

WMO Drought Activities

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Secretary-General



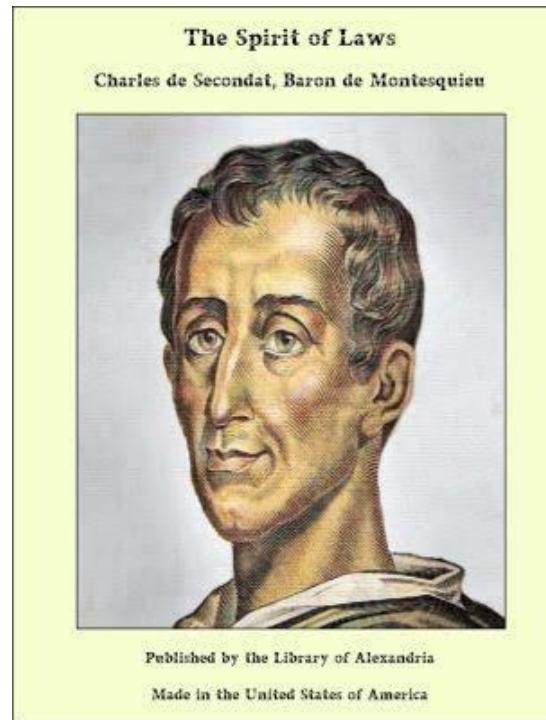
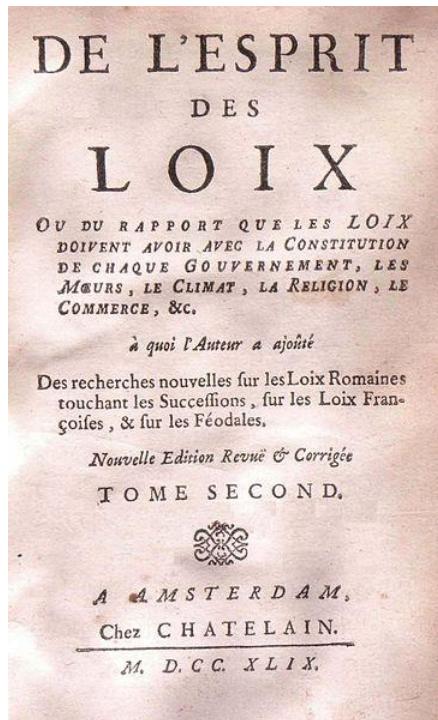
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World Meteorological Organization
Organisation météorologique mondiale

**International Seminar on Drought
and Agriculture
FAO, Rome, 19 June 2017**

“Climate is the primary world power”

Philosopher Baron de Montesquieu (1689-1755)



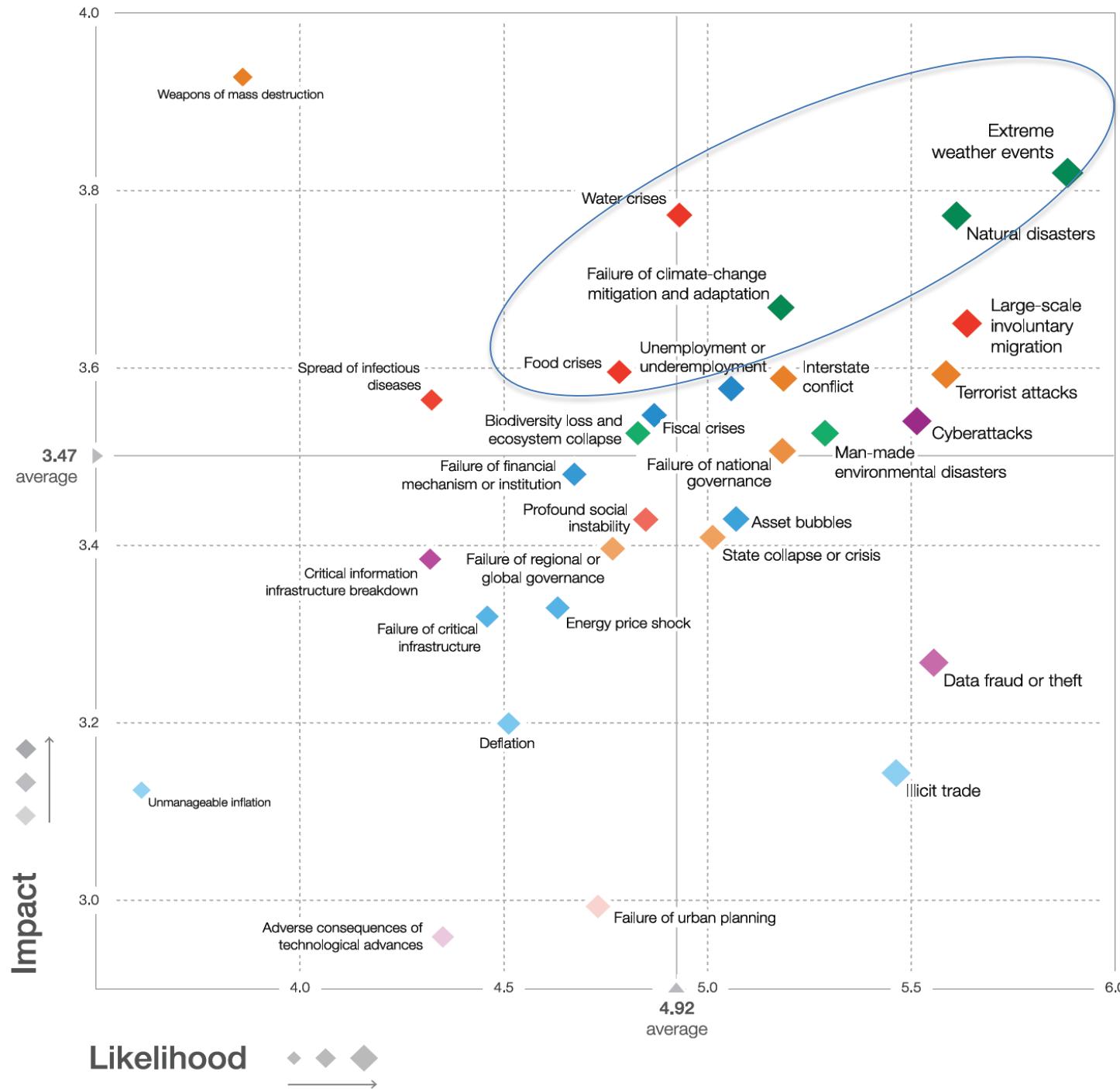
De l'Esprit des Loix, 1748 (partie III, livre XIX, chapitre XIV, paragraphe VI): "L'empire du climat est le premier de tous les empires".



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Global risks landscape 2017

World Economic Forum

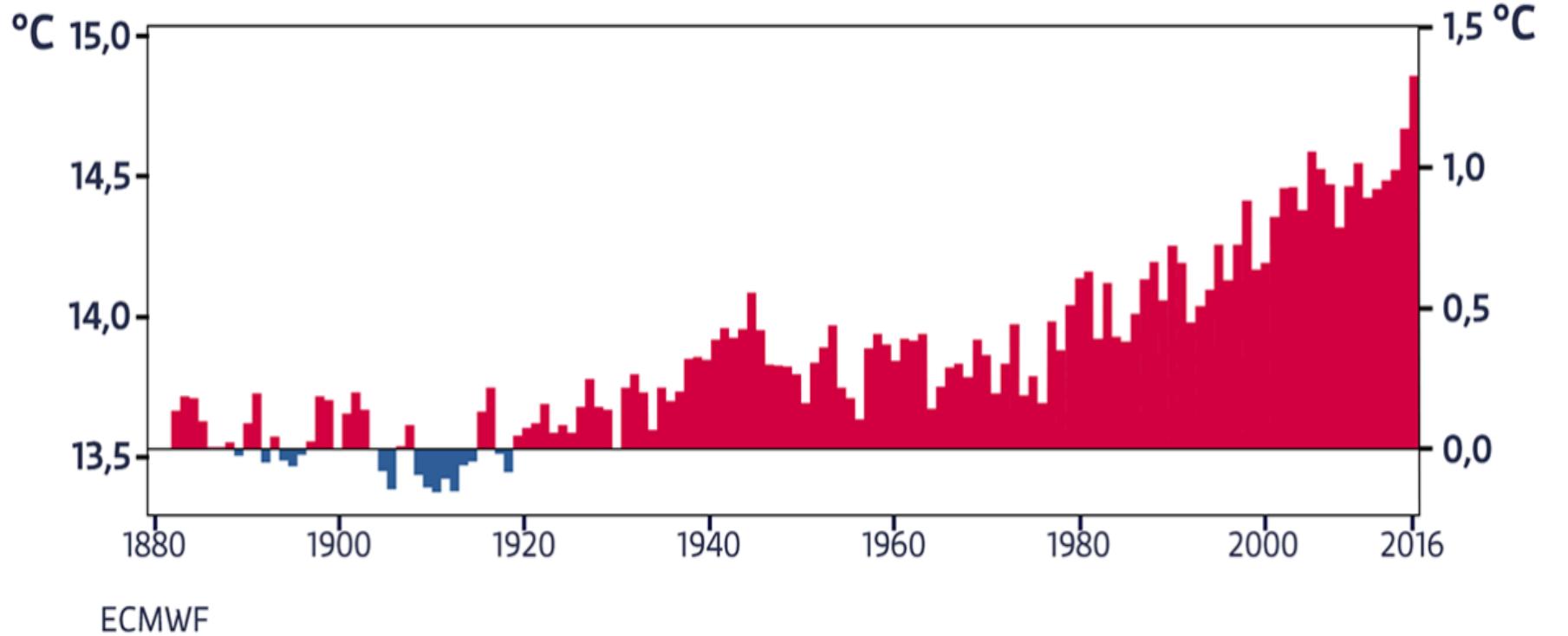


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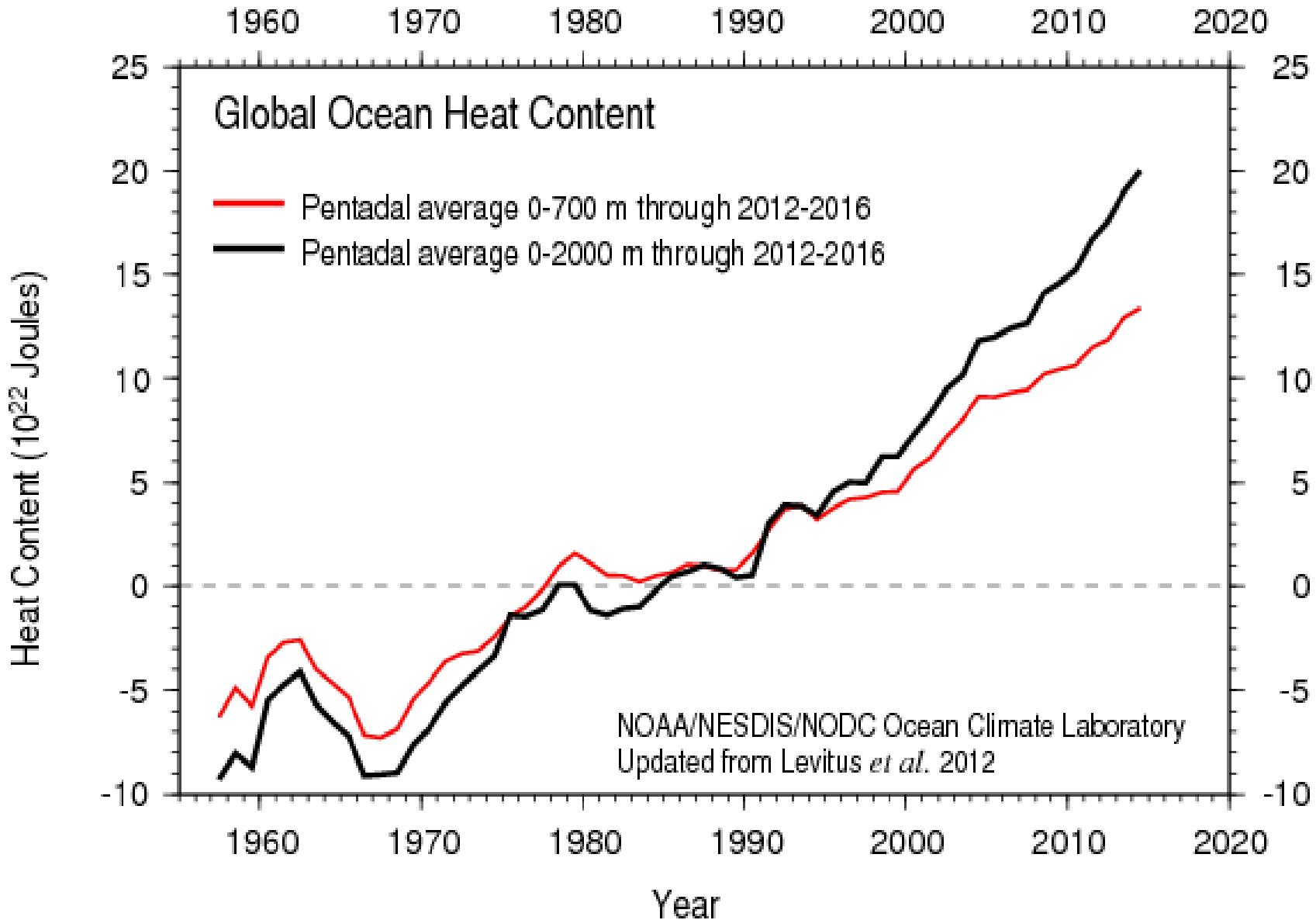
Global temperature 1880-2016

Average

Increase



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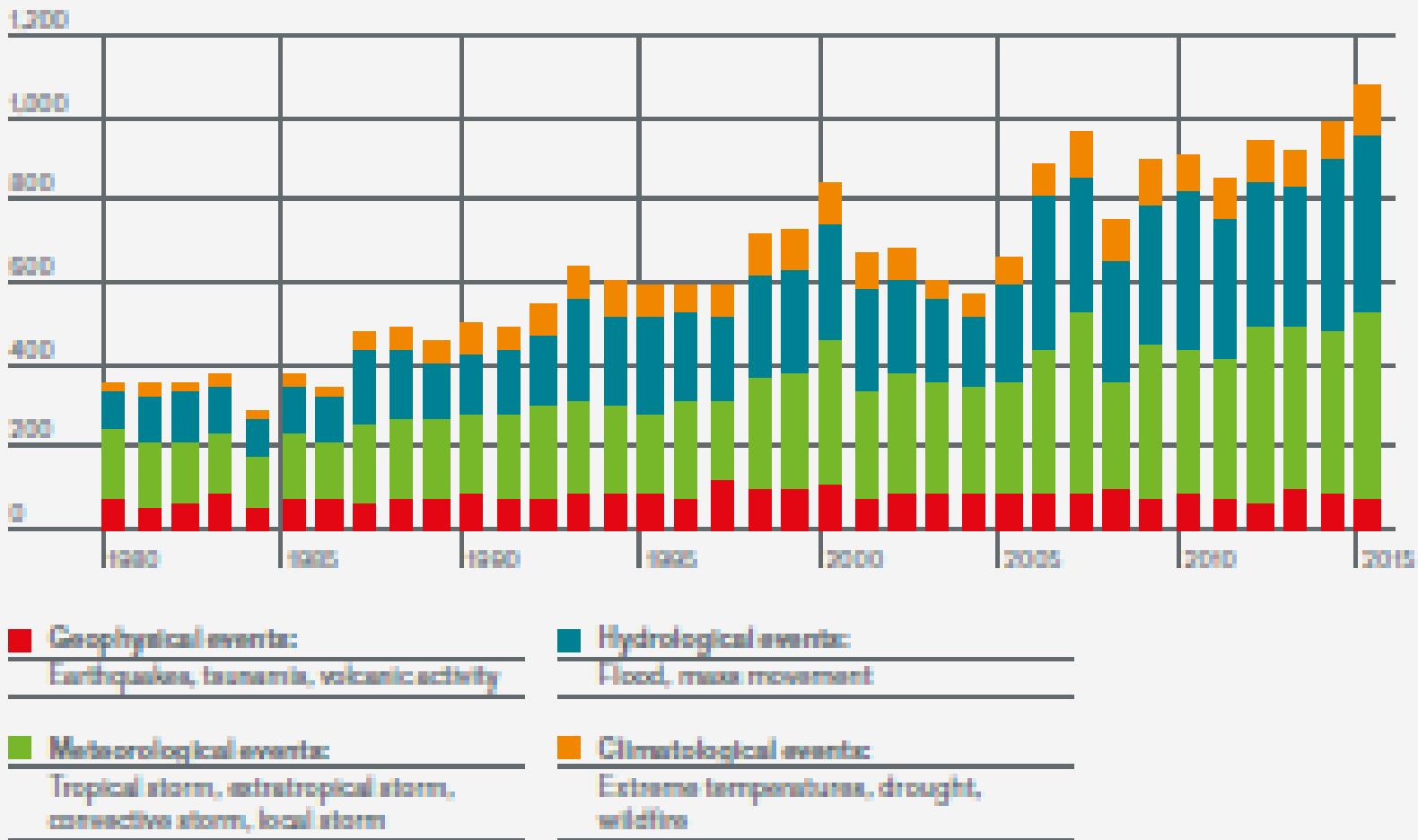
Arctic sea ice volume 1979-2016: -74 %



Source: <http://psc.apl.washington.edu/wordpress/research/projects/arctic-sea-ice-volume-anomaly/>
Created by: Andy Lee Robinson <http://youtube.com/sheavaland> Oct 2015

Growing number of weather related disasters

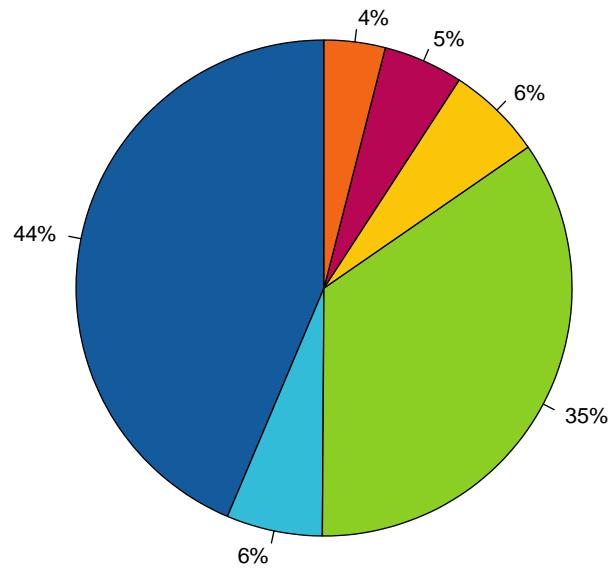
Number of loss events: 1980–2015



Global Disaster Statistics (1970-2012)

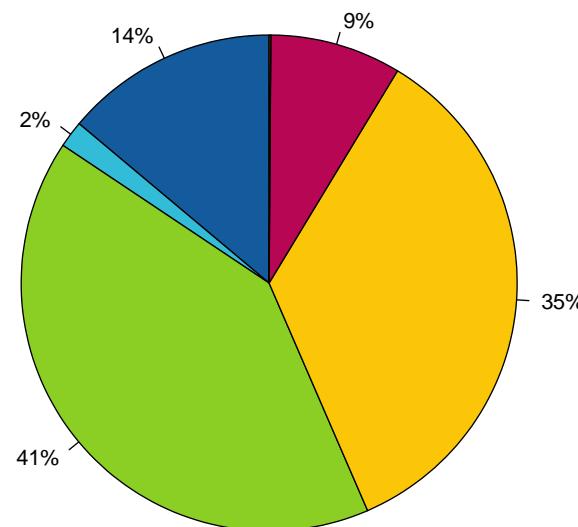
(a) number of reported disasters

Total = 8 835 disasters (1970–2012)



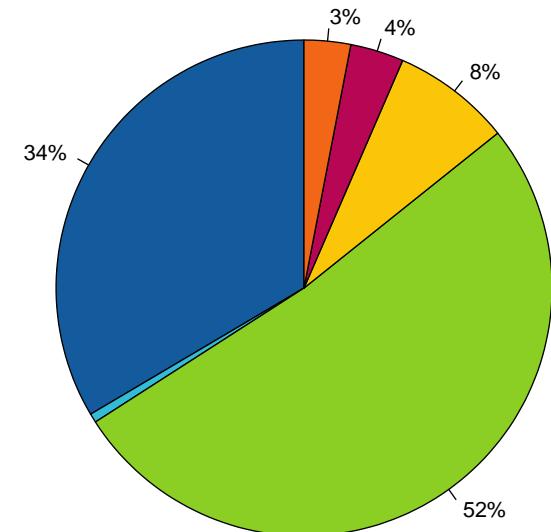
(b) reported deaths

Total = 1 944 653 deaths (1970–2012)



(c) reported economic losses

Total = US\$ 2 390.7 billion (1970–2012)



(a)

Droughts
Floods

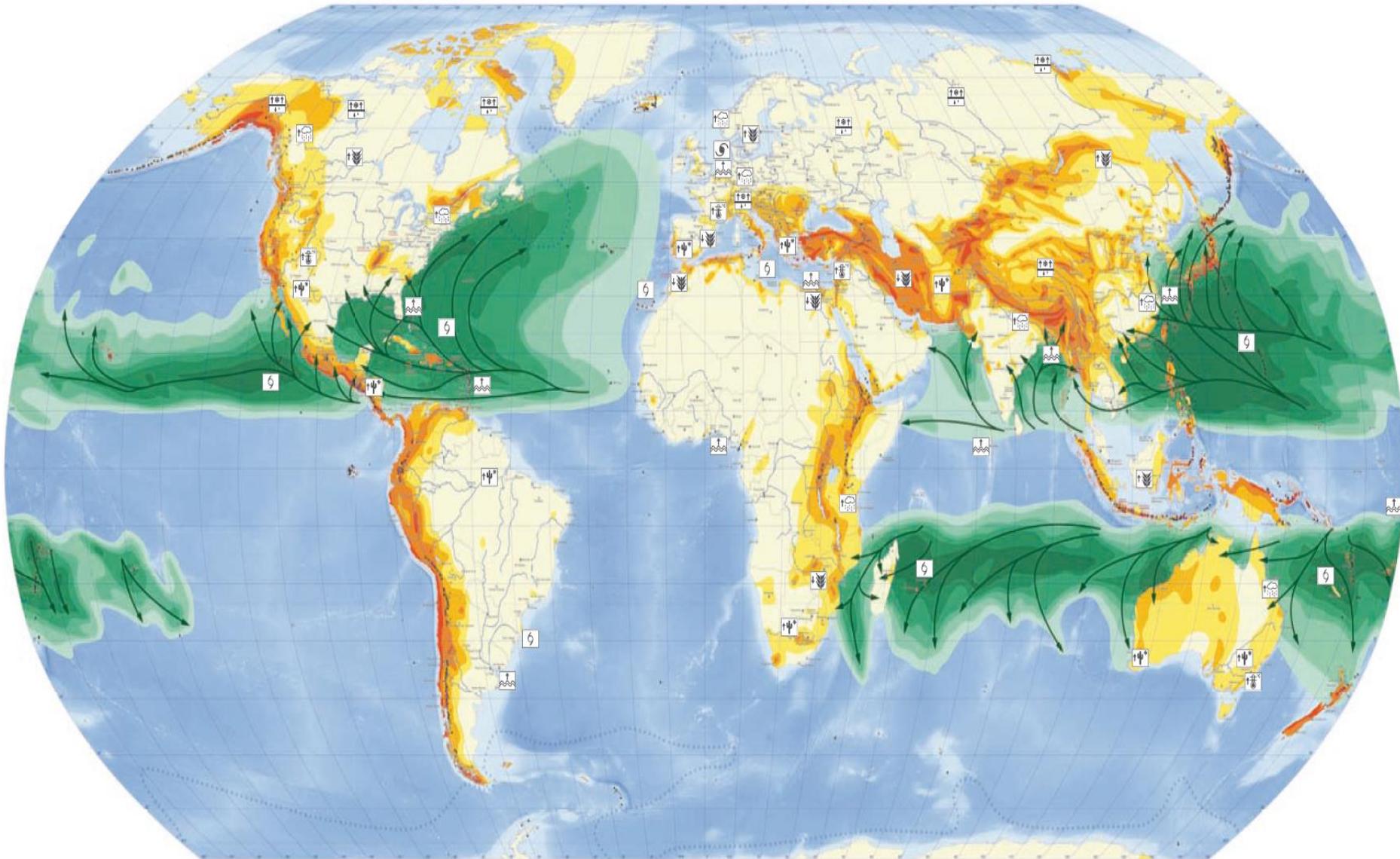
(b)

Extreme Temperature
Mass Movement Wet

(c)

(in US\$ billion, adjusted to 2012)
Wildfires
Storms

World map of natural hazards

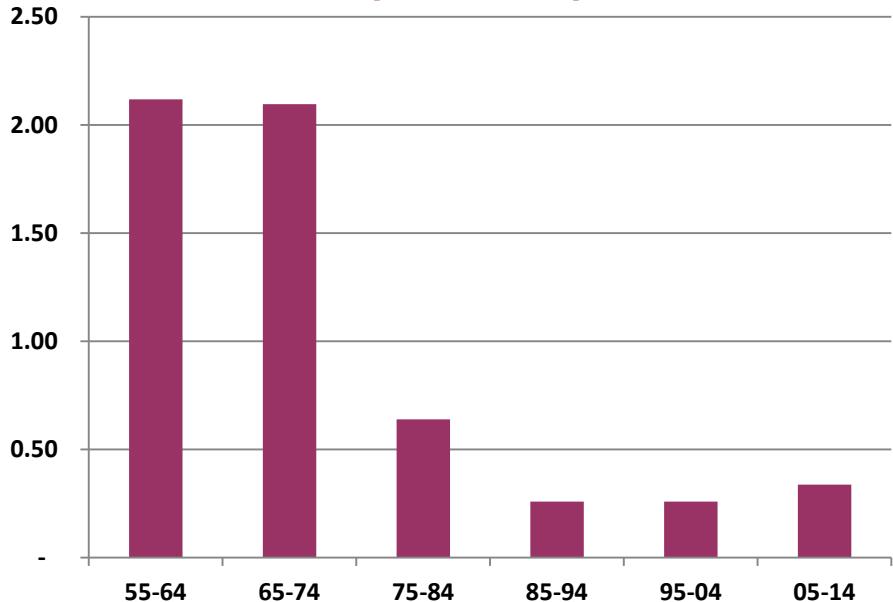


Global adaptation index

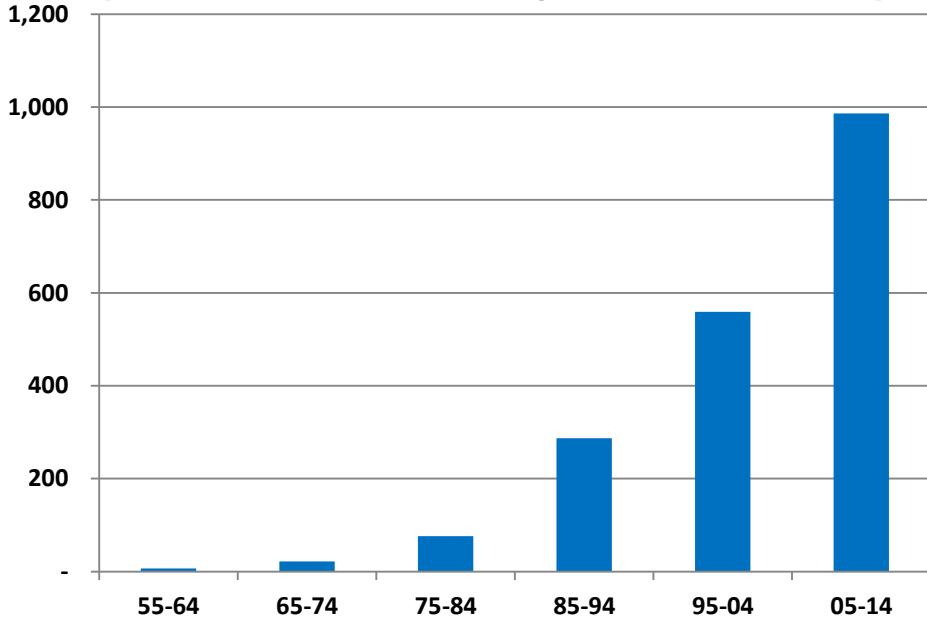


Impacts of hydrometeorological and climatological hazards (1955–2014)

Human losses by decade
(millions)



Economic losses by decade
(billions of US\$ adjusted to 2013)



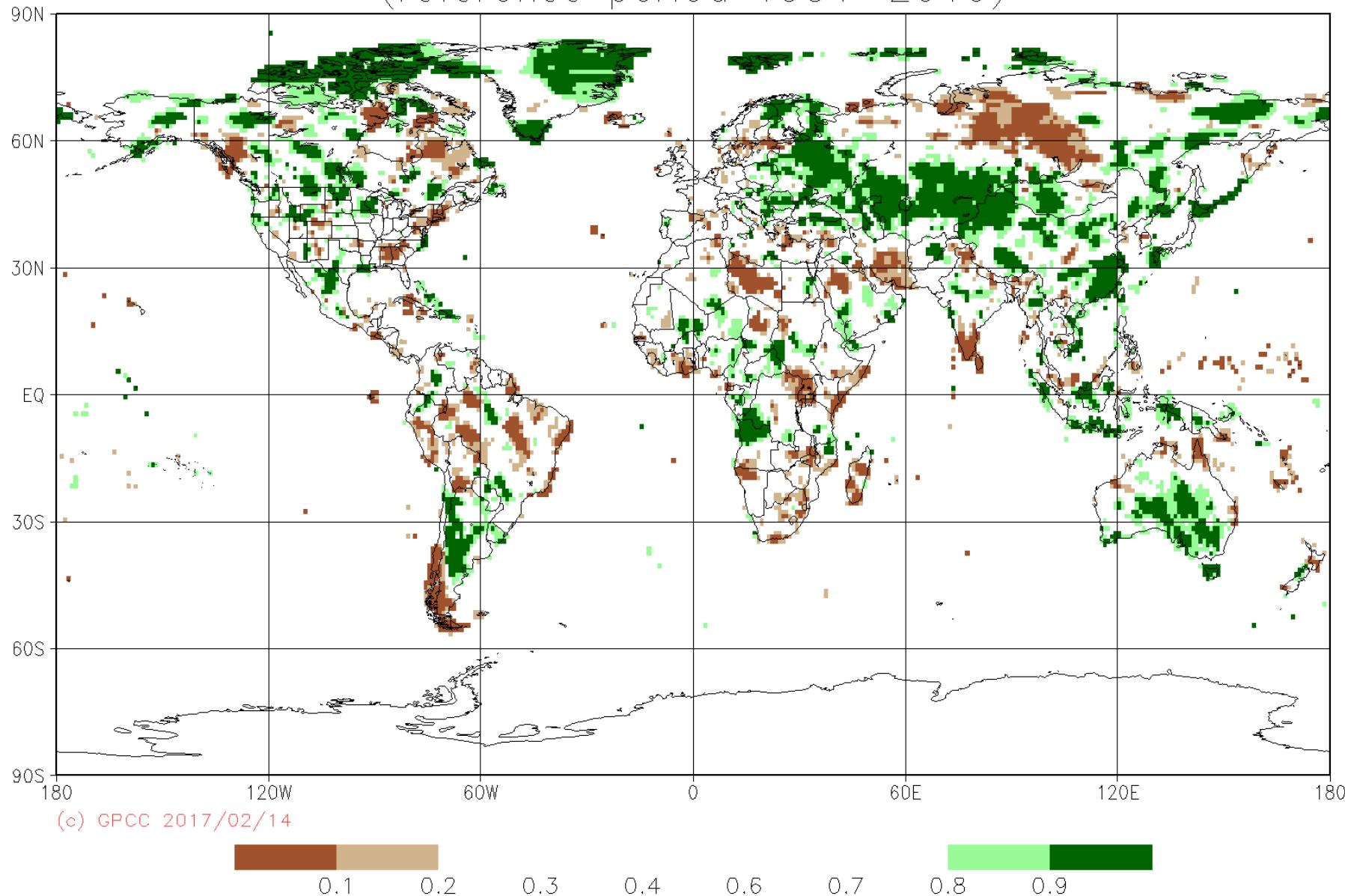
Reduction of the number of victims thanks to greater effectiveness of early warning systems and prevention measures



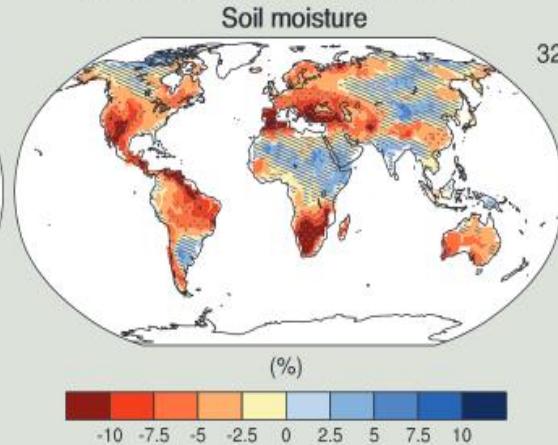
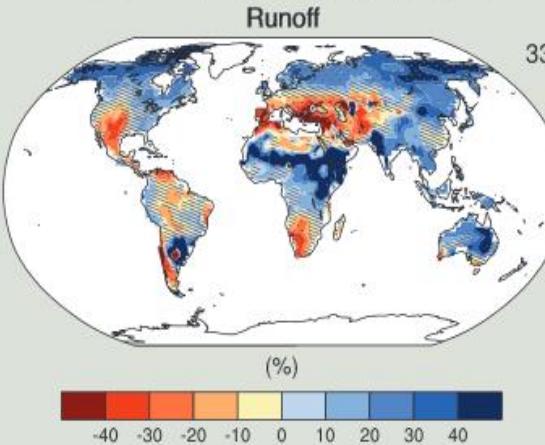
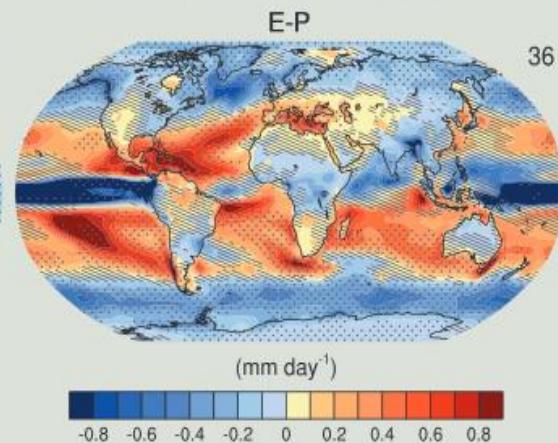
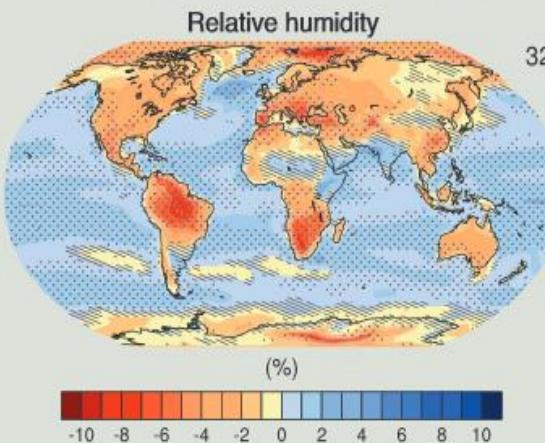
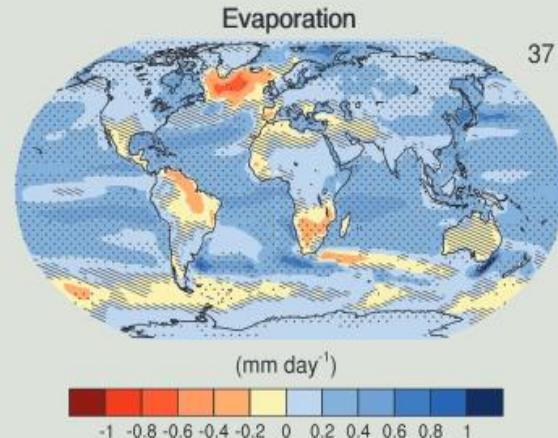
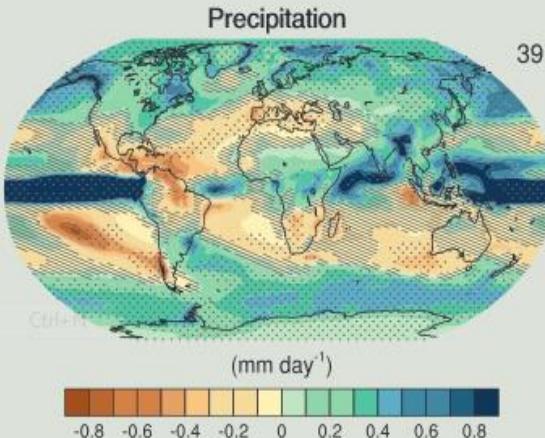
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Precipitation anomalies 2016

GPCC Precipitation Percentile
January 2016 – December 2016
(reference period 1951–2010)



Annual mean hydrological cycle change (RCP8.5: 2081-2100)

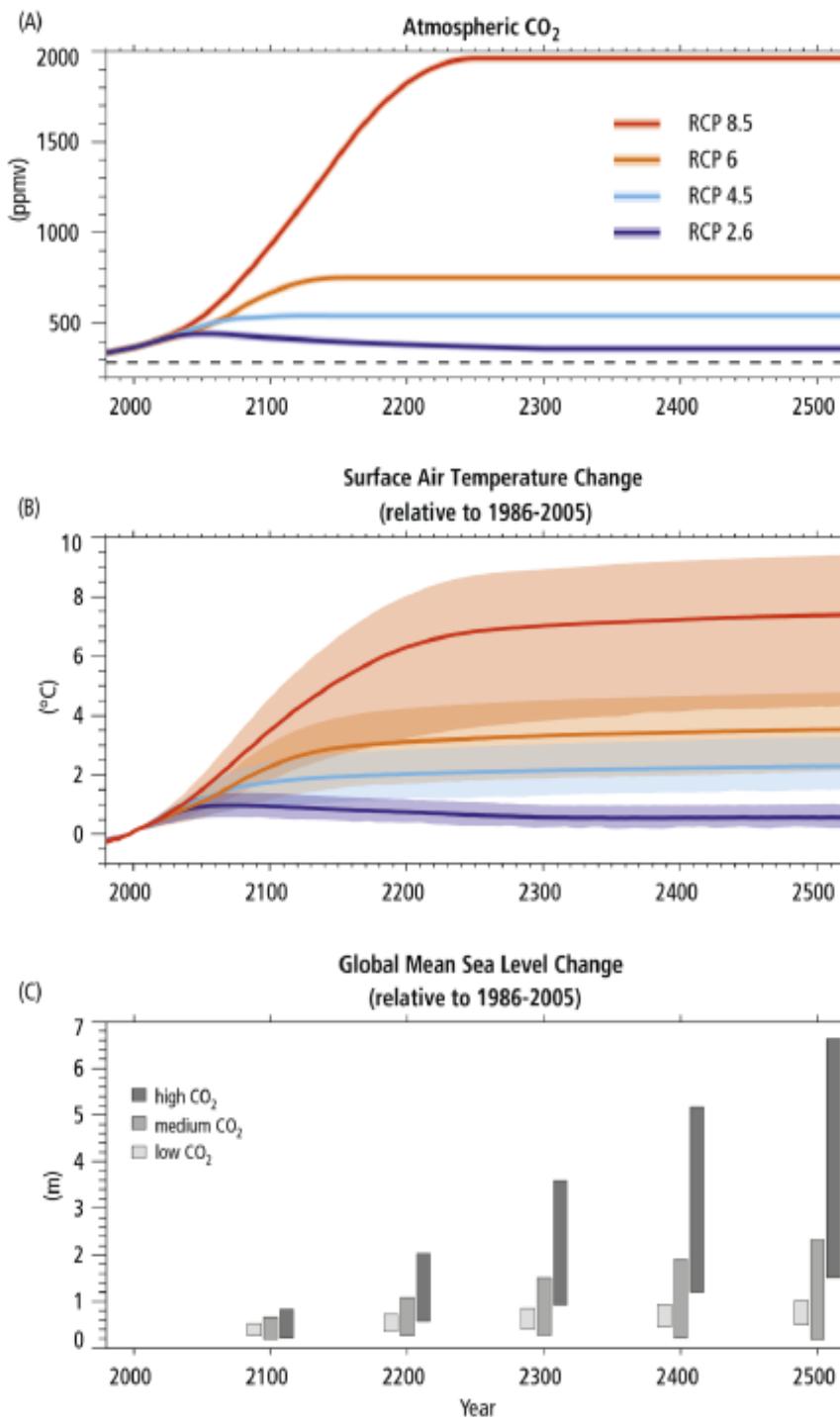


NO EMISSION CUTS
NOW => 2081-2100

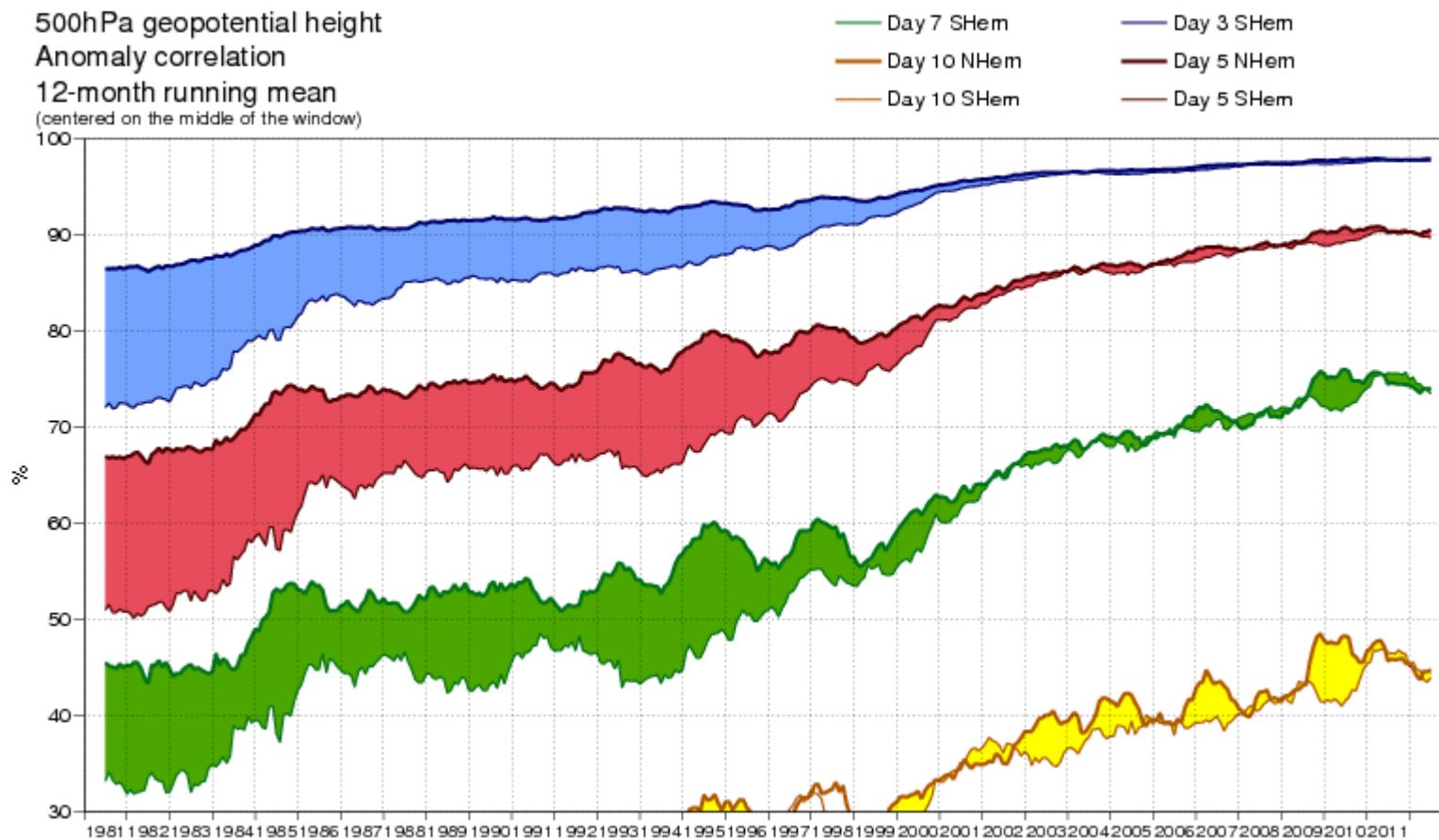


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2000-2500? Various emission pathways:



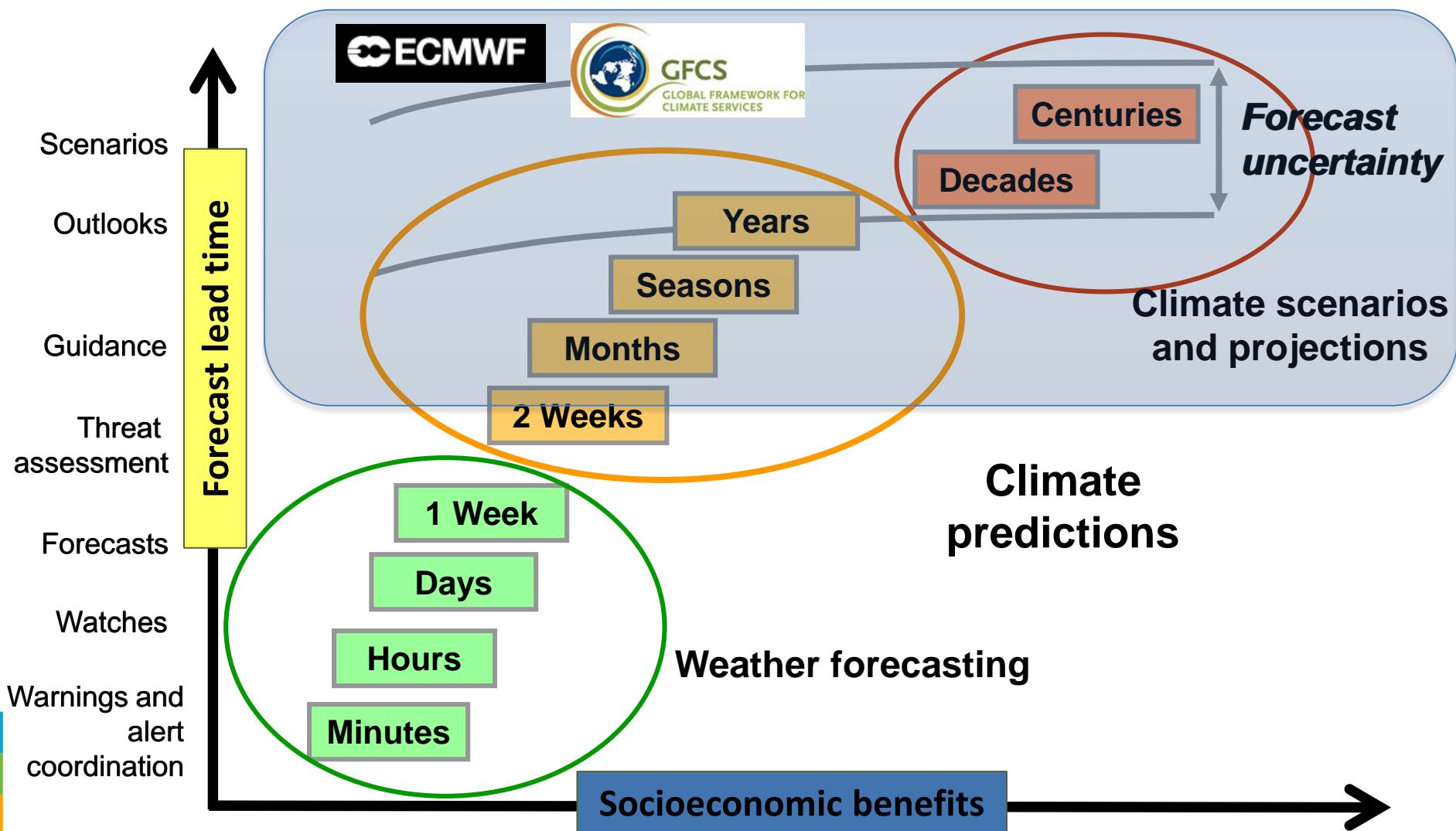
Improved weather forecasts



Improvements in anomaly correlation of 500 hPa height forecasts of the European Centre for Medium-Range Weather Forecasts (ECMWF) for the northern and southern hemispheres linked to the increase in satellite observations and skill of numerical models



Weather to climate: seamless framework for GFCS

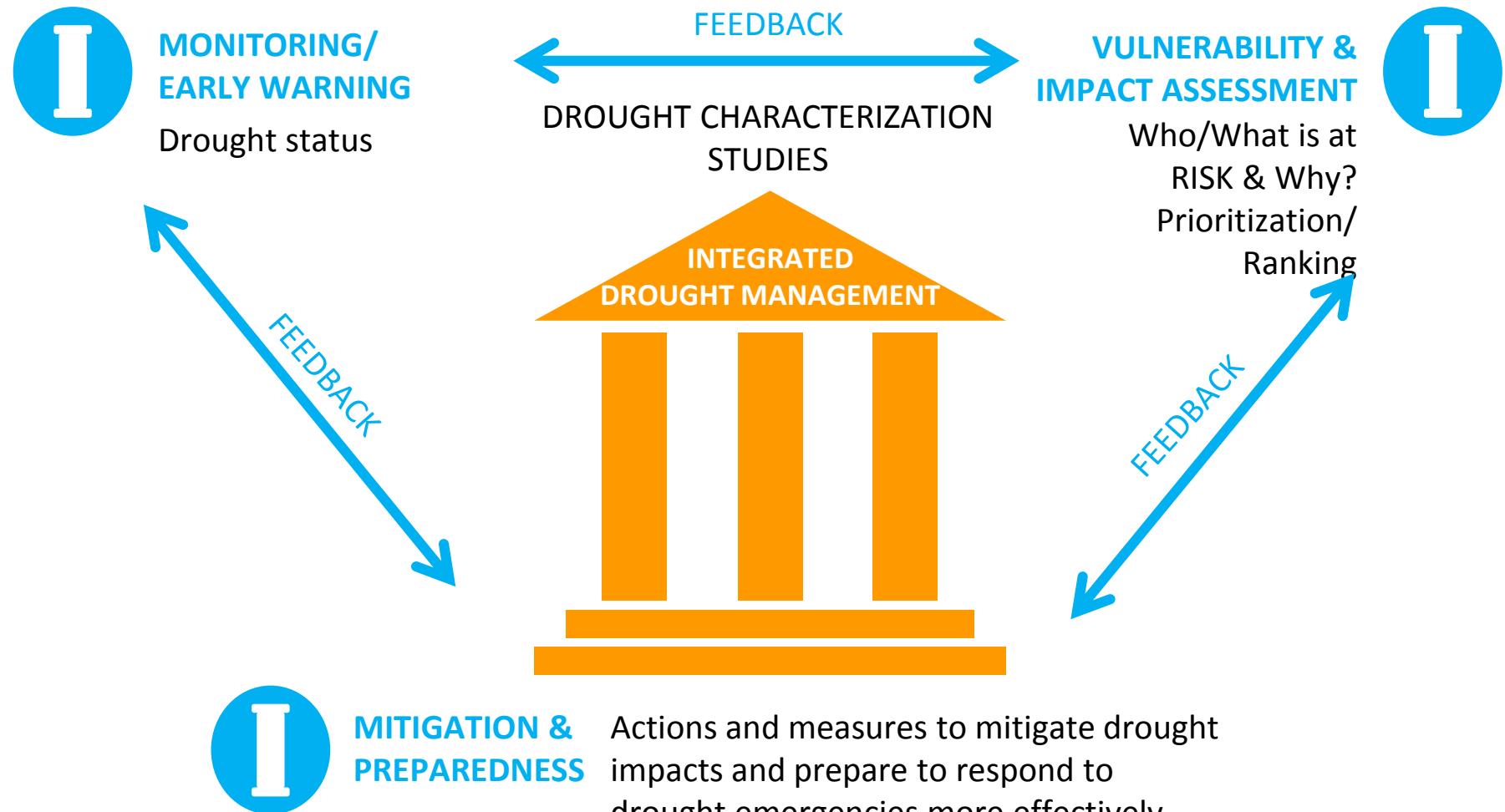


Adapted from NOAA
2011



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3 Pillars of Integrated Drought Management



SUSTAINABLE DEVELOPMENT GOALS/WMO



Weather resilience



Climate change & services



Good health and well-being



Quality education



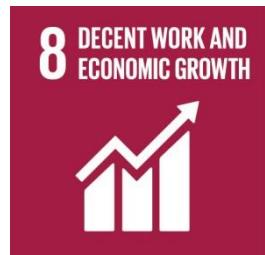
Gender-sensitive services



Water resource management



Solar, wind & hydro use



Climate resilience



Big data, innovations



Reduced inequalities



Air quality, heat waves, flooding



Responsible consumption and production



DRR, Adaptation, carbon & climate monitoring



Sea level rise, climate->oceans



Climate change <-> ecosystems



Climate driven conflicts



Resources for climate adaptation & DRR



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UN level challenges and opportunities

- Challenge: work in silos, overlapping and competing activities
- Too little action at country level, meetings & speeches instead



WMO, partnerships

- FAO: weather & climate services for local farmers, El Nino
- WHO: climate-air quality-health
- UNDP & World Bank: sustainability/climate resilience of investments



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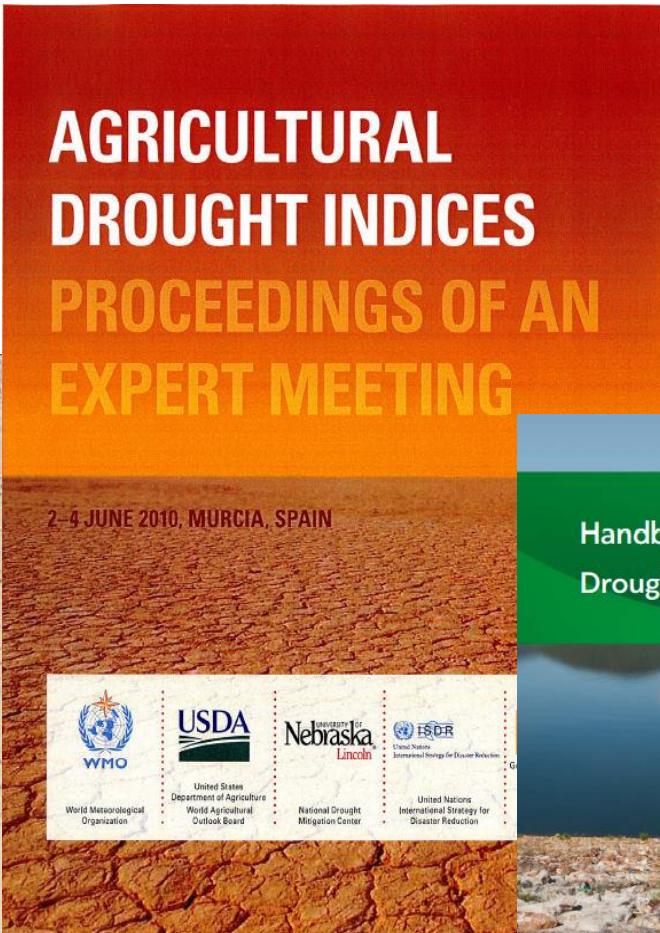
Integrated Drought Management Programme (IDMP)

- Established in 2013 at HMNDP
- Main co-sponsors WMO and Global Water Partnership along with over 30 other organizations including FAO & UNCCD
- Supports stakeholders at all levels by providing policy and management guidance and by sharing scientific information, knowledge and best practices for Integrated Drought Management.
- Contributes to global coordination of drought-related efforts of existing organizations & agencies

Drought Projects

- FAO, UNCCD, WMO, CBD and UN Water - 6 Regional National Drought Management Policy Workshops (2013-2015)
 - Eastern Europe, Latin America, Asia-Pacific, North Africa and Western Asia East and Southern Africa, West Africa
- IDMP Regional Projects
 - Central and Eastern Europe (since 2013)
 - Horn of Africa (since 2014)
 - West Africa (since 2015)
 - South Asia Drought Monitoring System (since 2014) – with IWMI
 - Central America (since 2013).
 - South America (since 2015) - Developing South American Drought Monitoring System
 - Pacific Islands (since 2016)

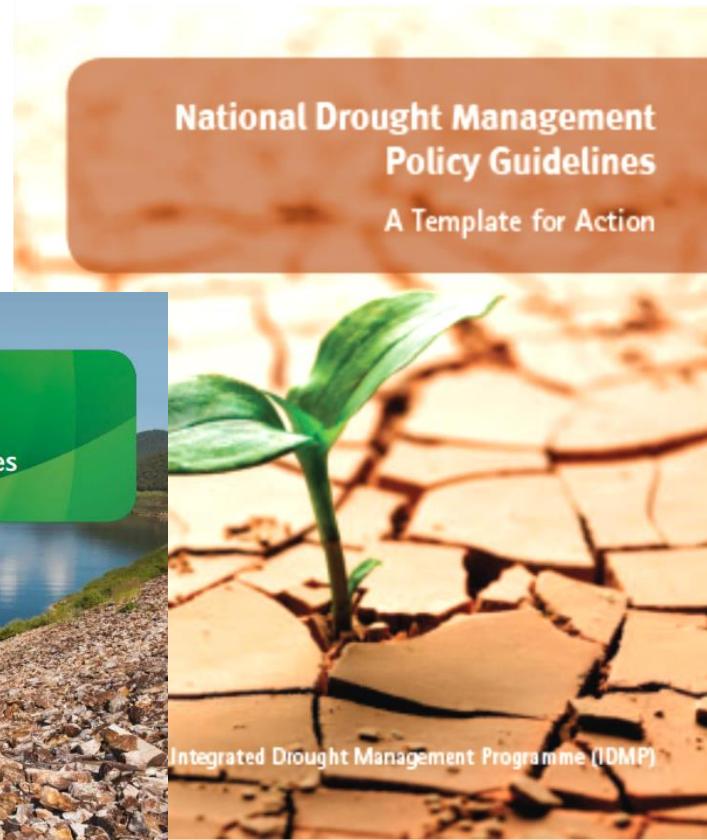
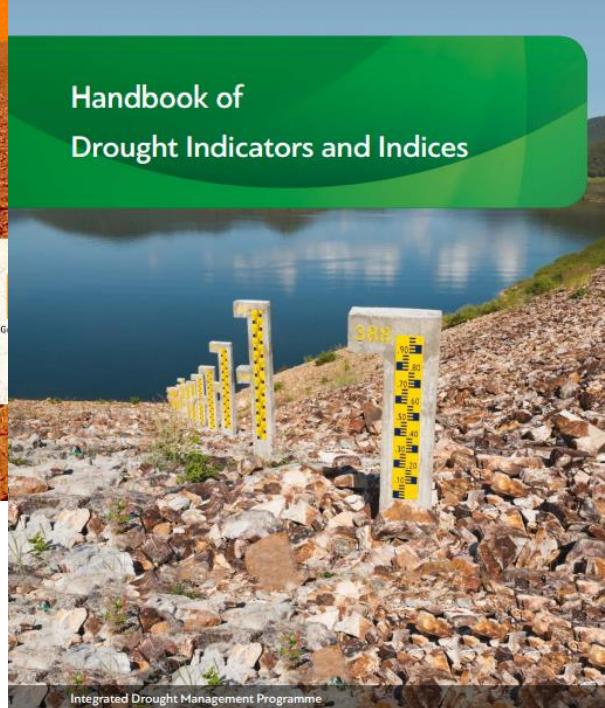
Drought Publications



Drought monitoring and early warning:
concepts, progress and future challenges



National Drought Management Policy Guidelines
A Template for Action





WORLD
METEOROLOGICAL
ORGANIZATION

