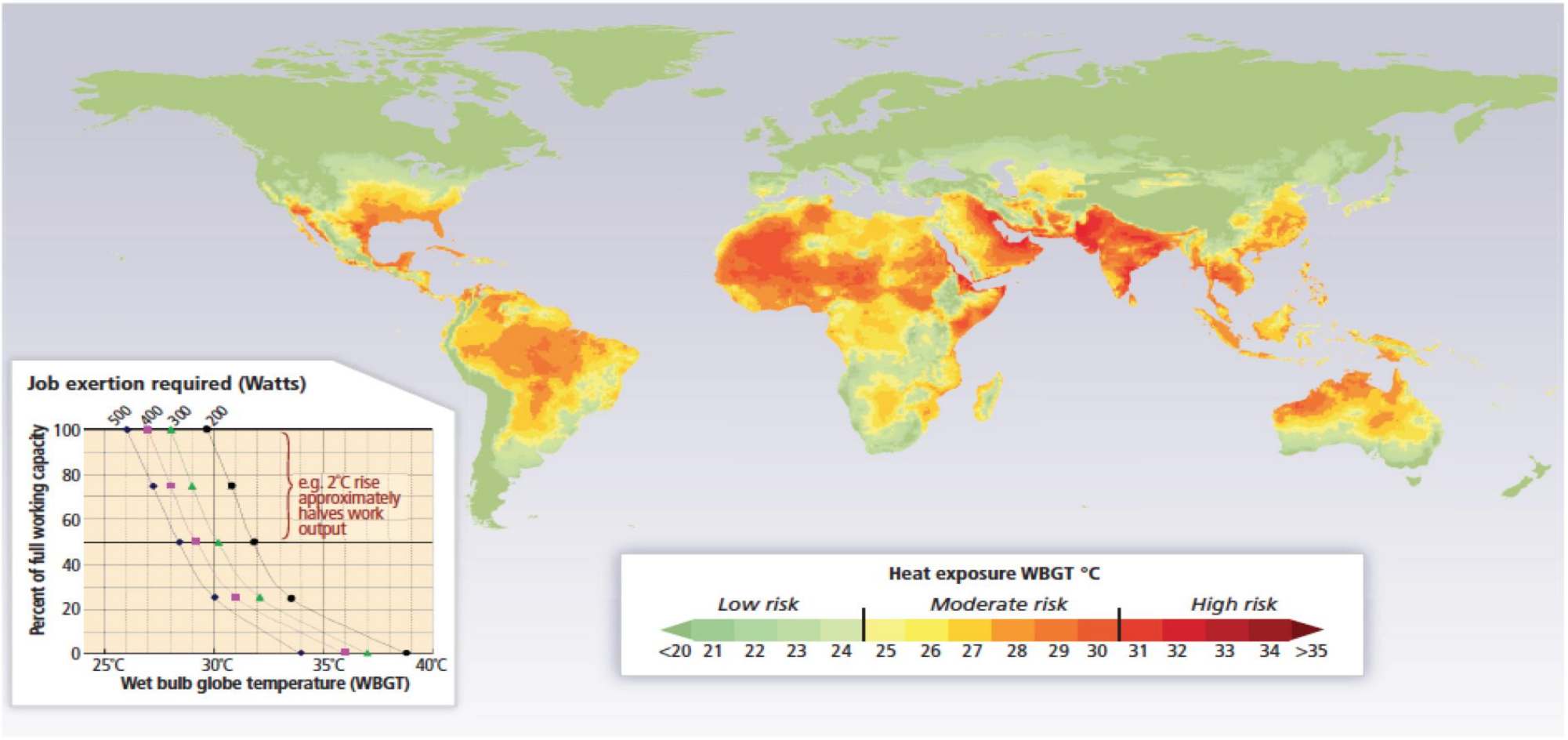
Climate information for setting standards



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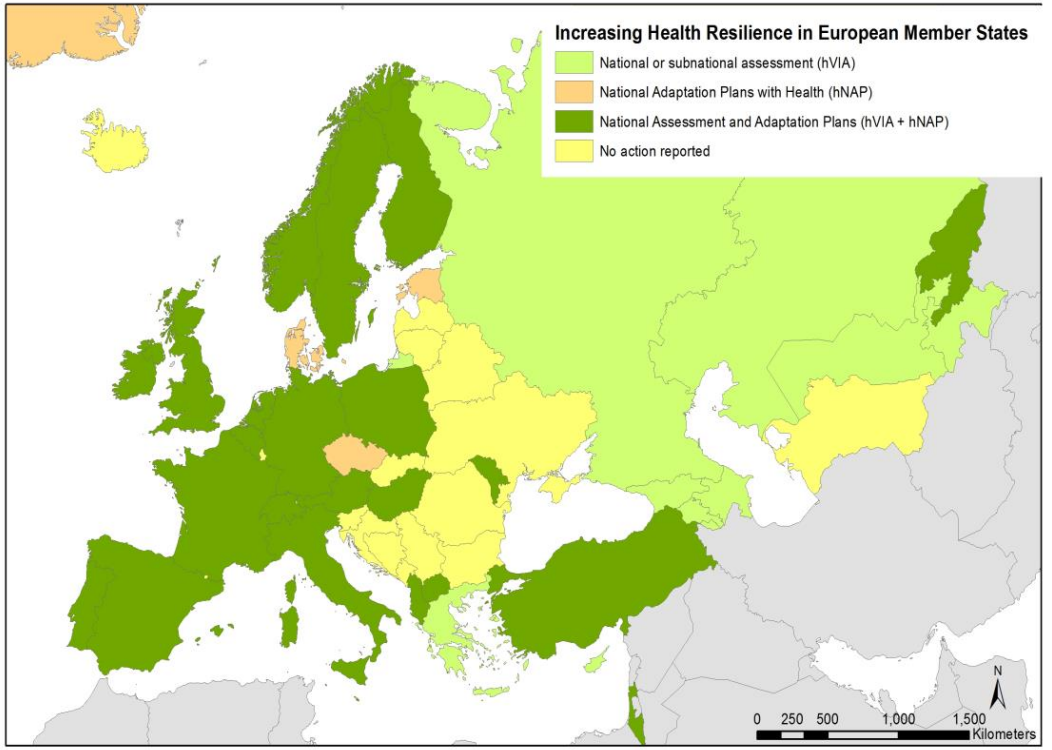
Climate information for health adaptation planning

- Extreme weather events preparedness and response
- Climate sensitive infectious disease surveillance
- Environmental services improvement (e.g. water and food safety)
- Strengthen health system resilience
- Train the workforce
- etc



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Data Source and map production:

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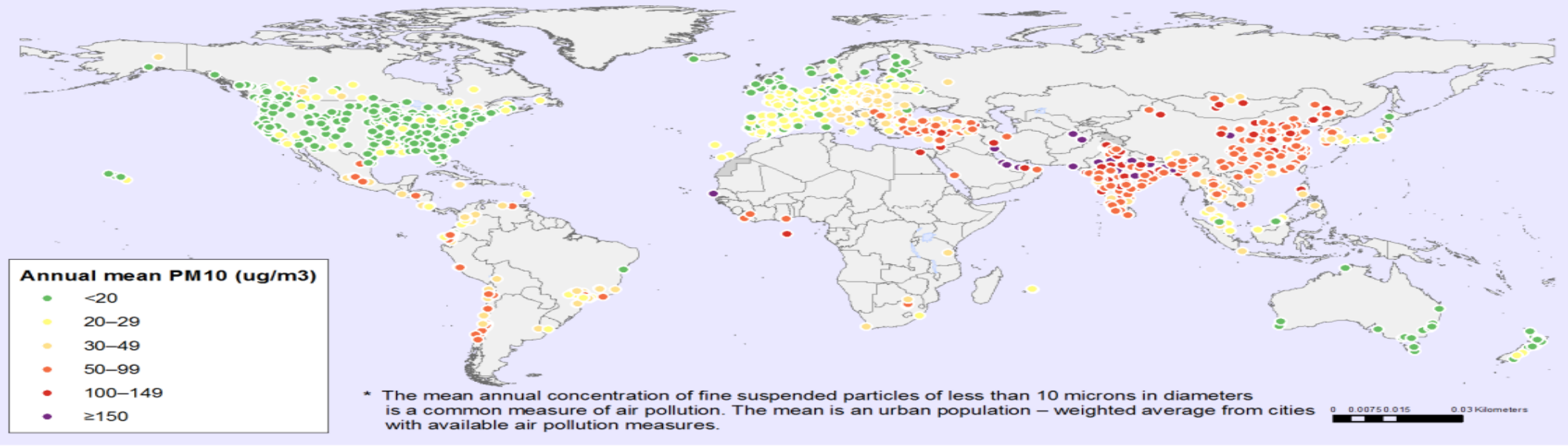
Exposure to particulate matter with an aerodynamic diameter of 10 µm or less (PM10) in 1600 urban areas*, 2008–2013



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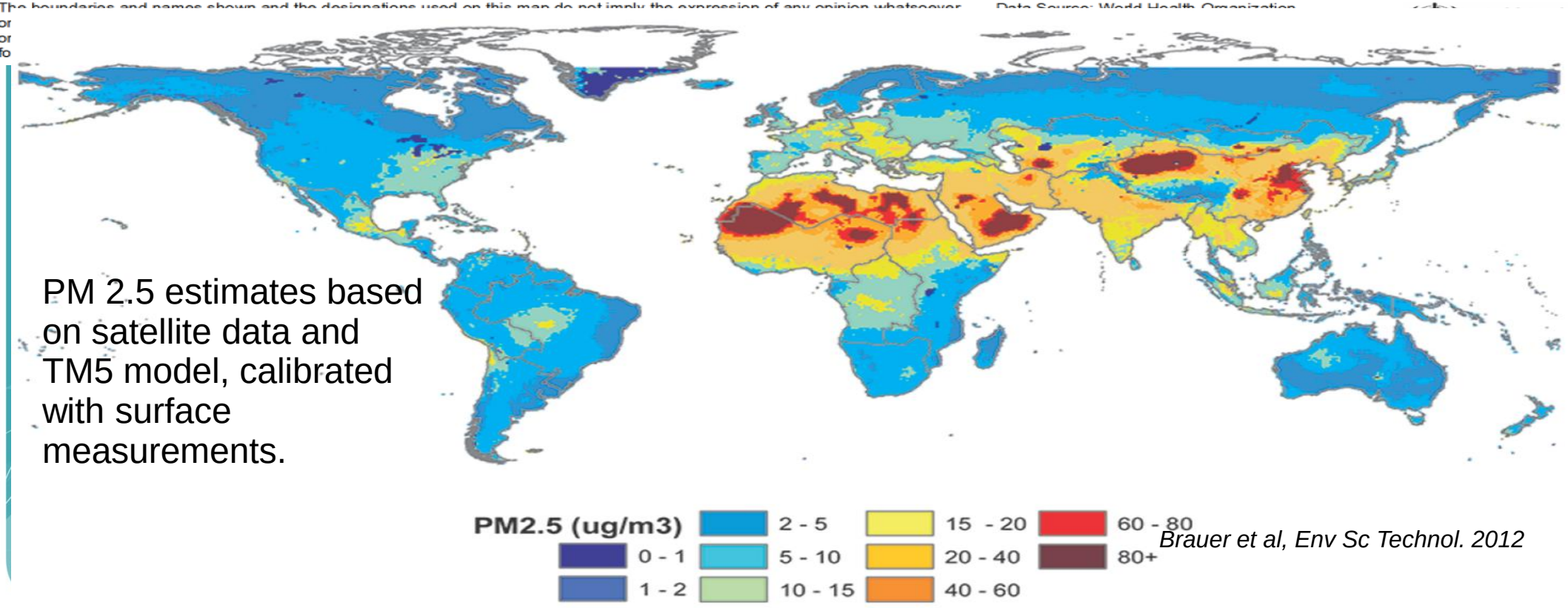

PM 2.5 estimates based on satellite data and TM5 model, calibrated with surface measurements.

Brauer et al, Env Sc Technol. 2012

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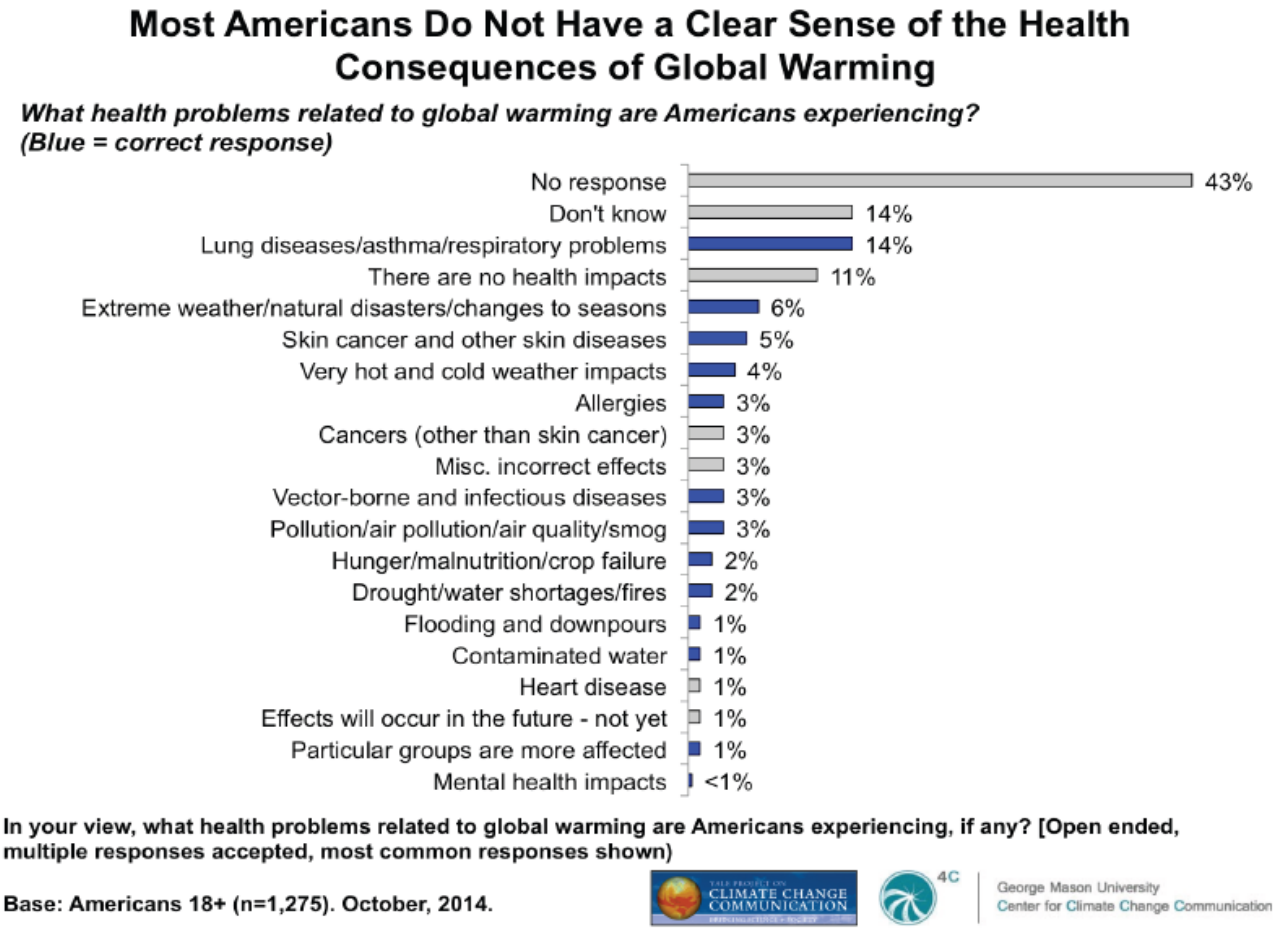
Joint communication



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Thank You!

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Operational needs

- **Public and freely available meteorological and climate data for use in research and assessments**
- **Improved spatial and temporal resolution**
- **Improvement in dialogue between providers and users of climate services – jointly**
- **Public and freely available downscaled meteorological and climate data**
- **Improvement in dialogue between different players and sectors – find synergies**
- **Avoid duplications – joint efforts**