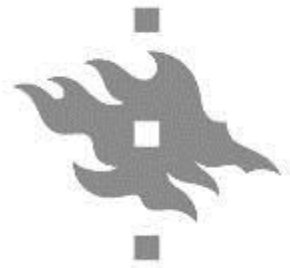




HENVI Science Day 2016: Environmental vulnerabilities in
the globalizing world: How to adapt and manage change?
Helsinki, May 11, 2015



Introduction to environmental change and vulnerability

Professor Markku Kanninen
Viikki Tropical Resources institute,
Department of Forest Sciences, University of Helsinki



Increasing exposure of people and assets

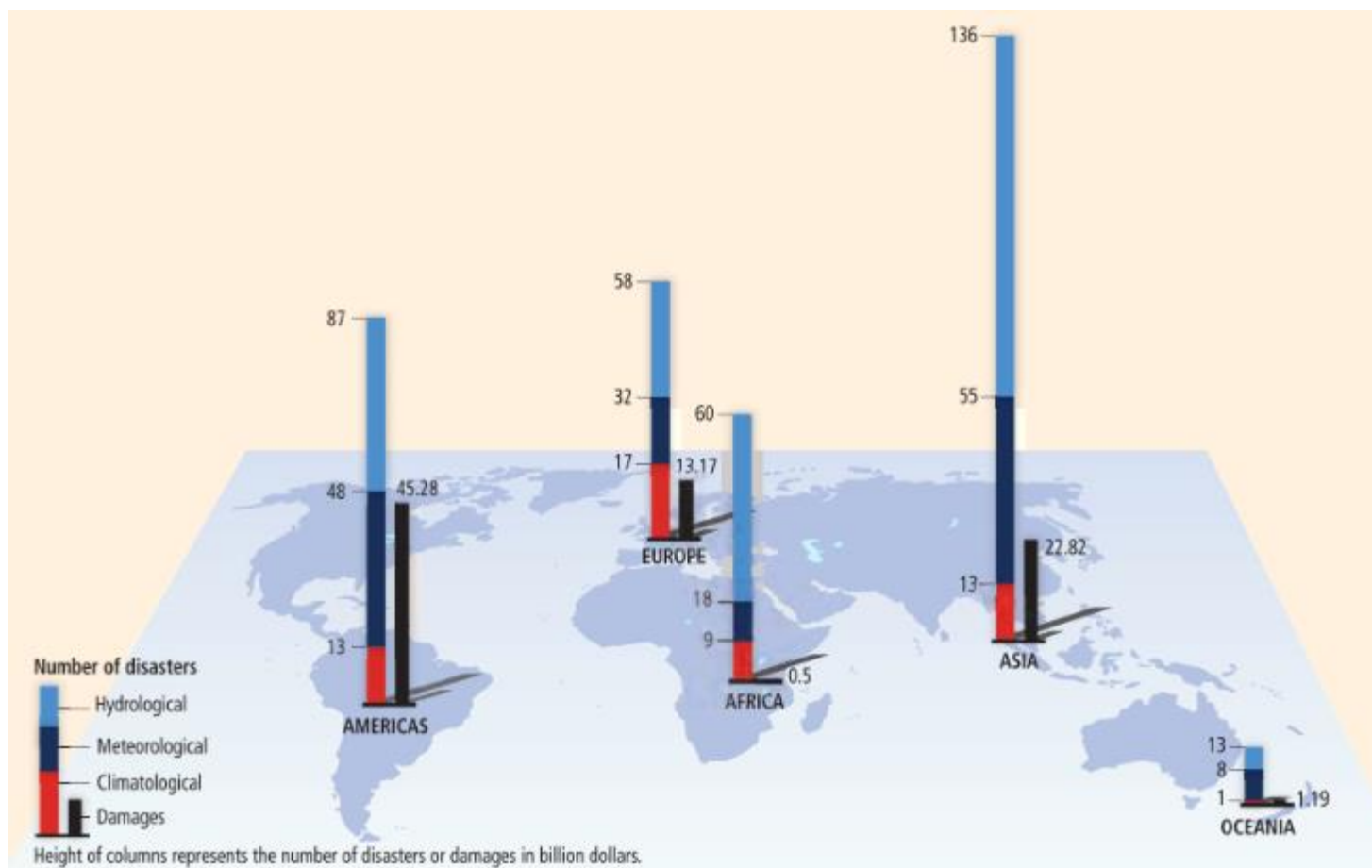


Jakarta floods 2015



Weather- and climate-related disasters 2000 to 2008

Number of disasters (left bars), estimated damage (right bars) US\$ billion, averages 2000-2008



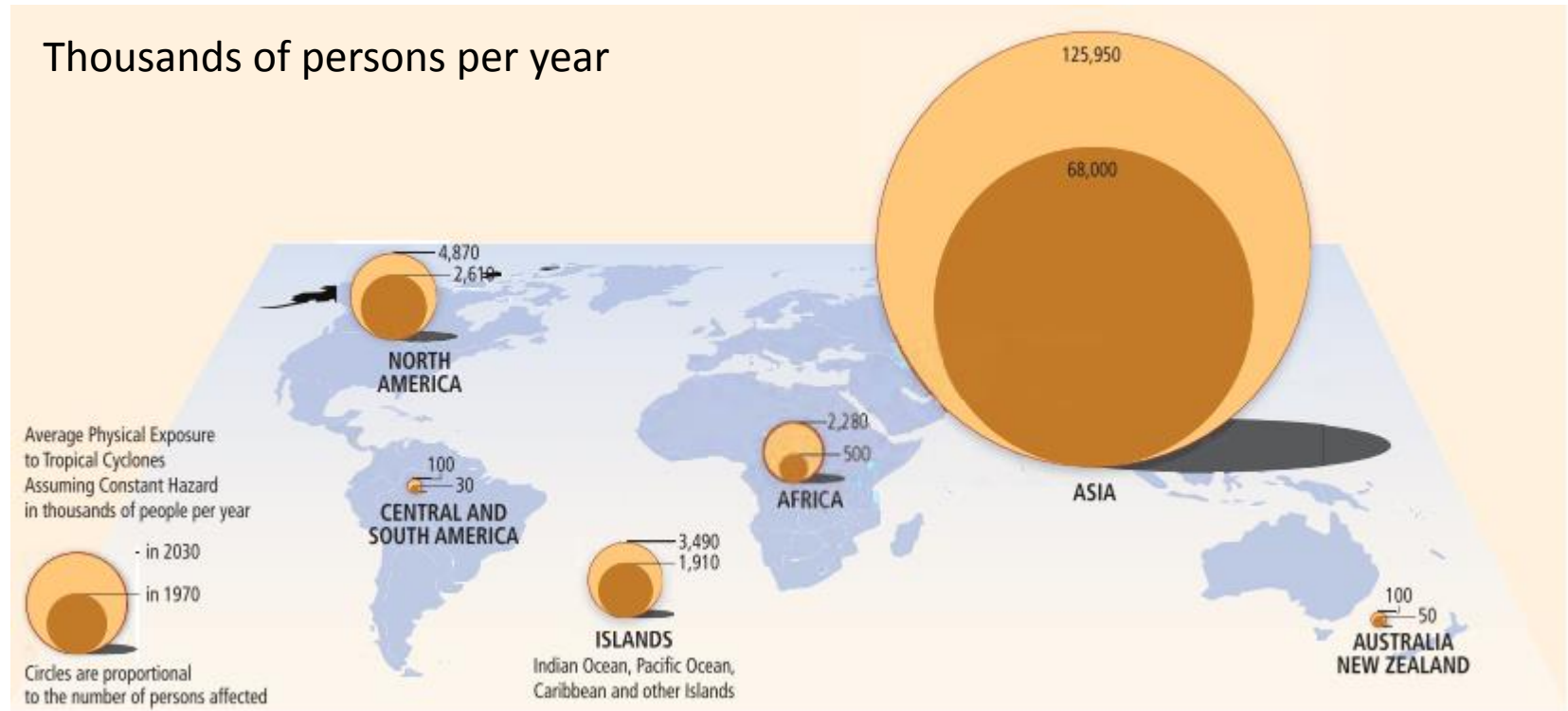


Sea-level rise will impact millions of people





Physical exposure to tropical cyclones in 1970 and 2030

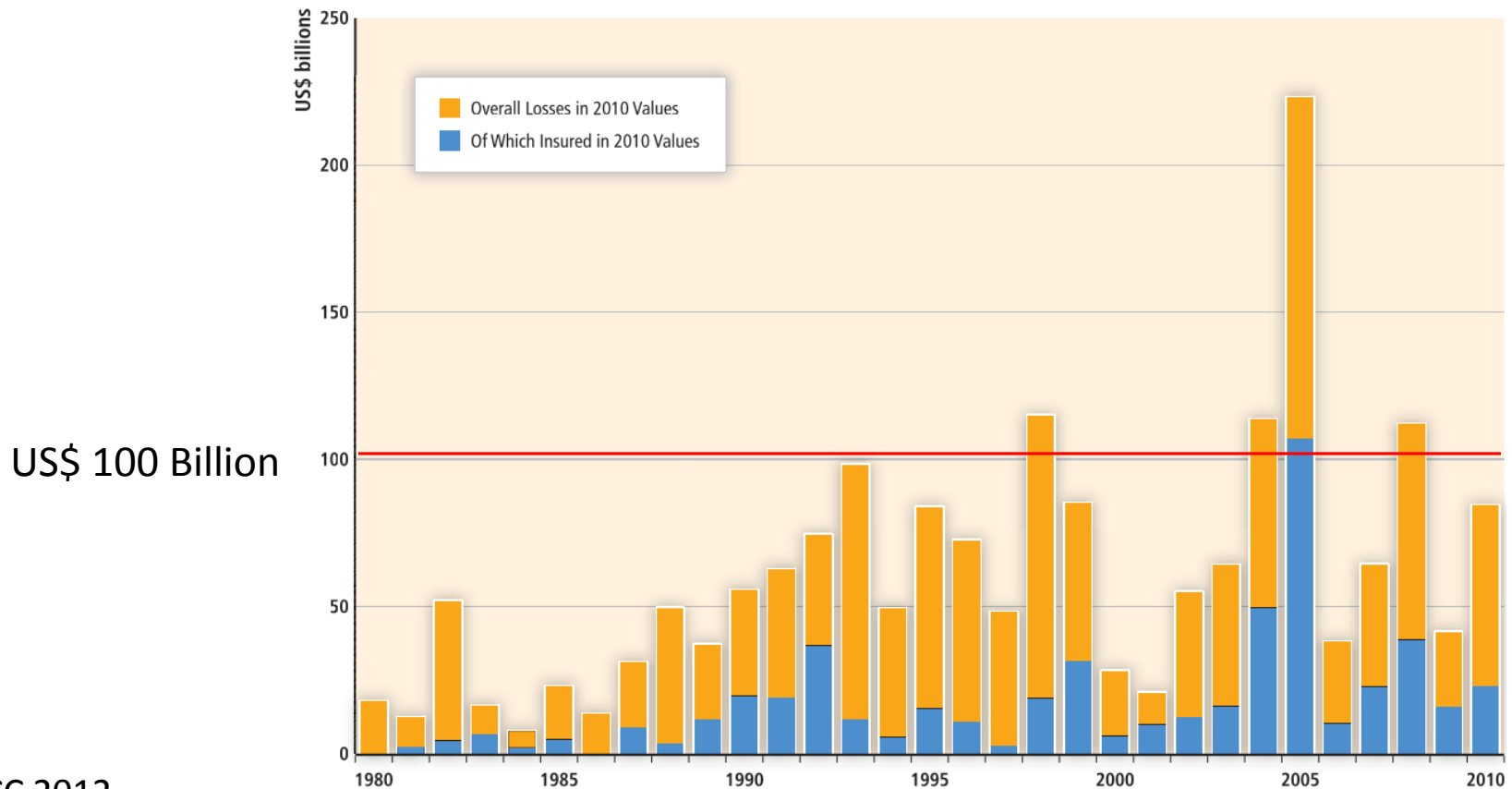


1970 = 73 Million people
2030 = 137 Million people



Losses from weather- and climate-related disasters

The overall losses and insured losses from weather- and climate-related disasters worldwide (in 2010 US\$)

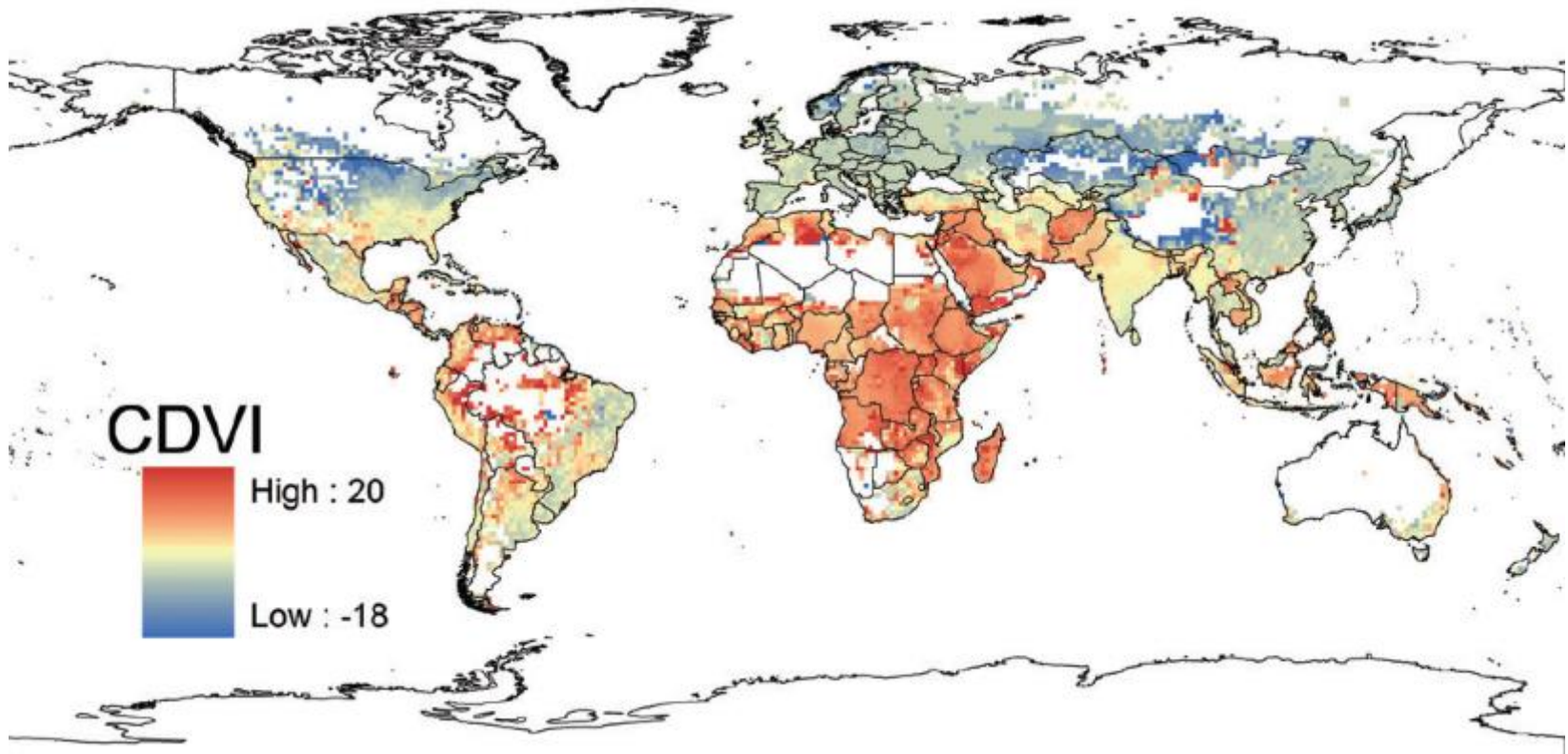


IPCC 2012



Vulnerability indices take population dynamics into consideration

Global climate–demography vulnerability index (CDVI)

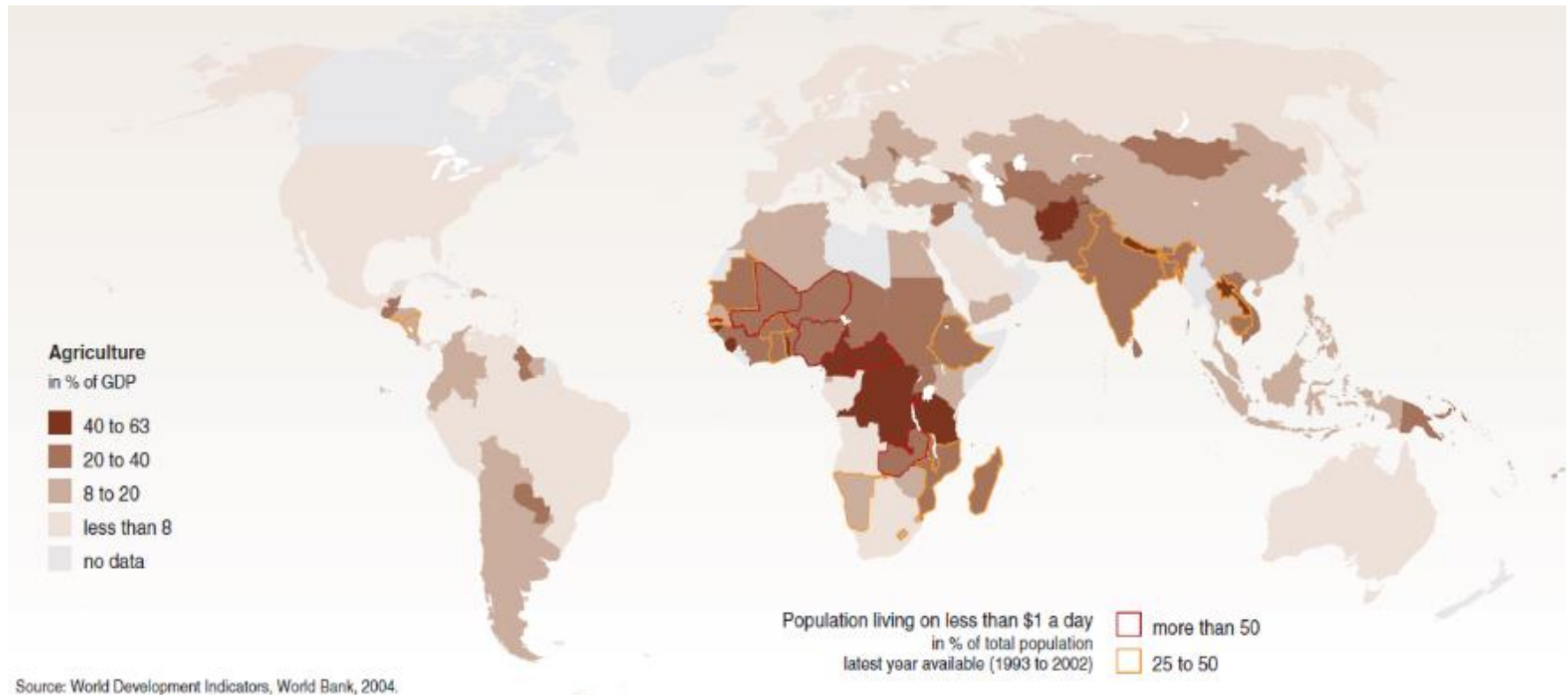


Samson et al. 2011



Importance of agriculture in national economies

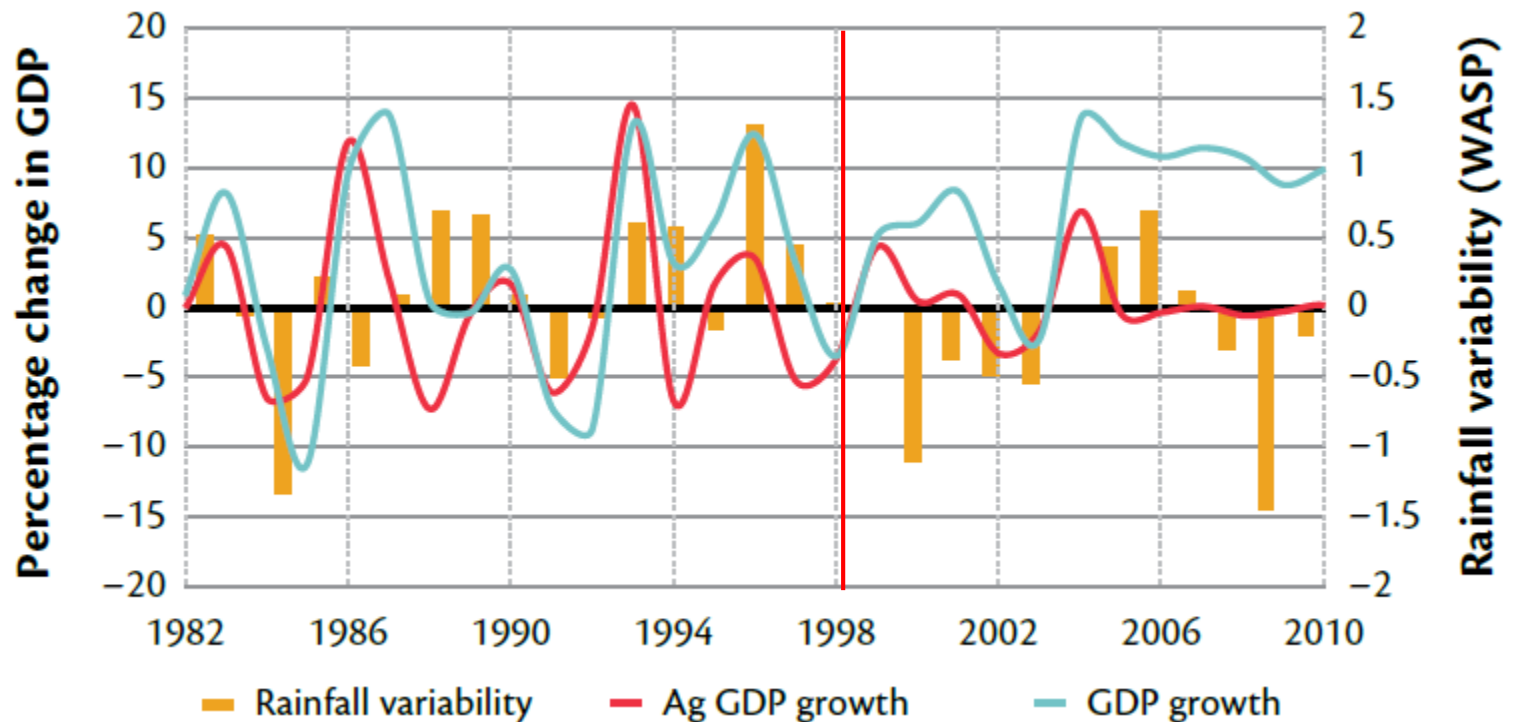
Share of agriculture (%) of GDP





Role environmental factors in socioeconomic development

Ethiopia: Rainfall variability and changes in GDP and agricultural GDP 1982-2010

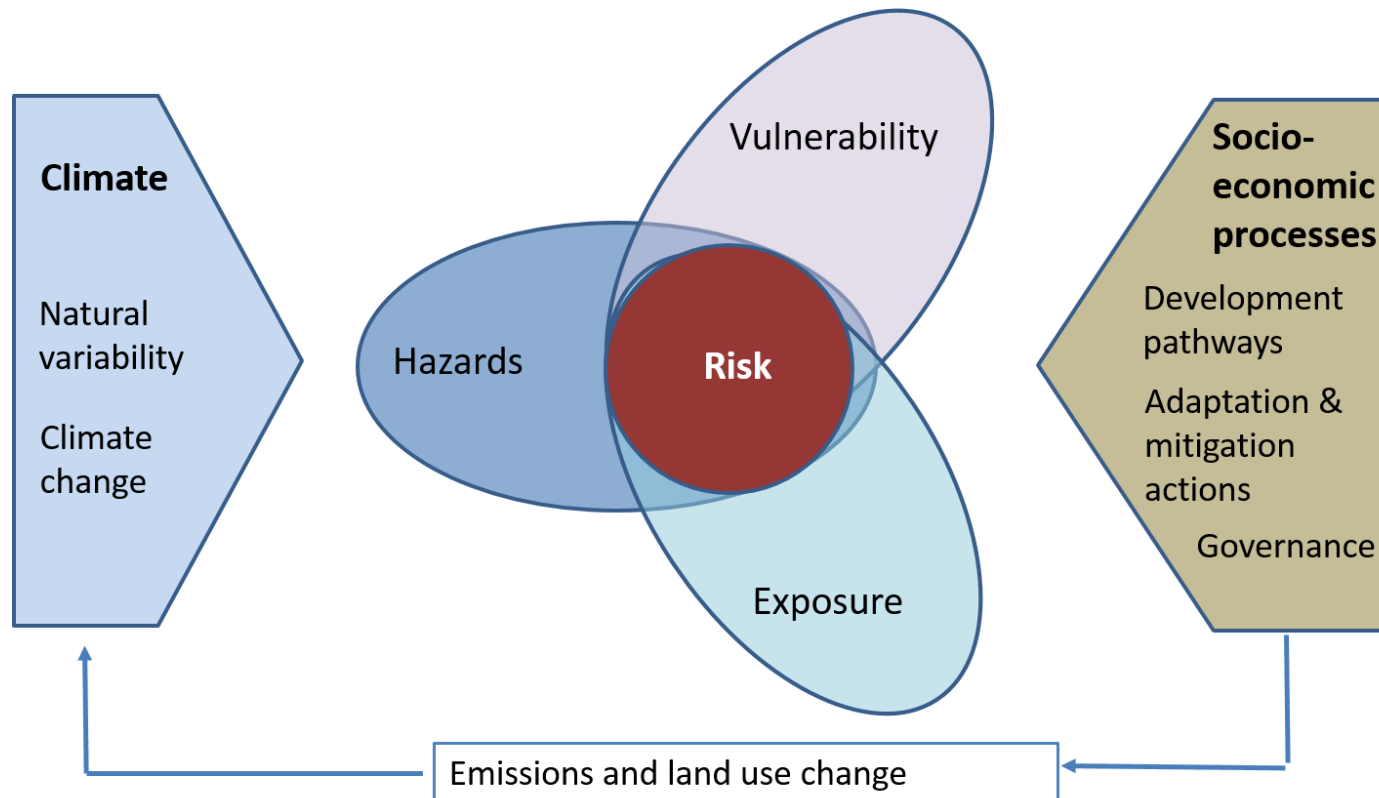


WASP = 12-month Weighted Anomaly of Standardized Precipitation



The IPCC approach to climate risk and its components

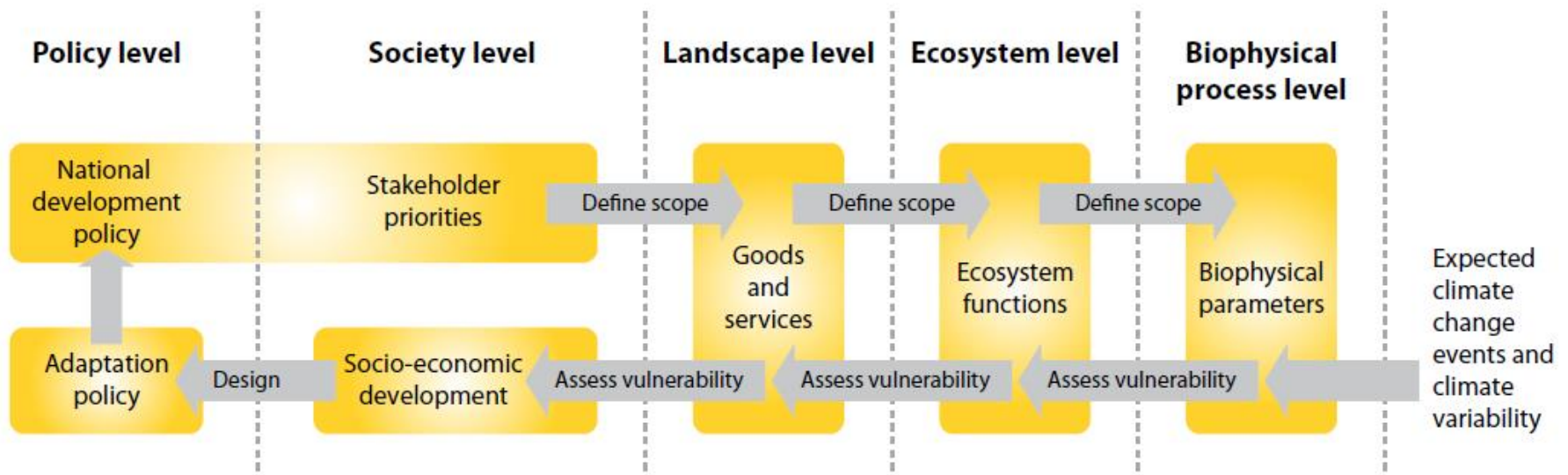
Climate risk as a result of interaction of socioeconomic development, climate variability and climate change





Building an adaptation program

CIFOR's TroFCCA (Tropical Forests and Climate Change Adaptation) framework using ecosystem-based approach for adaptation in coupled human and environment systems



Emphasis in development-oriented approach

- 1) How to reduce vulnerability and exposure to current climatic variability
- 2) Defining the priorities for adaptation for the society



Elements of the new Paris agreement

- Bottom-up approach
 - Intended Nationally Determined Contributions (INDCs)
 - Wide variety of national circumstances
 - Periodic reviews of commitments (NDCs) – monitoring
- Developing resilient societies and ecosystems
 - Adaptation gaining the place it deserves
- Recognizing loss and damage
 - Some climate change impacts that cannot be adapted to
- Linking climate action with wider development goals
 - Climate change mitigation and adaptation actions to achieve SDG's



VITRI



WORLD BANK



ADAPTATION FUND

Green
Climate
Fund

Global adaptation funding timeline

Under UNFCCC:

Least Developed Countries Fund (LDCF)

Special Climate Change Fund (SCCF)

(operational)

2002

(currently)

\$ 921.9 M

2004

\$ 337.4 M

Outside of the UNFCCC process:

Pilot Program on Climate Resilience

2008

\$ 1.3 B

Under the Kyoto Protocol of UNFCCC:

Adaptation Fund

2009

≈ \$ 500 M

Under the UNFCCC:

Green Climate Fund

2015

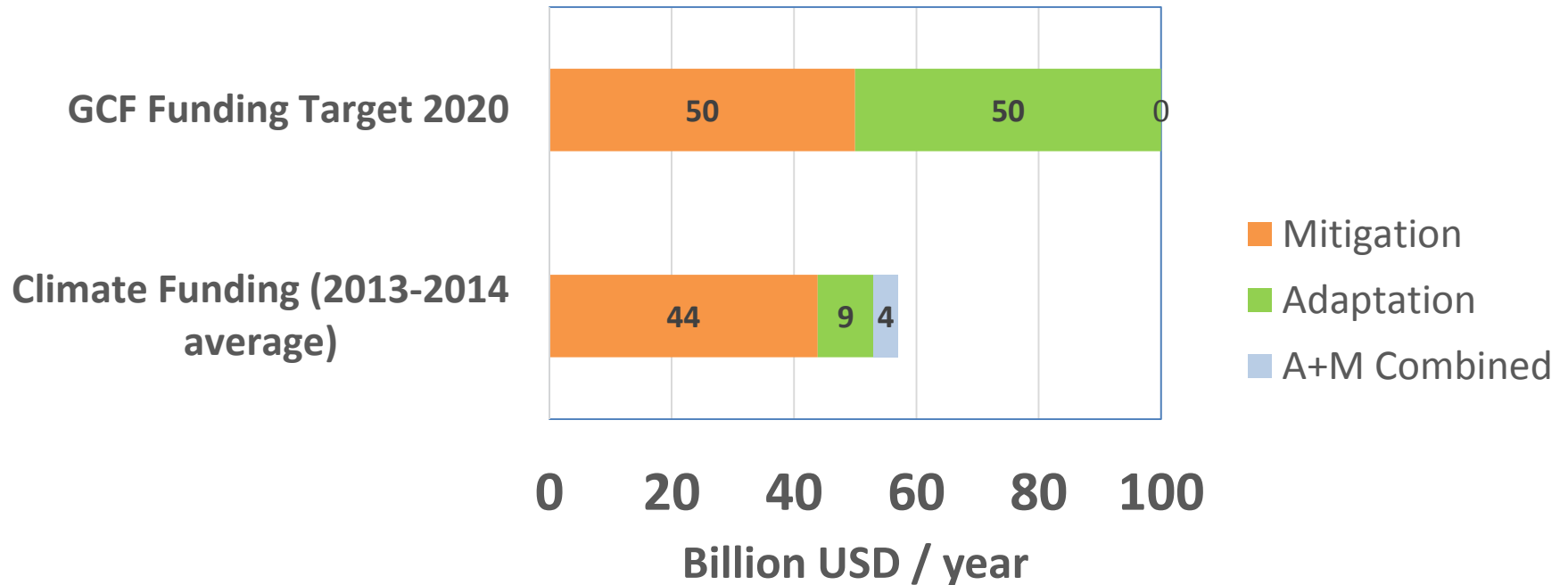
≈ \$ 1 B

GCF decision: 50% of the funding to adaptation





Life after Paris: Funding for adaptation is expected to increase in the future

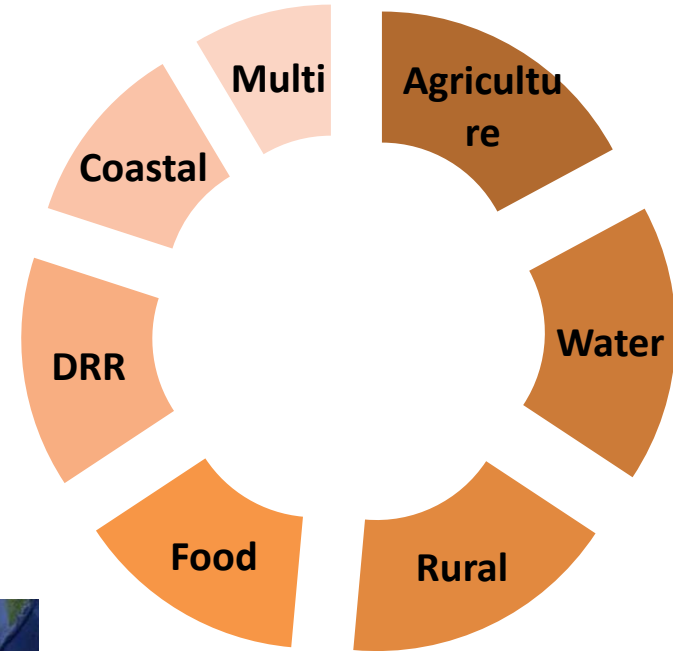


Funding data: OECD 2015. Climate finance in 2013-14 and the USD 100 billion goal



Adaptation Fund project portfolio reflects the priorities of the countries

Since 2010 the Fund has approved about US\$ 350 million for 60+ adaptation projects in vulnerable developing countries and regions





Adaptation Fund – lessons learned after 8 years & research needs

- How do we measure adaptation success/failure?
 - Criteria, indicators, and tools for adaptation planning and impact assessment needed
- Local adaptation initiatives disconnected from National Adaptation Programs (NAPs)
 - Multi-level governance for adaptation agendas
- Huge capacity gap in designing and implementing adaptation actions
 - Linking to national development needs
 - Institutional capacity, governance, equity
 - Tools and methods



Thank you

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