

Will the world be more dangerous due to global warming?

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Meeting title, date of meeting, venue of meeting

What are natural hazards?

A natural hazard is a natural phenomenon that might have a negative effect on humans and other animals, or the environment.

There are 5 main groups:

- Geological hazards
- Cosmic hazards
- Meteorological or climate hazards
- Hydrological hazards
- Biological hazards



Which natural hazards are affected by climate change?

- Geological hazards

- Avalanche

- Earthquake

- Coastal erosion

- Landslide

- Sinkhole

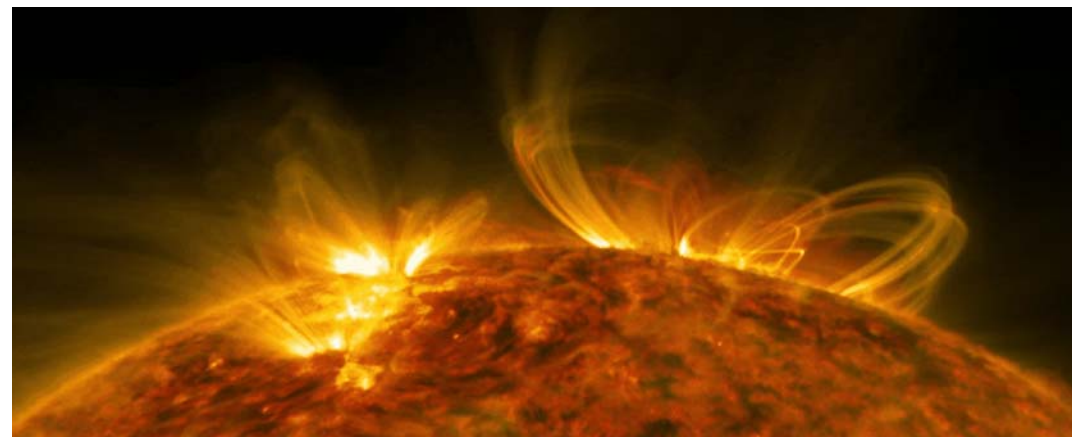
- Subsidence

- Volcanic eruption



Which natural hazards are affected by climate change?

- Cosmic hazards
 - Geomagnetic storm
 - Impact of meteor
 - Aliens



Which natural hazards are affected by climate change?

• Meteorological or climate hazards

- Blizzard
- Drought
- Hail and ice storms
- Heat wave
- Hurricanes
- Tornado
- Wildfire



Which natural hazards are affected by climate change?

- Hydrological hazards

- Floods

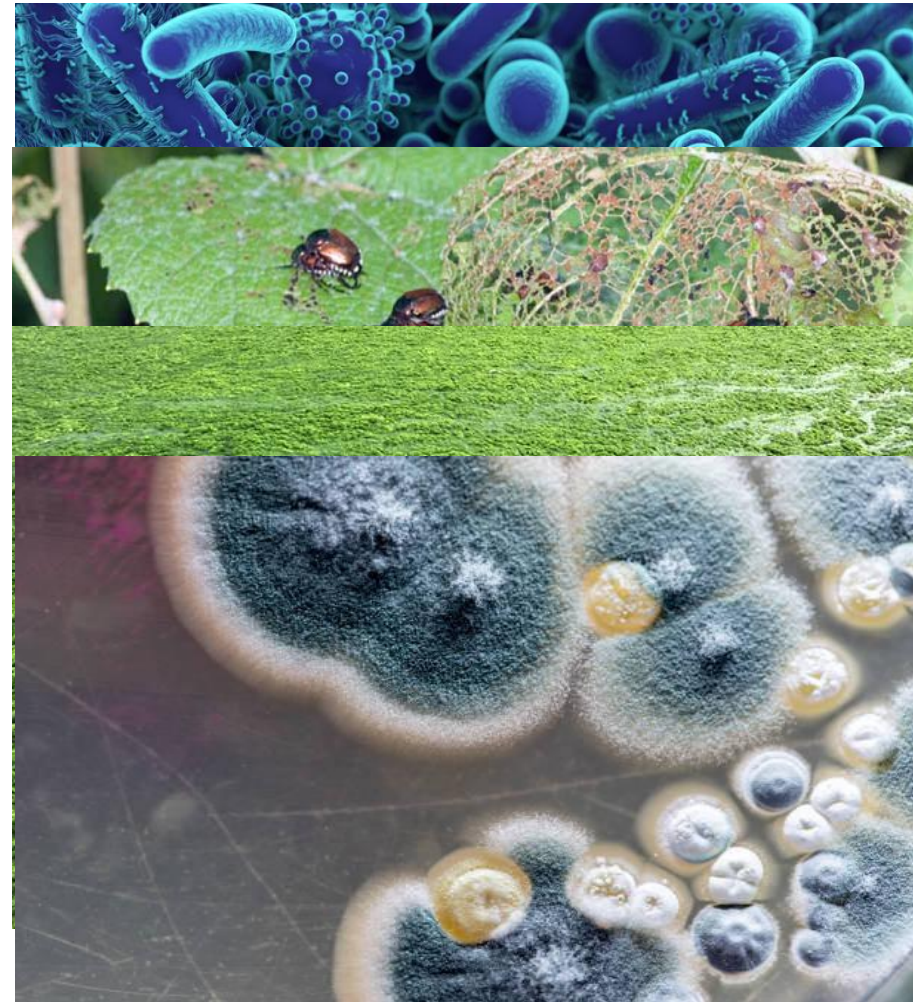
- Tsunami



Which natural hazards are affected by climate change?

• Biological hazards

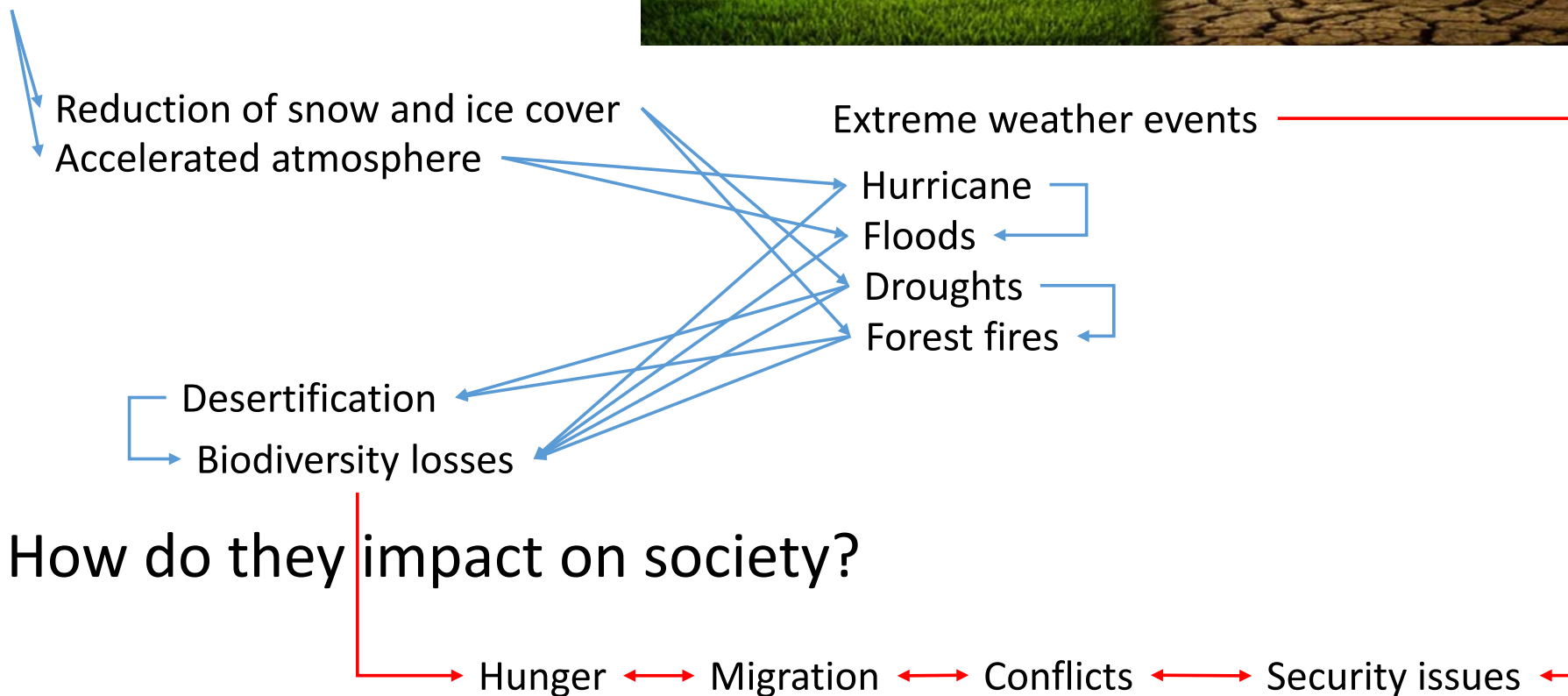
- Disease and pandemic (viruses, bacterias)
- Pests
- Bio-active substances, toxins from biological sources
- Algal blooms
- Spores and fungi



Examples of direct and indirect impacts



Increase of temperature



How do they impact on society?

Hunger ↔ Migration ↔ Conflicts ↔ Security issues

How the world will change? Practice

Asia – Azja

country kraj	heatwave ^a upały				flood ^b powodzie				forest fires ^c pożary leśne				crop failure ^d nieurodzaie				population density gęstość zaludnienia				net number of migrants liczba migrantów	conflicts ^e konflikty zbrojne	climatic displacement przemieszczenia związane z klimatem						
	2020	2030	2050	2080	2020	2030	2050	2080	2020	2030	2050	2080	2020	2030	2050	2080	2020	2030	2050	2080			human ludzie	ecosystems ecosystemy					
China																													
India																													
Indonesia																													
Pakistan																													
Russia																													

^a	% of the area (25%, 50%, 75%, 100%) % powierzchni (25%, 50%, 75%, 100%)	intensity intensywność	low niska	medium średnia	high wysoka
^b	% of the area (25%, 50%, 75%, 100%) % powierzchni (25%, 50%, 75%, 100%)	intensity intensywność	low niska	medium średnia	high wysoka
^c	% of the area (25%, 50%, 75%, 100%) % powierzchni (25%, 50%, 75%, 100%)	intensity intensywność	low niska	medium średnia	high wysoka
^b	% of the area (25%, 50%, 75%, 100%) % powierzchni (25%, 50%, 75%, 100%)	intensity intensywność	low niska	medium średnia	high wysoka
^e	years since conflict began liczba lat od początku konfliktu				

How the world will change? Predictive models

Look at the maps and discuss following aspects:

- What will change?
- How will it change?
- Where will the changes be the most significant within next 60 years?

<https://www.theguardian.com/environment/ng-interactive/2021/oct/14/climate-change-happening-now-stats-graphs-maps-cop26>

When global temperatures are projected to hit key benchmarks this century

Average global surface temperature relative to a 1850-1900 baseline

Worst-case scenario

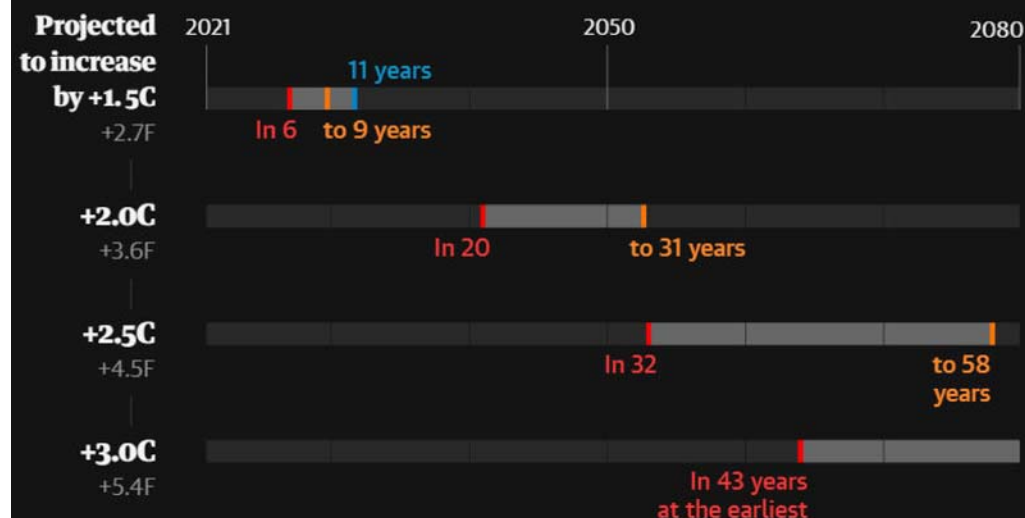
An unlikely pathway where emissions are not mitigated

Intermediate

A pathway where emissions start declining around 2040

Best-case

An unlikely pathway where emissions start declining now and global temperatures peak at +1.8C



Guardian graphic. Source: IPCC, 2021: Summary for Policymakers. Note: The IPCC scenarios used for best-case, intermediate and worst-case scenarios are SSP1-2.6, SSP2-4.5 and SSP5-8.5.

How the world will change? Predictive models



Population density is the concentration of individuals within a species in a specific geographic locale

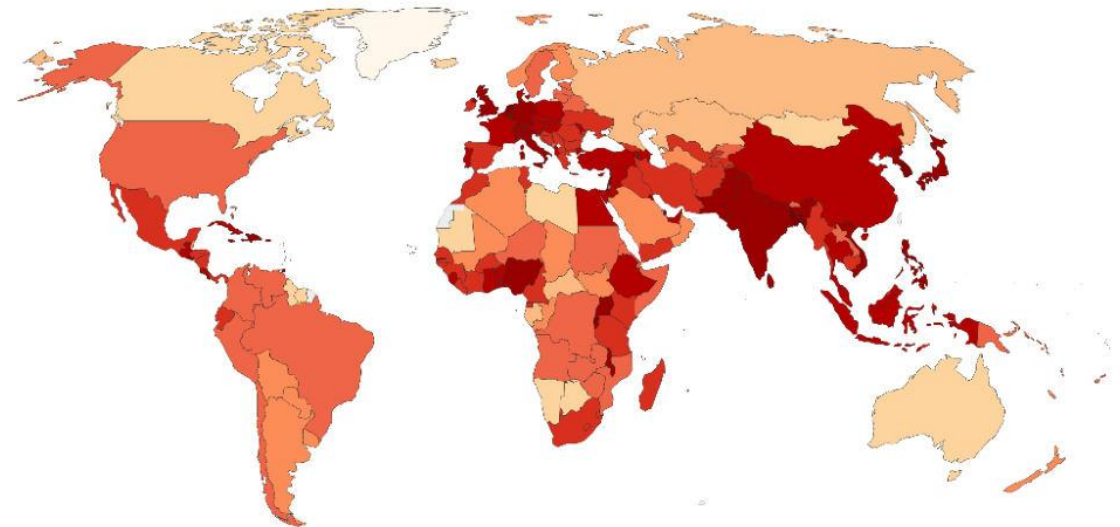
Population density prediction

<https://ourworldindata.org/grapher/population-density>

Where do we expect the most important impact on population?

Population density, 2022

Population density is measured as the number of people per square kilometer (km²) of land area.



Source: World Bank (2021), Gapminder (v6), HYDE (v3.2), UN (2019)

OurWorldInData.org/world-population-growth • CC BY

Migrations and displacement

Migration - movement of a person or a group of persons, either across an international border (international migration), or within a state (internal migration), encompassing any kind of movement of people, whatever its length, composition and causes

<https://www.migrationpolicy.org/programs/data-hub/charts/net-number-migrants-country-1950-2020-five-year-intervals?width=1000&height=850&iframe=true>

<https://www.theguardian.com/environment/ng-interactive/2021/oct/14/climate-change-happening-now-stats-graphs-maps-cop26>

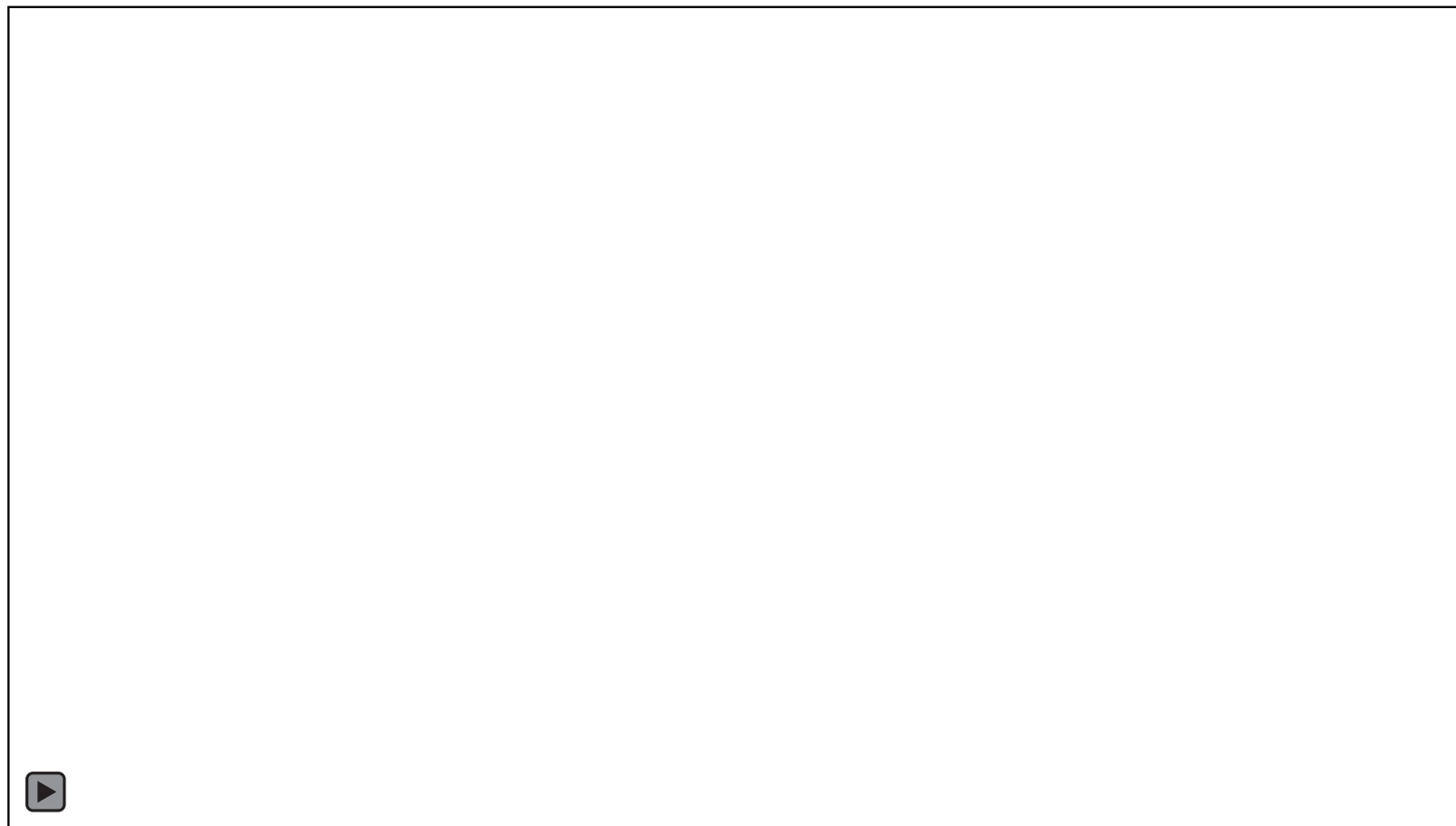
<https://atlas-for-the-end-of-the-world.com/images/World Maps/environmental displacement legend.pdf>



Discussion and conclusions

- What is the impact of climate change on natural disasters in different regions?
- How it will affect human population?
- What will be the directions of migrations?
- Which migrations will be related to climate change?

What to do to stop global warming?



https://www.youtube.com/watch?v=-D_Np-3dVBQ