



IPRA 2016

Disasters, Development and Conflict Risk Reduction

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CRIM-UNAM
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1. Research question

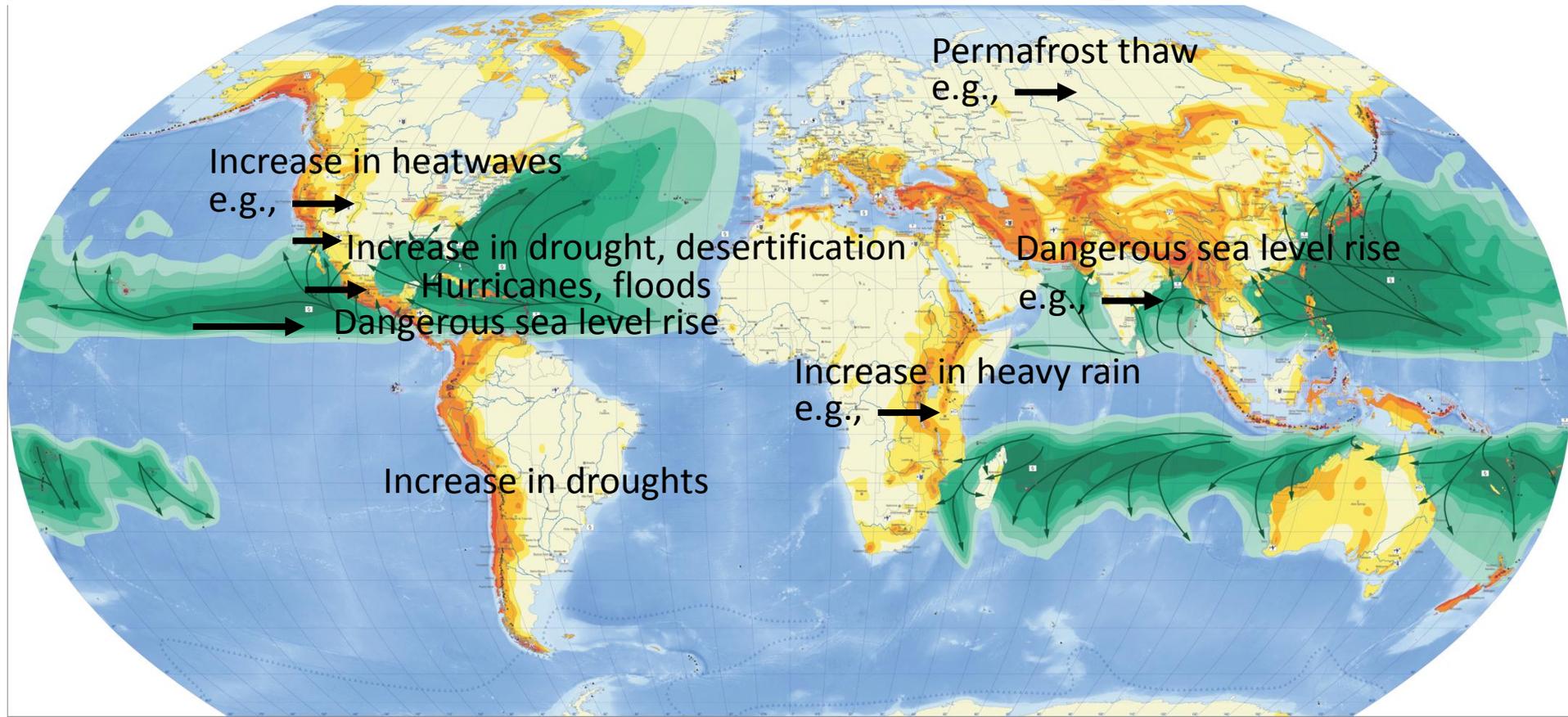
Why represent disasters a threat to development and how could disaster risk reduction (DRR), mitigation, adaptation, resilience, solidarity, and ethical investments reduce the risks of poverty, loss of human lives and conflicts?

2. Disasters worldwide

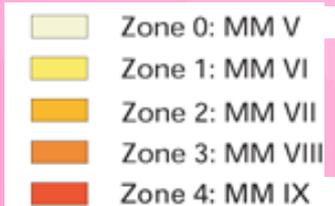
Patricia, 2015 (NASA)



Climate change, hazards, exposure, and dual vulnerability

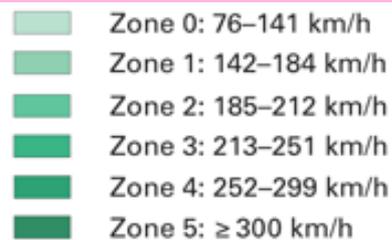


Earthquakes



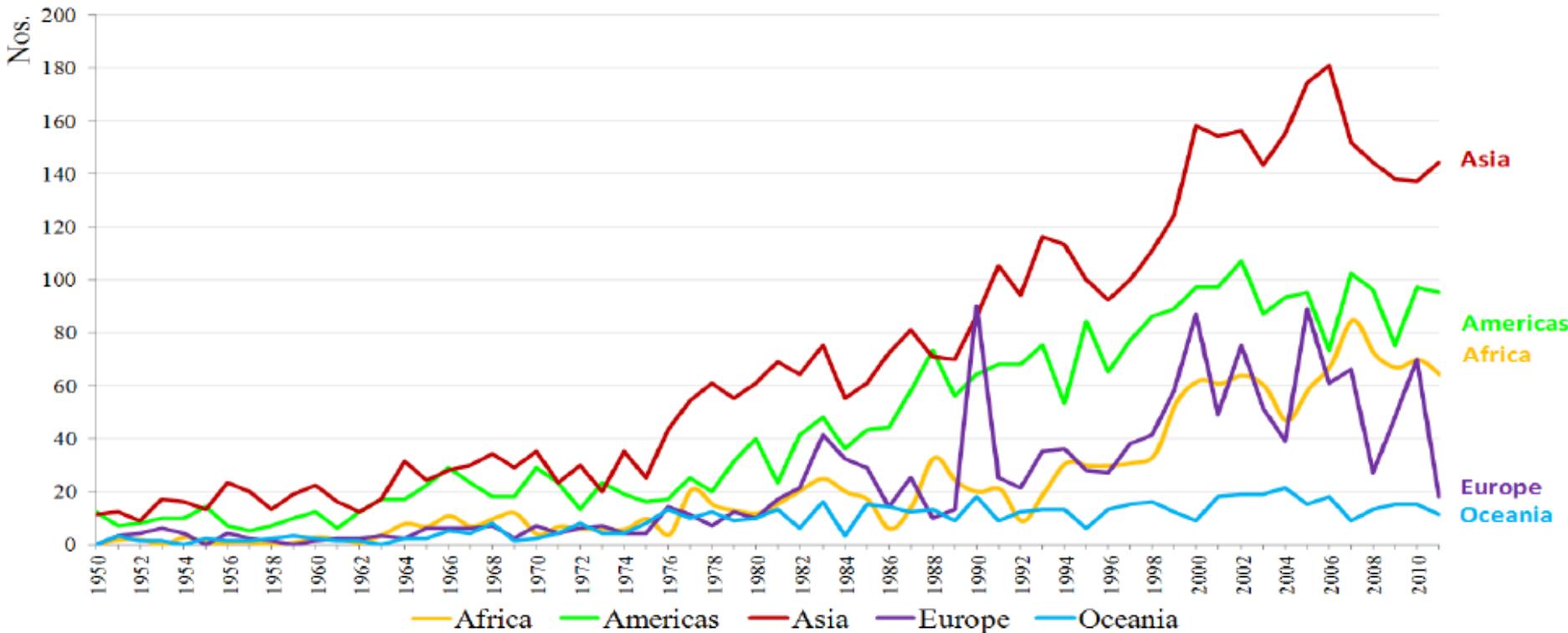
MM: modified Mercalli scale

Tropical Hurricanes

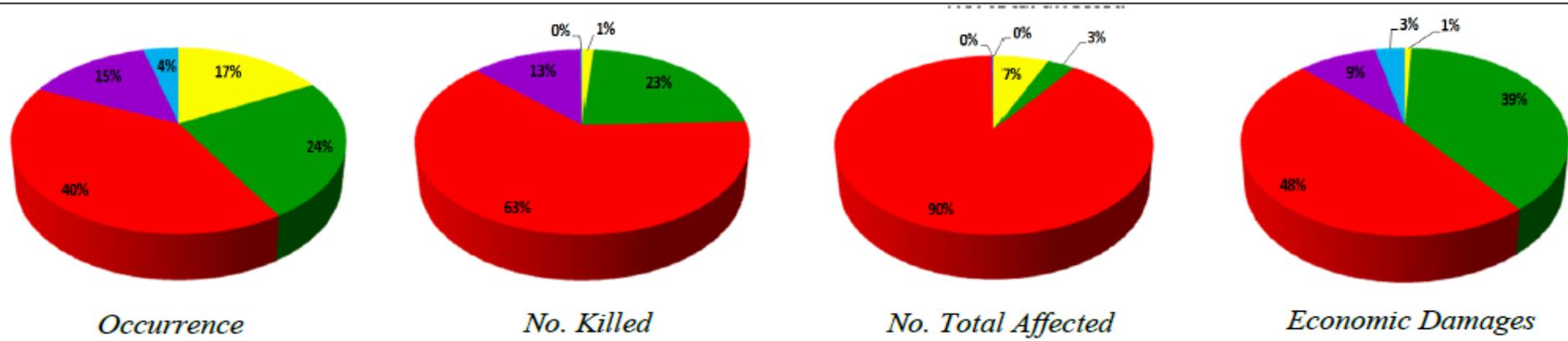


Münchener Rück
Munich Re Group

60 Years of Disasters worldwide: 1950-2011



Asia's share: 2002-2011

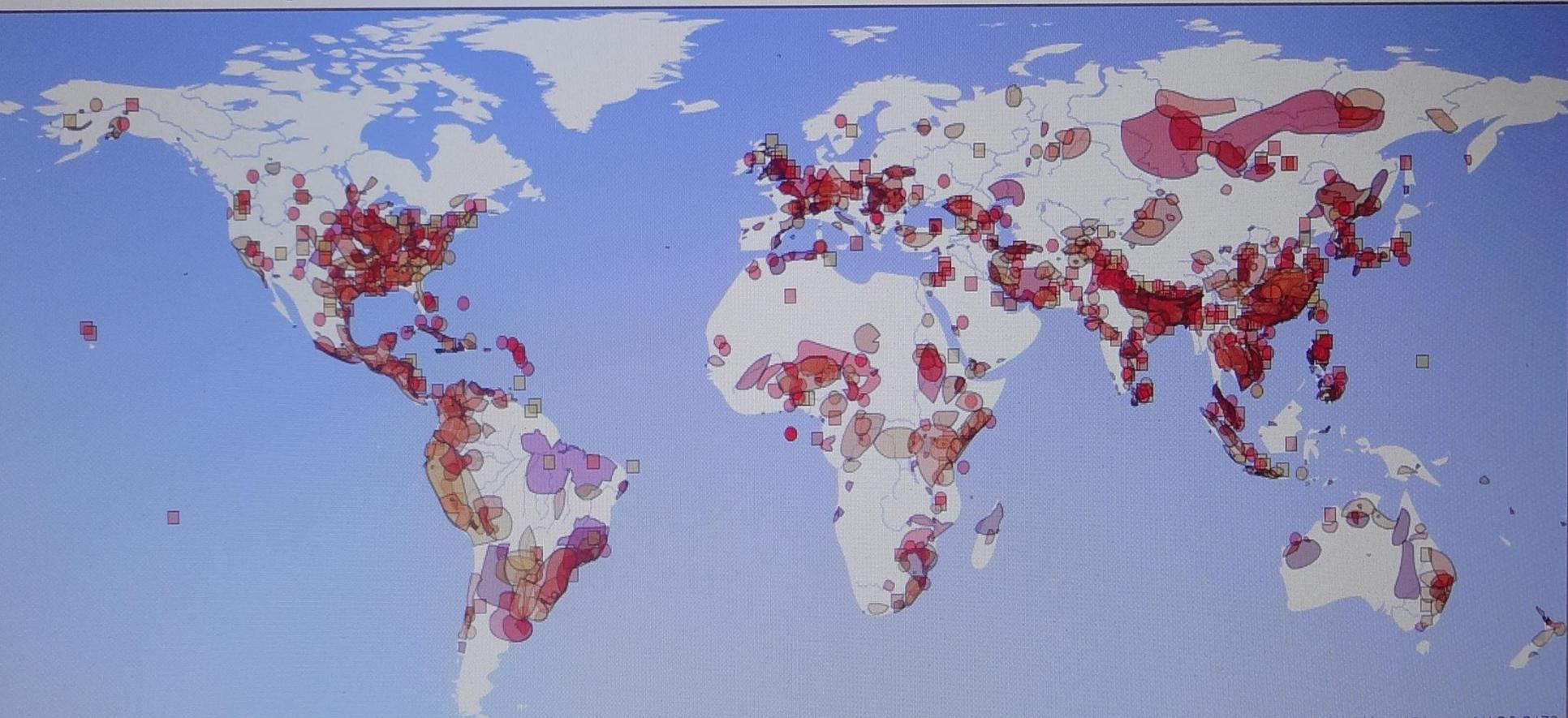


Source: CRED, 2013

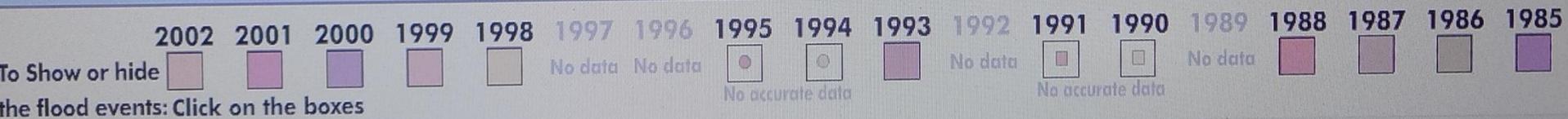
— Africa — Americas — Asia — Europe — Oceania

Extreme floods: 1985 to 2002

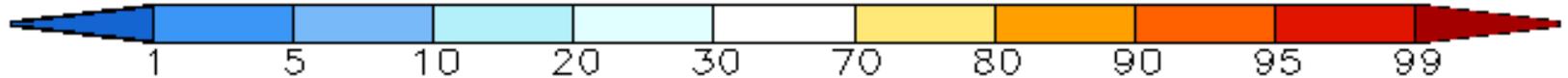
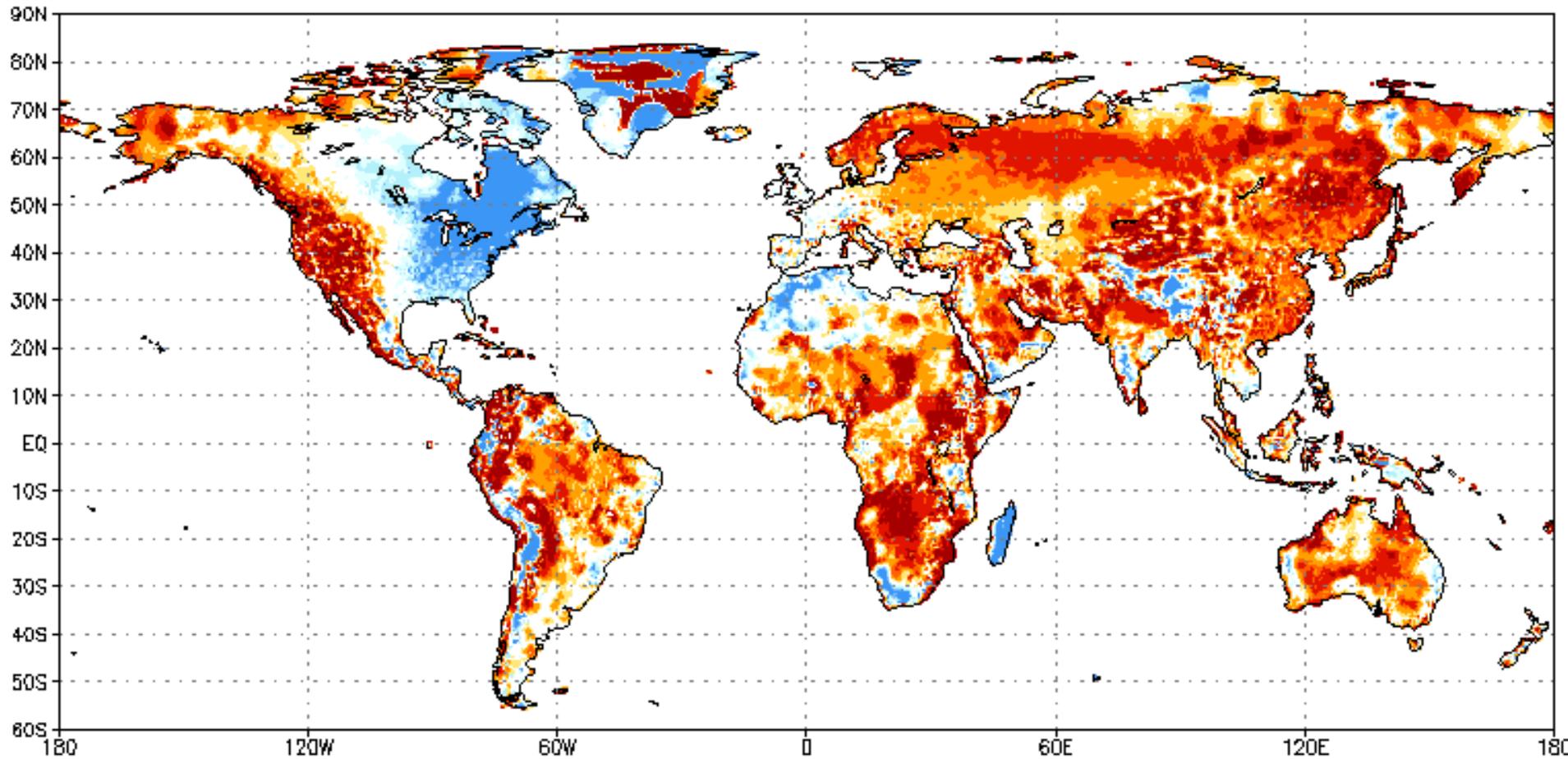
<http://www.dartmouth.edu/~floods/Archives/GlobalArchiveMap.html>



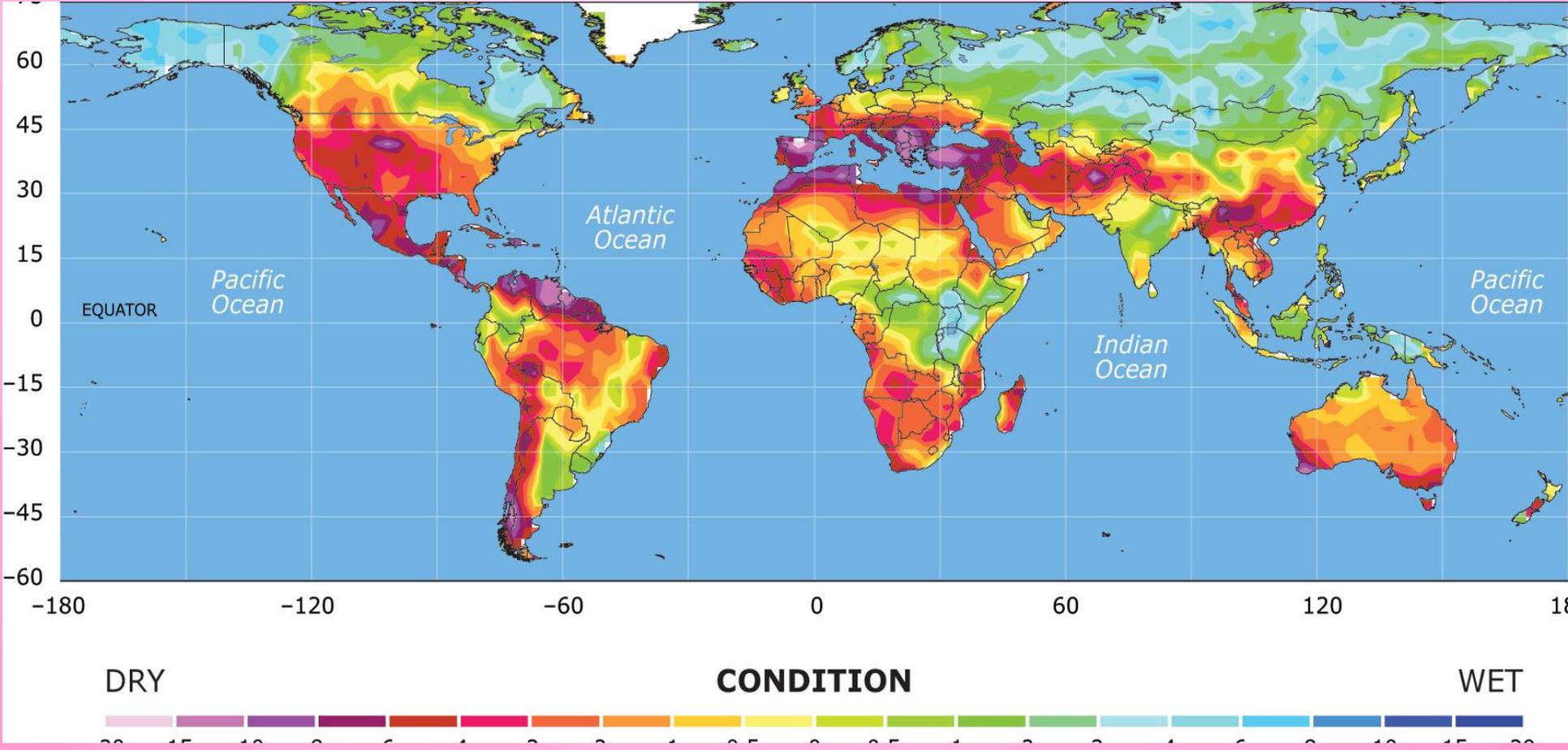
© 2002 - Dartmouth Flood Observatory - G.R. Brakenridge, Elaine Anderson - Cartography: S. Caquard - Work supported by NASA grant NAG5-9470



Droughts: temperature in 2015 above normal



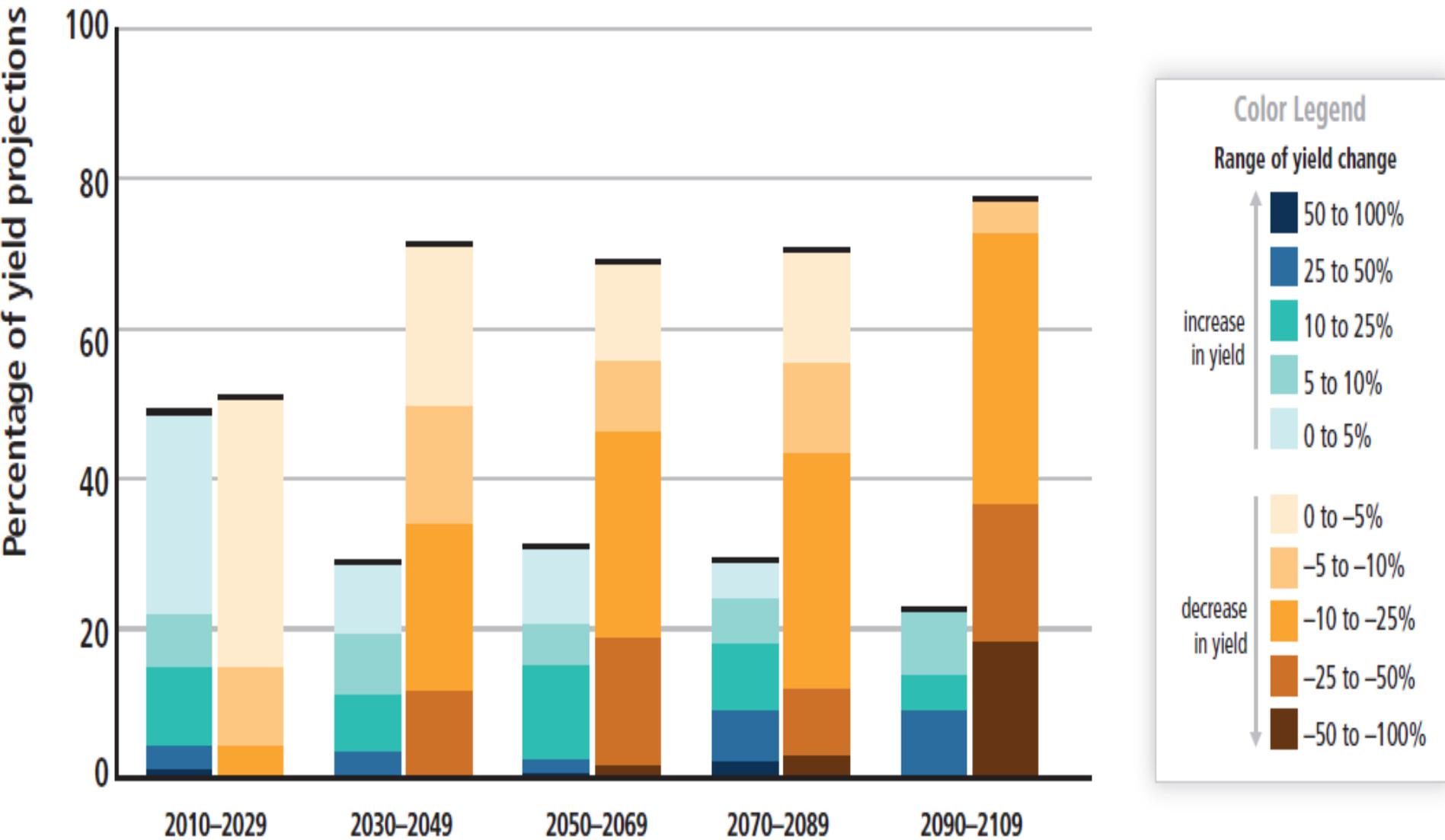
Conditions estimated: 2030-2039



2. Impacts on development

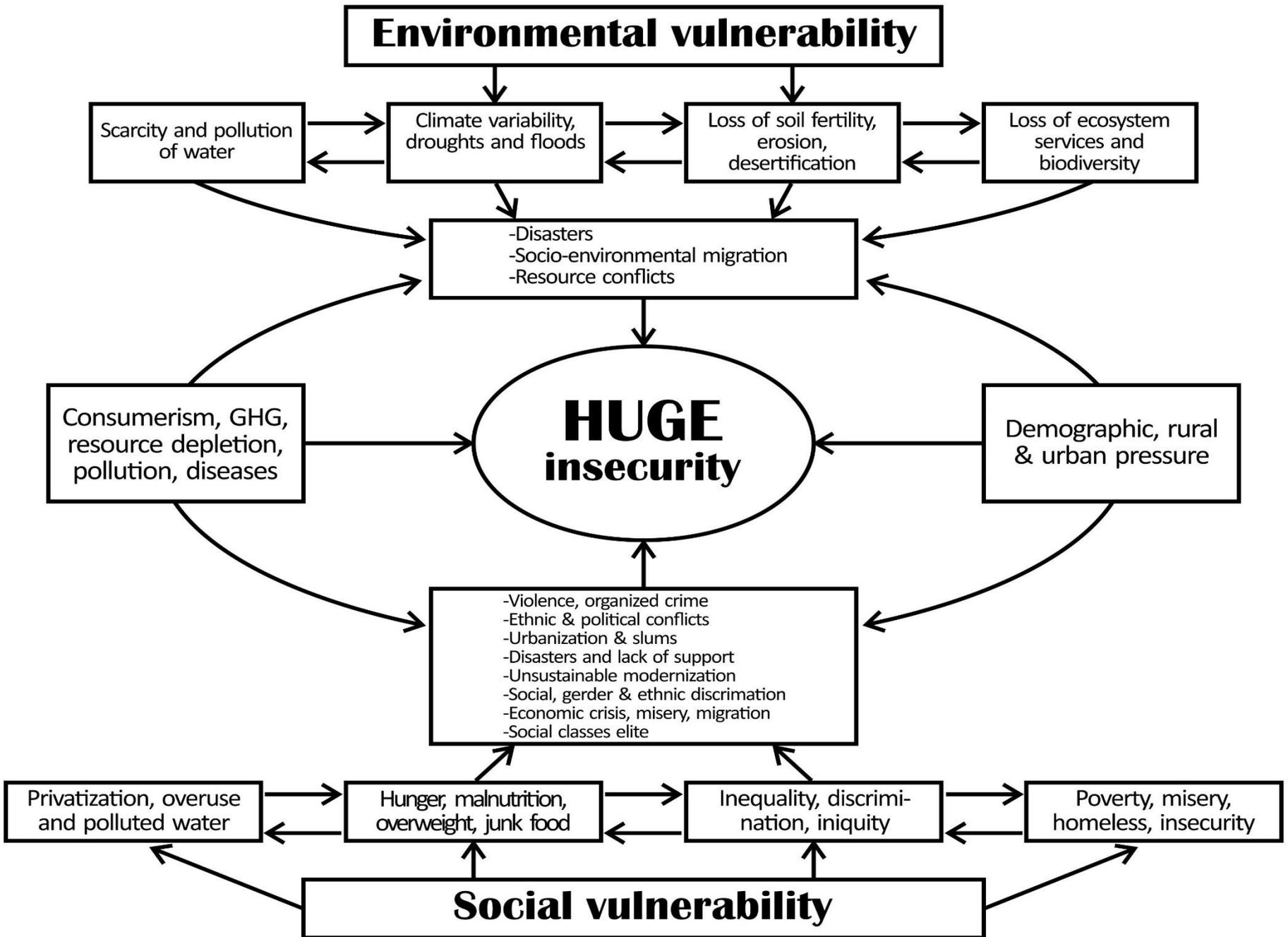
- **Climate change is projected to increase displacement of people** due to lack of resources, hunger and extreme weather events. Expanding opportunities for mobility can reduce vulnerability for such populations and **migration can be an effective adaptation strategy.**
- **Climate change can indirectly increase risks of violent conflicts in the form of civil war & inter-group violence by amplifying well-documented drivers of these conflicts such as poverty and economic shocks.**
- **The impacts of climate change on the critical infrastructure and territorial integrity of many states are expected to influence national security policies:** land inundation due to **sea level rise** poses risks to the territorial integrity of small island.
- **Transboundary impacts of climate change, such as changes in sea ice, shared water resources, and pelagic fish stocks,** have the potential to increase rivalry among states, but national and intergovernmental institutions can enhance **cooperation** and manage many of these rivalries and ethical investments from historical emitters of GHG will support adaptation in poor countries.

Projected crop yield changes (IPCC, 2014: 18)



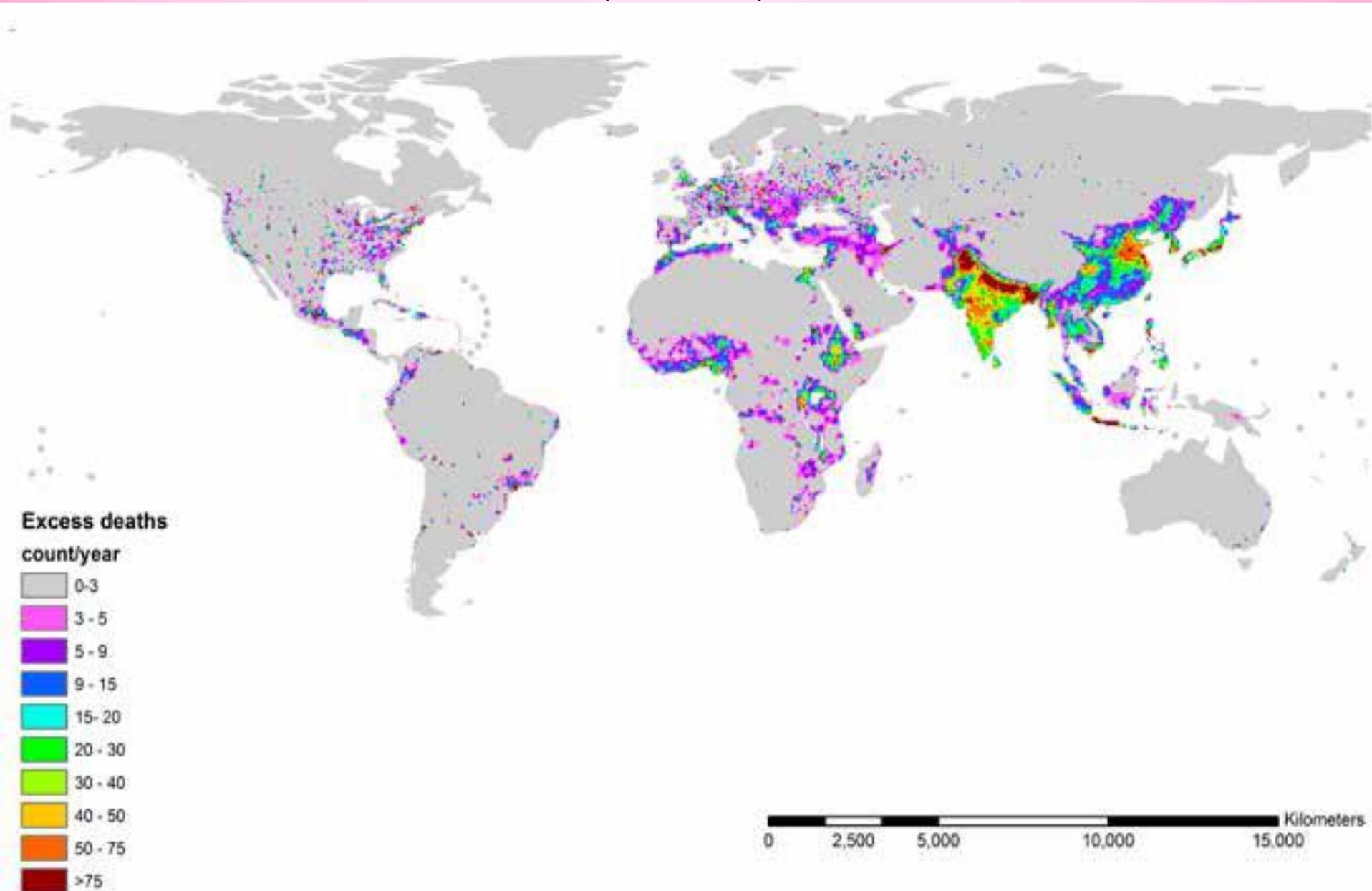
3. Dual vulnerability





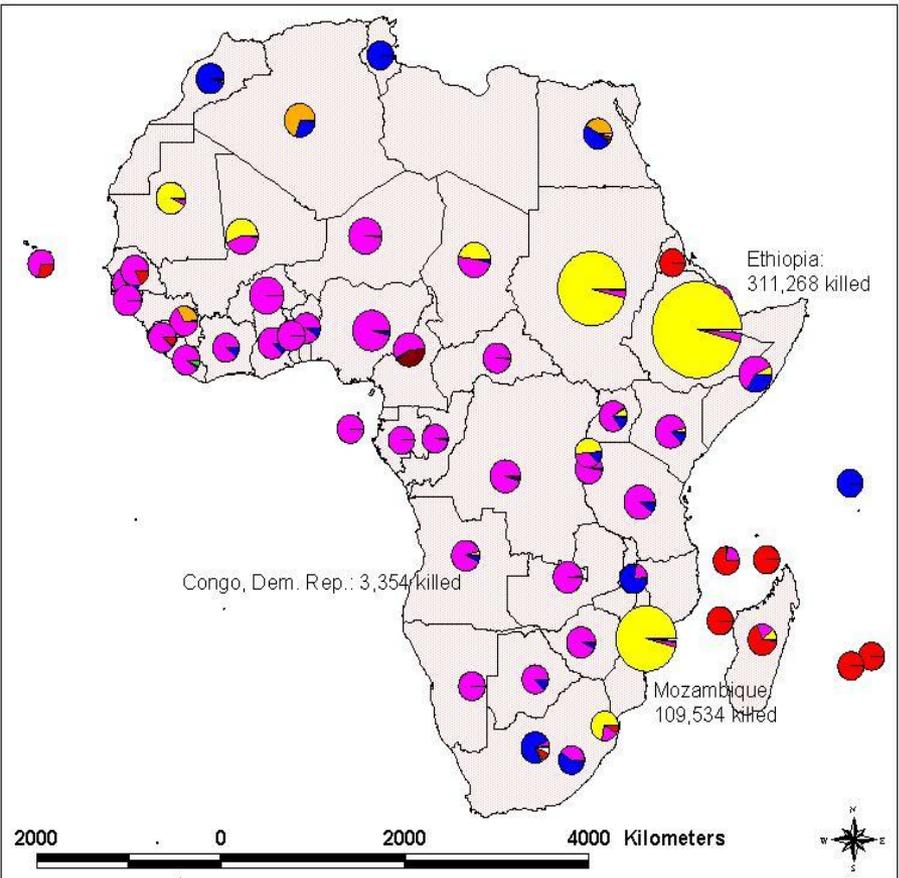
Heat related deaths of >65 years old

(WHO 2014:22)



Desasters & extreme events

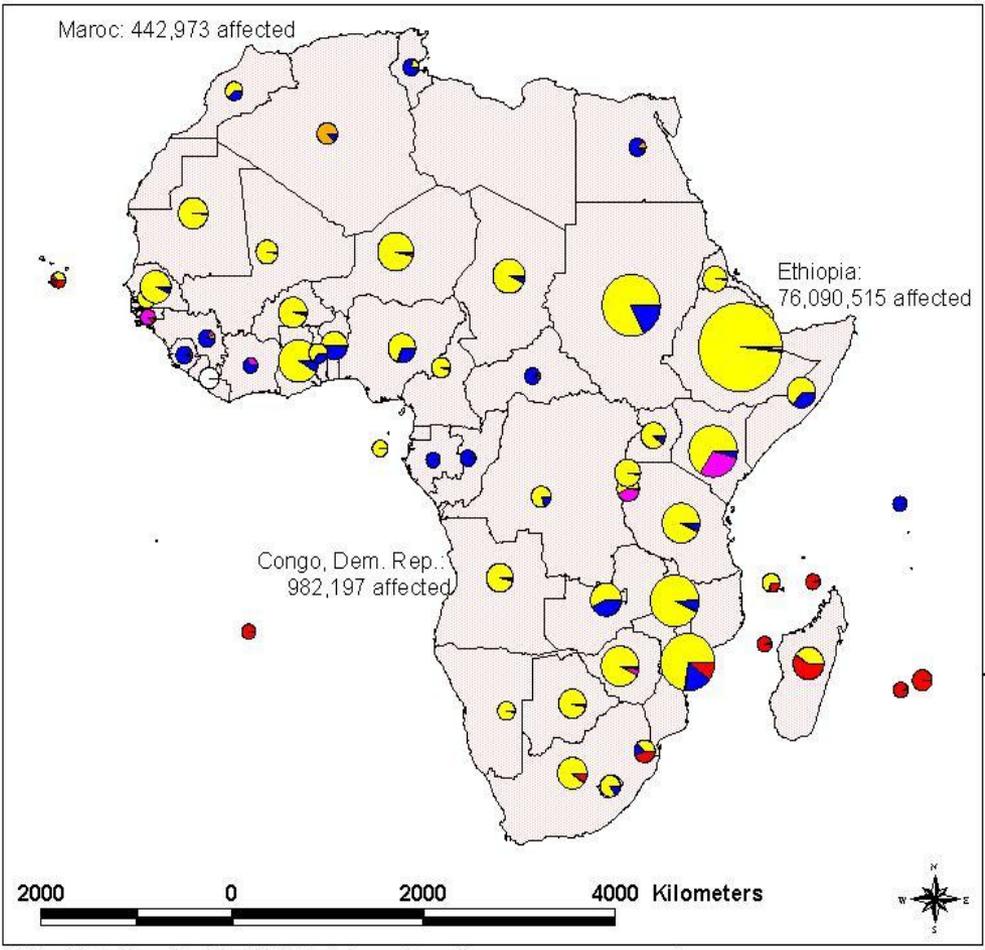
Distribution of natural disasters fatalities, by country and type of phenomena, in Africa (1975-2001)



EM-DAT: The OFDA/CRED International Disaster Database
 (<http://www.cred.be> ; email: cred@epid.ucl.ac.be)

LEGEND	
■	Volcano
■	Earthquake
■	Drought/Famine
■	Epidemic
■	Avalanche/Landslide
■	Flood
■	Wind Storm
■	Other

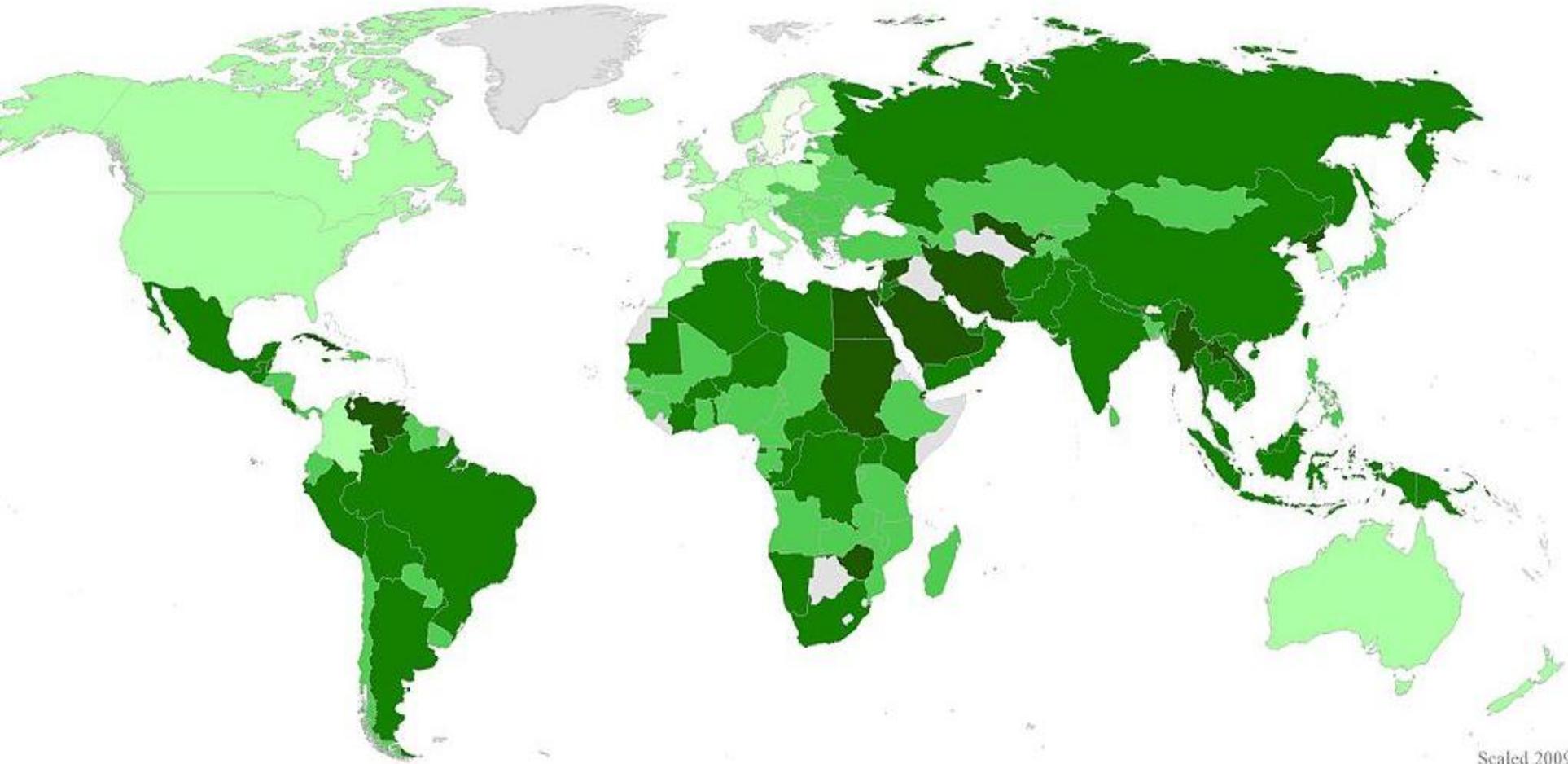
Distribution of people affected by natural disasters, by country and type of phenomena, in Africa (1975-2001)



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LEGEND	
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■	Flood
■	Wind Storm
■	Other

Trafficking of women & girls



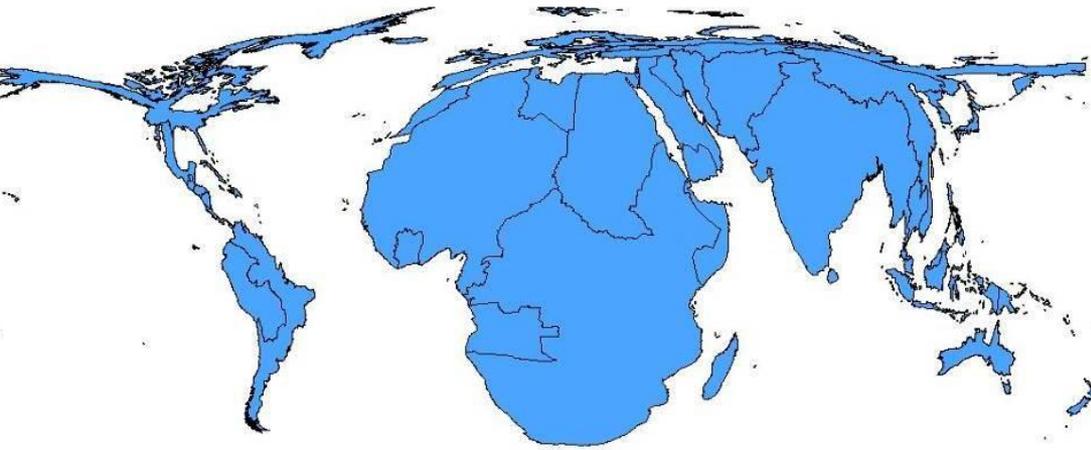
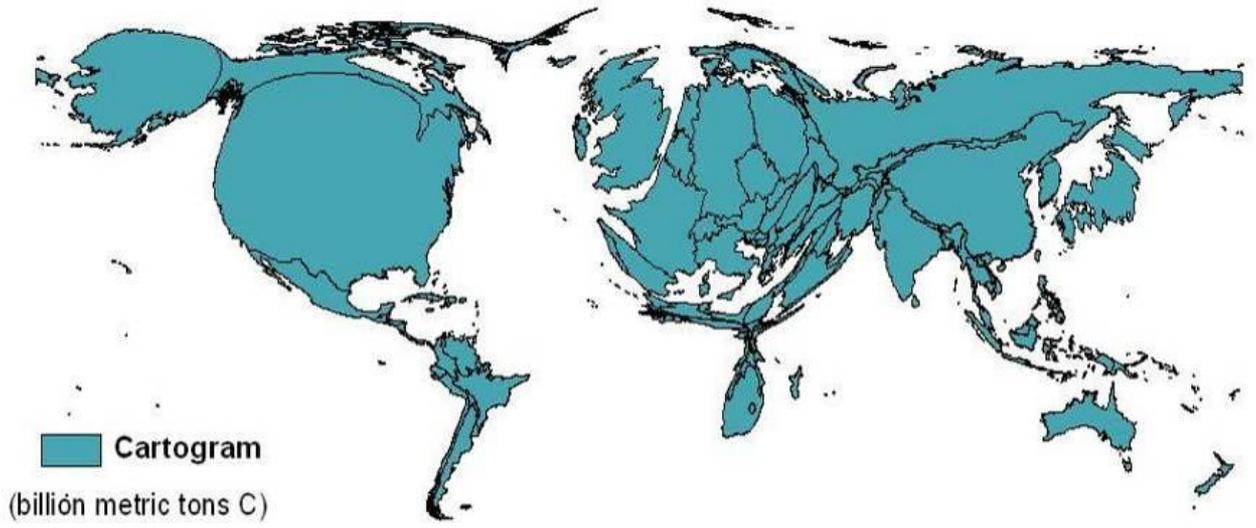
- Grey: No Data
- Lightest Green: Trafficking is illegal and rare
- Light Green: Trafficking is illegal but problems still exist
- Medium Green: Trafficking is illegal but is still practiced
- Dark Green: Trafficking is limitedly illegal and is practiced
- Black: Trafficking is not illegal and is commonly practiced



Land slides

Greenhouse gas emissions and unjust health impacts in the Global South

Total CUMULATIVE Greenhouse Gas Emissions in the Year 2002, by Country

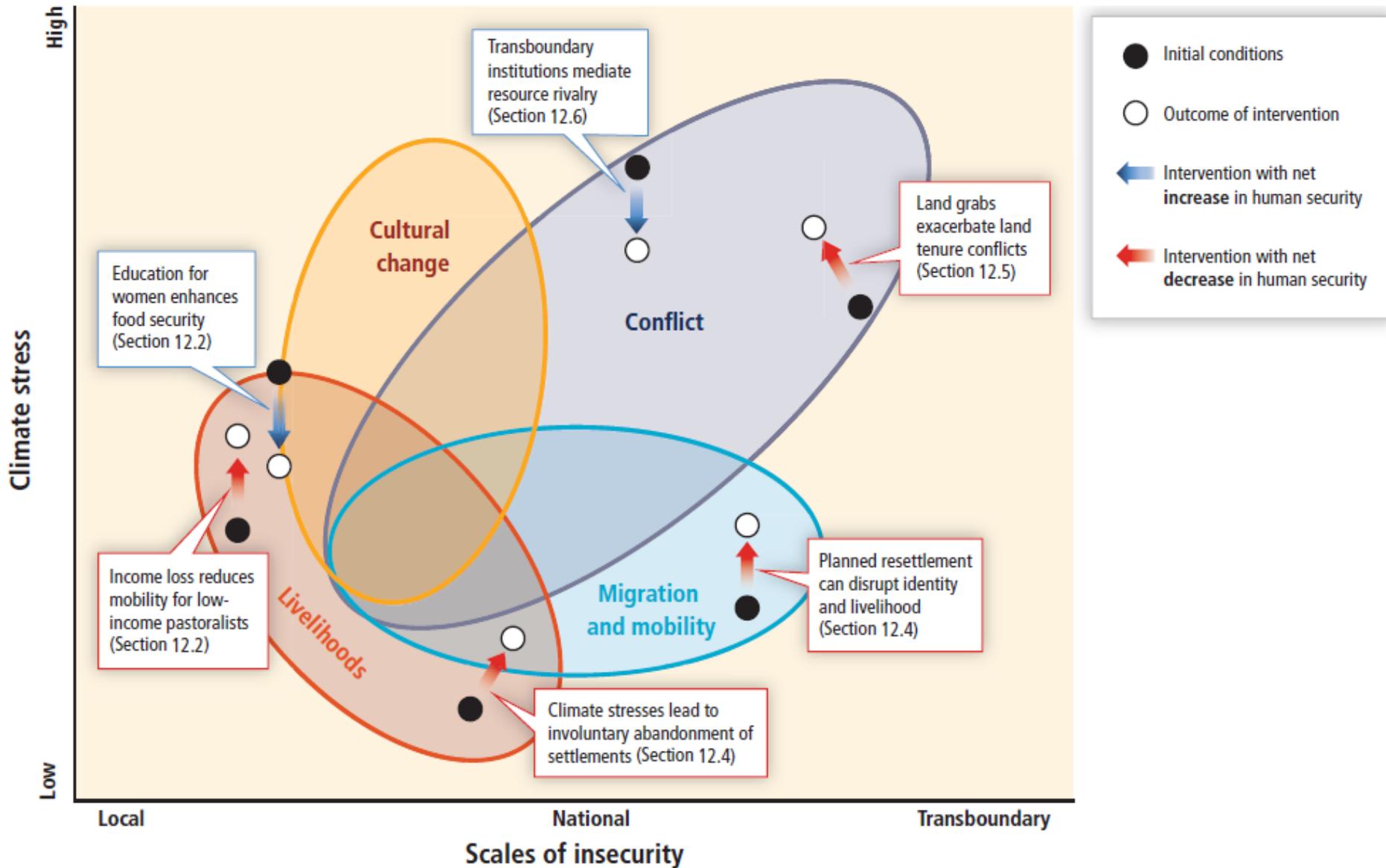


This map shows estimated mortality (per million people) attributable to climate change by the year 2000. Map is a density-equalizing cartogram in which the sizes of the 14 WHO regions are proportional to the increased mortality.

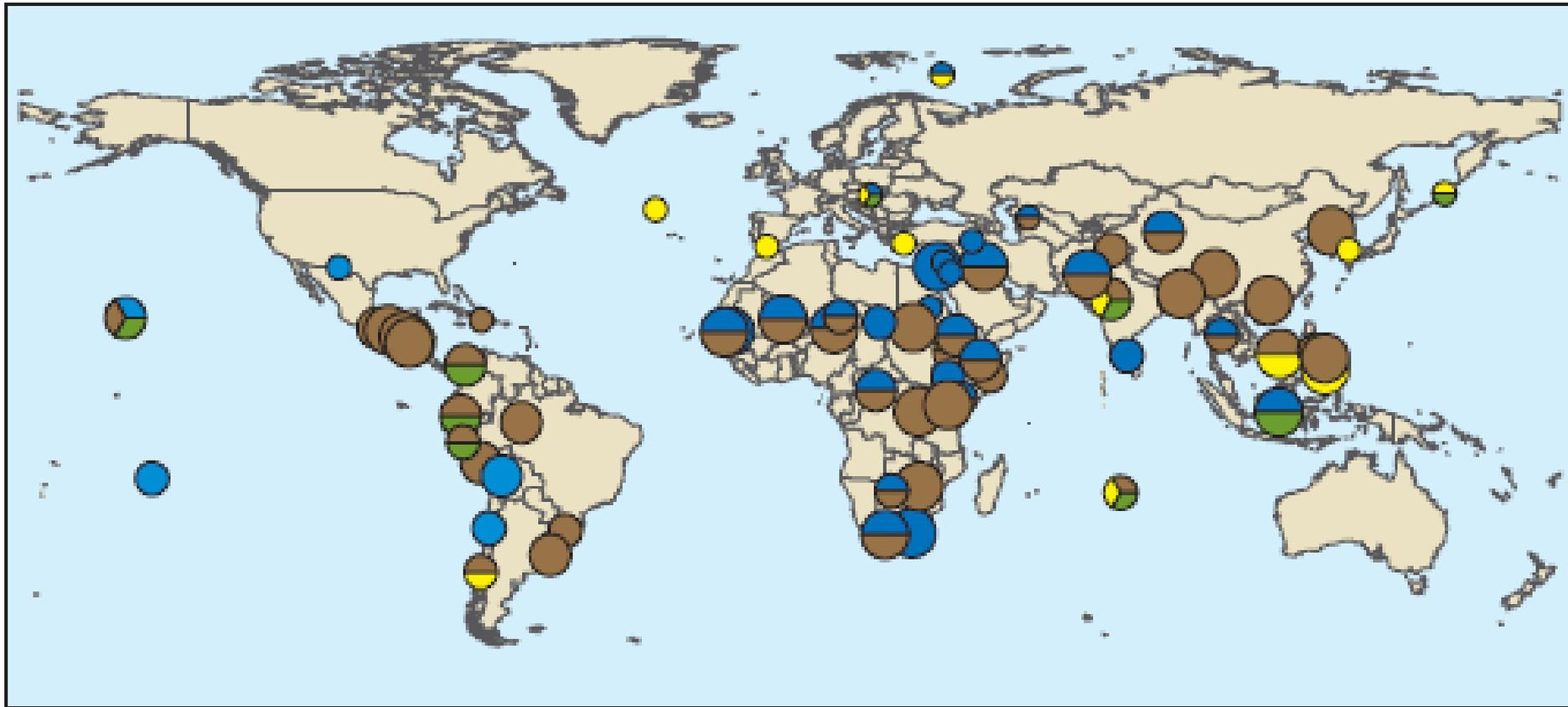
Patz et al., 2007.



5. Disasters and conflicts



Environmental conflicts (1980-2006)



Conflict intensity

- Diplomatic crisis
- Protests (partly violent)
- Use of violence (national scope)
- Systematic/collective violence

Conflict cause

- Water
- Land/soil
- Fish
- Biodiversity

Source: WBGU (2008: 32)

Multiple stressors

Climate change

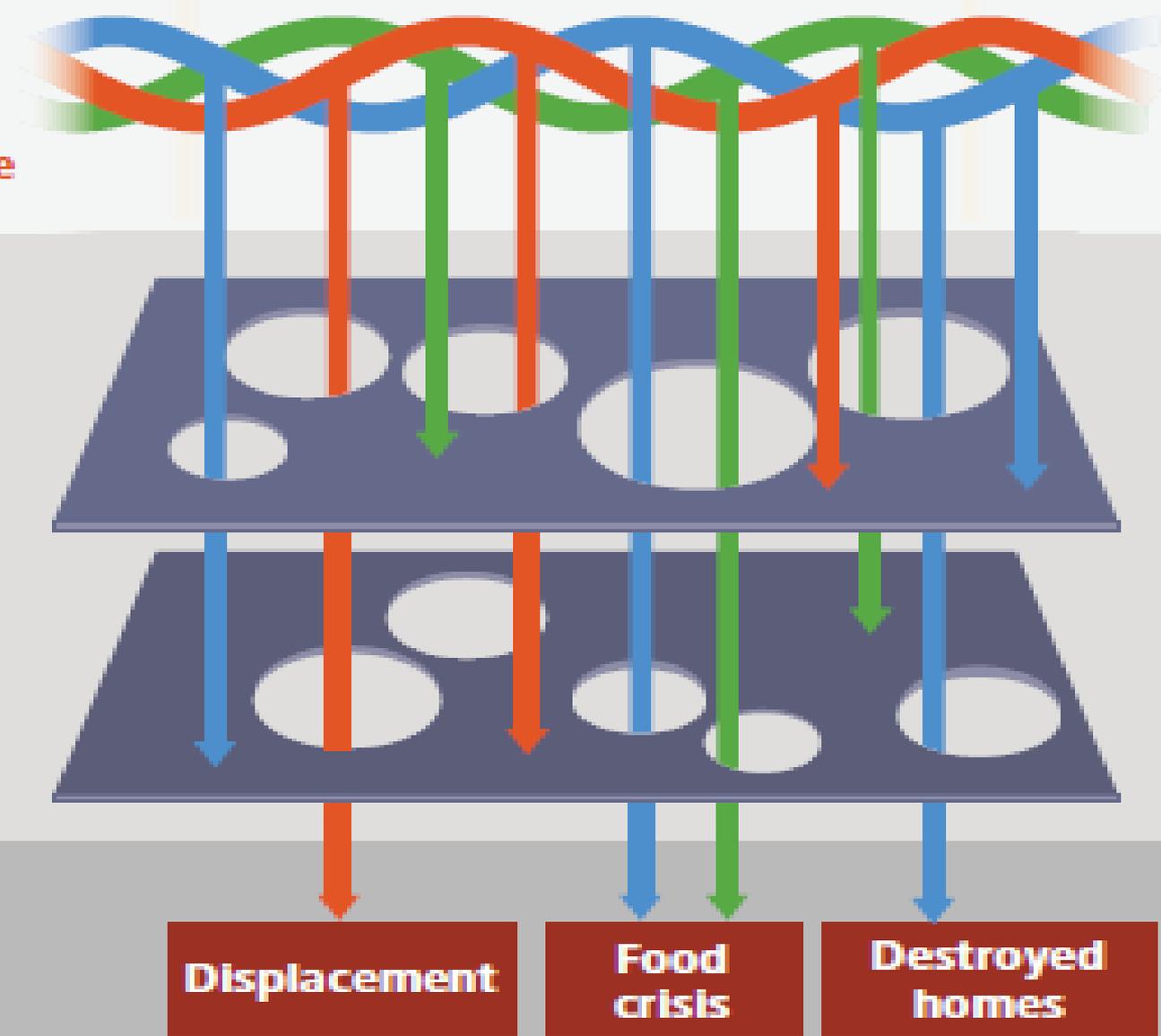
Globalizations

Technological change

Institutions such as:

- Social protection
- Relief organizations
- Disaster prevention

Livelihoods

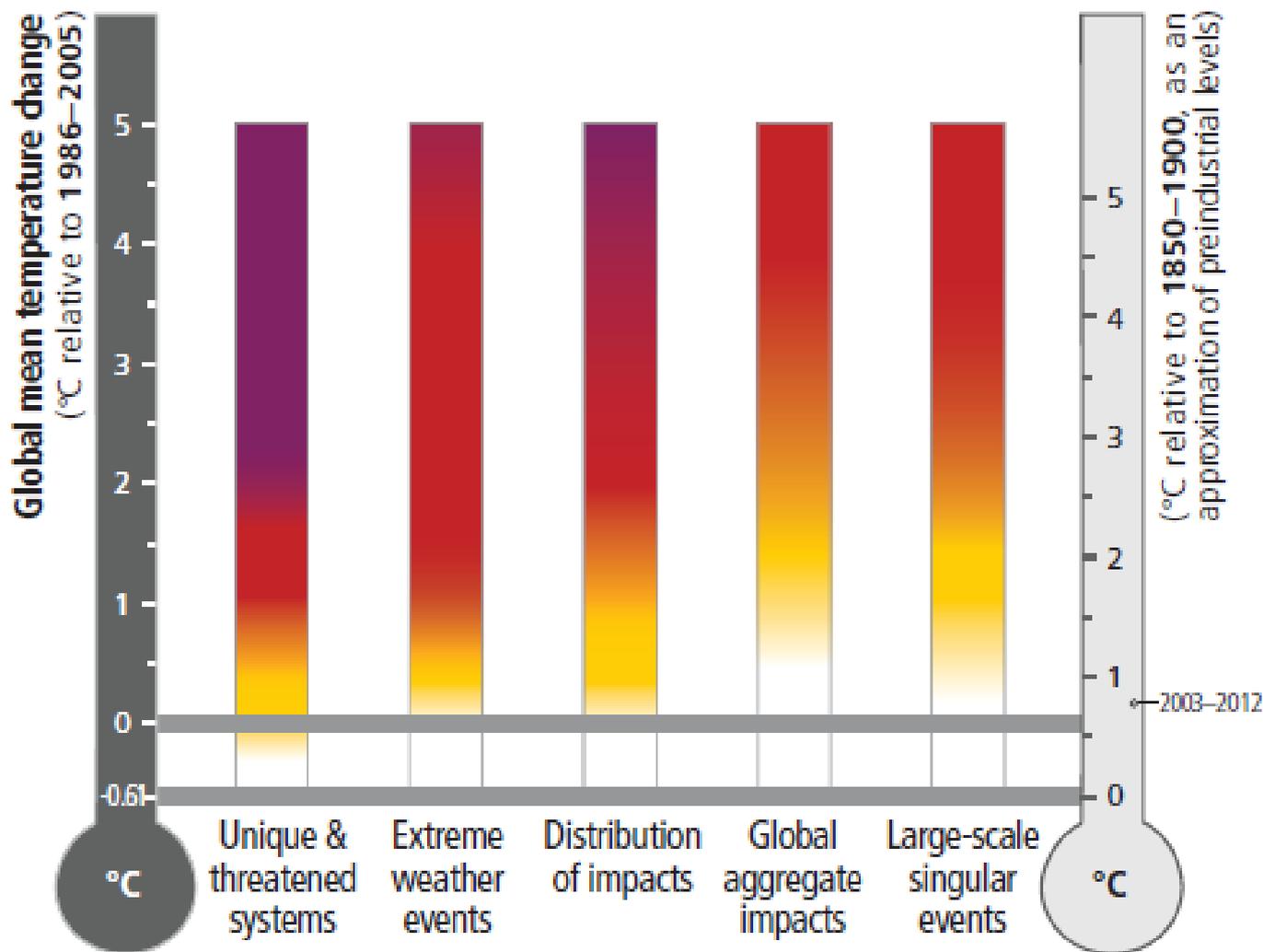


Displacement

Food crisis

Destroyed homes

Risks



Level of additional risk due to climate change

Undetectable

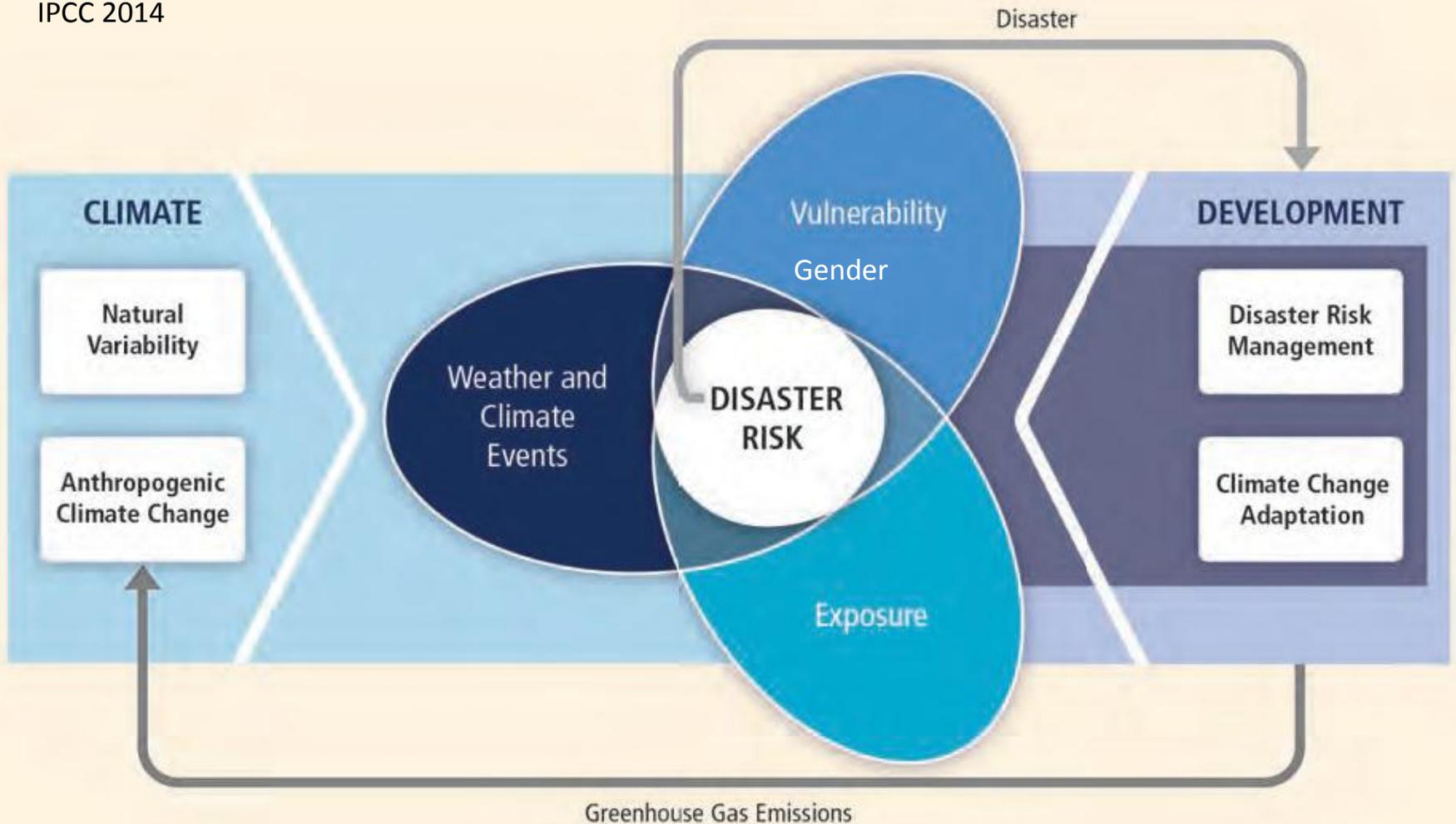
Moderate

High

Very high

Collaboration of three epistemic communities: climate change, disaster risk reduction (DRR) & development

IPCC 2014



6. Resilience, adaptation, mitigation & development



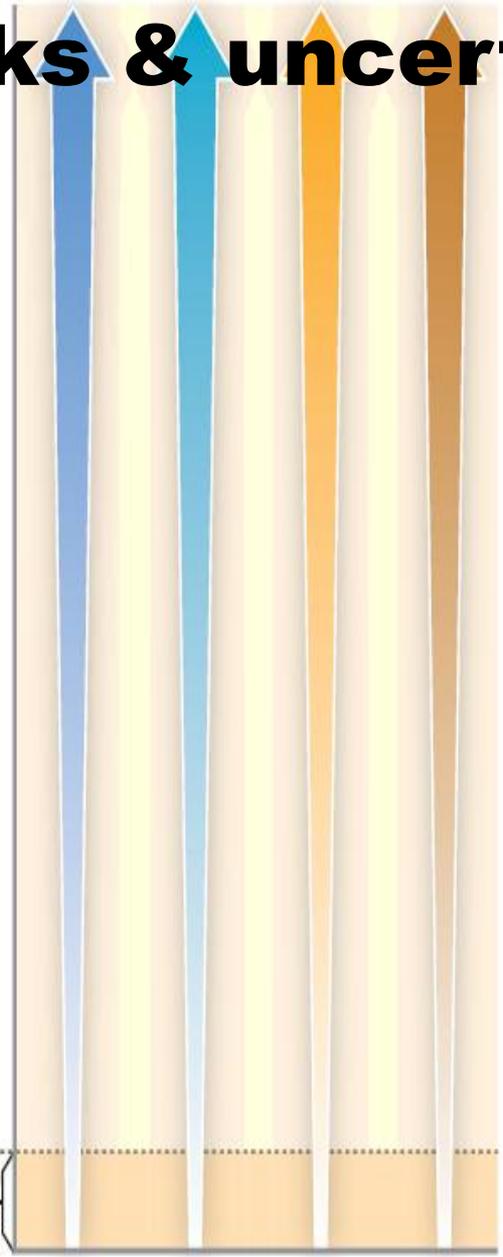
- **Human security will be progressively threatened as the climate changes.**
- **Climate change will compromise the cultural values that are important for community and individual wellbeing**
- **Indigenous, local and traditional forms of knowledge are a major resource for adapting to climate change**
- **Climate change will have significant impacts on forms of migration that compromise human security**
- **Mobility is a widely used strategy to maintain livelihoods in response to social and environmental changes**
- **Some of the factors that increase the risk of violent conflict within states are sensitive to climate change**
- **People living in places affected by violent conflict are particularly vulnerable to climate change**
- **Climate change will lead to new challenges to states and will increasingly shape both conditions of security and national security policies**

Risks & uncertainty

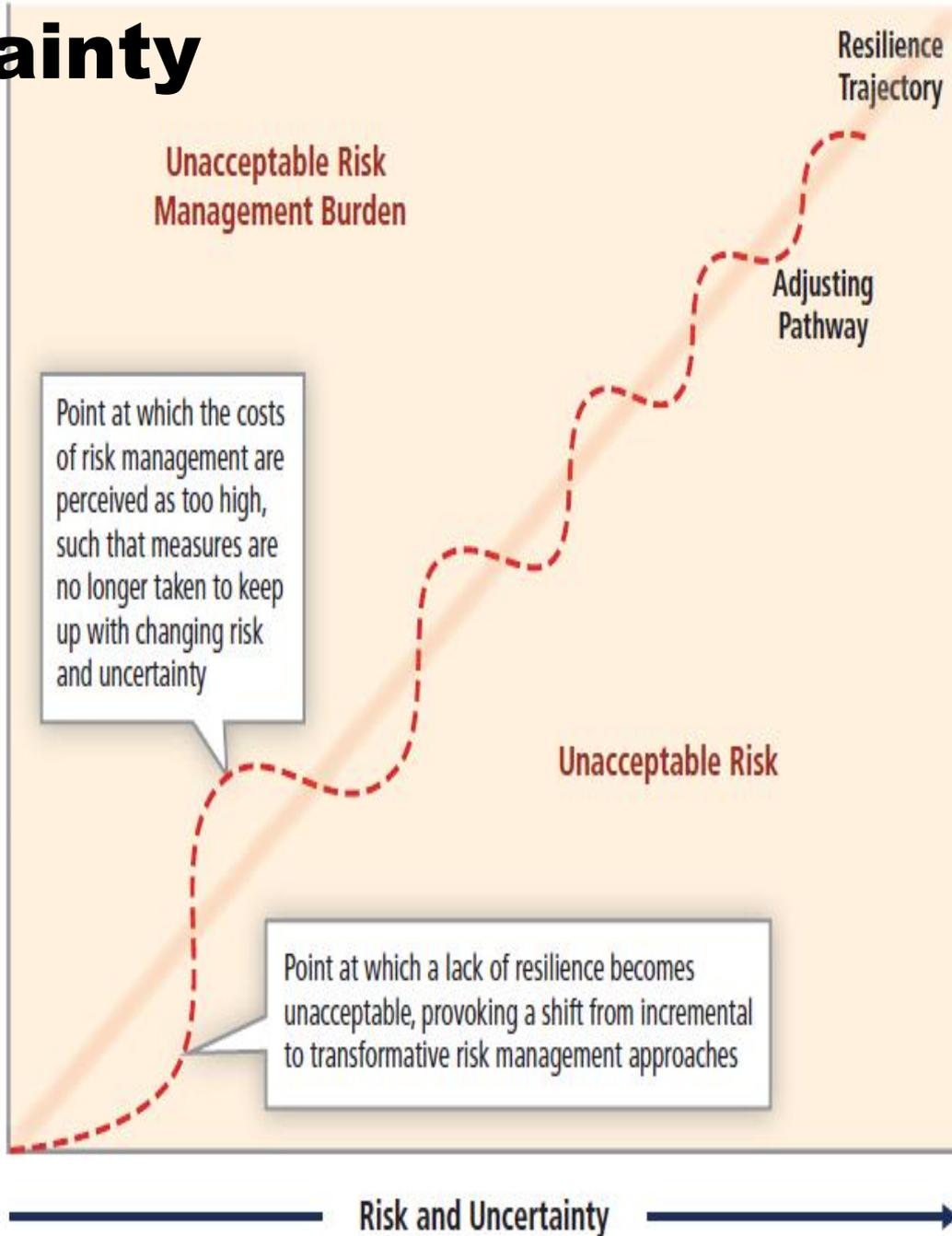
Risk Management-Development Synergy and Capacity

Transformative Changes

Incremental Adjustments



Adaptive Management Learning Innovation Leadership



Resilience Trajectory

Unacceptable Risk Management Burden

Adjusting Pathway

Point at which the costs of risk management are perceived as too high, such that measures are no longer taken to keep up with changing risk and uncertainty

Unacceptable Risk

Point at which a lack of resilience becomes unacceptable, provoking a shift from incremental to transformative risk management approaches

Risk and Uncertainty

Dematerialisation & decarbonisation



MITIGATION ADAPTATION

RESILIENCE

RENEWABLE ENERGY & WATER MANAGEMENT

Science & Technology

Photovoltaic/Thermosolar
Tidal
Geothermal
Wind

Finances

IWRM
Aquifers

Institutional Consolidation

Citizen Participation

Traditional knowledge
Ecosystem services
Soil management
Wetland
Coastal areas

**EXTREME
EVENTS &
DISASTERS**

**CC
GEC**

Social vulnerability

(Population growth, migration, gender discrimination, unemployment, poverty, hunger, violence, land grabbing, war, crime, minorities, exclusive globalization, economic crisis, inequity, lack of governance)

Environmental vulnerability

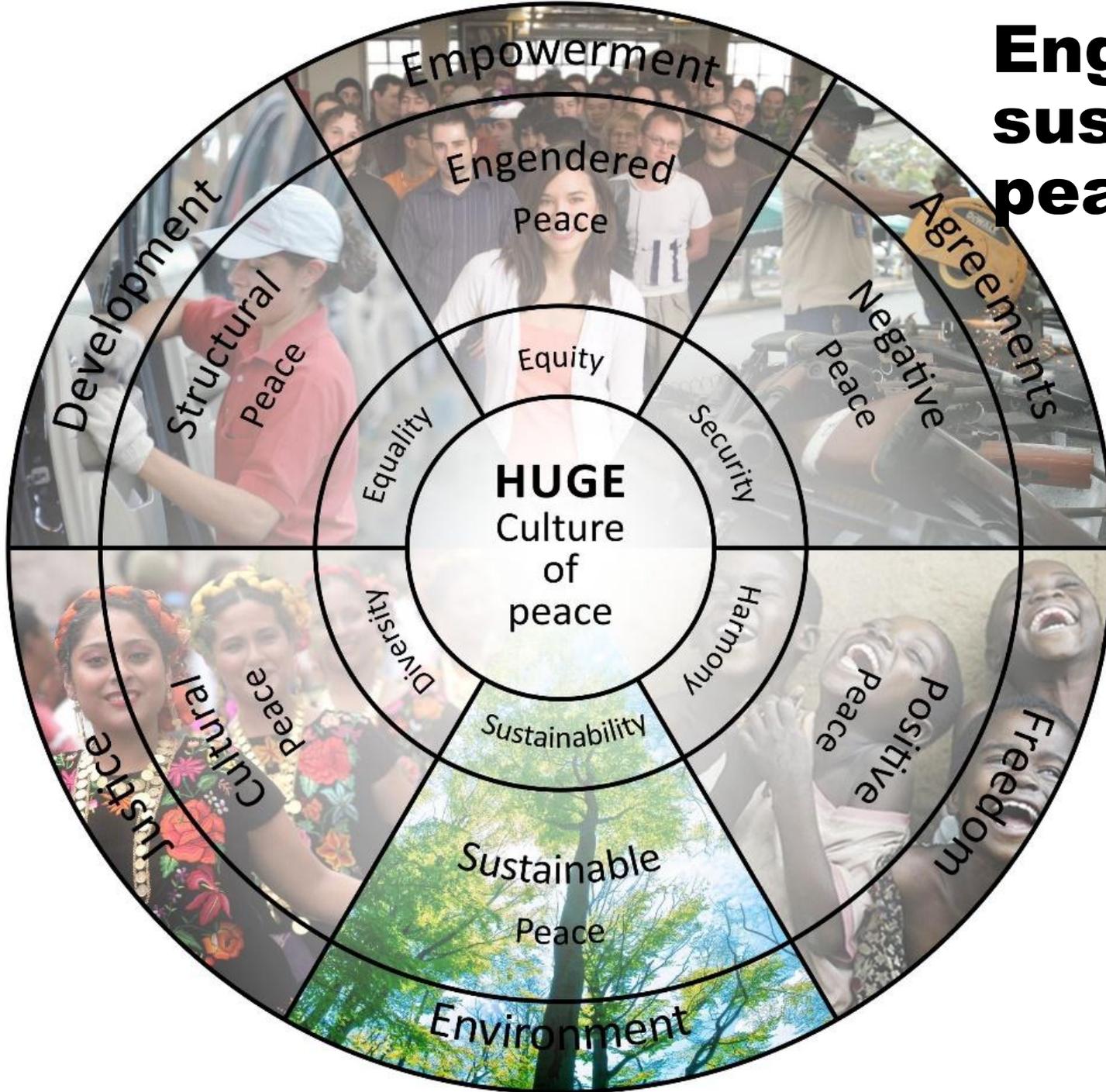
Loss of biodiversity & ecosystem services, scarcity & pollution of water, loss of soil fertility, desertification, temperature rise, heatwaves, storms, hurricanes, precipitation change, monsoon alteration, drought, sandstorms, sea level rise, glacier melting, vector-borne diseases

DEVELOPMENT

Sustainable Development Goals
GDP per capita
Wellbeing
Food sovereignty
Water security
Energy security
Health security
Employment
Water management
Culture
Social fabric
Conflict resolution
Sustainable consumption
Renewable energy
Ecosystem restoration
Human solidarity

Transparency in knowledge and finances

Engendered-sustainable peace





Thank you for your attention

http://www.afes-press.de/html/download_oswald.html