
Health impacts of climate change

Marina Maiero, Climate Change and Health Team, WHO
Kristie Ebi, University of Washington



**World Health
Organization**

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**



Climate change is already impacting on health



Cumulative emissions of greenhouse gases, to 2002



WHO estimates of *per capita* mortality from climate change, 2000

Map projections from Patz et al, 2007; WHO, 2009.

An example of how climate change is already damaging human health

Russia 2010:

Heat wave leads to fires, heavy air pollution and about 11,000 excess deaths

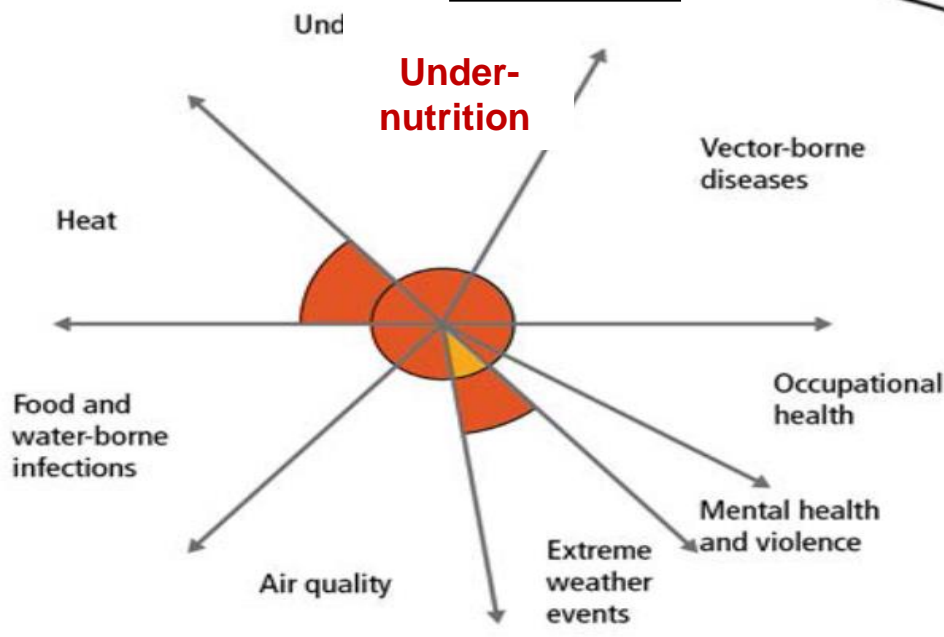
During 2000-2010 risk of extreme heat events 5 times greater than would be expected under a stationary climate

It is more likely than not (p about 80%) that the 2010 Moscow heat wave (and deaths) was due to climate change

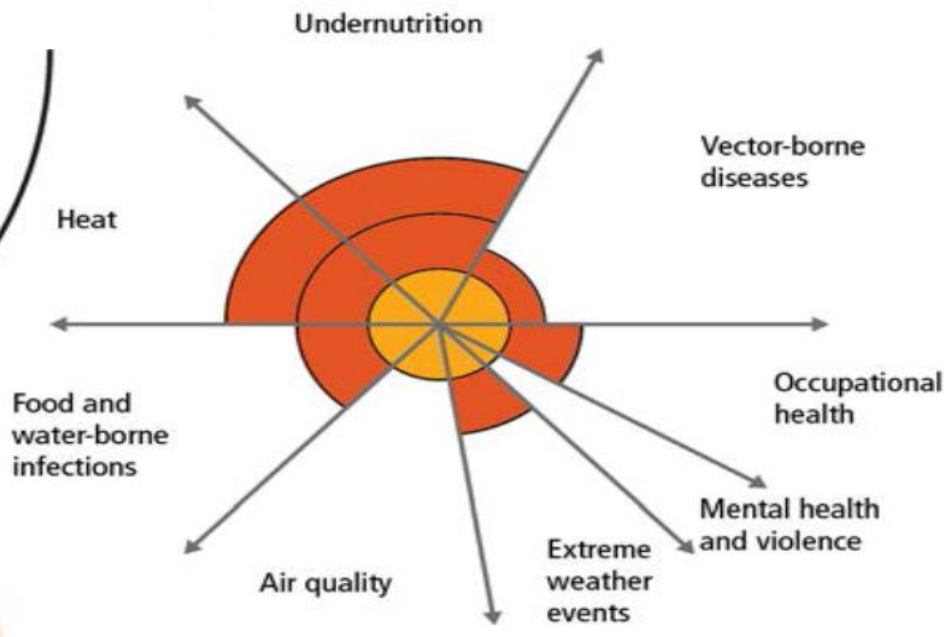
Slide courtesy of Prof. Alistair Woodward



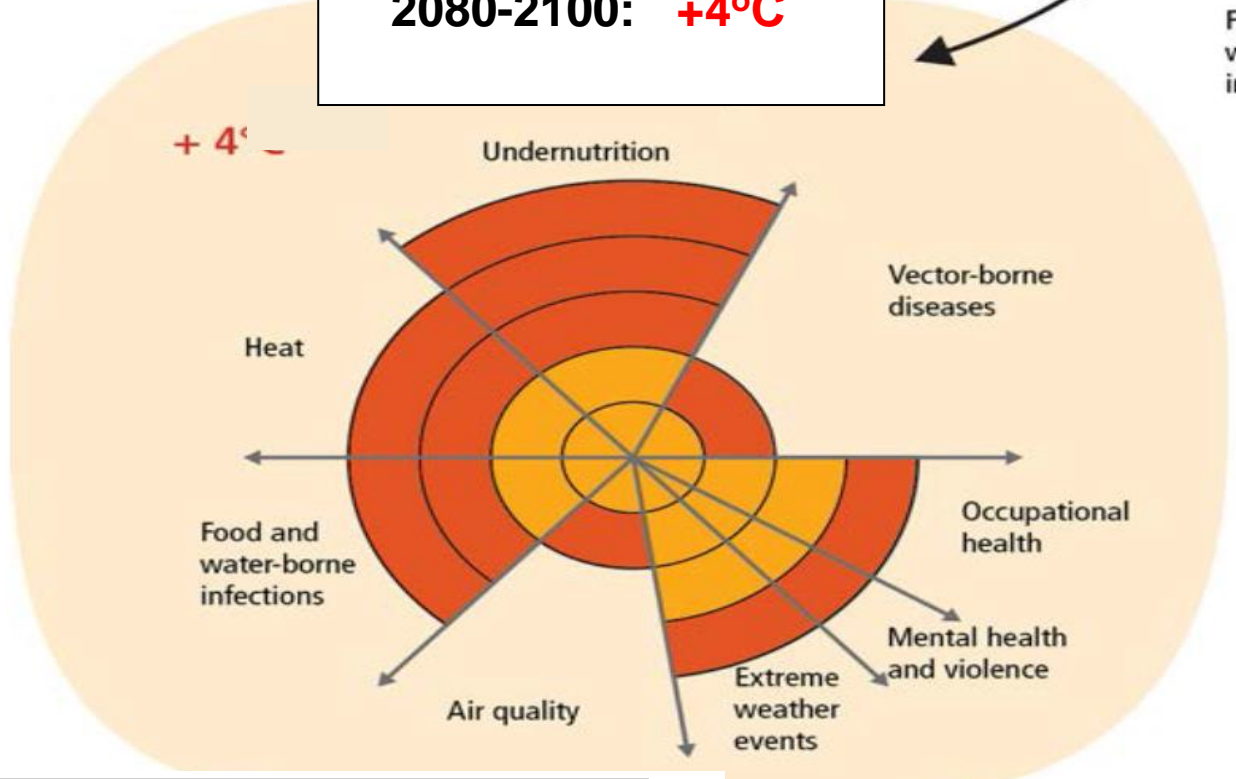
Present



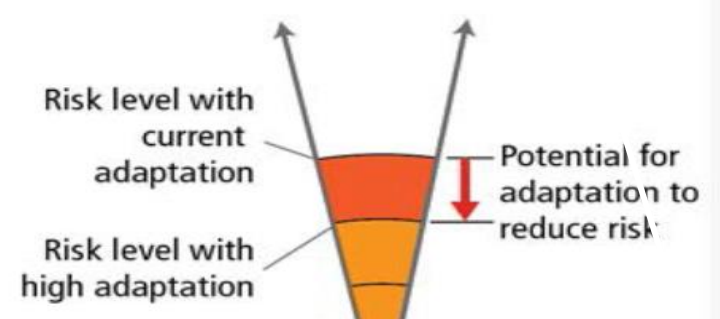
2030-2040: + 1.5°C



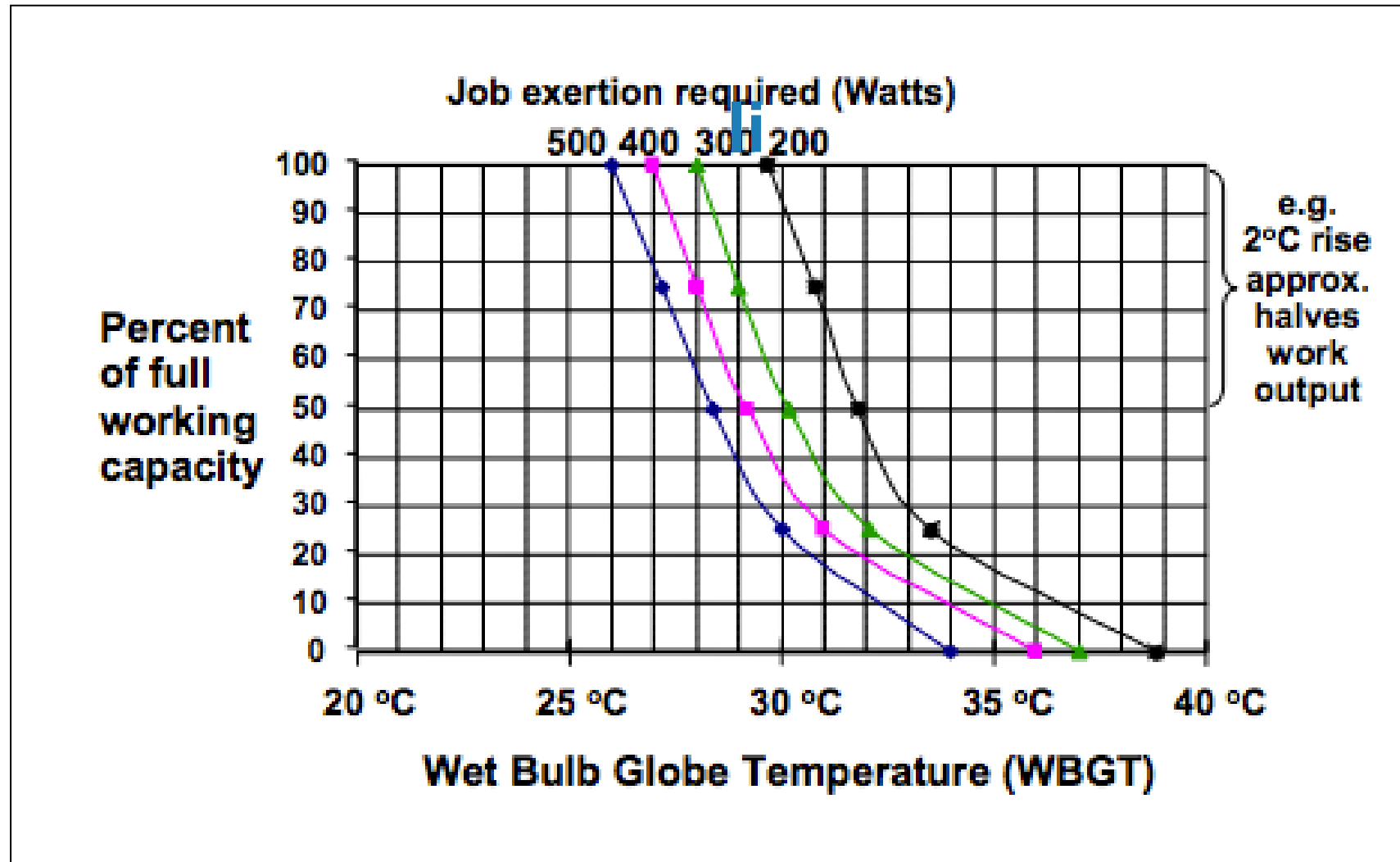
2080-2100: +4°C



Risk and potential for adaptation



Work and heat

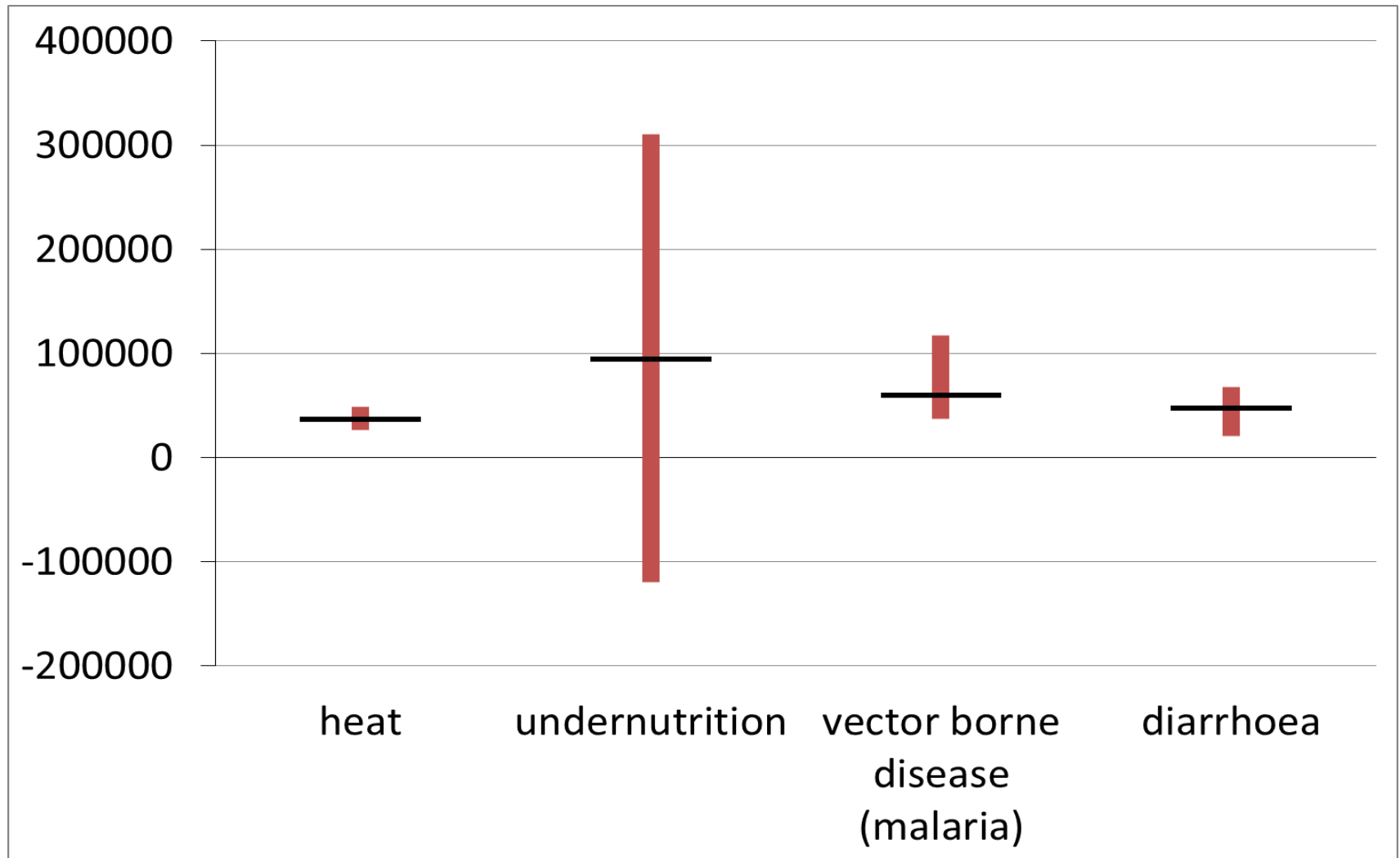
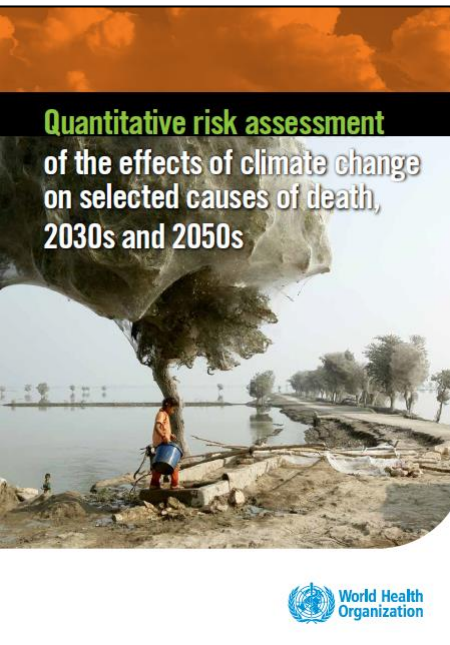


Slide courtesy of Alistair Woodward,
Tord Kjellstrom

In Southeast Asia, in 2050, more than half the afternoon work hours may be lost due to the need for rest breaks – IPCC, 2014

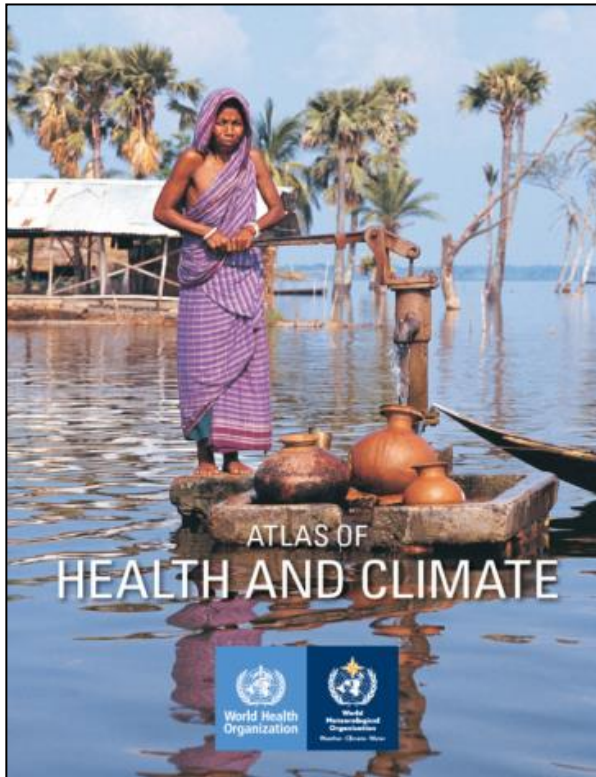
Above +10° global warming, large populated areas of the global are in many respects uninhabitable – PNAS 2010

Estimates of mortality due to climate change, 2030s: Approximately 250,000 excess deaths/year

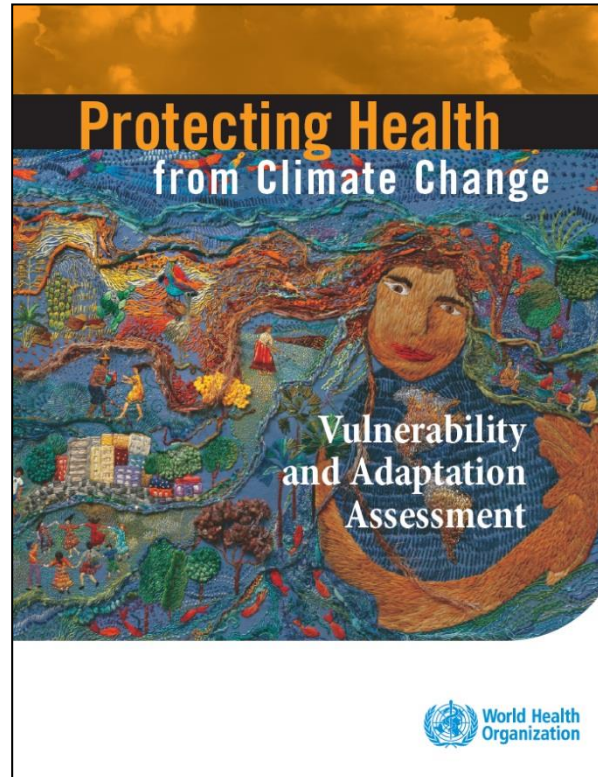


WHO, 2014.

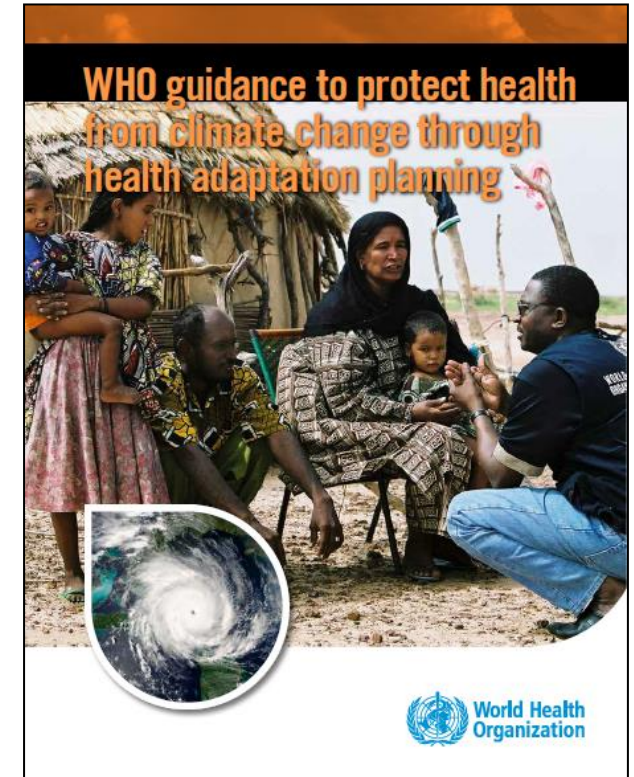
Selected Additional Reports and Guidance



Linking health and meteorological data



Assessing national level vulnerability and adaptation options



Developing the health component of national adaptation plans

Conclusions

- There is no "safe limit" for health: climate variability and change, are already impacting health significantly and inequitably.
- Higher rates of warming are projected to further increase health risks
- Thresholds exist at individual/community level: e.g. basic physiological limits for heat stress- but not linked to specific rates of global warming.
- Much, but not all, of the current and future burden could be avoided through proactive and efficient adaptation.
- Mitigation necessary to reduce known health threats, as a precaution against uncertain risks – and to gain large health "cobenefits".

