Working Group II

The contribution to the Fourth Assessment

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The WGII Fourth Assessment – chapters

1. Assessment of observed changes and responses in natural and managed systems

SECTORS AND SYSTEMS

2. New assessment methodologies and the characterisation of future conditions
3. Fresh water resources and their management
4. Ecosystems, their properties, goods and services
5. Food, fibre and forest products
6. Coastal systems and low-lying areas
7. Industry, settlement, and society
8. Human health

REGIONS

9: Africa, 10: Asia, 11: Australia and New Zealand, 12: Europe, 13: Latin America
14: North America, 15: Polar Regions (Arctic and Antarctic), 16: Small Islands

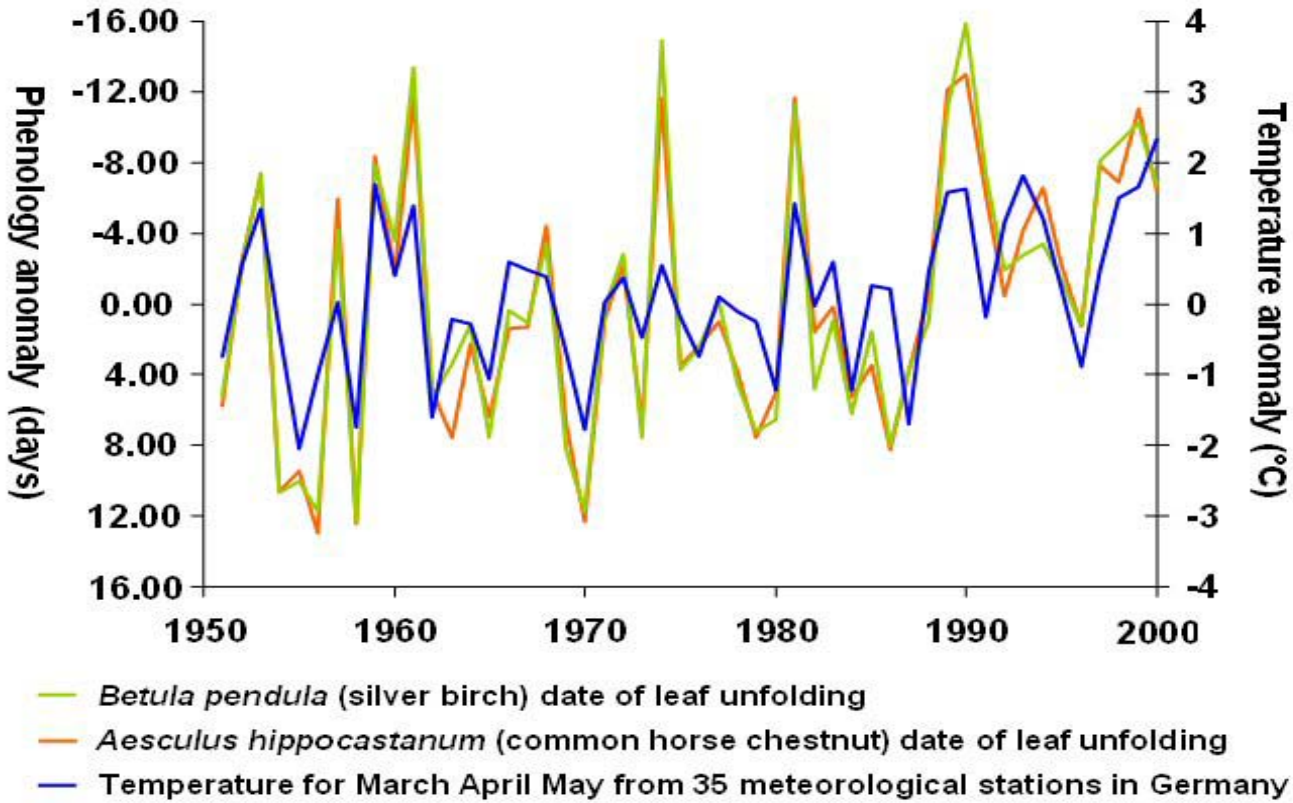
RESPONSES TO IMPACTS

17. Assessment of adaptation practices, options, constraints and capacity
18. Inter-relationships between adaptation and mitigation
19. Assessing key vulnerabilities and the risk from climate change
20. Perspectives on climate change and sustainability

B: Impacts of observed climate change

- The SPM concludes that **many natural systems are being affected by regional climate changes, particularly temperature increases**

Leaf unfolding dates in Europe (Ch 1)



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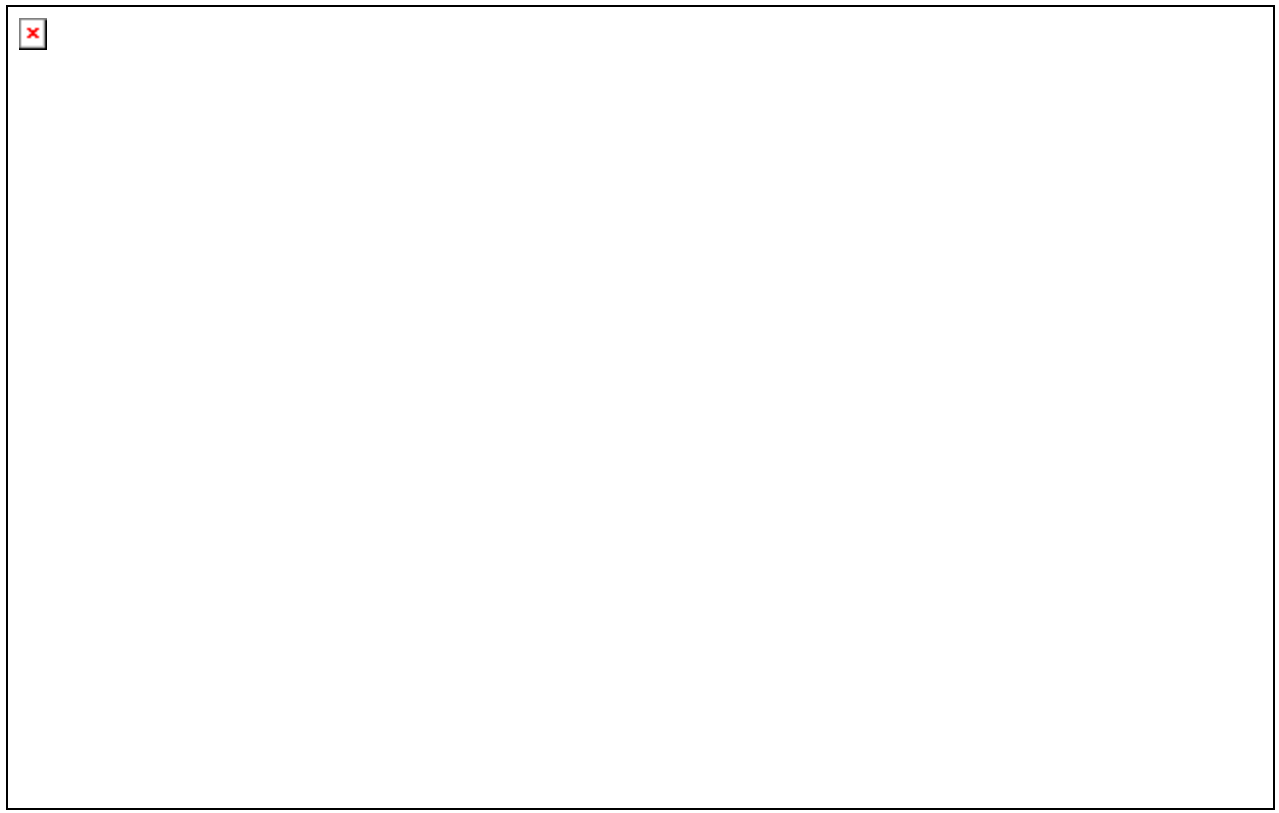
The Chacaltaya glacier and ski-lift, Bolivia (Ch 1)

Skiing was no longer possible after 2004



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Temperature changes since 1970 and observed changes in physical and biological systems

- **It is likely that anthropogenic warming has had a discernible influence on many physical and biological systems.**

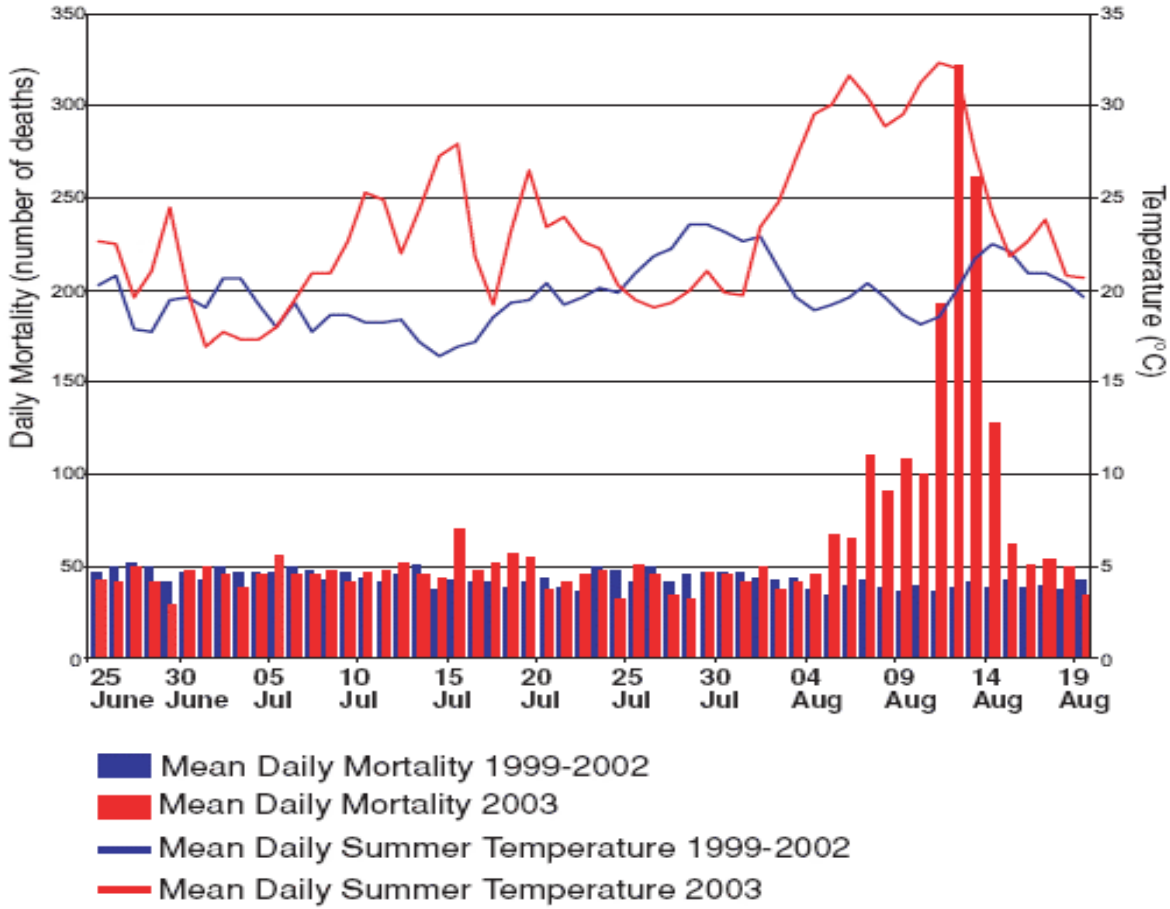
C: Future climate change

Magnitudes of impact can now be estimated more systematically for a range of possible increases in global average temperature.

Impacts due to altered frequencies and intensities of extreme weather, climate, and sea level events are very likely to change.

- We can understand these impacts by looking at some recent events

Number of deaths in Paris in summer 2003 (Ch 8)



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Impacts of climate change will vary regionally but are very likely to impose net annual costs which will increase over time as global temperatures increase

- Peer-reviewed estimates of the SCC for 2005 have an average value of US$43 per tonne of carbon (i.e., US$12 per tonne of carbon dioxide) but the range around this mean is large.

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In some locations and amongst some groups of people with high exposure, high sensitivity, and/or low adaptive capacity, net costs will be significantly larger than the global aggregate

- The poor
- Young children
- The elderly

Some regions will be more affected than others

- The Arctic
- Sub-Saharan Africa
- Small islands
- Asian megadeltas

D: Responses to impacts

- Some adaptation is occurring now, to observed and projected future climate change, but on a limited basis.
- Adaptation will be necessary to address impacts resulting from the warming which is already unavoidable due to past emissions.
- Vulnerability to climate change can be exacerbated by the presence of other stresses.
- Future vulnerability depends not only on climate change but also on development pathway
- Sustainable development can reduce vulnerability to climate change, and climate change could impede nations' abilities to achieve sustainable development
- Many impacts can be avoided, reduced or delayed by mitigation.
- A portfolio of adaptation and mitigation measures can diminish the risks associated with climate change.

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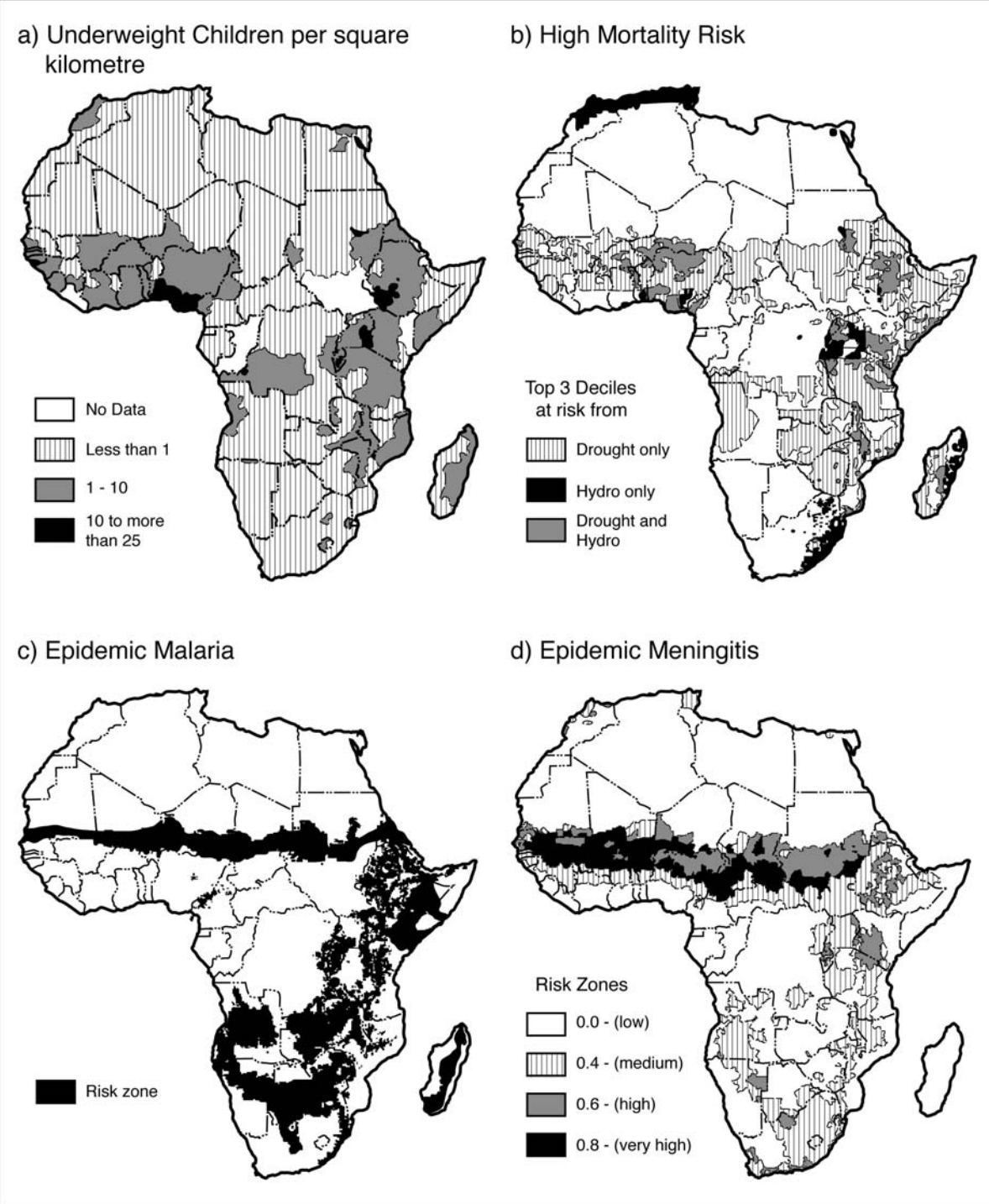
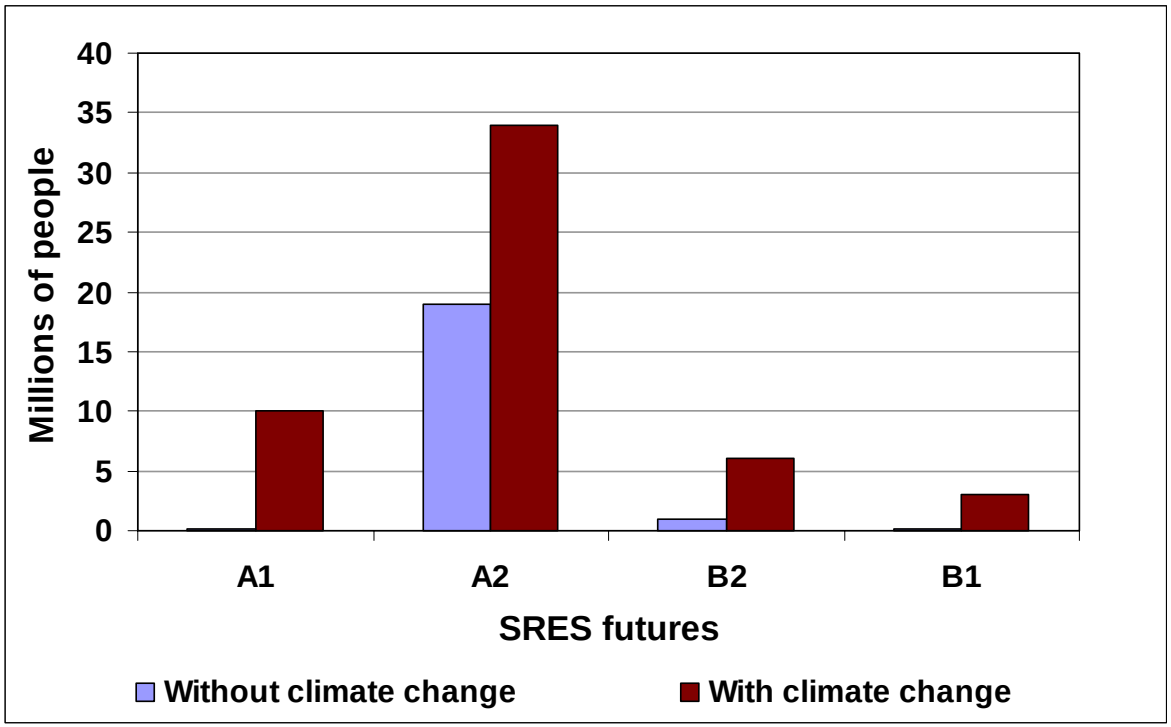


Vulnerability to climate change can be exacerbated by the presence of other stresses.

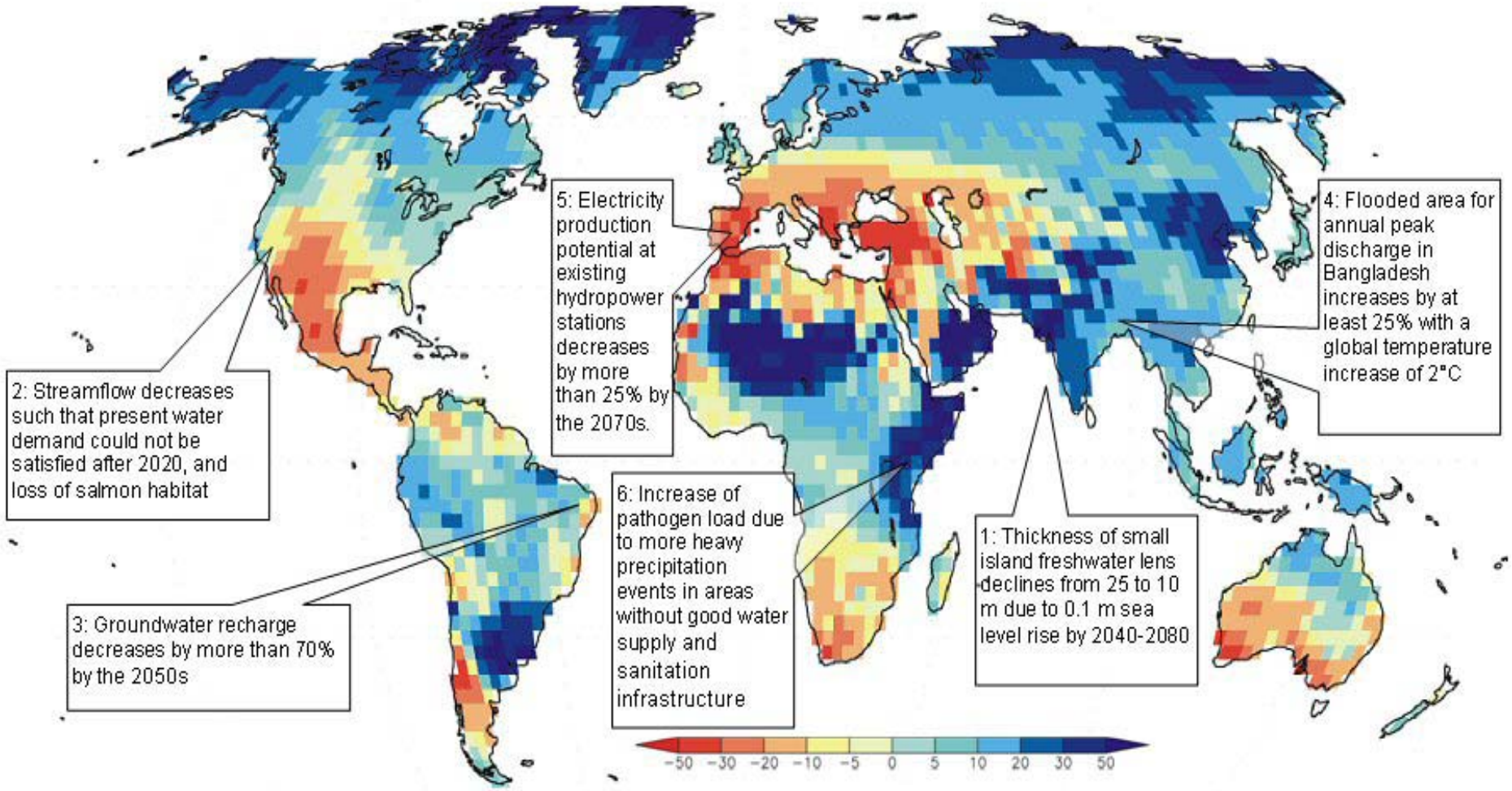
(Ch 9)

Future vulnerability depends not only on climate change but also on development pathway

People at risk of coastal flooding in the 2080s (p.a)



Climate change could impede nations' abilities to achieve sustainable development (Ch 3)



And now, for the authors to tell us about the specifics