

Carbon Literacy Training



Session 2: Climate Change Impacts, Climate Justice, and Future Scenarios

Session 2: learning outcomes

- Consolidate understanding of the learning outcomes from session one
- Explore the consequences of not taking climate action
- Learn about the countries that are the most vulnerable to climate change and the countries that are responsible for the most emissions, both currently and historically
- Explore various carbon reduction actions that lead to a positive future



Consolidate learning from session one

Watch the video to recap learning from session one.















Any comments or questions before we get started with session two?
















https://www.youtube.com/watch?v=G4H1N_yXBiA



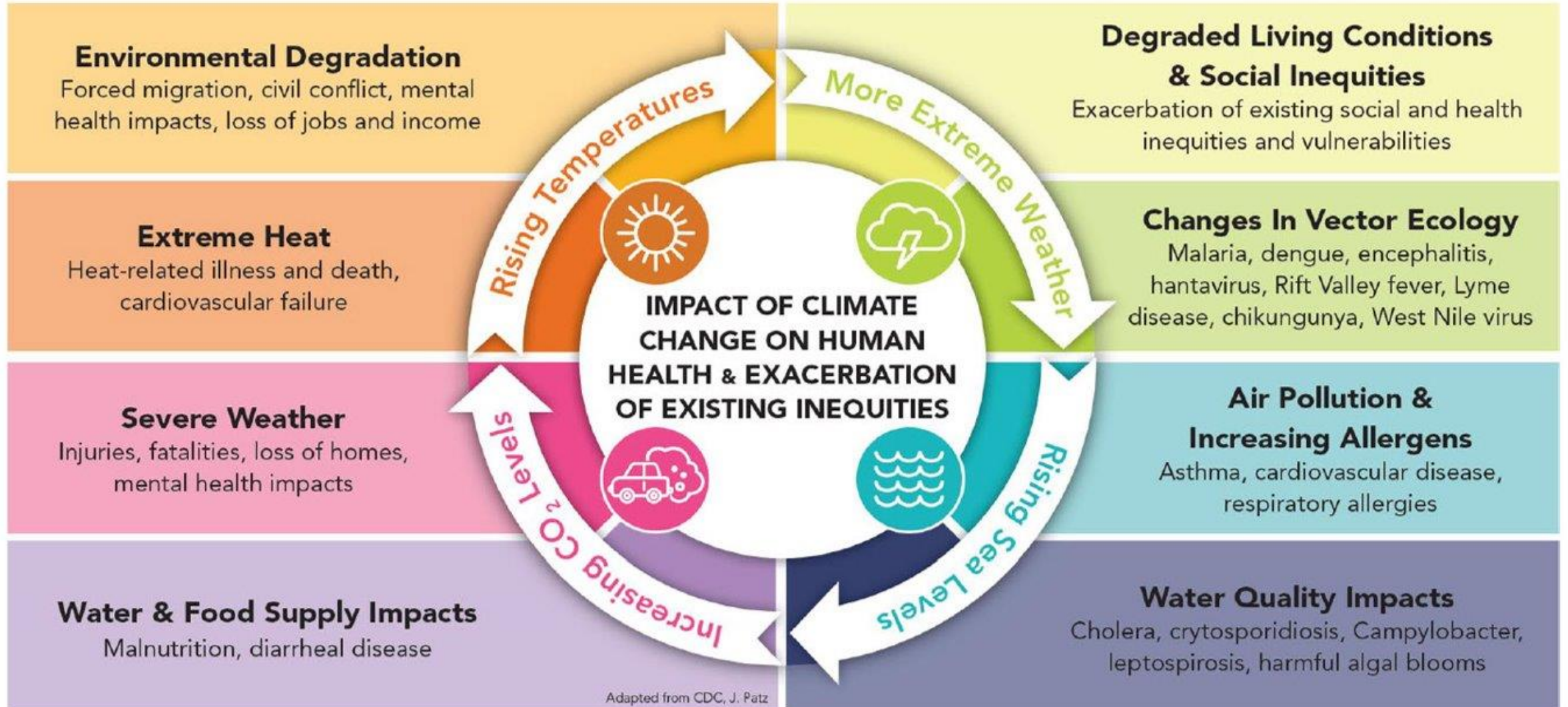
Global environmental impacts of climate change

DIRECT IMPACTS		1.5°C	2°C	2°C IMPACTS
 EXTREME HEAT Global population exposed to severe heat at least once every five years	 14%	 37%	2.6X WORSE	
 SEA-ICE-FREE ARCTIC Number of ice-free summers	AT LEAST 1 EVERY 100 YEARS	AT LEAST 1 EVERY 10 YEARS	10X WORSE	
 SEA LEVEL RISE Amount of sea level rise by 2100	0.40 METERS	0.46 METERS	0.06m MORE	
SPECIES		1.5°C	2°C	2°C IMPACTS
 SPECIES LOSS: VERTEBRATES Vertebrates that lose at least half of their range	 4%	 8%	2X WORSE	
 SPECIES LOSS: PLANTS Plants that lose at least half of their range	 8%	 16%	2X WORSE	
 SPECIES LOSS: INSECTS Insects that lose at least half of their range	 6%	 18%	3X WORSE	

Global environmental impacts of climate change

LAND	1.5°C	2°C	2°C IMPACTS
 ECOSYSTEMS Amount of Earth's land area where ecosystems will shift to a new biome	 7%	 13%	1.86% WORSE
 PERMAFROST Amount of Arctic permafrost that will thaw	4.8 MILLION KM ²	6.6 MILLION KM ²	38% WORSE
 CROP YIELDS Reduction in maize harvests in tropics	 3%	 7%	2.3X WORSE
OCEANS	1.5°C	2°C	2°C IMPACTS
 CORAL REEFS Further decline in coral reefs	 70–90%	 99%	UP TO 29% WORSE
 FISHERIES Decline in marine fisheries	 1.5 MILLION TONNES	 3 MILLION TONNES	2X WORSE

Global social impacts of climate change



Global social impacts of climate change: activity

In breakout rooms, read the infographic and discuss the following:

- **Which of these impacts have you come across before today?**
- **Are any of the impacts new to you?**
- **Does anything about this infographic surprise you?**

When we return to the main room, we will have time for feedback and any questions.



Exploring responsibility...

We have identified the causes and consequences of climate change. The next step is to understand how responsibility for climate change and climate impacts varies between nations based on both historical and current emissions.



Carbon map

- 1.) Follow the link to the carbon map online tool
- 2.) Watch the introductory video explaining how the tool works
- 3.) Browse categories under the **responsibility tab** (avoid vulnerability for now) – **what does this tell you about the global distribution of responsibility for climate change?**



<https://www.carbonmap.org/#intro>



This is a hard-hitting film about climate vulnerability and inequality



How climate change is making inequality worse, especially for children



<https://www.bbc.co.uk/news/av/science-environment-58677993>

BACKGROUND RESPONSIBILITY VULNERABILITY
Area Population Wealth Extraction Emissions Consumption Historical Reserves People at risk Sea level Poverty



Emissions today



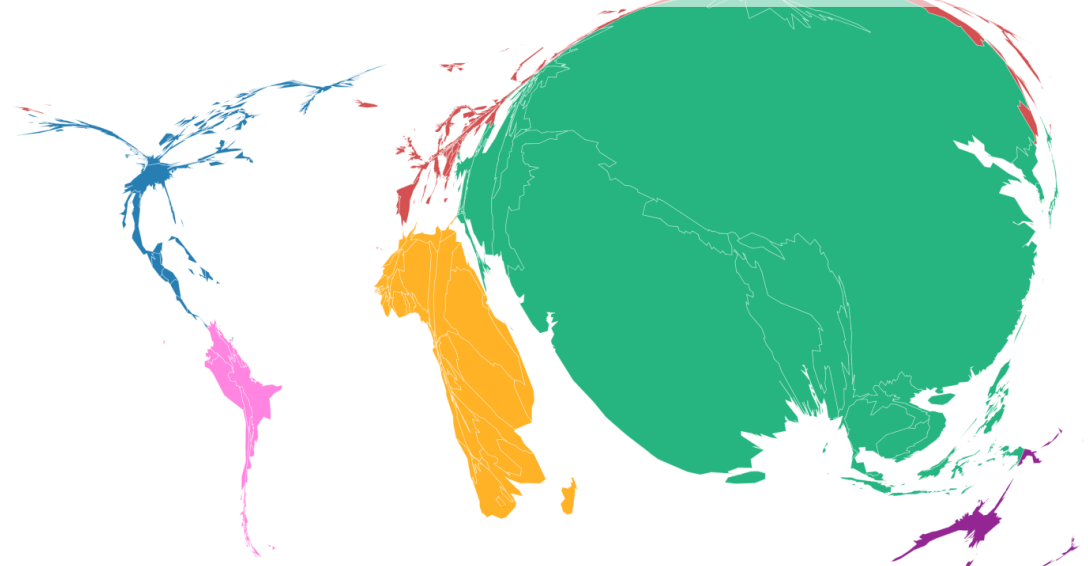
Shade by
Continents

- Europe
- Africa
- Asia
- North America
- South America
- Oceania

This map
Countries are sized to show their annual CO₂ emissions from fossil fuel use and cement production (2013). This is the conventional way to view national emissions, but it ignores imports and exports of fossil fuels (the Extraction map) and goods and services (the Consumption map).

ABOUT THIS TOOL DATA SOURCES

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People at risk



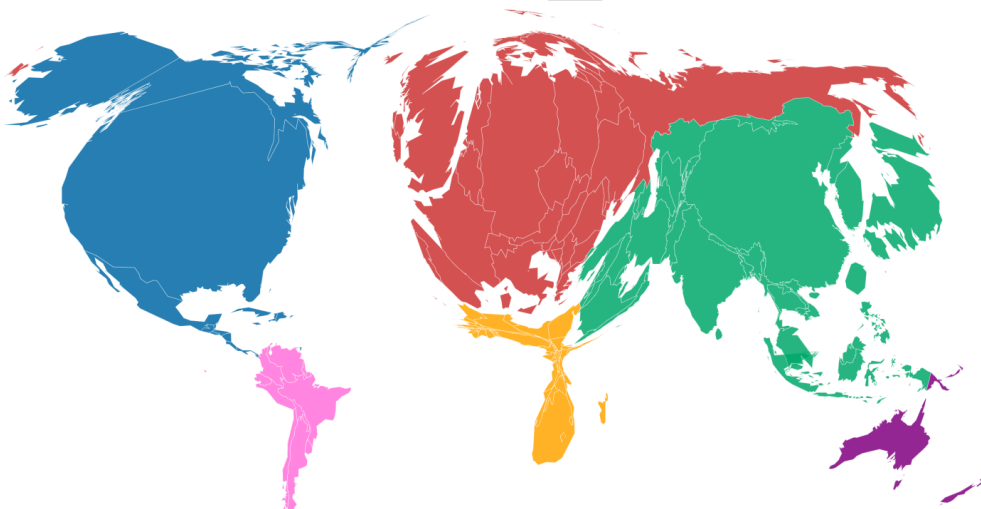
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This map
Country sizes show the number of people injured, left homeless, displaced or requiring emergency assistance due to floods, droughts or extreme temperatures in a typical year. Climate change is expected to exacerbate many of these threats.

ABOUT THIS TOOL DATA SOURCES

BACKGROUND RESPONSIBILITY VULNERABILITY
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Historical emissions



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- Europe
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This map
Country sizes show CO₂ emissions from energy use 1850-2011. These historical (or 'cumulative') emissions remain relevant because CO₂ can remain in the air for centuries. Europe and the US dominate, having released around half the CO₂ ever emitted.

ABOUT THIS TOOL DATA SOURCES

Discussion

'The world's wealthiest 1% produce double the combined carbon emissions of the poorest 50%.' Yet people from developing countries are most at risk to the impacts of climate change.

Report from the Cambridge Sustainability Commission April 2021



UK social impacts of climate change



Understanding climate justice



Climate justice is a concept that recognises the **ethical dimensions of climate change**.

It recognises that **those most affected by climate change** are those who are **causing the**

By participating in this training you are gaining the knowledge and skills to have a positive impact and be part of the solution.

provide solutions to climate change that **protect vulnerable nations and/or groups** from its worst effects.



5-minute break time!

Climate change: future scenarios



Activity one: troubled future



Increasing temperatures melt 80% of the world's permafrost



Rising sea levels sink island nations



Coral bleaching due to warmer oceans and ocean acidification



Half of all plant and animal species become extinct



Heatwaves lead to millions of deaths globally



Flooding and extreme weather events cause loss and damage



Supply shortages devastate economies



Millions are displaced due to war, extreme weather, and shortages

Activity one: troubled future

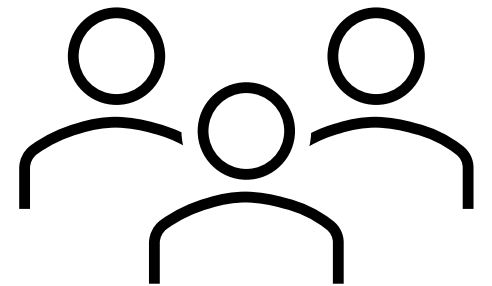
How did we get here? Consider what actions were (or were not) taken that led us to this troubled future.

In breakout rooms:

1. **Nominate a facilitator** to lead the activity.
2. The facilitator will **screen share a slide pack** showing ten different (in)actions.
3. As a team, **decide which five of these (in)actions contributed the most** to the troubled future scenario.

Take note of the five you decided on as a group to feed back to main room.

There is no right or wrong answer.



Activity two: positive future



Stable temperatures prevent melting permafrost



Sea level rises are limited; island nations are protected



Healthy coral reefs sustain life in our oceans



Protected forests enhance biodiversity



Cities are resilient and sustainable economic hubs



Stable temperatures prevent frequent extreme weather events



Climate conflicts are avoided



Quality of life improves around the world

Activity two: positive future

How did we get here? Consider what actions were taken that led us to this positive future.

In breakout rooms:

1. Nominate a

2. The facilitator

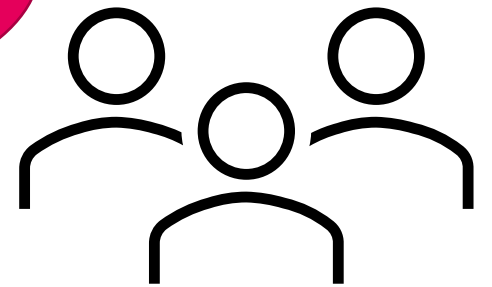
3. As a group, discuss the scenario

By being here and developing your own climate solutions, you are helping to make this future achievable.

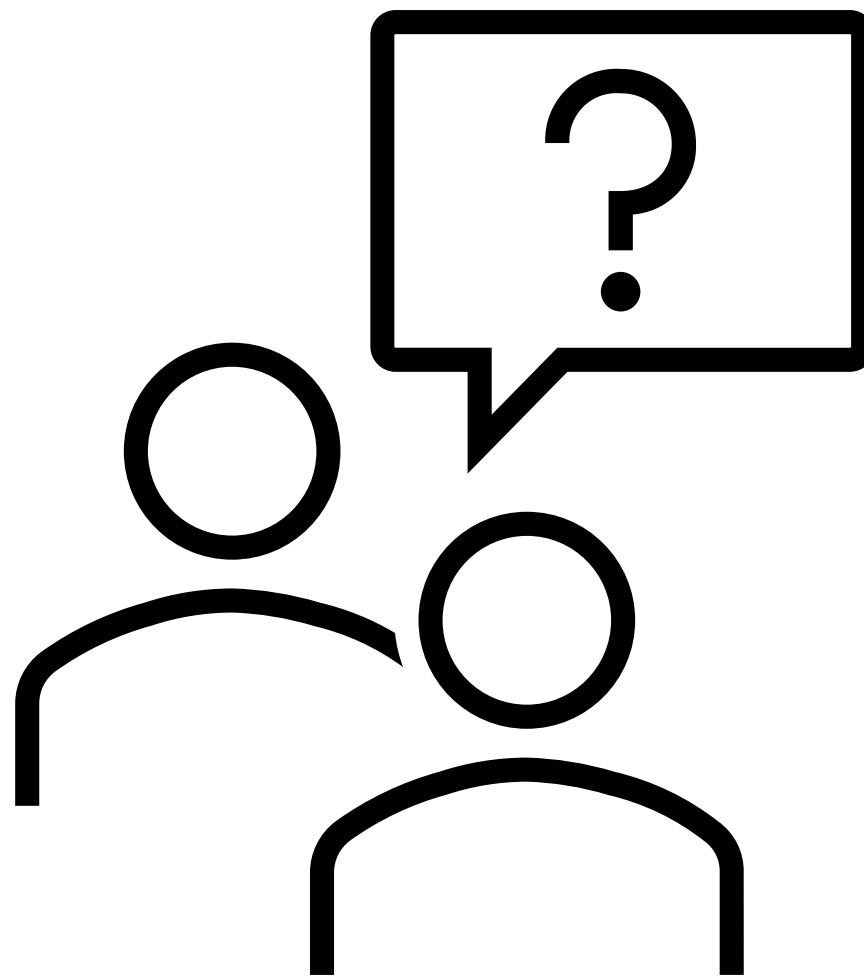
future

Take note

There is not a right or wrong



Climate quiz



Next session we will:

- Learn about climate change mitigation
- Learn about climate change adaptation
- Explore different solutions that can be adopted to lower individual carbon footprints



If you have any questions about the course, you can contact Jess at jessica.tasney@sanctuary.co.uk



Recommended reading

[Our World in Data: CO2 emissions \(Our World in Data\)](#)

[How calls for climate justice are shaking the world \(BBC\)](#)

