

# The Limits to Growth: Sustainability and the Circular Economy

## Lecture 4: Sustainability and Political (In-)Action

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- Updated versions of these slides will be available in our [Github repository](#).



## NEWS/UPDATES/ORG

## Course Organization - Asynchronous Learning & MOOC content

- **Massive Open Online Course**
  - Remote and (often) asynchronous online courses *not* just for students enrolled in a specific university but *ideally* open for everybody
  - Usually consists of pre-recorded lectures, interactive content and online quizzes
  - Some of you might have visited MOOC on platforms such as edX, LinkedIn Learning, Coursera, Udacity, etc. before
- Course Website - [Link](#)
- **Lectures L06, L07, L08 and L09** are going to be MOOC lectures.
- There will be **no live lectures** on Wednesdays, but we will have **live exercises**.



# Lecture Plan

**Week 6**  
(11.12 - 15.12.2023)



## Life Cycle Assesment

Life cycle assessments (LCAs) are powerful tools for evaluating the environmental impacts of products, processes, and services throughout their entire life cycle. In this session, we will explore the methodology, principles, and applications of LCAs in sustainability efforts.

Duration: 90 minutes

[View](#)

**Week 7**  
(18.12 - 22.12.2023)



## Technologies and Sustainability

Sustainable innovations can potentially drive positive change, from renewable energy to efficient transportation. Yet, it's essential to acknowledge their limitations. In this chapter, we will scrutinise the boundaries of technology, emphasising the need for holistic approaches to achieve genuine sustainability.

Duration: 90 minutes

[View](#)

**Week 8**  
(08.01 - 12.01.2024)



## Circular Economy

As we confront the challenges of resource depletion and waste accumulation, the concept of a circular economy emerges as a transformative solution. In this lecture, we will delve into the main characteristics of a circular economy, where products and materials are reused, refurbished, remanufactured, and recycled.

Duration: 90 minutes

[View](#)

**Week 9**  
(15.01 - 19.01.2024)



## Circular Societies

Beyond the circular economy, we delve into the idea of creating societies that embrace circular principles. This entails fostering inclusivity, sharing resources, reducing inequalities, and promoting cooperation. We'll explore how circular thinking can reshape governance, education, and community dynamics, ultimately envisioning a world where human well-being and environmental health coexist harmoniously.

Duration: 90 minutes

[View](#)

## Exercise 6 + 7

20.12.2023  
3.00 p.m.

## Exercise 8

10.01.2024  
3.00 p.m.

## Exercise 9

17.01.2024  
3.00 p.m.

## Q&A Session

- Exercise / Q&A:
  - Wednesdays **3:00 pm** (Berlin time)
  - BigBlueButton ([Link](#))

Exercises still have to be given in until the **exercise deadline** noted in the exercise sheets. Exercise sheets are on the website or our GitHub Repository ([Link](#)).

## E02 – CARBON FOOTPRINT

## E02 - Carbon Footprint Results

Q1

What is your carbon footprint according to the instructions in the E01 exercise sheet (in t)?

Scale



# SUSTAINABLE DEVELOPMENT GOALS

# Sustainable Development Goals

## Important Actors

- United Nations
  - Largest intergovernmental organization in the world
  - 193 members
  - Established in 1945
  - Main aims: maintaining international peace, international cooperation
  - Organized in six principal bodies and autonomous specialized agencies



e.g. General Assembly,  
Security Council, UN  
Secretariat



e.g. World Health Organization (WHO),  
World Bank Group (WBG), Food and  
Agriculture Organization (FAO)

# Sustainable Development Goals

## Overview

- Sustainable Development Goals → SDGs
- 17 interlinked goals
- Proposed in 2015 by the United Nations General Assembly
- To be achieved by 2030 by all UN member states
- Each goal typically has 8-12 targets, and each target has between 1-4 indicators used to measure progress toward reaching the targets.

*“A blueprint to achieve a better and more sustainable future for all people and the world by 2030” – United Nations General Assembly*

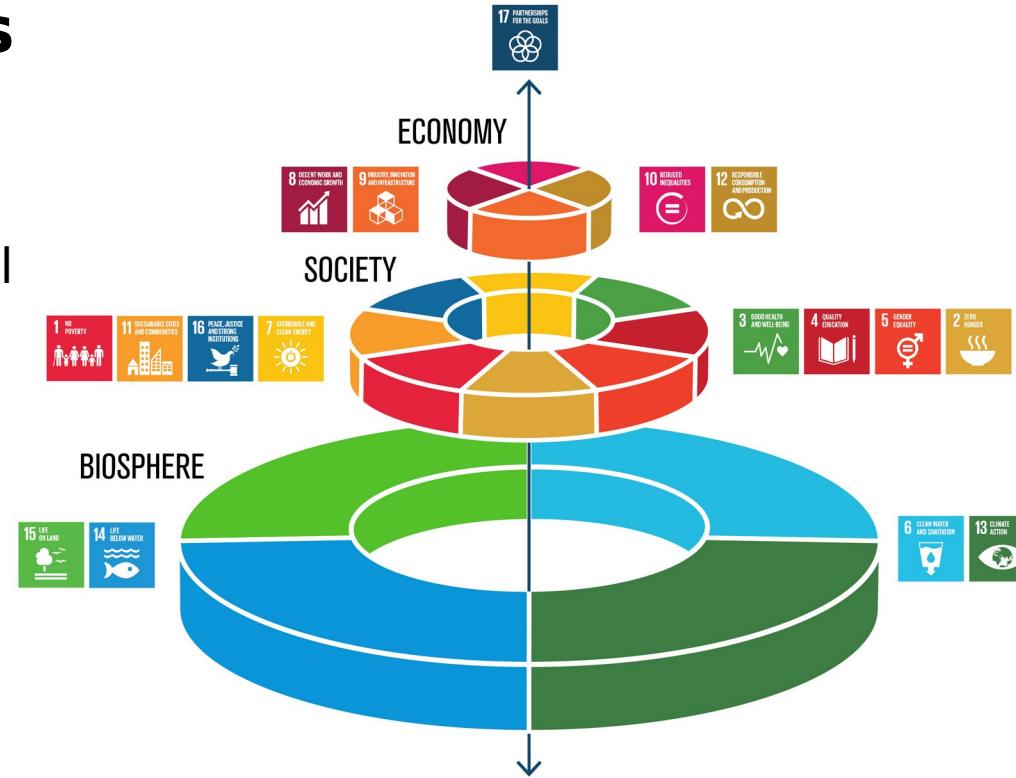
# Sustainable Development Goals



# Sustainable Development Goals

## Challenges

- The SDGs cover all three dimensions of sustainability: economic, ecological and social
- Many of the goals focus on society
- No prioritization between different goals



*"The means of implementation targets under each Sustainable Development Goal and Goal 17, which are referred to above, are key to realizing our Agenda and are of **equal importance** with the other Goals and targets. We shall accord them **equal priority** in our implementation efforts and in the global indicator framework for monitoring our progress."*

# Sustainable Development Goals

## Challenges

- Water, food and energy are vital prerequisites for any human life → other goals cannot be achieved without them

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  - Zero Hunger vs. Environmental Stability (Life Below Water, Life On Land)
  - Economic Growth vs. Decent Work

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  - Economic Growth vs. Decent Work
- Potential/risk for/of greenwashing

# A SHORT HISTORY OF ACTIONS ON CLIMATE CHANGE

# A Short History of Actions on Climate Change

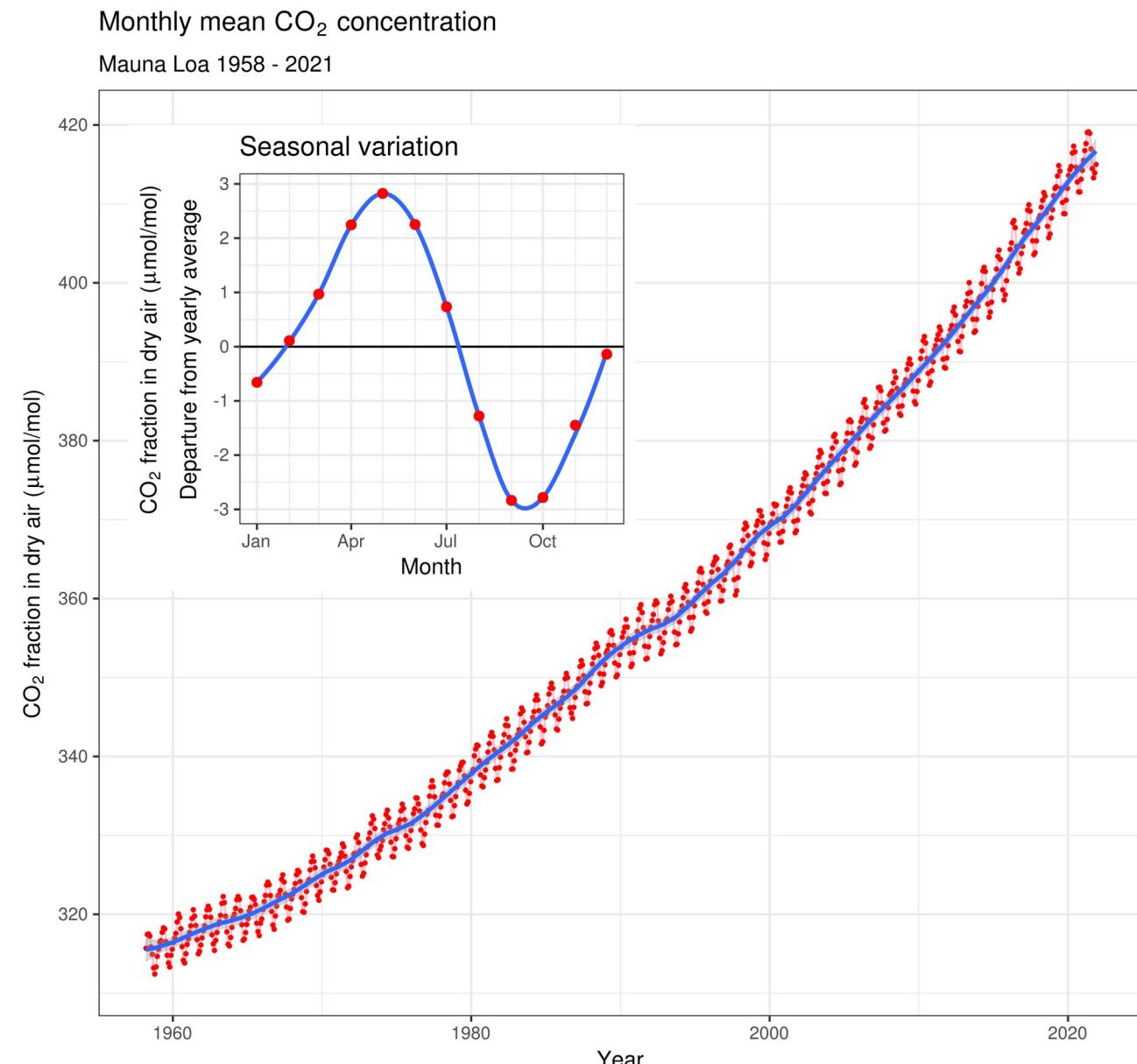
## (Incomplete) Timeline

- 1957 – First climate change warnings issued by Roger Revelle and Hans Suess
- 1958 – Start of systematic measurements of atmospheric CO<sub>2</sub> by Dave Keeling
- 1972 – United Nations Conference on the Human Environment (Stockholm)
- 1979 – First World Climate Conference (Geneva)
- 1988 – IPCC (Intergovernmental Panel on Climate Change) founded
- 1992 – Earth Summit (Rio)
- 1997 – Kyoto Protocol
- 2009 – Copenhagen Accord
- 2015 – Paris Agreement
- 2021 – Glasgow Climate Pact

# A Short History of Actions

## Detour - Keeling Curve

- Named after Charles David Keeling
- Graph representation of the accumulation of CO<sub>2</sub> in the atmosphere based on continuous measurements (Mauna Loa Observatory - Hawaii) from 1958 to the present day



Data : Dr. Pieter Tans, NOAA/ESRL (<https://gml.noaa.gov/ccgg/trends/>) and  
Dr. Ralph Keeling, Scripps Institution of Oceanography (<https://scrippsc02.ucsd.edu/>). Accessed 2021-12-16  
<https://w.wiki/4ZWn>

# A Short History of Actions on Climate Change

## 1979 - First World Climate Conference (Geneva)

- First major meeting on climate change
- Initiated by the World Meteorological Organization (WMO)
- Scientific gathering explored how climate change might affect human activities
- Led to the creation of the Intergovernmental Panel on Climate Change (IPCC)
  
- Urged governments “*to foresee and prevent potential man-made changes in climate that might be adverse to the well-being of humanity*”

## A Short History of Actions on Climate Change

### 1988 - IPCC (Intergovernmental Panel on Climate Change)

- Intergovernmental body of the United Nations
- Task: *“Provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation”*

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## 1988 - IPCC (Intergovernmental Panel on Climate Change)

- Intergovernmental body of the United Nations
- Task: “*Provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation*”
- IPCC assessments:
  - *provide a scientific basis for governments to develop climate related policies*
  - *are policy-relevant but not policy prescriptive: they may present projections of future climate change based on different scenarios and the risks that climate change poses and discuss the implications of response options, but they do not tell policymakers what actions to take.*
  - *are written by hundreds of leading scientists who volunteer their time and expertise as Coordinating Lead Authors and Lead Authors of the reports. They enlist hundreds of other experts as Contributing Authors to provide complementary expertise in specific areas*

# A Short History of Actions on Climate Change

## 1997 – Kyoto Protocol

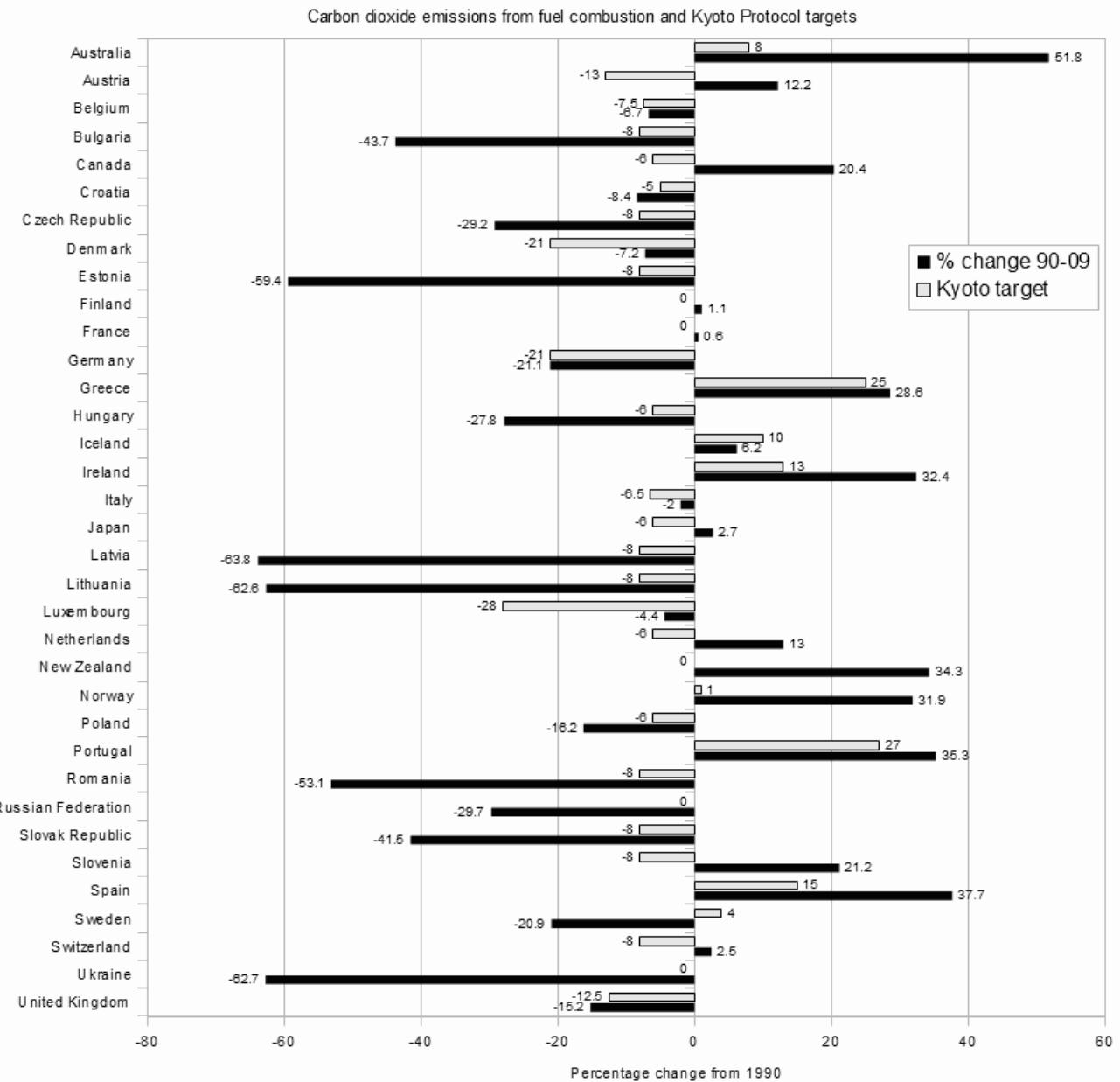
- Commitment to reduce GHG emissions and concentration in the atmosphere to “*a level that would prevent dangerous anthropogenic interference with the climate system*”
- Recognizing that global warming occurs and that human-made GHG emissions are driving it
- Developed nations pledge to reduce “overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012”.
- Entered into force on 16 February 2005

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- However
  - USA, Australia and other countries refused to ratify the agreement
  - Canada withdrew from the Kyoto Protocol in 2012

# A Short History of Actions 1997 – Kyoto Protocol



Enescot – [https://commons.wikimedia.org/wiki/File:Kyoto\\_Parties\\_with\\_first\\_period\\_\(2008-2012\)\\_greenhouse\\_gas\\_emissions\\_limitations\\_targets\\_and\\_the\\_percentage\\_change\\_in\\_their\\_carbon\\_dioxide\\_emissions\\_from\\_fuel\\_combustion\\_between\\_1990\\_and\\_2009.png](https://commons.wikimedia.org/wiki/File:Kyoto_Parties_with_first_period_(2008-2012)_greenhouse_gas_emissions_limitations_targets_and_the_percentage_change_in_their_carbon_dioxide_emissions_from_fuel_combustion_between_1990_and_2009.png) – CC BY-SA 3.0.

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- Content:
  - **Endorses** the continuation of the Kyoto Protocol
  - “**We emphasise our strong political will** to urgently combat climate change in accordance with the principle of common but differentiated responsibilities and respective capabilities”
  - “**We shall, recognizing** the scientific view that the increase in global temperature should be below 2 degrees Celsius”

# A Short History of Actions on Climate Change

## 2015 – Paris Agreement

- *Reach global peaking of greenhouse gas emissions **as soon as possible***

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- Increasing the ability to **adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development**, in a manner that does not threaten food production; and

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- Increasing the ability to **adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development**, in a manner that does not threaten food production; and
- Making **finance flows** consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

# A Short History of Actions on Climate Change

## 2021 - Glasgow Climate Pact

- **Reaffirms** the Paris Agreement temperature goal of holding the increase in the global average **temperature to well below 2 °C** above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels

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- Including accelerating efforts **towards the phase-out of unabated coal** power and inefficient fossil fuel subsidies
- **Urges developed country** Parties to provide enhanced **support, including through financial resources**, technology transfer and capacity-building, to assist developing country

# A Short History of Actions on Climate Change

## 2021 - Glasgow Climate Pact

- 140 countries pledged to reach net-zero emissions
- 100+ countries pledged to reverse deforestation by 2030
- 40+ countries pledged to move away from coal

# A Short History of Actions on Climate Change

## 2022/23 – COP27/28 (United Nations Climate Change Conference)

- COP27 in Sharm el-Sheikh, Egypt
  - No relevant results
  - But, more than 600 fossil fuels lobbyists registered to attend
- 
-

# A Short History of Actions on Climate Change

## 2022/23 – COP27/28 (United Nations Climate Change Conference)

- COP27 in Sharm el-Sheikh, Egypt
  - No relevant results
  - But, more than 600 fossil fuels lobbyists registered to attend
- COP28 in Dubai
  - Designated president for COP28: Sultan Al Jaber → CEO of Abu Dhabi National Oil Company

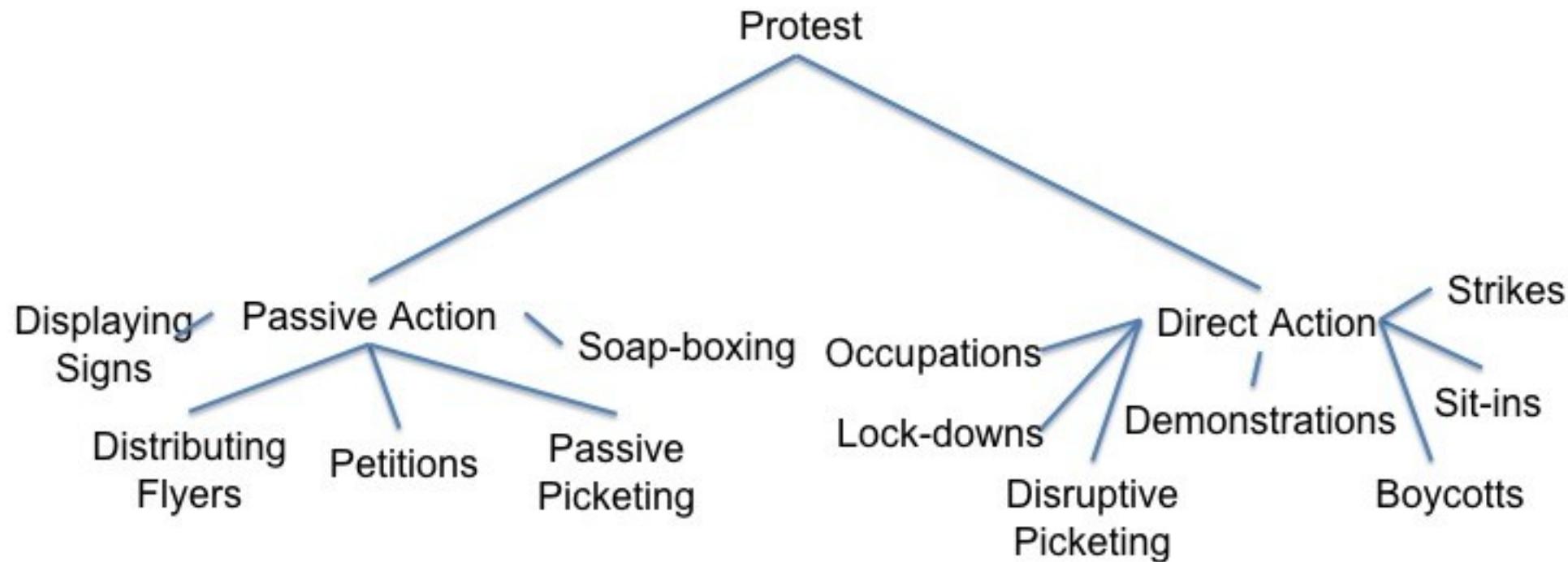
## What to expect of COP28?

- Bla, bla bla - [Link](#)

# ACTIVISM

# Activism

## Types of Political Protest



\* All can be violent or non-violent

# Activism

## Fridays for Future



## Activism

### Extinction Rebellion (XR)



*"I am afraid of losing my child  
to a resource war because of a  
climate collapse"*

# Activism

## Extinction Rebellion (XR)



Vladimir Morozov (2019) – <https://xrbristol.org.uk/2020/04/17/blog-xr-has-sticking-power/> – CC BY-SA 4.0.

## Activism

*“Climate activists are sometimes depicted as dangerous radicals, but the truly dangerous radicals are the countries that are increasing the production of fossil fuels.”*

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**United Nations Secretary General Antonio Guterres**

## Activism

### Extinction Rebellion (XR)

- Beyond just protesting (Lars Werner): [Link](#)

## Activism

### Last Generation (Letzte Generation)

- 2021 → before the elections in Germany
- 27 days hunger strike (picture day 25) → afterwards Intensive Care Unit
- Together with other climate activists, Jeschke wanted to use this drastic means to draw attention to the climate crisis and achieve a discussion with the candidates for chancellor.
- Olaf Scholz (Chancellor Germany) and Last Generation → [Video](#)





## Activism

### Neubauer, et al. vs. Germany

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### Neubauer, et al. vs. Germany

- Nine young people from Germany sued Germany
- They argue: *“that the goals and measures of the Federal Climate Protection Act are not sufficient to effectively protect their fundamental rights from the consequences of the climate crisis as well as to fulfill the government’s obligations under the Paris Agreement.”*

## Activism

### Neubauer, et al. vs. Germany

- Nine young people from Germany sued Germany
- They argue: "*that the goals and measures of the Federal Climate Protection Act are not sufficient to effectively protect their fundamental rights from the consequences of the climate crisis as well as to fulfill the government's obligations under the Paris Agreement.*"

**They won!** → *"Freedoms and fundamental rights are already being violated today by insufficient climate protection. The legislator must adapt the Federal Climate Protection Act by the end of 2022"*

*"Climate protection is not nice-to-have, fair climate protection is a fundamental right, that is now official. A huge success - for everyone and especially for us young people who have been on climate strike for their future for over two years. We will now continue to fight for a 1.5 degree policy that is fair to all generations." - Luisa Neubauer*

# CONCLUSION

## Conclusion

- Sustainable Development Goals → SDGs
- Short history of actions on climate change
  - Geneva, Kyoto, Copenhagen, Paris, Glasgow, etc.
  - Problem
    - → A lot of bla, bla, bla
    - → Lack of progress
    - → Policies favor business as usual instead of acting in accordance with science because they are afraid to make unpopular decisions
- Individual activism as a response / counter movement to inactive governments who ignore urgent issues (i.e., the three key challenges of the 21<sup>st</sup> century)

## EXERCISE E03

## Exercise E03

### Individual Action

Addressing climate change requires collective efforts on individual, community, national, and global levels. In the lecture, we discussed the international and national perspectives. For the exercise, we want to look at what can be done on the community and individual levels.

1. Work through the MOOC content for L04 ([Link](#)). There you will learn about sustainable everyday practices and the problem of food waste.
    - a) Watch all the videos, read all the texts and answer the questions.
  2. In the lecture, we discussed the history of international and national actions. In part 1 of the exercise you have learned about individual actions and what a single person can do.
    - a) In your opinion, what is more important when it comes to fighting climate change (and the other challenges we have discussed)? (1) Political Action (e.g. on the international or national level), (2) Collective Action (e.g. activism, protests) or (3) Individual Action (e.g. what you yourself can do).
    - b) Explain your choice.
- Submit your result according to the submission guidelines posted in the exercise sheet → [E03](#).

## Additional Resources

- Podcast Episode: How to Save a Planet (2021) - *We Go Inside the COP26 Climate Talks* - [Link](#)
- Greta Thunberg mocks world leaders in 'blah, blah, blah' speech | BBC News (2021) - [Link](#)
- Rutger Bregman tells Davos to talk about tax: 'This is not rocket science' | Guardian News (2019) - [Link](#)
- IPCC (2022) - *About the IPCC* - [Link](#)
- Richard Black, BBC (2013) - *A brief history of climate change* - [Link](#)

# Questions?