Observed & Projected Climate Change Impacts, Reasons for Concern, & Opportunities and **Limits of Adaptation** Jean-Pascal van Ypersele **IPCC Vice-Chair** Twitter: @JPvanYpersele

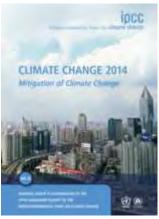
Geneva Environmental Network, Geneva, 2 June 2015

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What is happening in the climate system?

What are the risks?

What can be done?





Key messages from IPCC AR5

- → Human influence on the climate system is clear
- → Continued emissions of greenhouse gases will increase the likelihood of severe, pervasive and irreversible impacts for people and ecosystems
- → While climate change is a threat to sustainable development, there are many opportunities to integrate mitigation, adaptation, and the pursuit of other societal objectives
- → Humanity has the means to limit climate change and build a more sustainable and resilient future





Since 1950, extreme hot days and heavy precipitation have become more common





There is evidence that anthropogenic influences, including increasing atmospheric greenhouse gas concentrations, have changed these extremes

Impacts are already underway

- Tropics to the poles
- On all continents and in the ocean
- Affecting rich and poor countries (but the poor are more vulnerable everywhere)



AR5 WGII SPM





Risk = Hazard x Vulnerability x Exposure (Katrina flood victim)



AP Photo - Lisa Krantz (http://lisakrantz.com/hurricane-katrina/zspbn1k4cn17phidupe4f9x5t1mzdr)

Potential Impacts of Climate Change

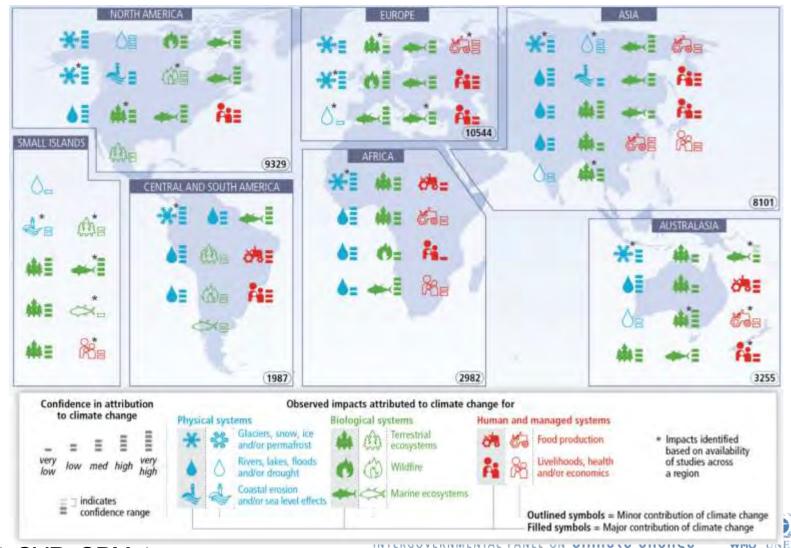


AR5 WGII SPM





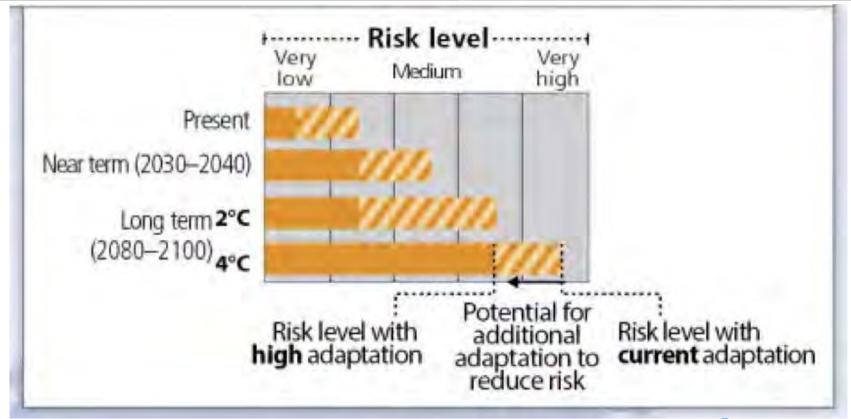
Widespread impacts attributed to climate change based on the available scientific literature since literature since the AR4



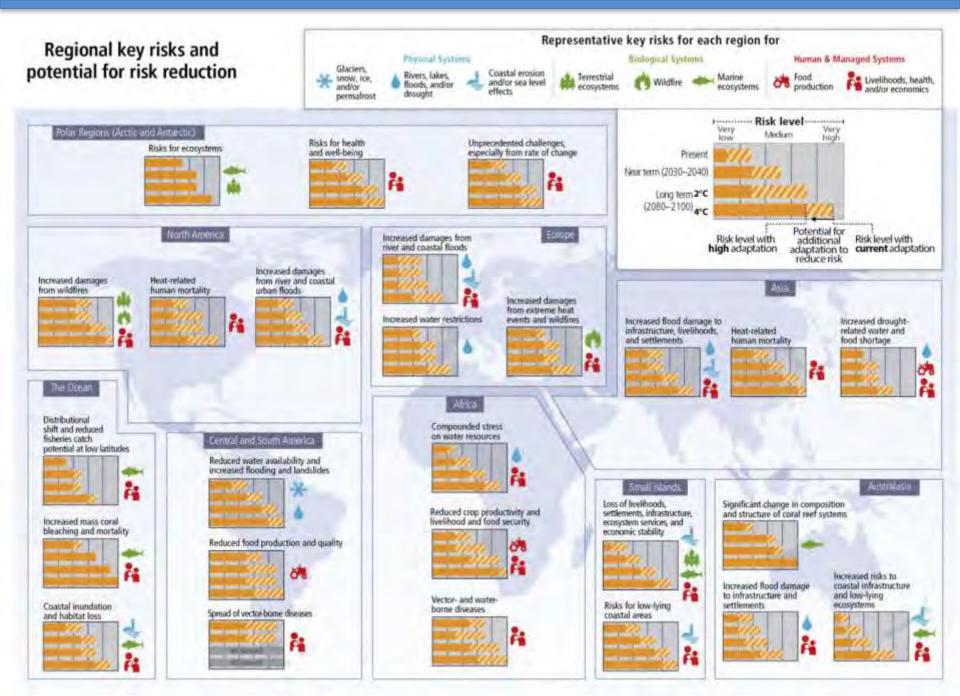


Regional key risks and potential for risk reduction through adaptation



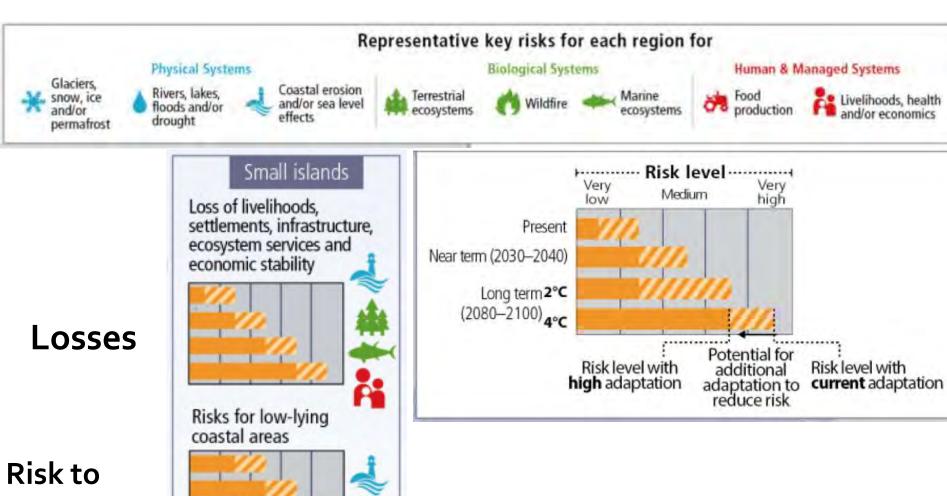






IPCC, AR5, SPM, Figure SPM.8

Regional key risks and potential for risk reduction: Small Islands







coastal areas

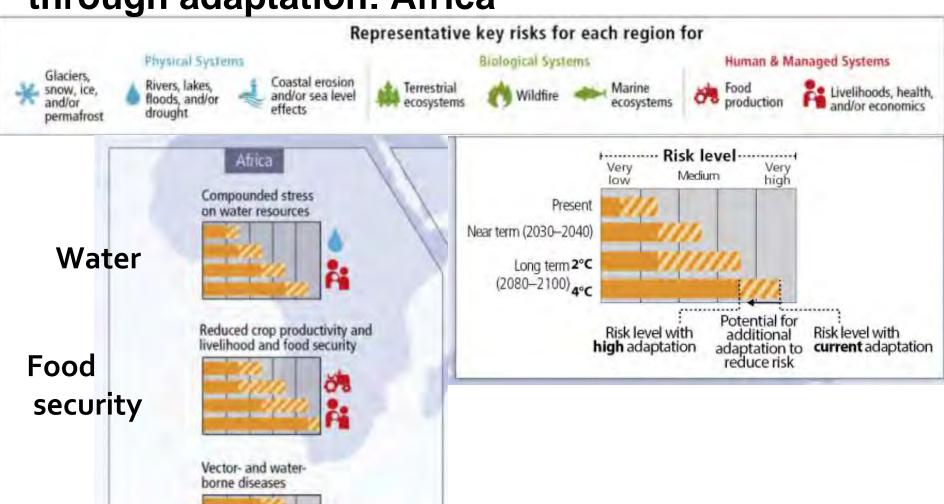
Adaptation issues and prospects: Risks to coastal areas

- High ratio of coastal area to land mass will make adaptation a significant financial and resource challenge for islands
- 2. Adaptation options include maintenance and restoration of coastal landforms and ecosystems, improved management of soils and freshwater resources, and appropriate building codes and settlement patterns

Flood risk adaptation in Bangladesh (example): cyclone shelters, awareness raising, forecasting and warning



Regional key risks and risk reduction through adaptation: Africa







Diseases

Adaptation issues and prospects: Water

1. Reducing non-climate stressors on water

resources

Demand management and conservation are methods that target efficiency. Conservation begins by reducing high losses from water supply distribution systems. Demand



management has gone largely unaddressed since most water utilities still focus on infrastructure development rather than on conservation.

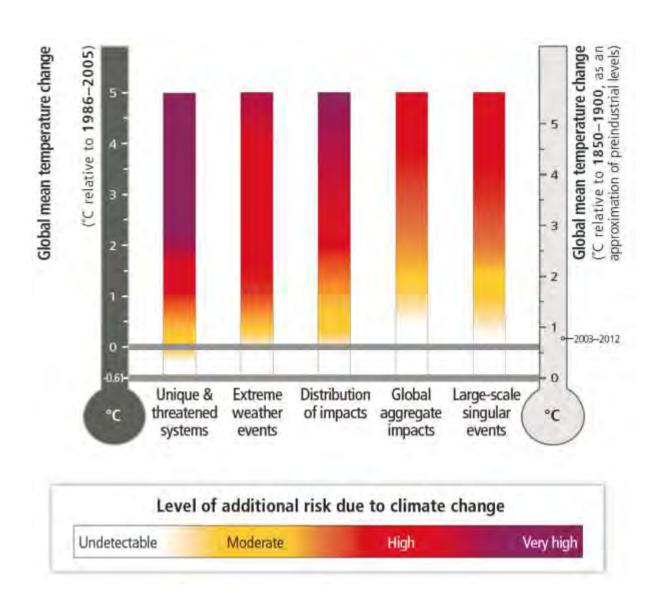
http://www.greenfacts.org/en/water-resources/I-3/6-sustainable-management.htm#2p0

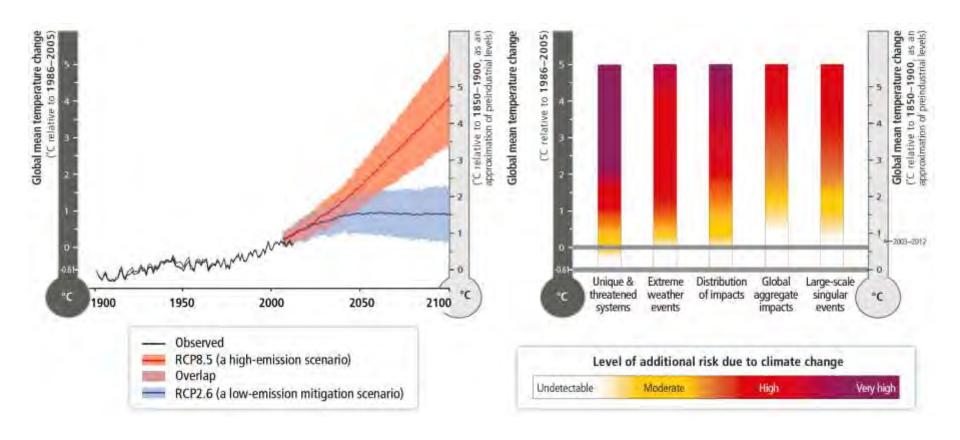






The Reasons For Concern



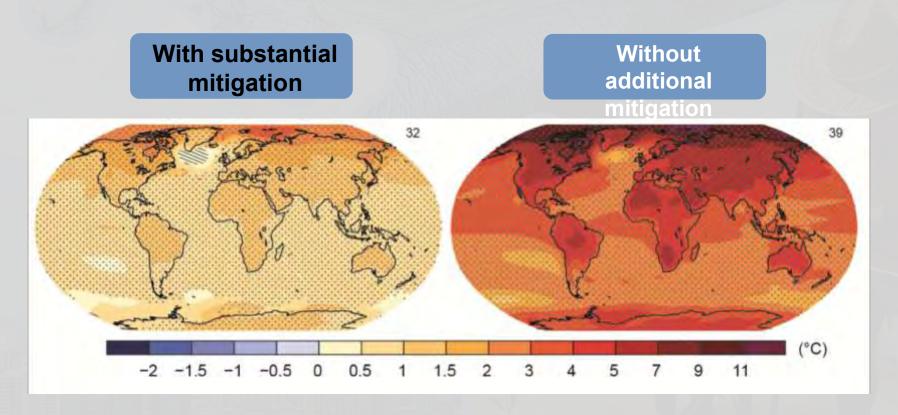


- Sustainable development and equity provide a basis for assessing climate policies and highlight the need for addressing the risks of climate change
- Issues of equity, justice, and fairness arise with respect to mitigation and adaptation





The Choices Humanity Makes Will Create Different Outcomes & increase prospects for effective adaptation



Change in average surface temperature (1986–2005 to 2081–2100)

AR5 WGI SPM





Useful links:

- z www.ipcc.ch : IPCC (reports and videos)
- z www.climate.be/vanyp : my slides my platform as candidate IPCC Chair
- Z On Twitter: @JPvanYpersele and @IPCC_CH