UNITED NATIONS UNIVERSITY
UNU-IAS

APRU Multi-Hazards Summer School 2020

Global impacts of disasters and climate change and recent advances in DRR Science and Policy

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July 2020

UNU System

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Master and PhD Degrees

Outline

1. Global disasters and climate change risks
2. The science and impacts of climate change
3. International frameworks for disasters and climate change
4. Conclusion

The Anthropocene

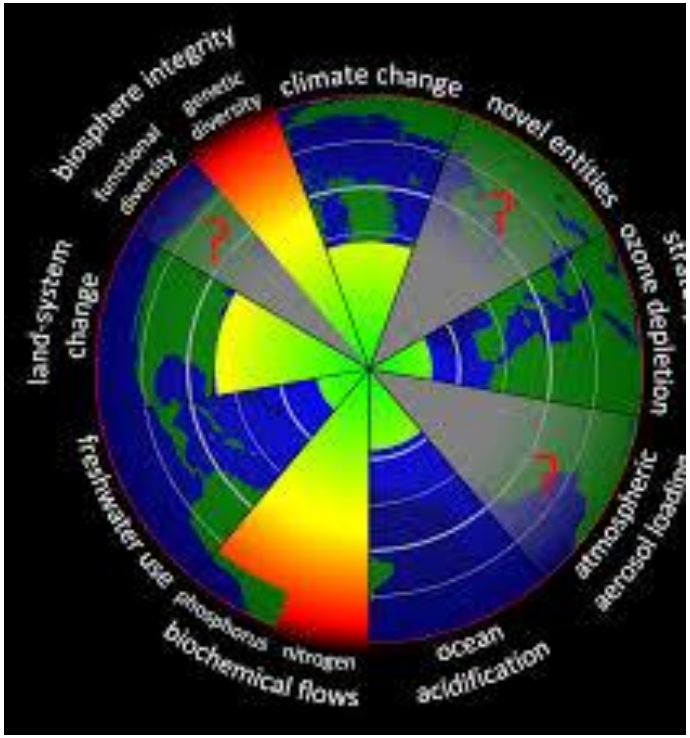
https://www.youtube.com/watch?v=fvgG-pxlobk

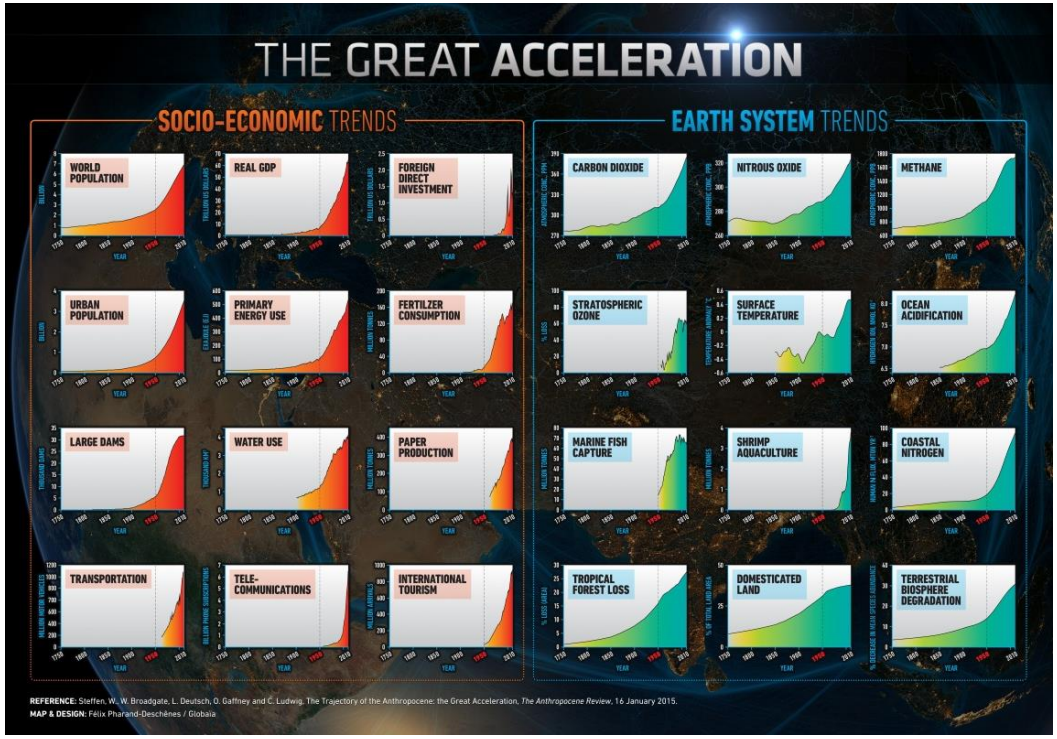
Global Environmental Change

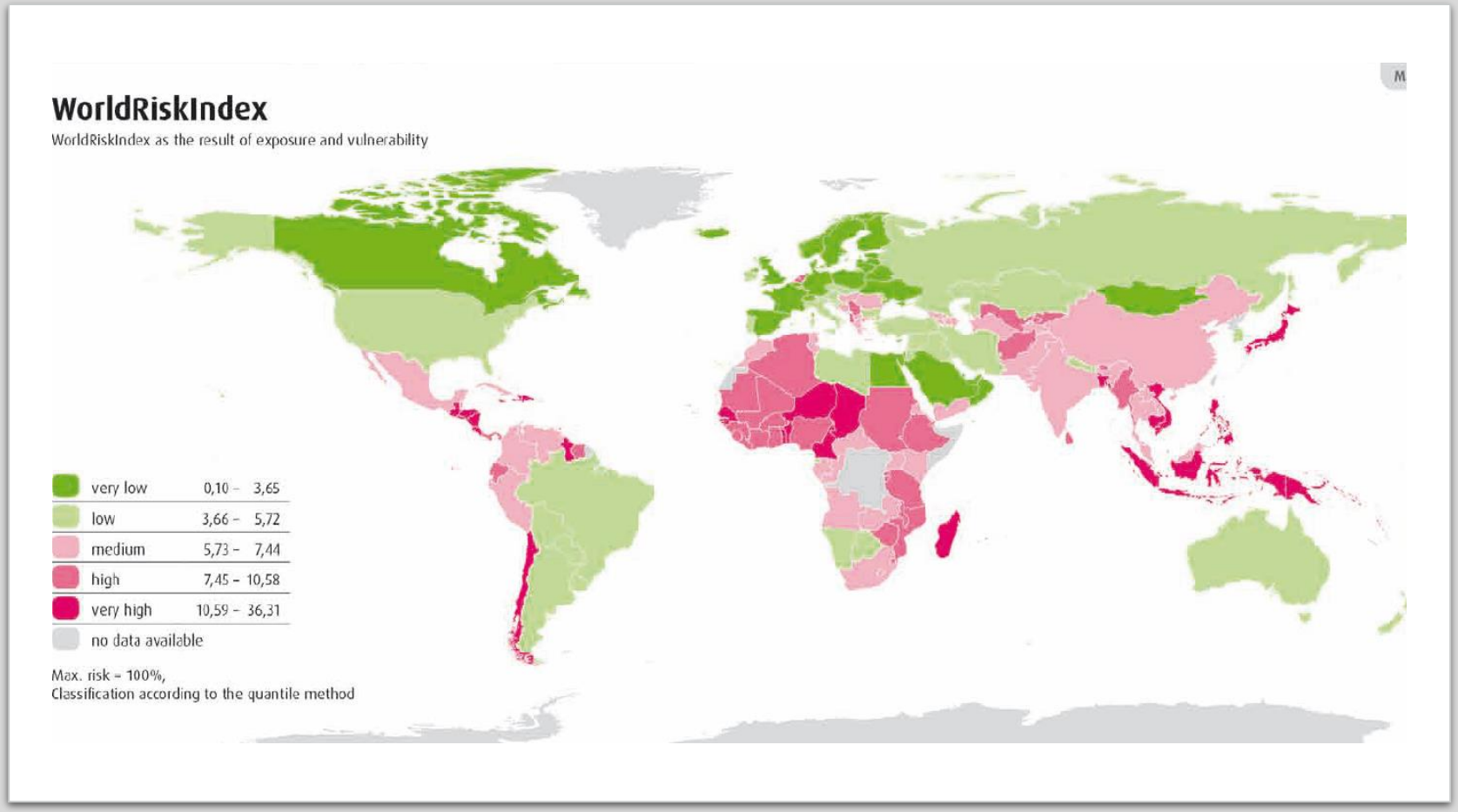
The Anthropocene

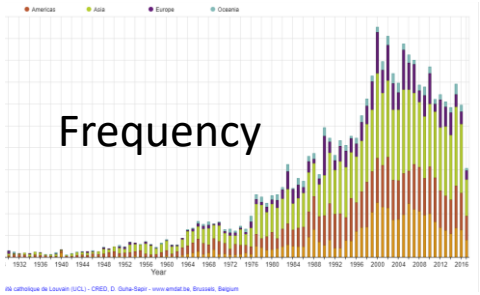
The Great Acceleration

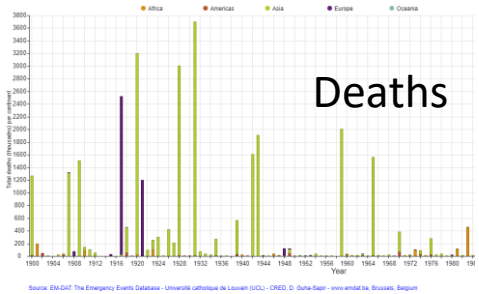
Planetary Boundaries

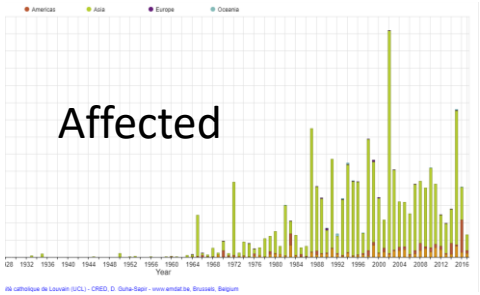


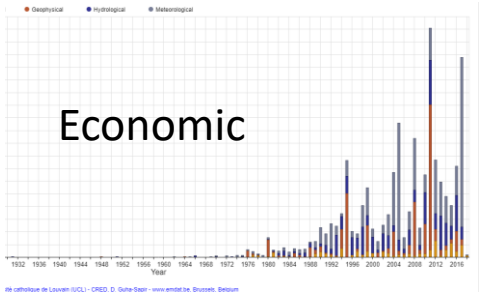



WorldRiskIndex
WorldRiskIndex as the result of exposure and vulnerability
very low 0,10 – 3,65
low 3,66 – 5,72
medium 5,73 – 7,44
high 7,45 – 10,58
very high 10,59 – 36,31
no data available
Max. risk = 100%,
Classification according to the quantile method





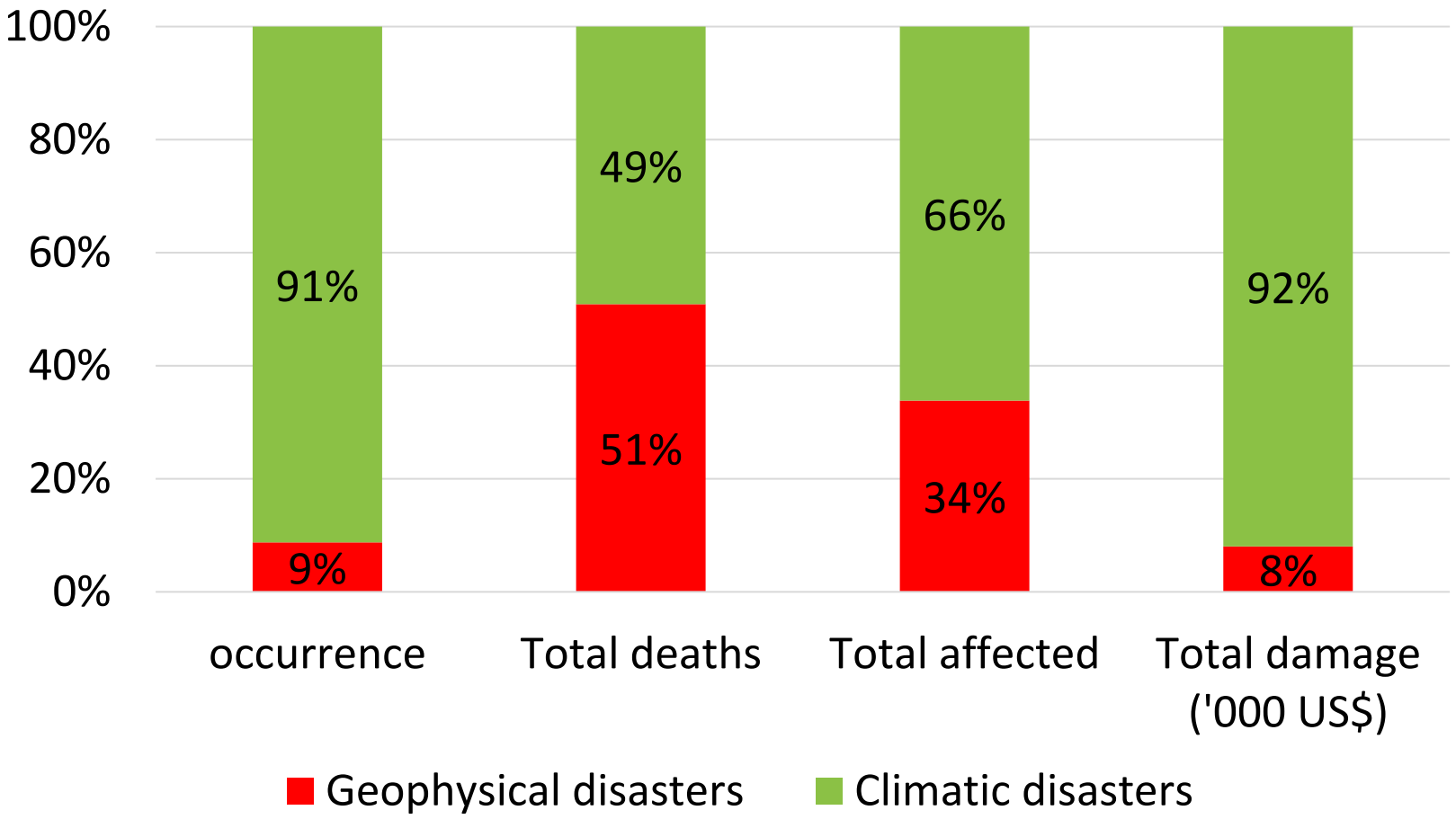




Global Disaster Impacts

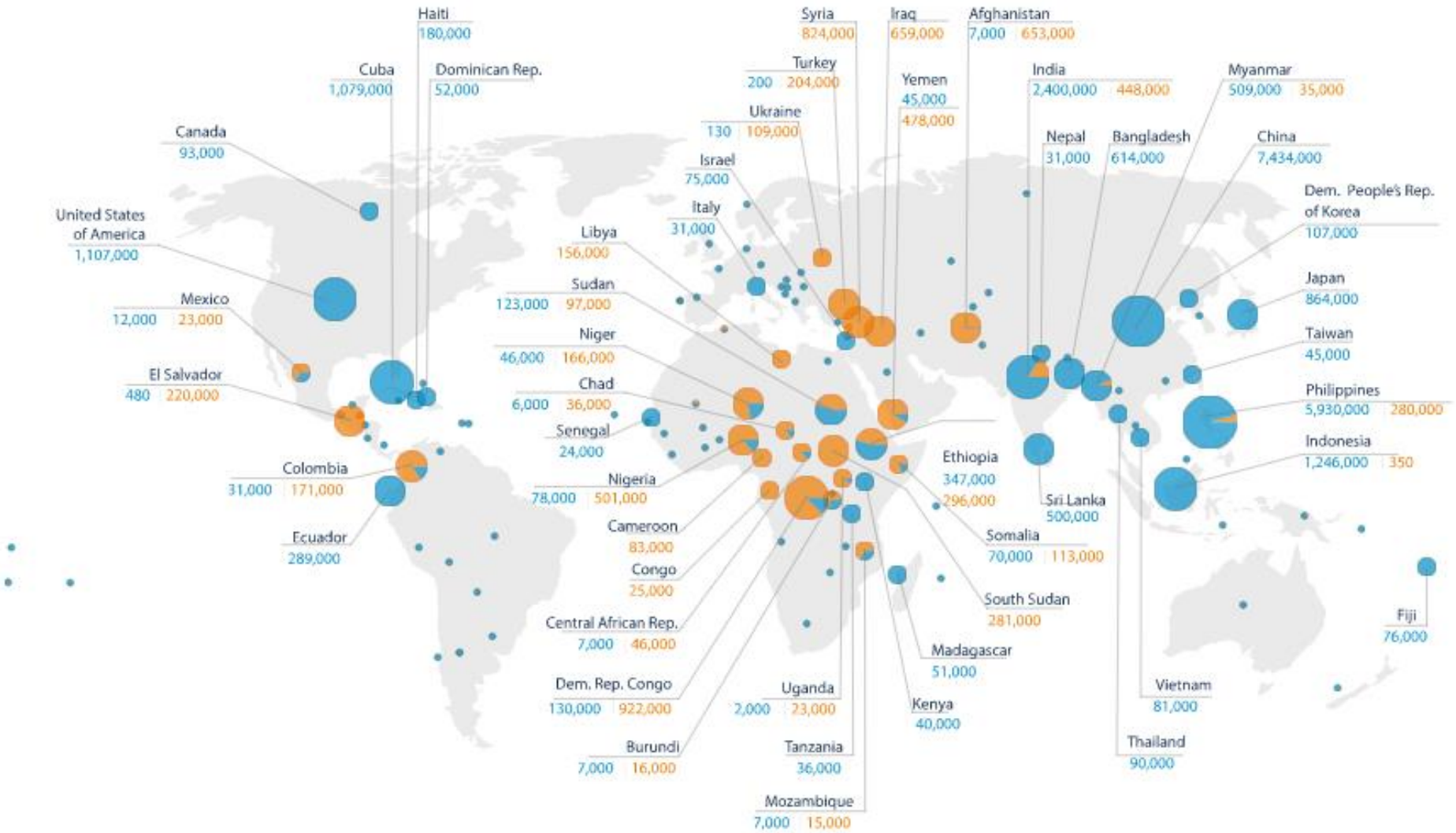
- Number of disasters
- Number of deaths
- Number of total affected
- Economic damage

Comparing Impacts of Geophysical vs. Climatic Disasters



New displacements by conflict and disasters in 2016

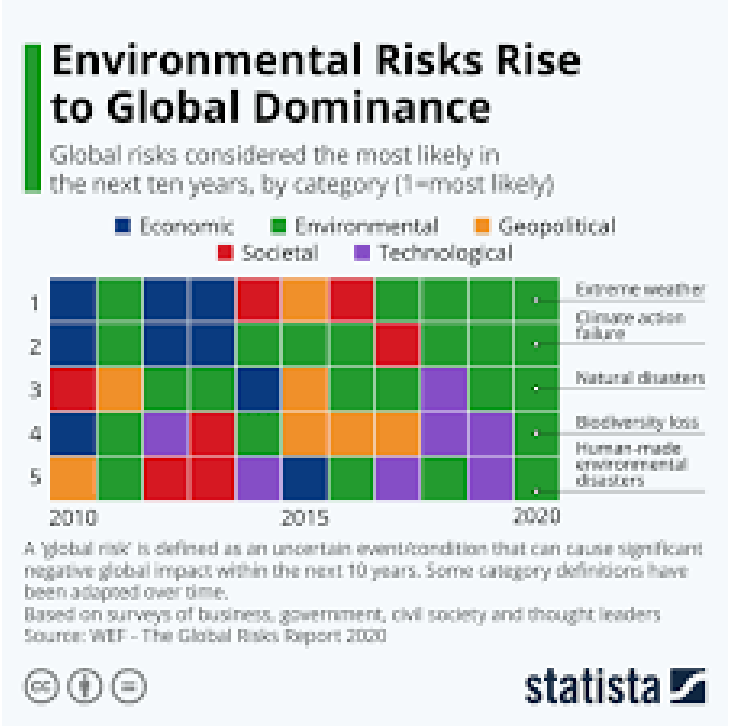
TWEET THIS MAP

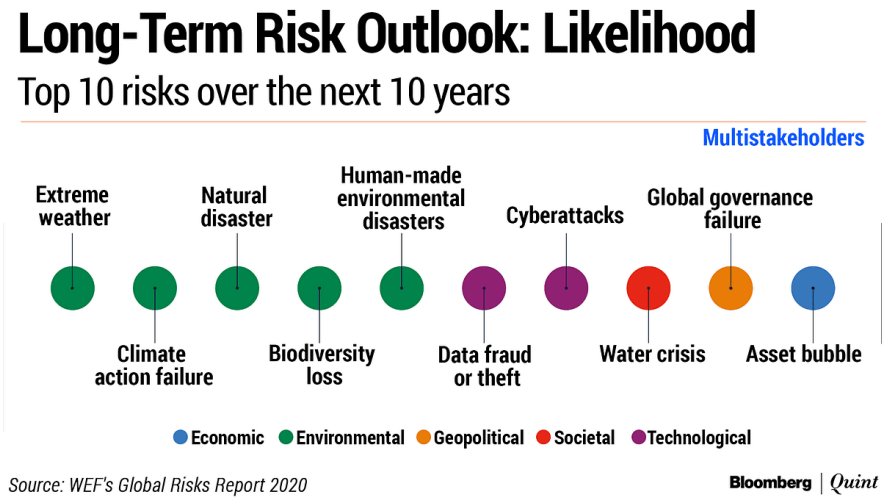


The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by IDMC.

The country name and the figure are shown only when the value exceeds 20,000 people displaced

Global Risk Report 2020

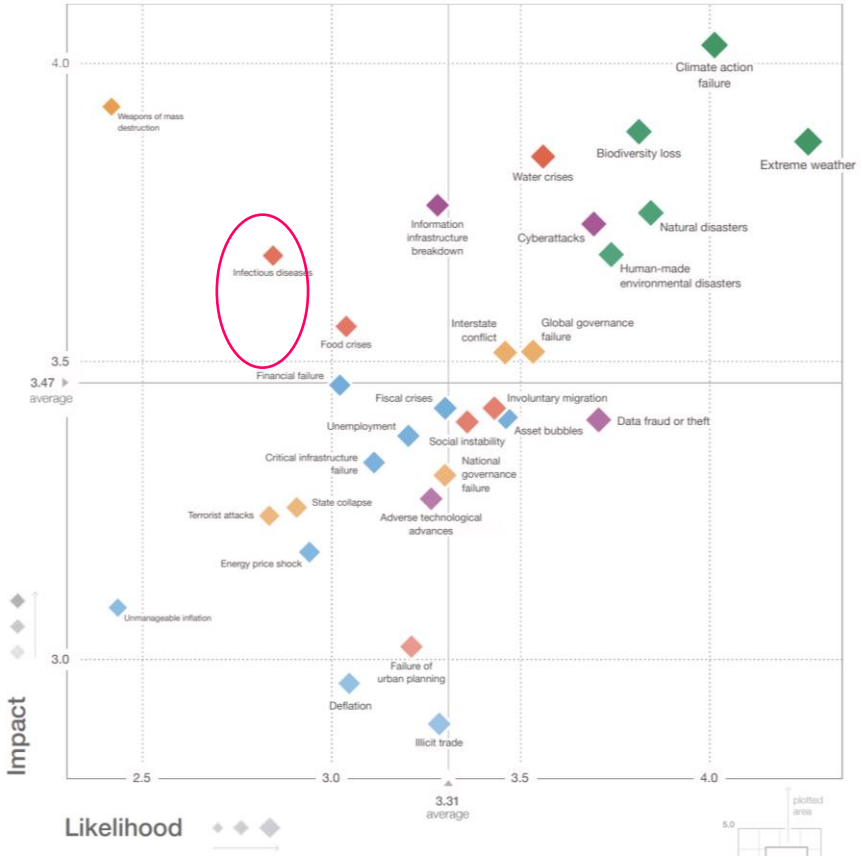


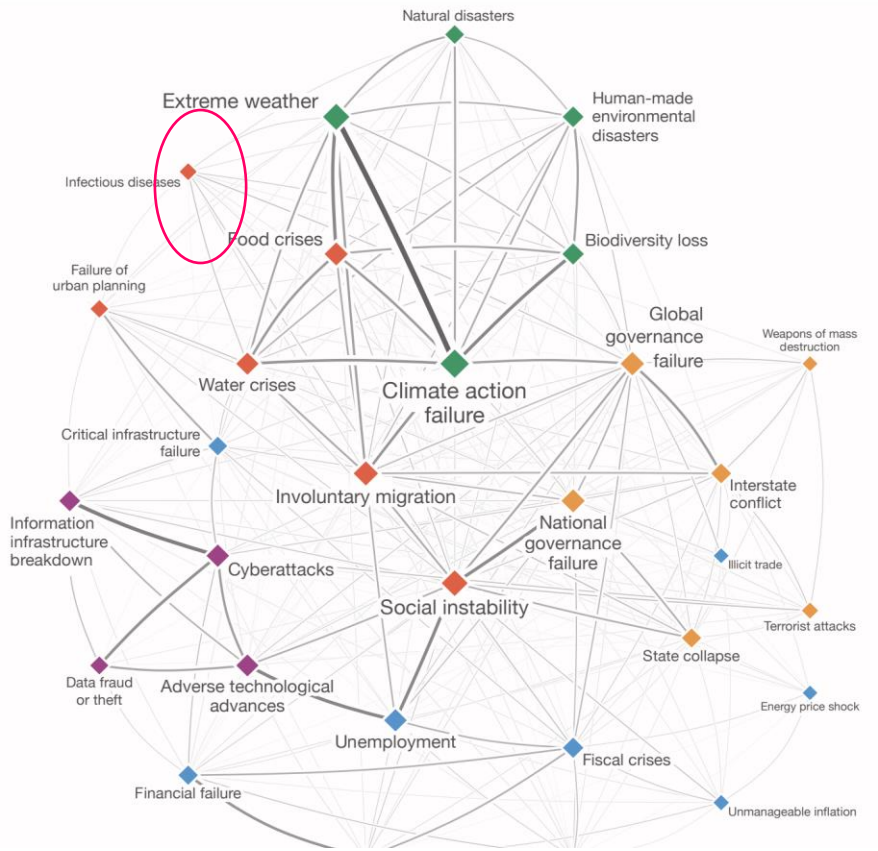


Source: WEF's Global Risks Report 2020

Bloomberg | Quint

Global Risks





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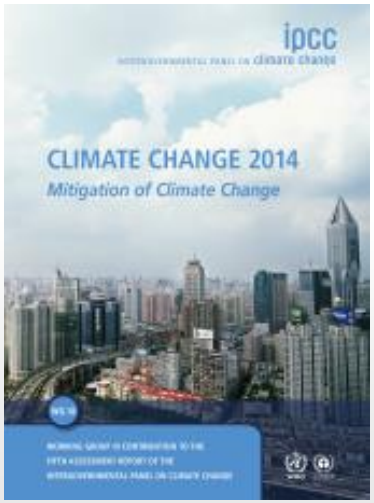
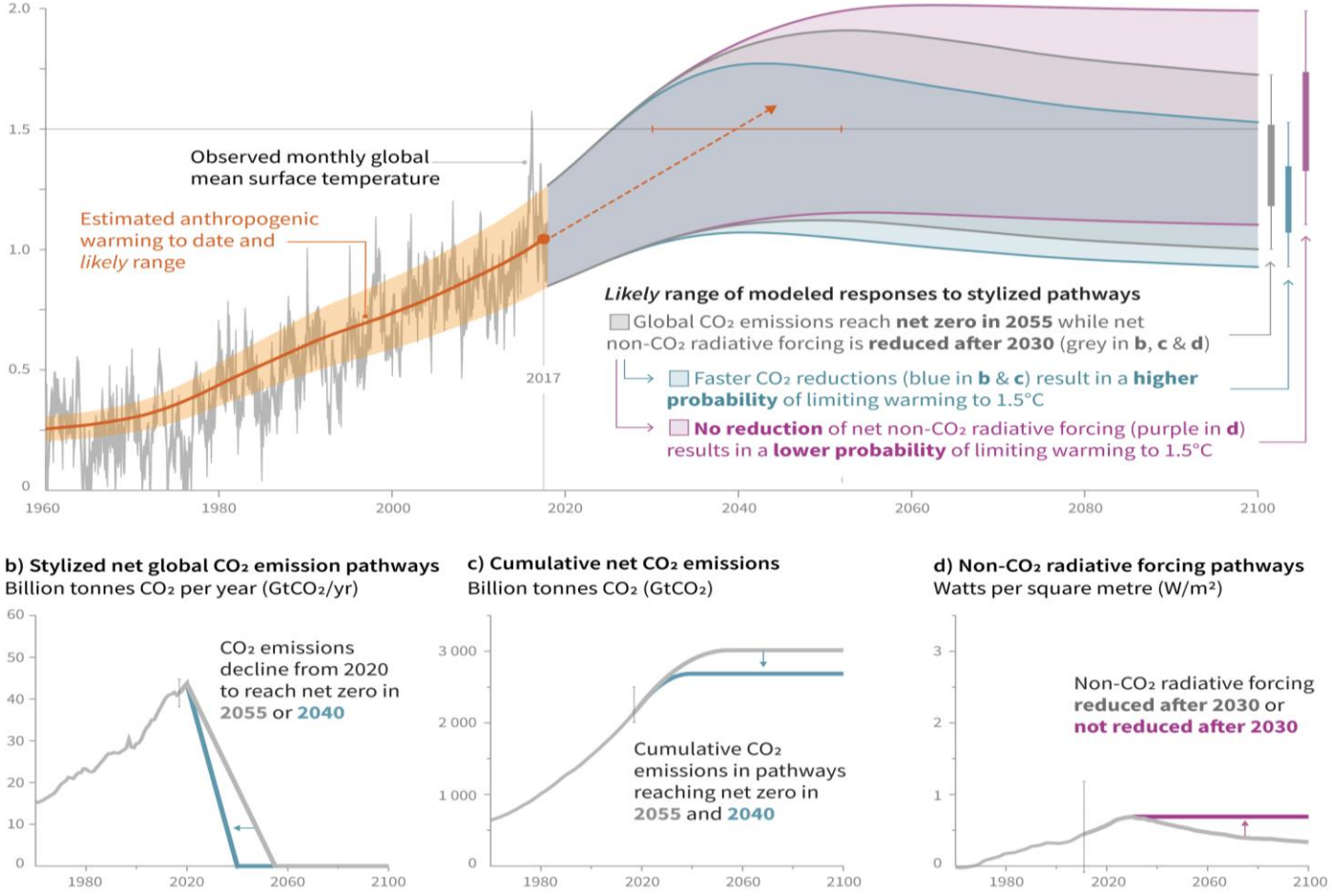
Where are we now?

Since pre-industrial times, human activities have caused approximately 1.0°C of global warming.

- Already seeing consequences for people, nature and livelihoods
- At current rate, global warming would reach 1.5°C between 2030 and 2052
- *But* past emissions alone do not commit the world to 1.5°C

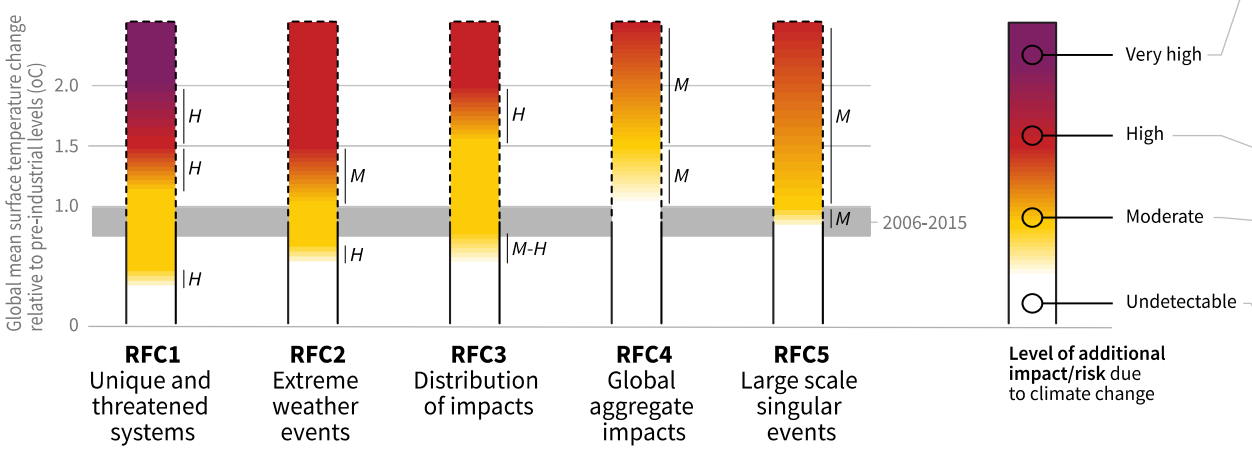


SPM.1: Cumulative emissions of CO_2 and future non-CO_2 radiative forcing determine the probability of limiting warming to 1.5°C



Five Reasons For Concern (RFCs) illustrate the impacts and risks of different levels of global warming for people, economies and ecosystems across sectors and regions.

Impacts and risks associated with the Reasons for Concern (RFCs)



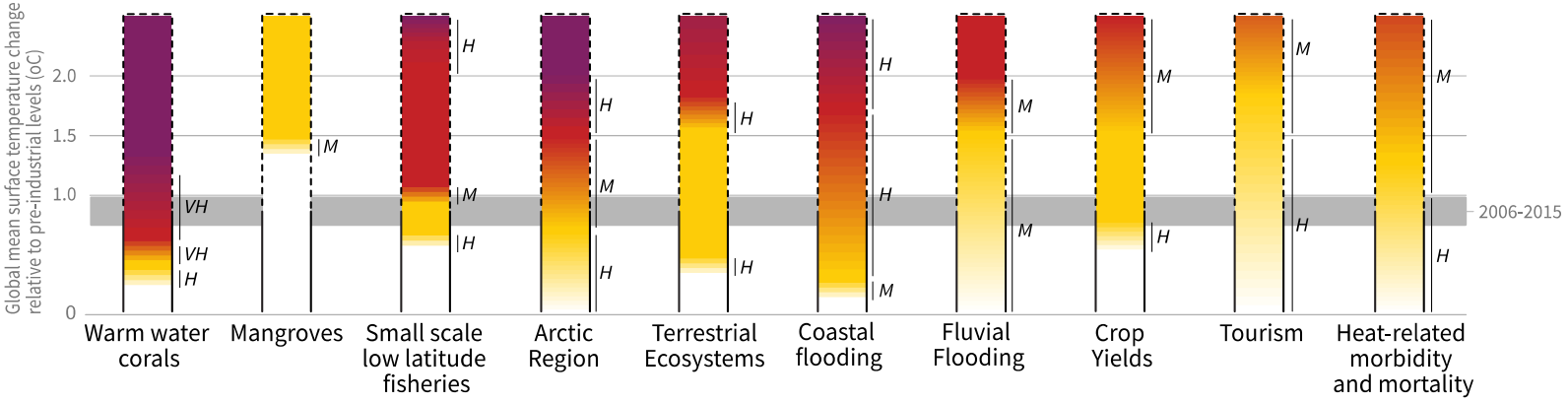
Purple indicates very high risks of severe impacts/risks and the presence of significant irreversibility or the persistence of climate-related hazards, combined with limited ability to adapt due to the nature of the hazard or impacts/risks.

Red indicates severe and widespread impacts/risks.

Yellow indicates that impacts/risks are detectable and attributable to climate change with at least medium confidence.

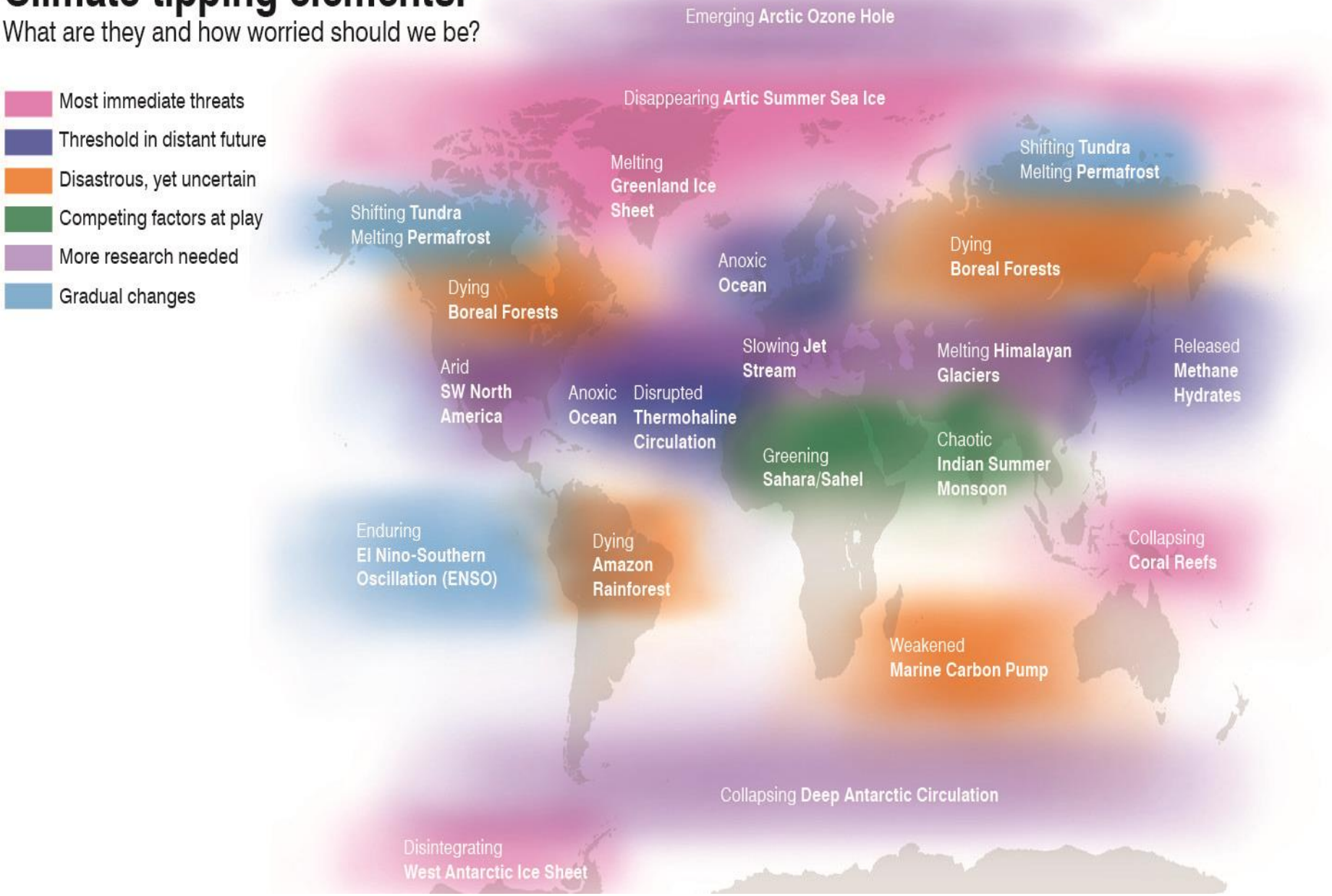
White indicates that no impacts are detectable and attributable to climate change.

Impacts and risks for selected natural, managed and human systems



Climate tipping elements:

What are they and how worried should we be?



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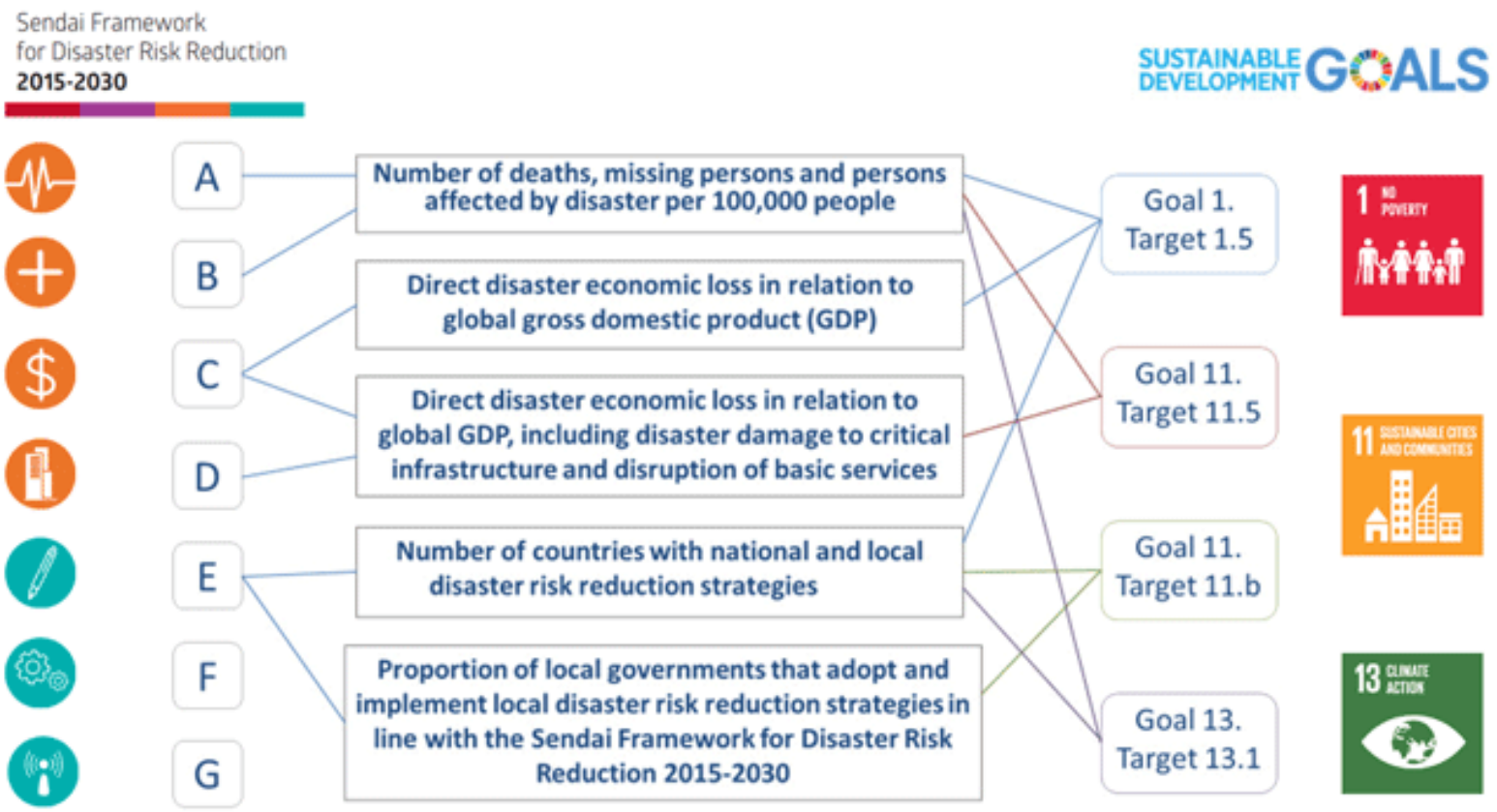
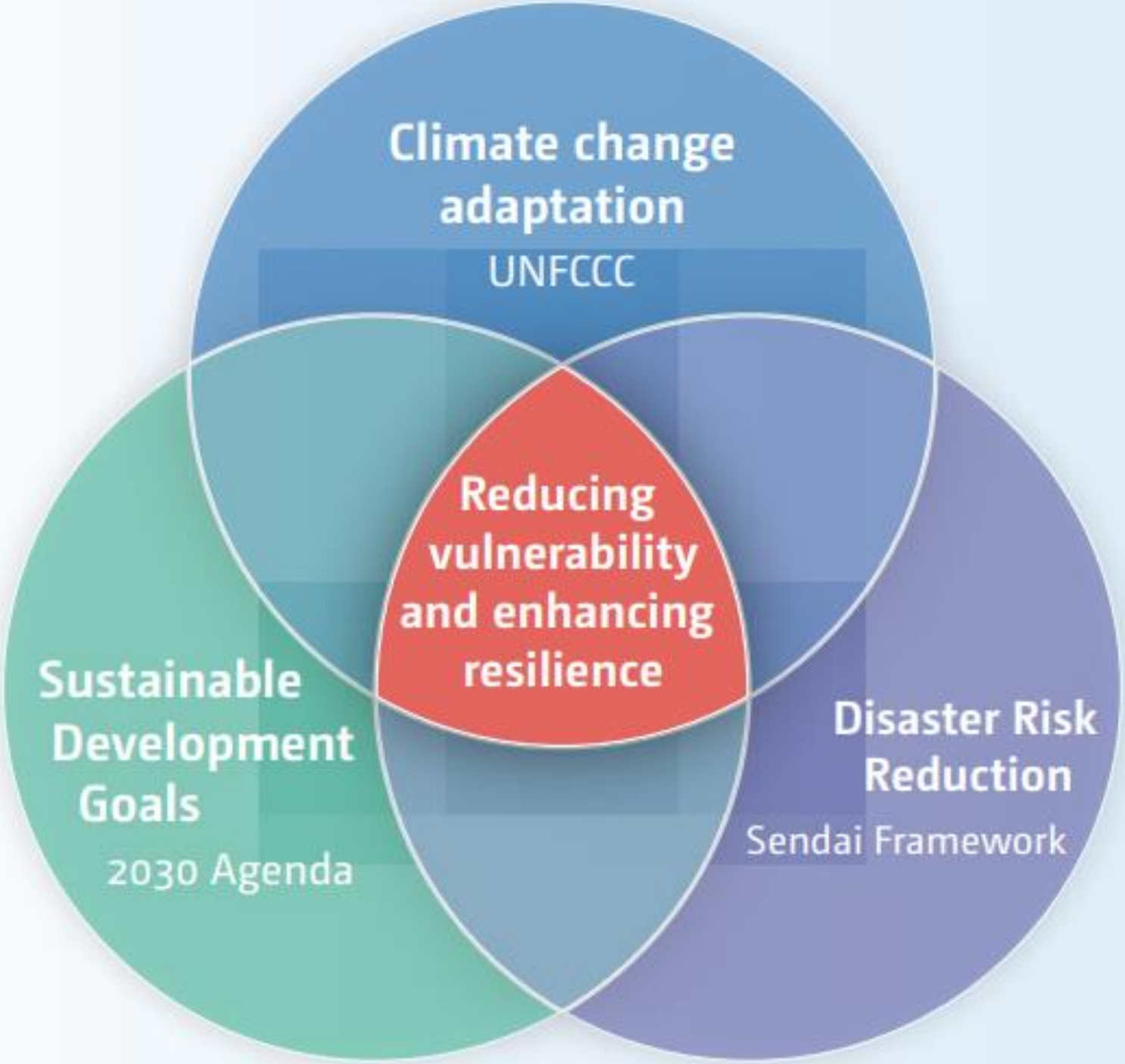
The Sustainable Development Goals

SDGs and DRR


Sendai Framework
for Disaster Risk Reduction
2015-2030
SUSTAINABLE DEVELOPMENT GOALS
A
B
C
D
E
F
G
Number of deaths, missing persons and persons affected by disaster per 100,000 people
Direct disaster economic loss in relation to global gross domestic product (GDP)
Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services
Number of countries with national and local disaster risk reduction strategies
Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030
Goal 1. Target 1.5
Goal 11. Target 11.5
Goal 11. Target 11.b
Goal 13. Target 13.1
1 NO POVERTY
11 SUSTAINABLE CITIES AND COMMUNITIES
13 CLIMATE ACTION


Climate change adaptation
UNFCCC
Reducing vulnerability and enhancing resilience
Sustainable Development Goals
2030 Agenda
Disaster Risk Reduction
Sendai Framework

Conclusion

1. Disasters and climate change are interrelated
2. The human impacts of climate disasters are increasing
3. The science of climate change has improved vastly
4. The need for coherence on the International frameworks for disasters and climate change

References

1. EMDAT, 2020
2. Stephen et al 2015, Planetary Boundaries
3. IPCC, 2020
4. SDG Progress, 2020
5. World Risk Report, 2020