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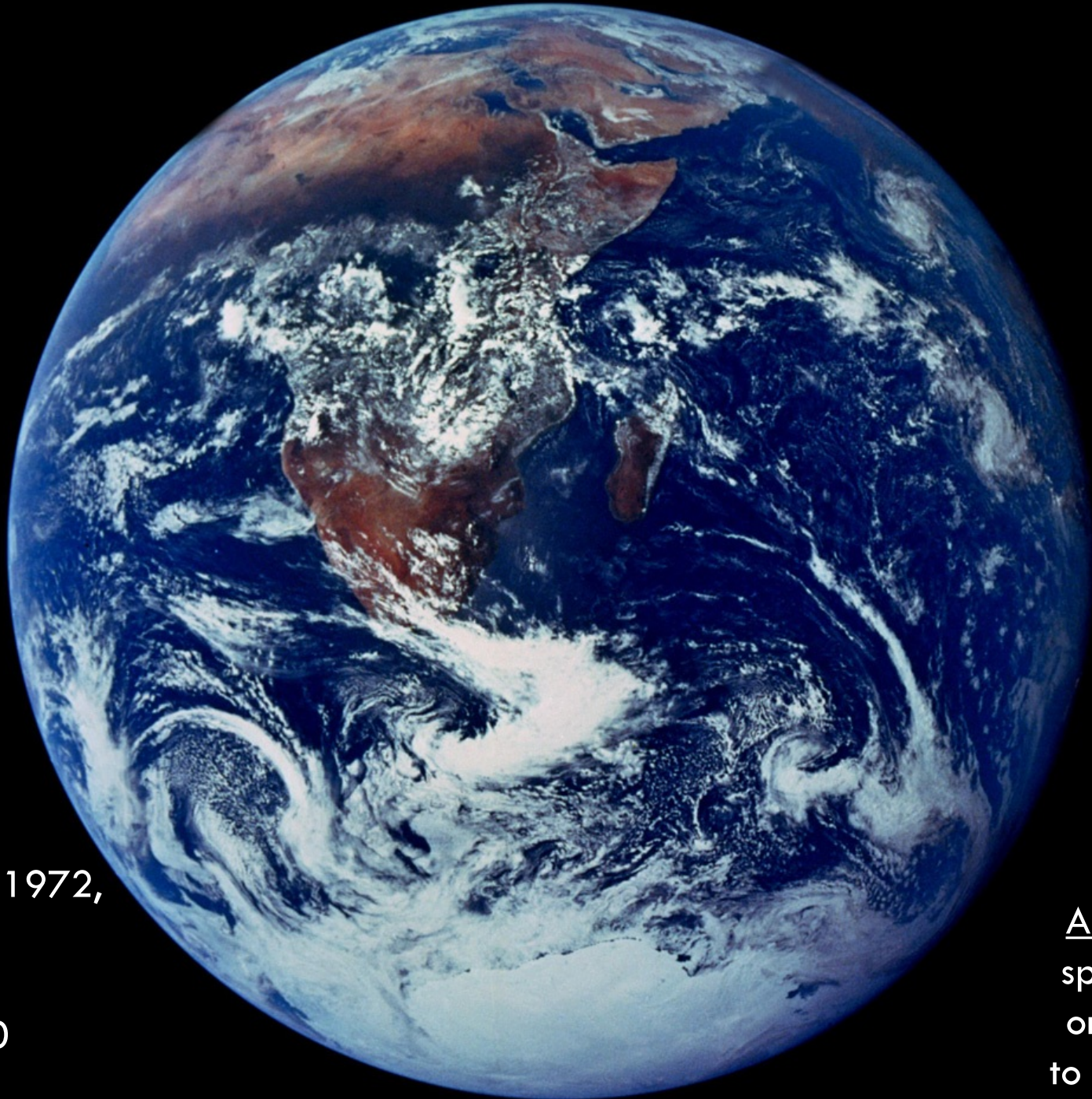


# CLIMATE CHANGE AND CRISIS: MYTH OR FACT?



<https://pollev.com/lindan443>





December 7, 1972,  
from  
a distance of  
about 29,000  
kilometers

Apollo 17  
spacecraft  
on its way  
to the Moon



What comes to your mind when I say "Climate Change"?

Nobody has responded yet.

Hang tight! Responses are coming in.

# II. Climate Change (CC)

Earth System process	Control variable	Threshold avoided or influenced by slow variable	Planetary Boundary (zone of uncertainty)	State of knowledge*
Climate change	Atmospheric CO <sub>2</sub> concentration, ppm;  Energy imbalance at Earth's surface, W m <sup>-2</sup>	Loss of polar ice sheets. Regional climate disruptions. Loss of glacial freshwater supplies. Weakening of carbon sinks.	Atmospheric CO <sub>2</sub> concentration: 350 ppm (350–550 ppm)  Energy imbalance: +1 W m <sup>-2</sup> (+1.0–+1.5 W m <sup>-2</sup> )	1. Ample scientific evidence. 2. Multiple sub-system thresholds. 3. Debate on position of boundary.

**Boundary:** Atmospheric CO<sub>2</sub> concentration no higher than 350 ppm

**Pre-industrial level:** 280 ppm

**Current level :** **October 8, 2023: 418.53 ppm**

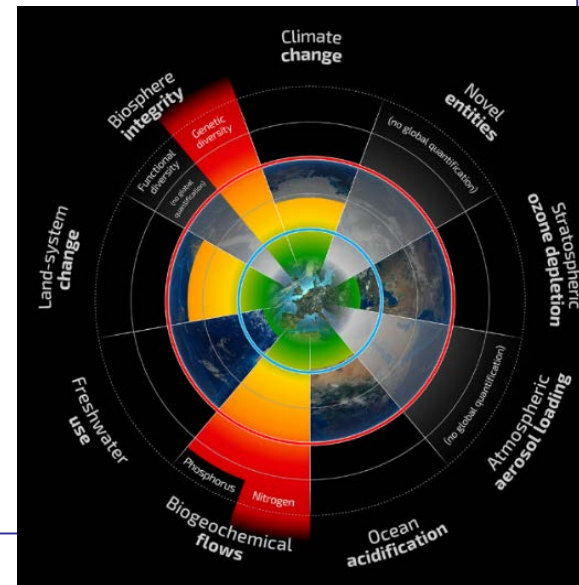
**Mauna Loa** **October 8, 2022: 415.33 ppm**

**September 2012: 391.02 ppm**

**Diagnosis:** Boundary exceeded

**May 2023 Temperature**

**+ 1.22°C since 1880**



# How would you define concept of planetary boundaries?

The lowest layer of the troposphere where wind is influenced by friction.

0%

Crossing boundaries increases the risk of generating large-scale abrupt or irreversible environmental changes.

0%

Crossing boundaries decreases the risk of Earth's vulnerability.

0%

"Safe operating space" [SEE MORE](#)  [ity.](#)

# II. Climate Change (CC)

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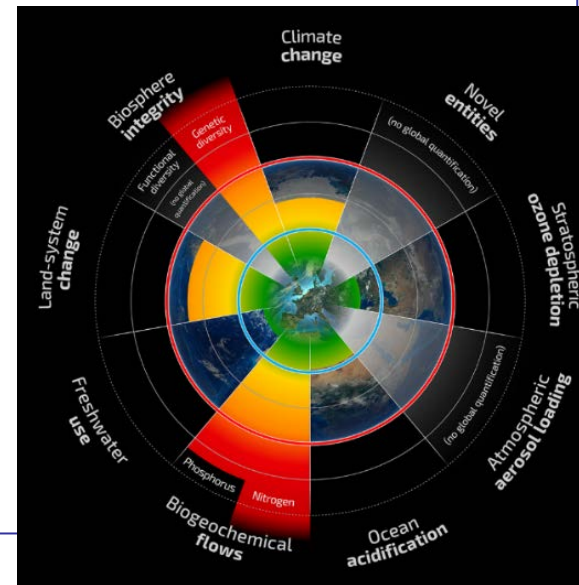
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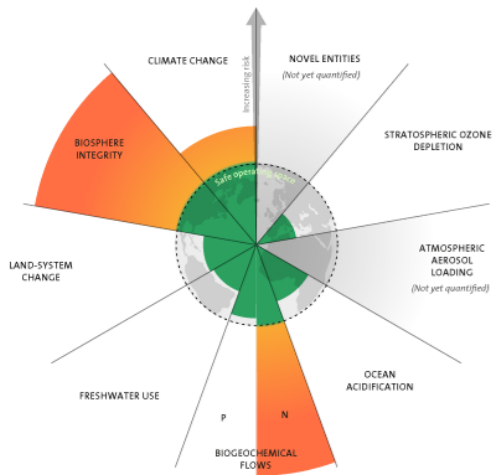
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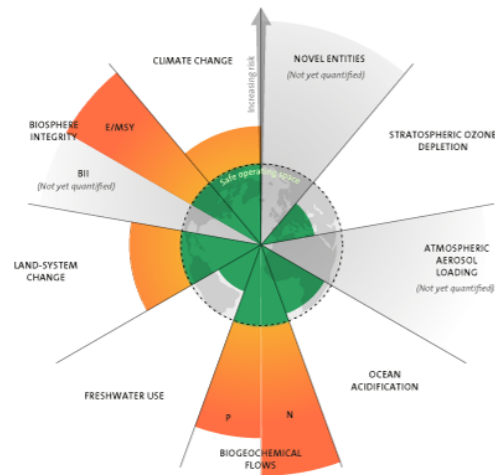


2009



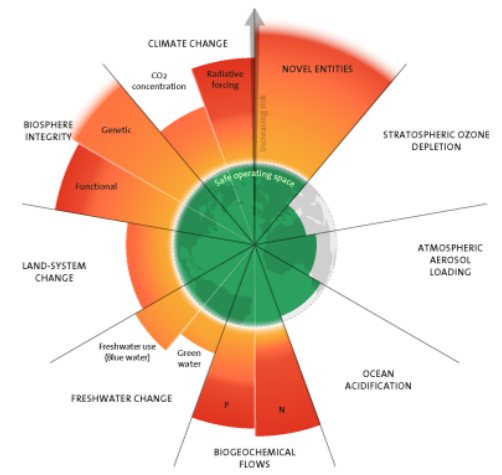
3 boundaries crossed

2015



4 boundaries crossed

2023



6 boundaries crossed

# History of climate change and research





The earliest interest in “climate” was of a rather pragmatic nature

Greek *klinein* – „to incline, at an angle“

Aristoteles (384-322 BC) – *Meteorologica* - VALID FOR ROUGHLY 2000 YEARS



Can you guess the year when the greenhouse effect was DISCOVERED?

Nobody has responded yet.

Hang tight! Responses are coming in.



# CC - history

**1753** – discovery of CO<sub>2</sub>

**1824** – Joseph Fourier - greenhouse effect in the atmosphere

**TEMPERATURE RELATED!**



**1861** – John Tyndall - water vapour and other gases are **GREEN HOUSE GASSES**

**1896** – Svante Arrhenius – hypothesis on enhancement of GH effect due to increase of CO<sub>2</sub> in the atmosphere as a consequence of fossil fuels combustion (HOTHOUSE)

- the prognosis on increase of the temperature by several °C when GHG concentration doubles is still valid

**1937** – term „**GREENHOUSE EFFECT**“ (Trewartha)

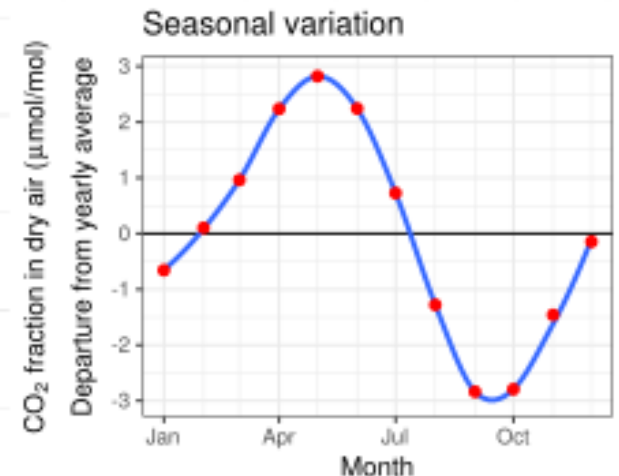
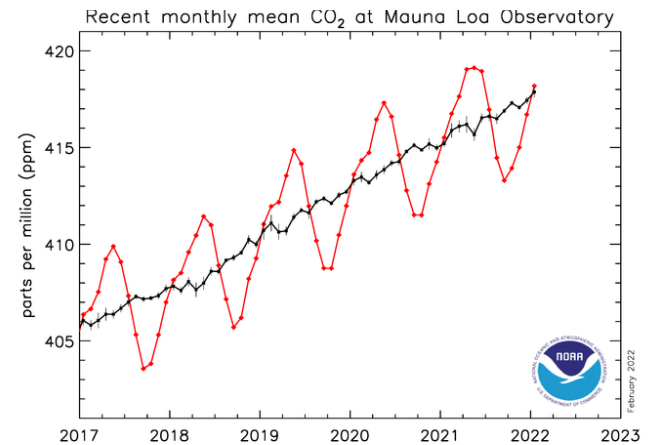
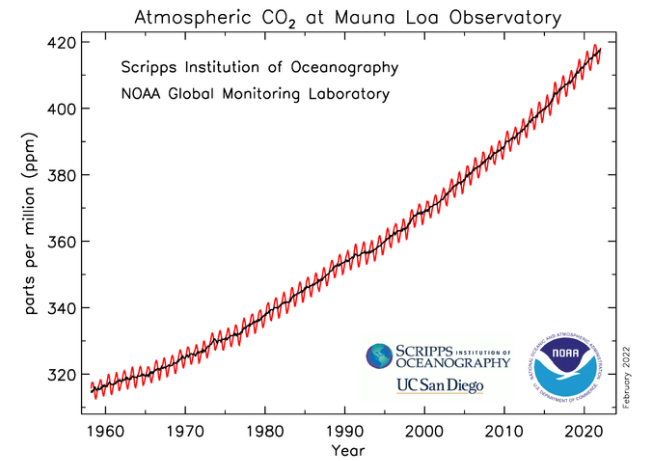
# CC - history

**1957** – oceanographer **Roger Revelle** and chemist Hans Suess shown that oceans **can not absorb entire CO<sub>2</sub> produced by people**

*"Human beings are now carrying out a large scale geophysical experiment.,,"*



# 1950 – Charles David Keeling continuous measurements taken at the Mauna Loa Observatory since 1950 (till now)



# ipcc

INTERGOVERNMENTAL PANEL ON  
climate change



- **The international body for assessing the science related to climate change.**
- Created in 1988
- To provide governments at all levels with scientific information that they can use to develop climate policies
- **Hundreds of people** from all over the world contribute to the work of the IPCC. For the assessment reports, experts volunteer their time as IPCC authors to **assess the thousands of scientific papers** published each year to provide a comprehensive summary of what is known about the **drivers of climate change, its impacts and future risks, and how adaptation and mitigation can reduce those risks.**
- **The IPCC does not conduct its own research.**
- **Working Group I: the Physical Science Basis;**
- **Working Group II: Impacts, Adaptation and Vulnerability;**
- **Working Group III: Mitigation of Climate Change**







# CC... and politics

**1972 – UNCHE (The United Nations Conference on the Human Environment), Stockholm.** CC becomes one of the global priorities

- Creation of United Nations Environment Programme (UNEP)

**1990 – 1<sup>st</sup> IPCC report – „Temperature increase by 0.3-0.6 °C is caused also by the human activities“**

**1992 – Earth summit – United Nations Framework Convention on CC,**  
*Rio de Janeiro*

**2005 – Kyoto Protocol (1997)**

**! CHINA – developing country, USA – did not sign !**

**2013 - 5<sup>th</sup> IPCC report „Scientists are 95% certain that humans are the "dominant cause" of global warming since the 1950s“**

**2016 – Paris Treaty came** into force

**2021-2022 - 6<sup>th</sup> IPCC report**

**2023 – United Nations Climate Change Conference, Dubai**

# Greenhouse Effect and Global Climate Change

- Greenhouse effect (GE) – natural atmospheric effect essential for life on the Earth
- GE dampens temperature fluctuation between day and night and thus provides favorable conditions for life



When poll is active, respond at [pollev.com/lindan443](https://pollev.com/lindan443)

Text **LINDAN443** to **+420 736 350 959** once to join

# What is an average temperature on the Earth?







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26 °C   0 °C   15 °C   -2 °C

## Greenhouse Gasses (GH) in the atmosphere

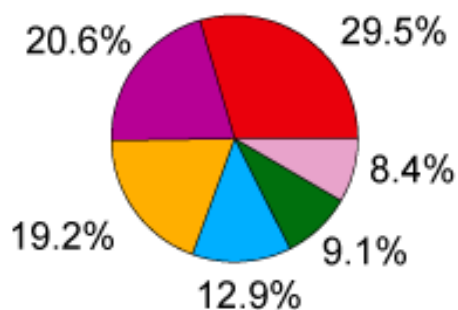
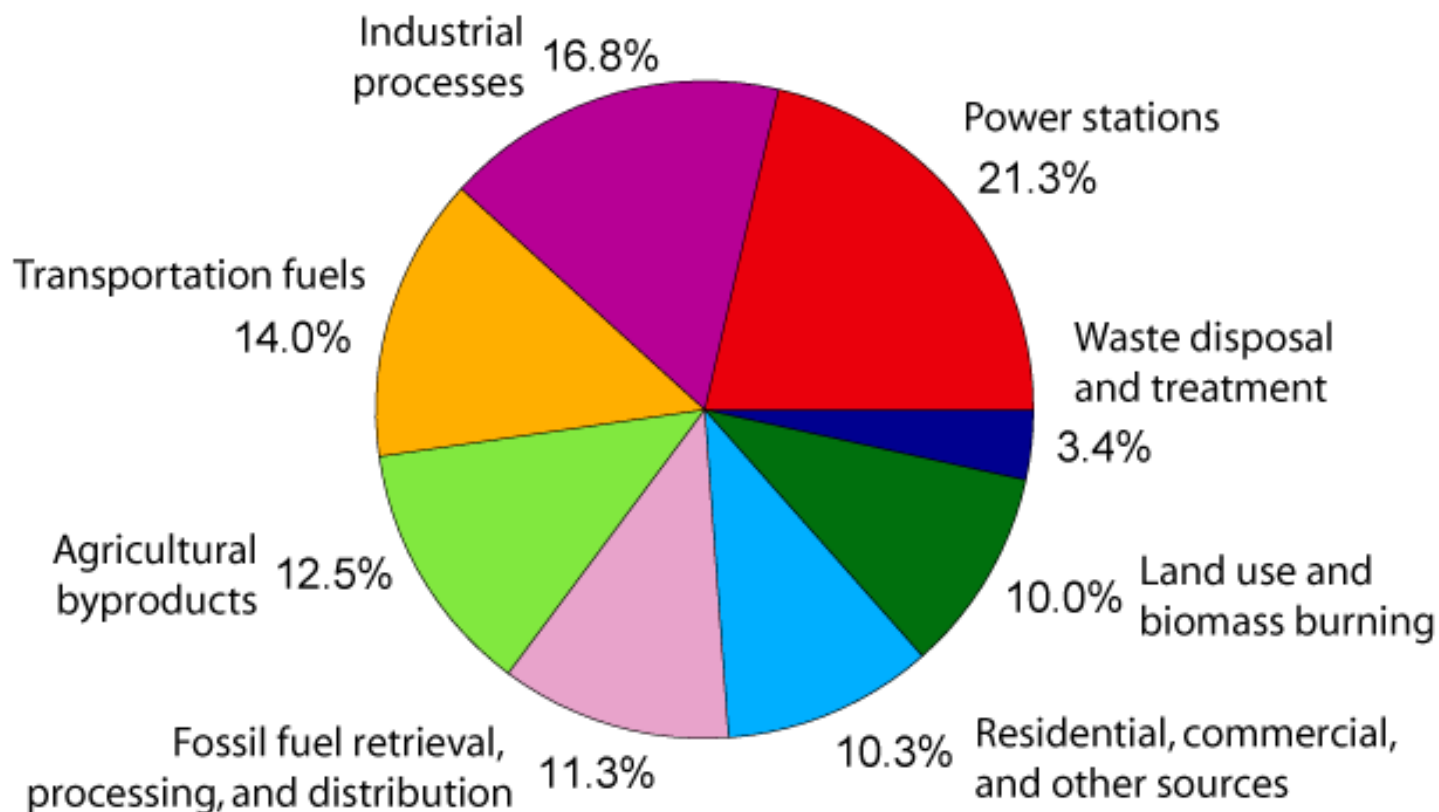
- the most important GHG is water vapour -  $\text{H}_2\text{O}(\text{g})$  that creates 2/3 of greenhouse effect
- however  $\text{H}_2\text{O}(\text{g})$  concentration in the atmosphere is **not significantly influenced** by human activities
- second most important GHG is  $\text{CO}_2$  (~ 20 % GH effect)
- last 13 % of GH effect – mainly gases like  $\text{CH}_4$ ,  $\text{N}_2\text{O}$ , CFC

	Water	Carbon Dioxide	Methane	Nitrous Oxide
				
Atmospheric Concentration	0.01–4%*	385 ppm	1797 ppb	322 ppb
Rate of Increase	n/a	1.5 ppm/yr	7.0 ppb/yr	0.8 ppb/yr
Atmospheric Lifetime	Very short 1–5 days	Variable 5–200 yr	12 yr	120 yr
Global Warming Potential (GWP)	n/a†	1	21	310

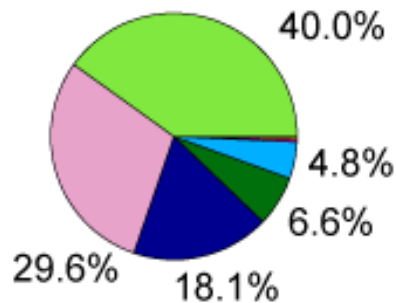
\* The amount of water vapor in the air varies according to temperature and density of air (usually ~1–3% of troposphere)

† Water vapor levels vary strongly according to region, so rates of change and warming potential cannot be assessed

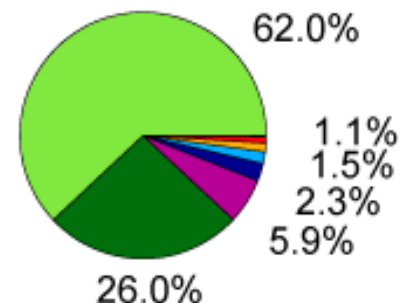
# Annual Greenhouse Gas Emissions by Sector



**Carbon Dioxide**  
(72% of total)



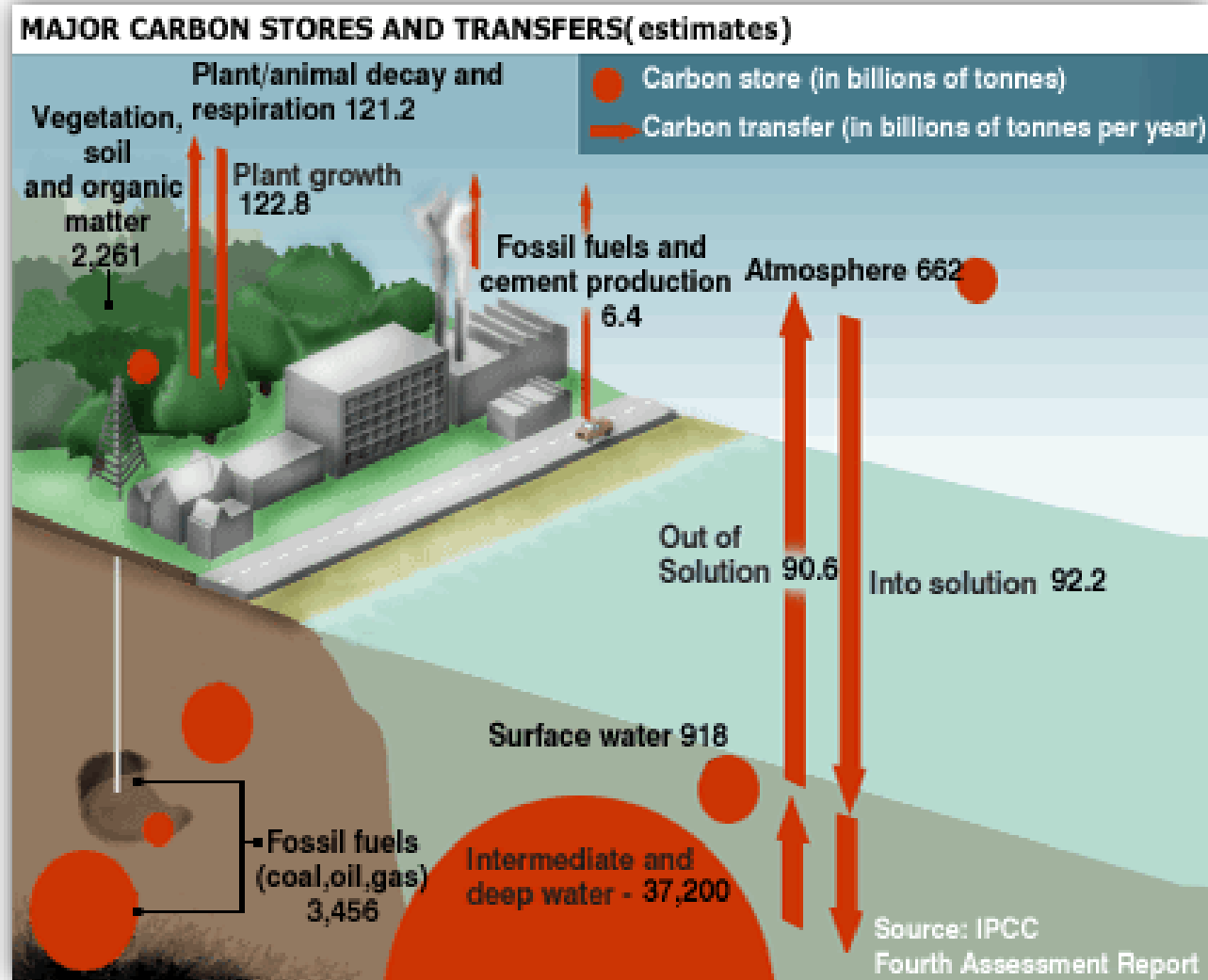
**Methane**  
(18% of total)



**Nitrous Oxide**  
(9% of total)

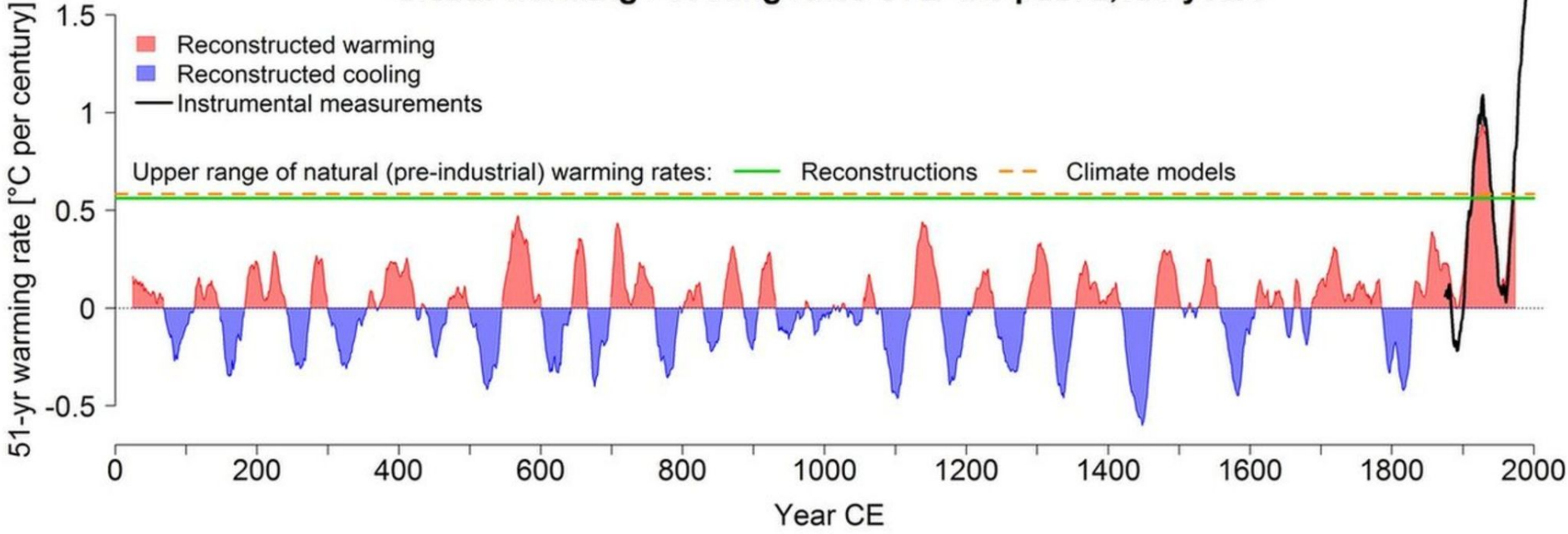
# ..... Problem?

- **increase of CO<sub>2</sub>** level in the atmosphere due to the **antropogenic action** - disruption of the balance between **release** and **absorption of CO<sub>2</sub>** in the carbon geochemical cycle





## Global warming / cooling rates over the past 2,000 years



**GLACIAL/INTERGLACIAL PERIOD**

# CC indicators

## Climate Change Indicators



Sea Level



Temperature: Air & Ocean



Water Vapor



Ocean Acidity



Snow Cover



Glaciers and Ice Sheets



Permafrost



Arctic Sea Ice



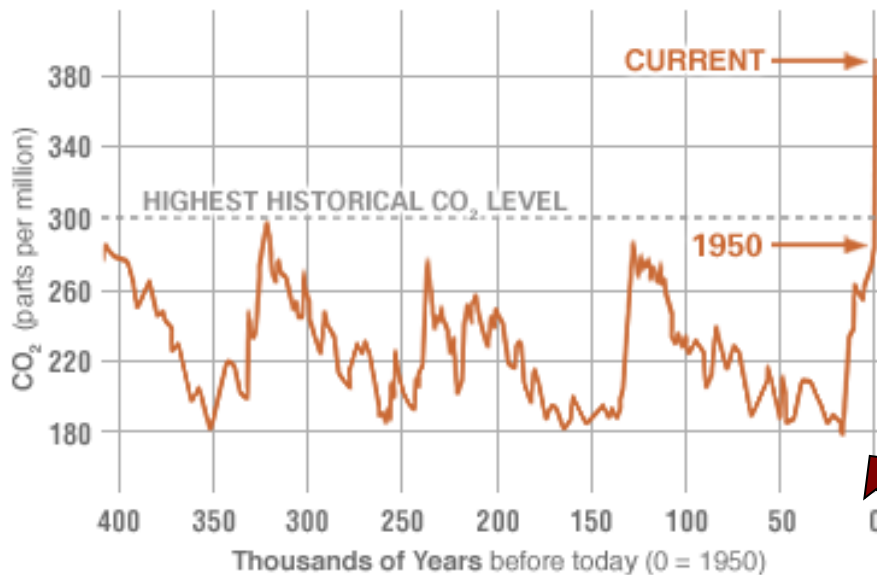
# Increase of CO<sub>2</sub> level

- CO<sub>2</sub> level increased more than >40 % since pre-industrial level
- level of other greenhouse gases increases as well
- main source of this increase is **fossil fuels combustion + deforestation**

## PROXY (INDIRECT) MEASUREMENTS

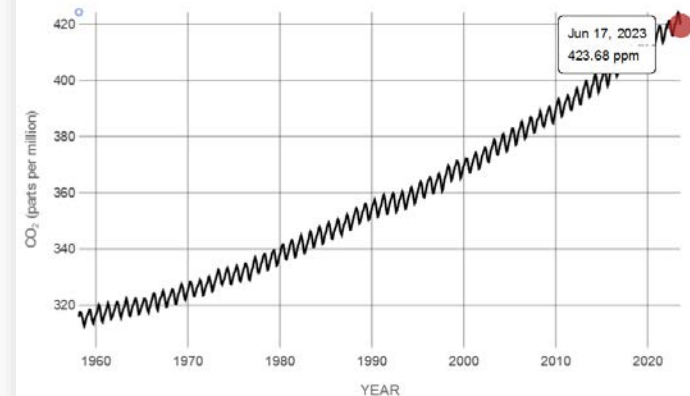
Data source: Reconstruction from ice cores.

Credit: NOAA



## DIRECT MEASUREMENTS: 1958-PRESENT

Data source: Monthly measurements.



## PROXY

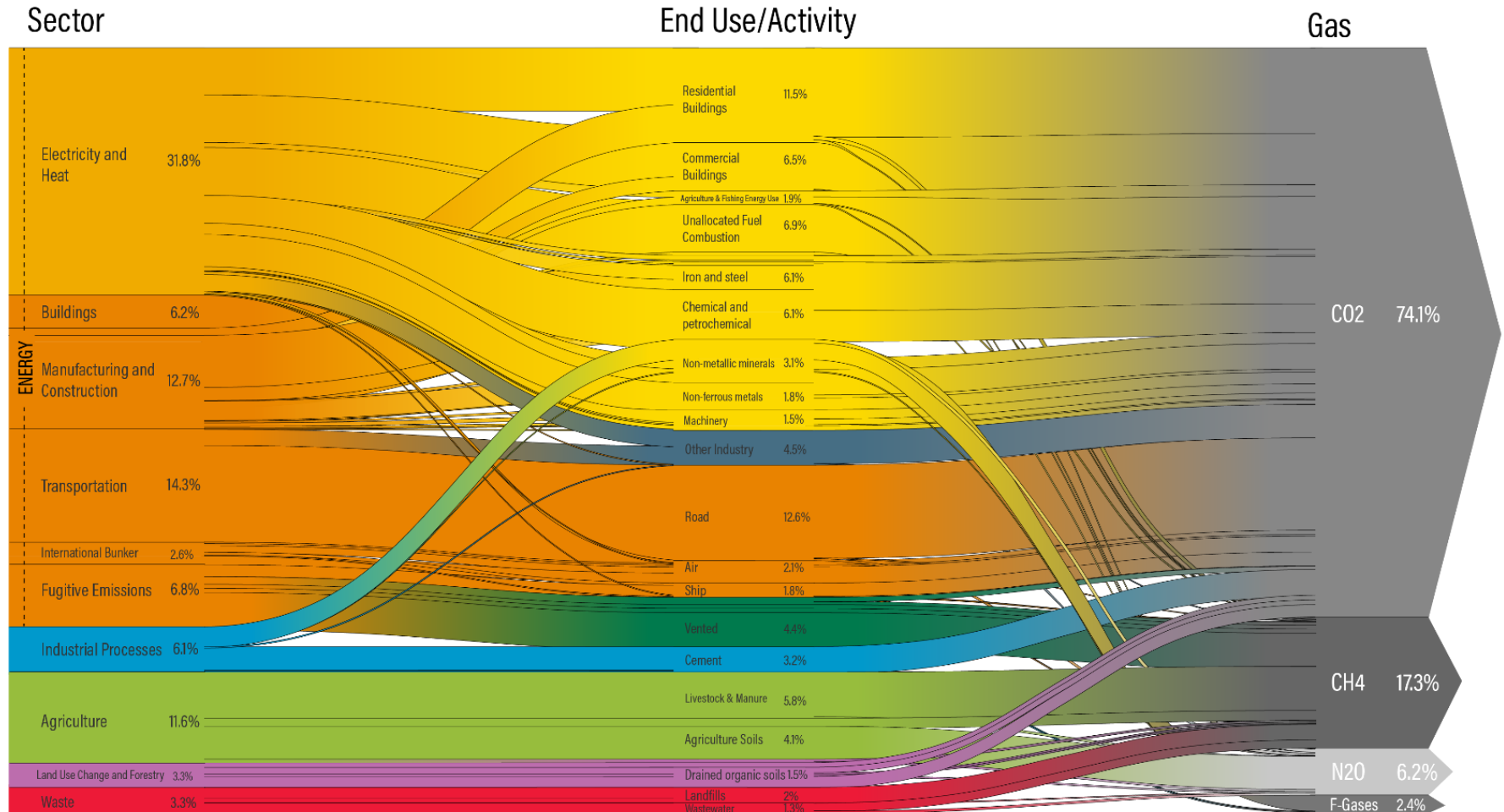
**Historical:** memos, newspaper, diaries

**Biological:** tree rings, corals, ice cores

**Geological:** ocean sediments, ice sheets, past glaciers, stalactites

# World Greenhouse Gas Emissions in 2019 (Sector | End Use | Gas)

Total: 49.8 GtCO<sub>2</sub>e



Source: Climate Watch, based on raw data from IEA (2021), GHG Emissions from Fuel Combustion, [www.iea.org/statistics](http://www.iea.org/statistics); modified by WRI.

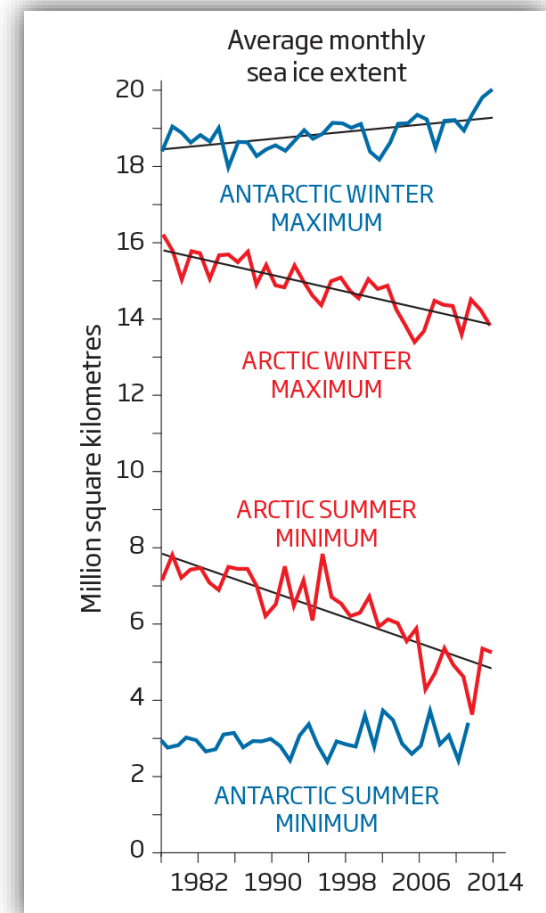
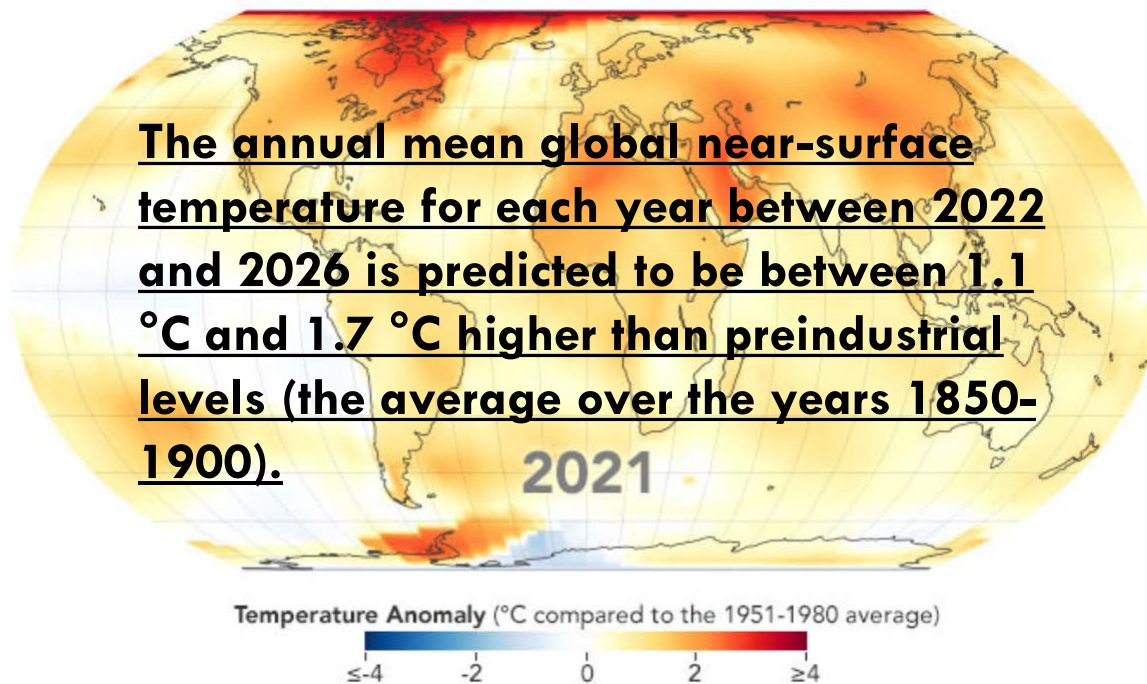
## What about other CC indicators?



Nobody has responded yet.  
Hang tight! Responses are coming in.

# Other indicators (variables) of CC

- changes in temperature (land/ocean)
- changes in ice cover in Arctic ocean
- changes in ice cover in North and South pole
- sea level rise
- humidity rise



# Less ice in the Arctic ocean

new naval routes  
from Europe to Asia

Japan from Rotterdam - Suez Canal - **30 days**  
- Northern Sea Route - **18 days**



Global Agenda Arctic Future of the Environment Geo-economics

## The final frontier: how Arctic ice melting is opening up trade opportunities



With financial gains to be exploited, will the world have enough restraint to resist damaging this landscape? Image: Unsplash/Valeria Bugasova

„The United States Geological Survey estimates that the Arctic contains approximately **13% of the world's undiscovered oil resources** and about **30% of its undiscovered natural gas resources.**“



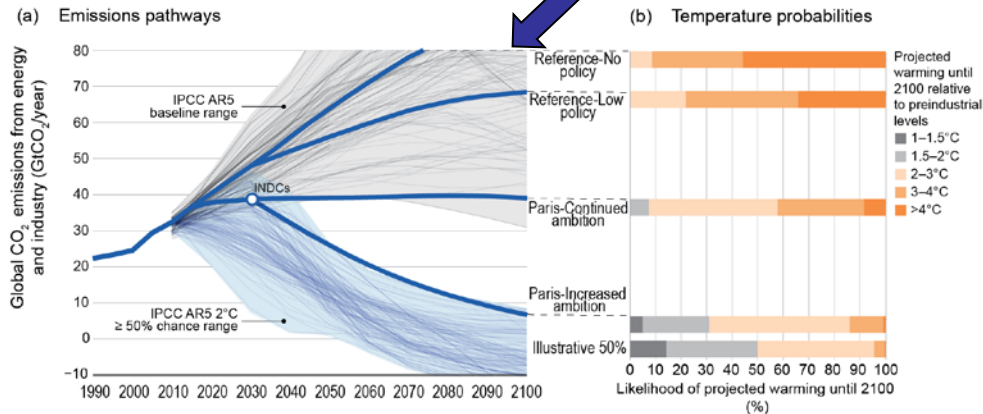
# Glacier calving in Arctic ocean



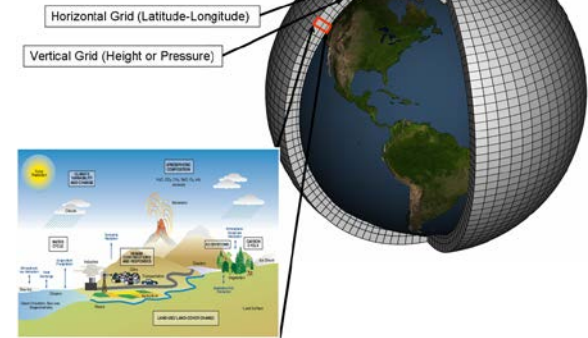
Glacier Watching Day 17

"CHASING ICE" captures largest glacier calving ever filmed - OFFICIAL VIDEO

# Scenario vs model?



## Schematic for Global Atmospheric Model

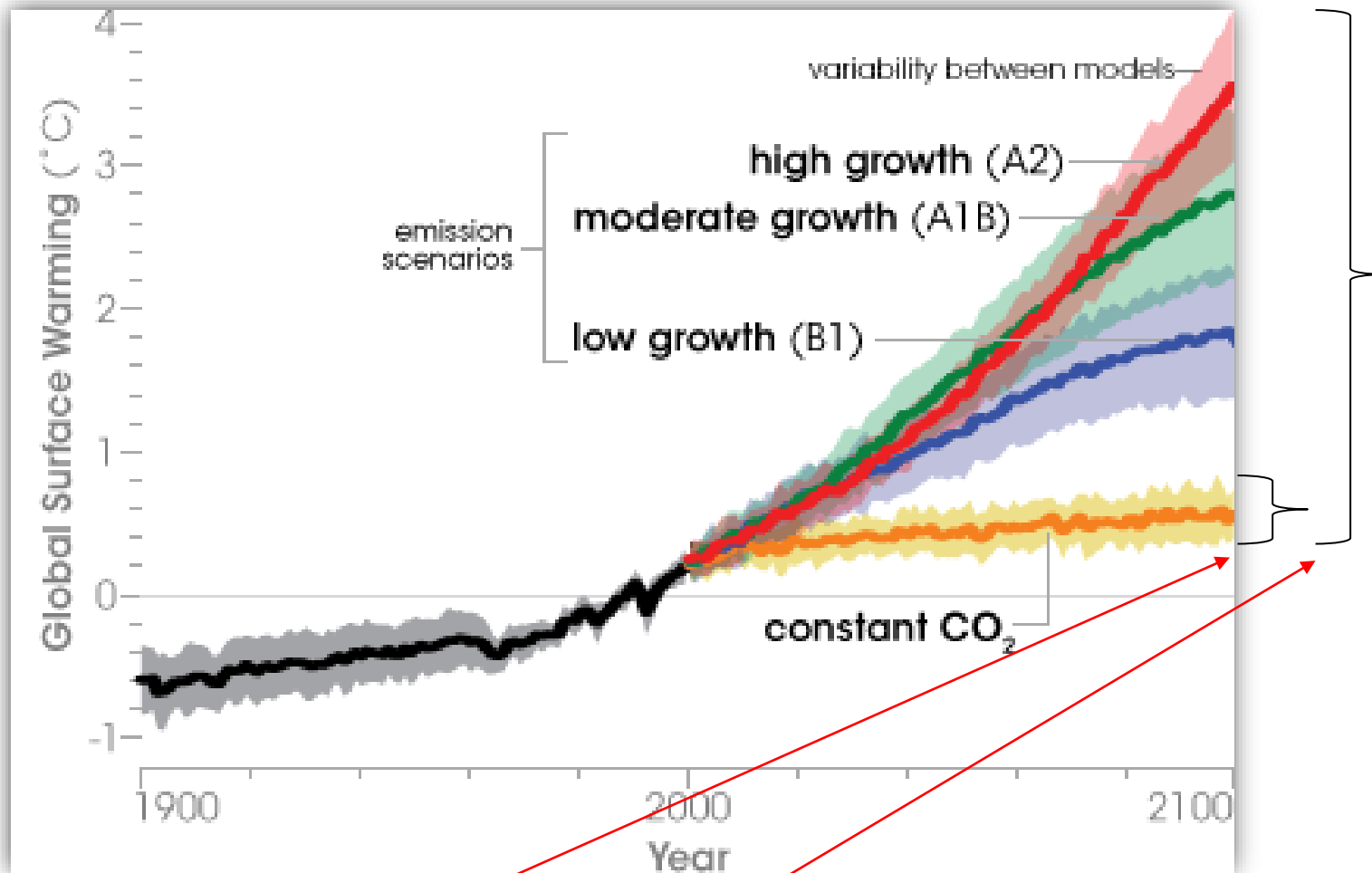


- plausible and **often simplified** description of how the future **may develop**, based on a coherent and internally consistent set of assumptions about driving forces and key relationships
- the impact of humans on the environment

- the climate models describe how the earth's **climate functions**
- based on physical laws and equations, approximation needed!

If the climate **models** are combined with the **emission scenarios**, it is possible to predict with a certain amount of **probability** how the climate will **be in the future**.

# Temperature rise scenarios to 2100



- scientific vs. political uncertainty



# CC consequences





Do you personally feel any consequences of CC? If yes, which ones?

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Nobody has responded yet.  
Hang tight! Responses are coming in.

# Consequences of CC

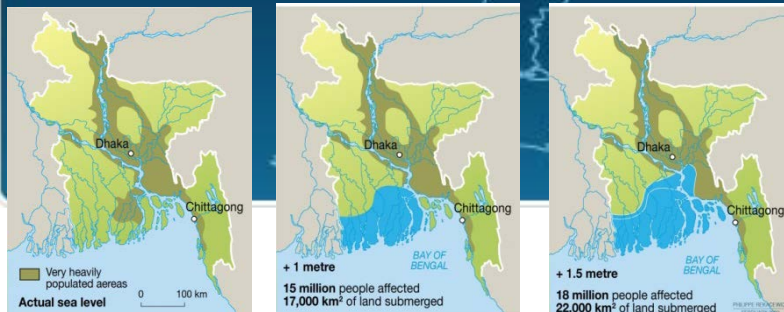
- regionally specific
- e.g. increasing vs. decreasing yields in some regions

## Likely Scenarios if Climate Change Continues

▼ SELECT CLIMATE IMPACTS



WHAT YOU CAN DO TO HELP ►

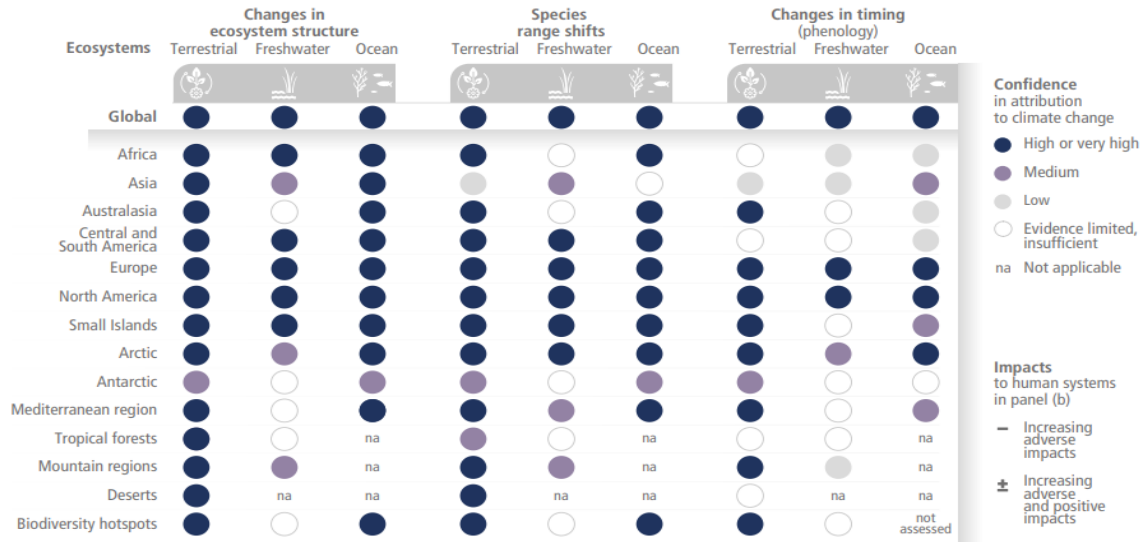


Sources: Dacca University; Intergovernmental Panel on Climate Change (IPCC).

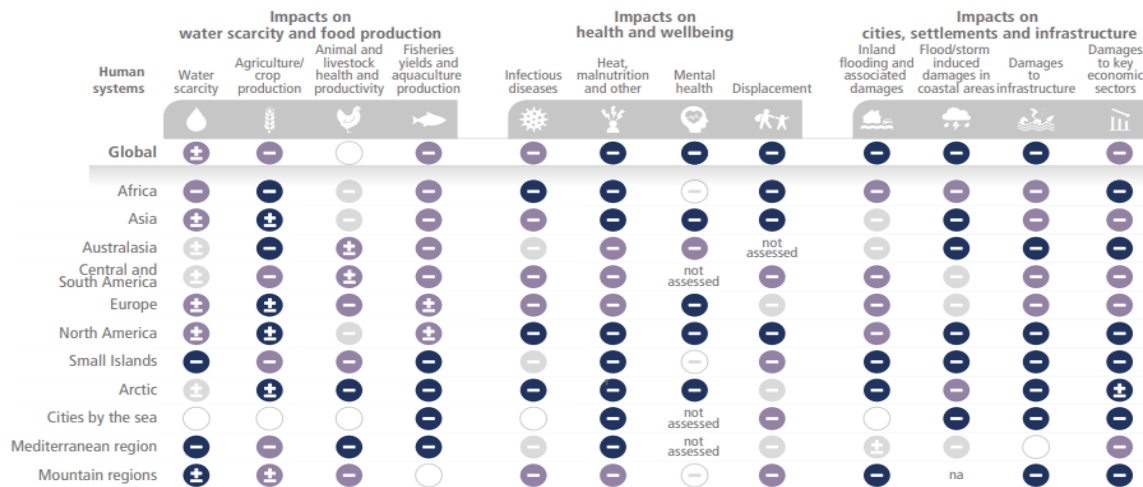
SPM

## Impacts of climate change are observed in many ecosystems and human systems worldwide

### (a) Observed impacts of climate change on ecosystems



### (b) Observed impacts of climate change on human systems



**Figure SPM.2 | Observed global and regional impacts on ecosystems and human systems attributed to climate change.** Confidence levels reflect uncertainty in attribution of the observed impact to climate change. Global assessments focus on large studies, multi-species, meta-analyses and large reviews. For that reason they can be assessed with higher confidence than regional studies, which may often rely on smaller studies that have more limited data. Regional assessments consider evidence on impacts across an entire region and do not focus on any country in particular.

(a) Climate change has already altered terrestrial, freshwater and ocean ecosystems at global scale, with multiple impacts evident at regional and local scales where there is sufficient literature to make an assessment. Impacts are evident on ecosystem structure, species geographic ranges and timing of seasonal life cycles (phenology) (for methodology and detailed references to chapters and cross-chapter papers see SMTS.1 and SMTS.1.1).

# CC - controversy



UNCOMMON KNOWLEDGE WITH PETER ROBINSON

HOOVER INSTITUTION

Keeping Your Cool on the Climate Debate with Bjorn Lomborg

54 588 zhladnutí • 10. 3. 2021

1,1 TIS. 68 ZDIELANIE ULOŽIŤ ...

„How much do we want to spend on the climate compare to other problems?“

*„...more heat will damage crop growth in many warmer climates, but it means better agricultural production in cold countries. And, CO<sub>2</sub> is a fertiliser — commercial greenhouses pump in extra CO<sub>2</sub> to grow bigger tomatoes. So overall, we can expect agriculture to gain from global warming in the short and medium term...“ B. Lomborg*



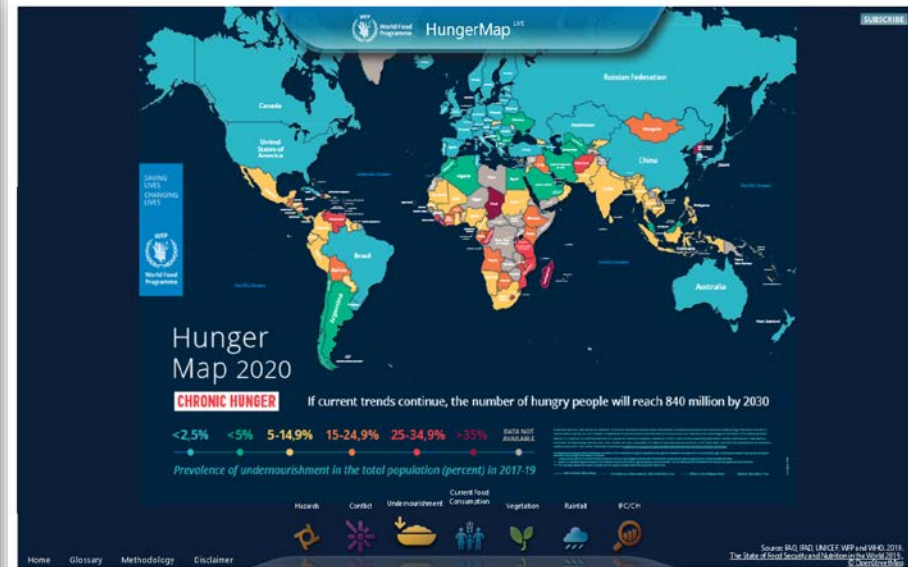
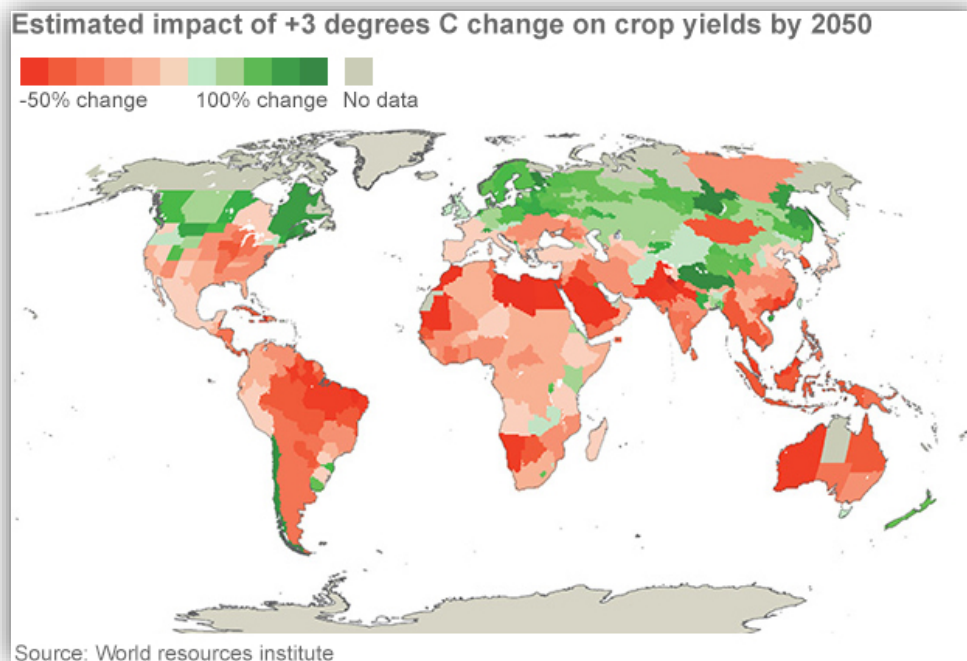
Let's discuss!

Nobody has responded yet.  
Hang tight! Responses are coming in.

# Moral dimension of CC

„...more heat will damage crop growth in many warmer climates, but it means better agricultural production in cold countries. And, CO<sub>2</sub> is a fertiliser — commercial greenhouses pump in extra CO<sub>2</sub> to grow bigger tomatoes. So overall, we can expect agriculture to gain from global warming in the short and medium term...“ B. Lomborg

**yes, increasing yields, but mainly in countries with the actual overproduction, while the agrarian countries in developing world (with significant hunger) will experience even drop in the production**



Interactive Map: Tracking World Hunger and Food Insecurity



# Climate change: The great civilisation destroyer?

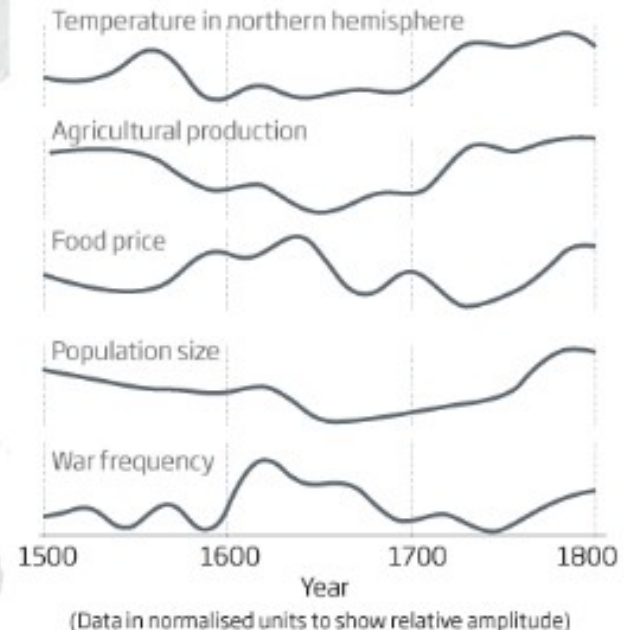
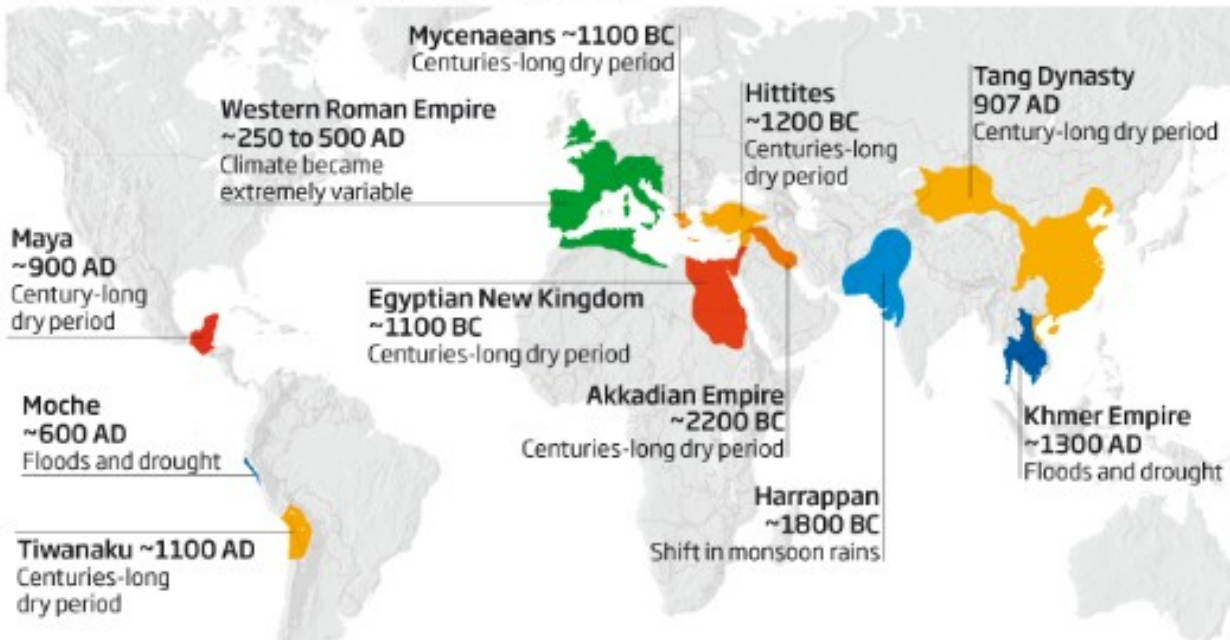
War and unrest, and the collapse of many mighty empires, often followed changes in local climates. Is this more than a coincidence?



## More than coincidence?

©NewScientist

The decline and fall of many civilisations coincided with periods of climate change, and there are also correlations between climate change, population size and the frequency of wars, as data from Europe shows (right)





**Solutions of CC?**



## Solutions?

---

Nobody has responded yet.

Hang tight! Responses are coming in.



Democratic politician  
Ex-vicepresident USA  
Environmentalist

Gore held the "first congressional hearings on the climate change, and co-sponsor[ed] hearings on toxic waste and global warming".



The Nobel Peace Prize 2007

Intergovernmental Panel on Climate Change , Al Gore

Share this: 67

# The Nobel Peace Prize 2007

## IPCC

INTERGOVERNMENTAL  
PANEL ON  
CLIMATE CHANGE



Photo: Ken Opprann  
Albert Arnold (Al)  
Gore Jr.

Prize share: 1/2

„...was one of the first politicians to grasp the seriousness of climate change and to call for a reduction in emissions of carbon dioxide and other greenhouse gases."

Intergovernmental  
Panel on Climate  
Change (IPCC)

Prize share: 1/2

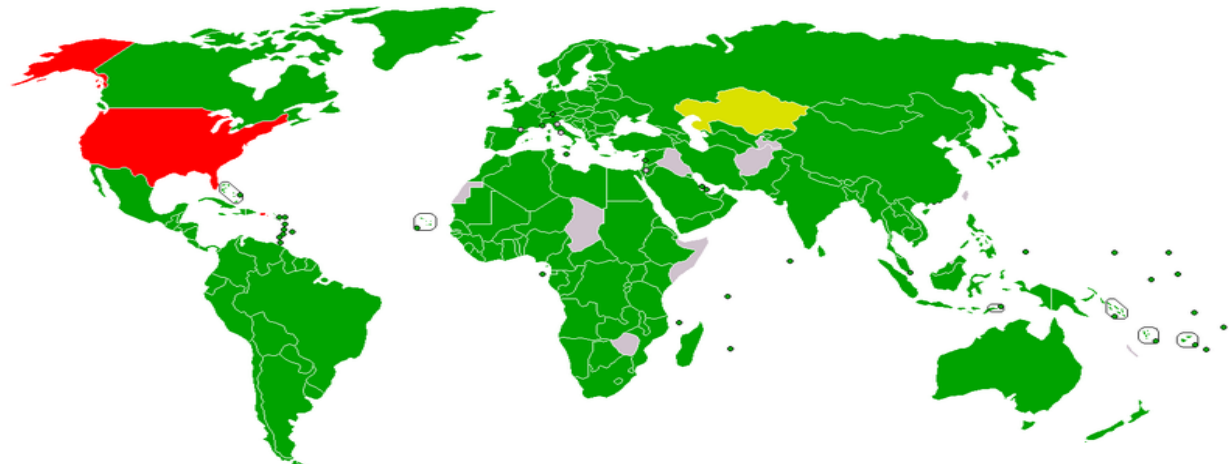
The Nobel Peace Prize 2007 was awarded jointly to Intergovernmental Panel on Climate Change (IPCC) and Albert Arnold (Al) Gore Jr. *"for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change"*

# Politics on CC

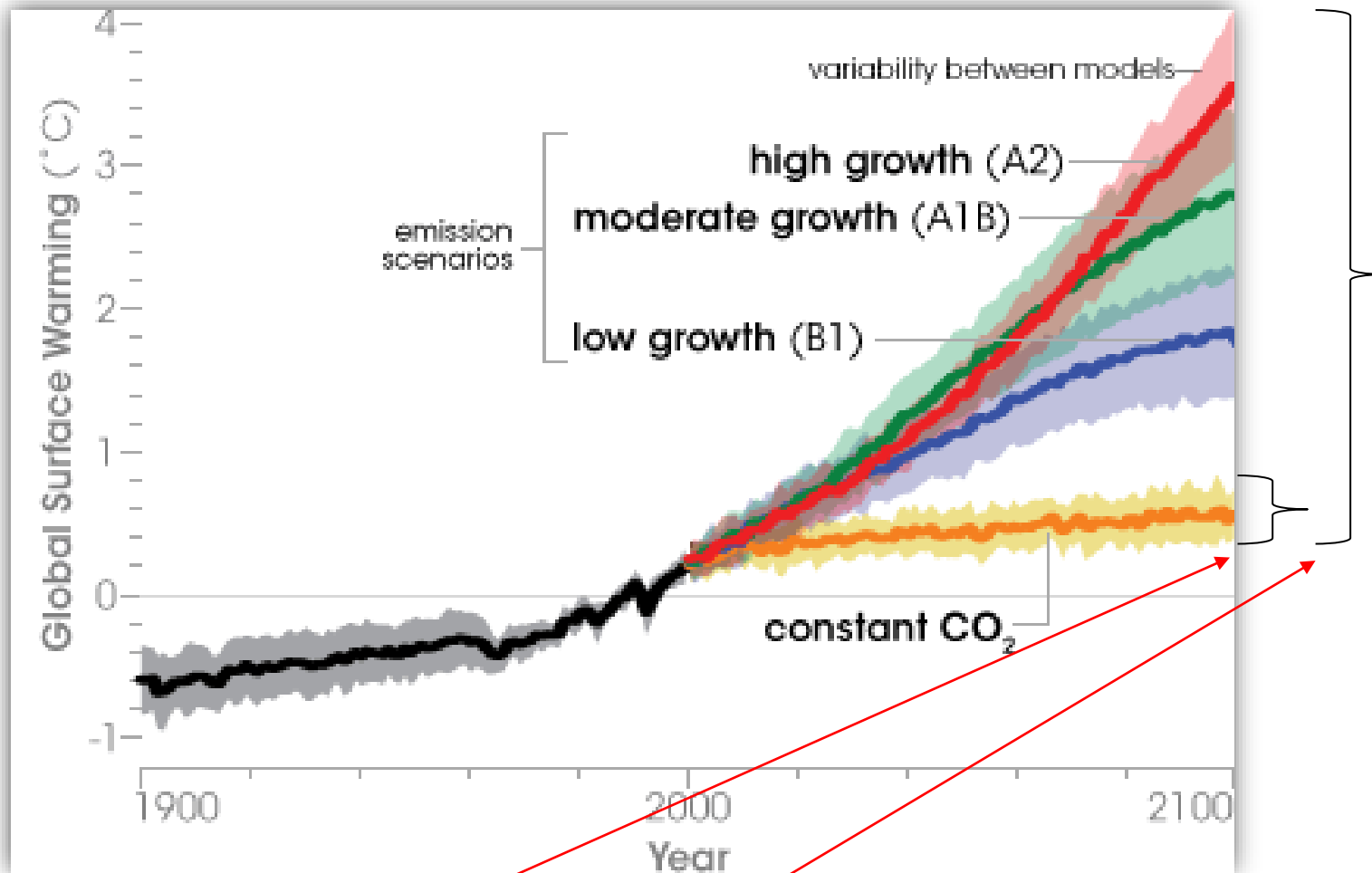
- main aim – decrease the GHG emissions, mainly CO<sub>2</sub>
  - 1992: UN Framework Convention on Climate Change
  - 1997: Kyoto protocol (in force from 2005)
  - **industrial countries should decrease their GHG emissions until the year 2012 for 5.2 % compared to the year 1990**
  - different threshold for different countries (e.g. EU 8%)
- however, industrial countries (Annex I countries with Kyoto targets) contributed „only“ with 24 % of global CO<sub>2</sub> emission (2010)

## Participation in the Kyoto Protocol

- Signed and ratified
- Signed, ratification pending
- Signed, ratification declined
- [citation needed]
- Non-signatory



# Temperature rise scenarios to 2100

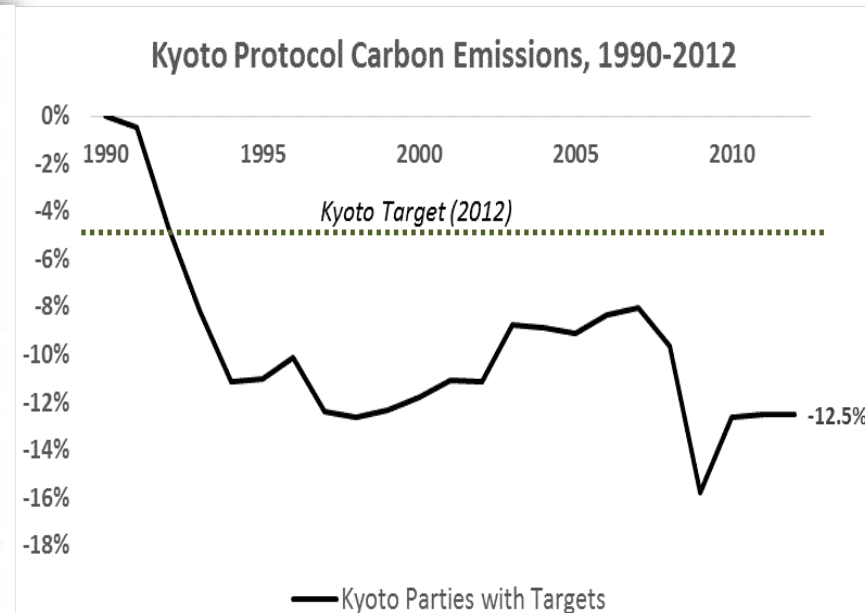
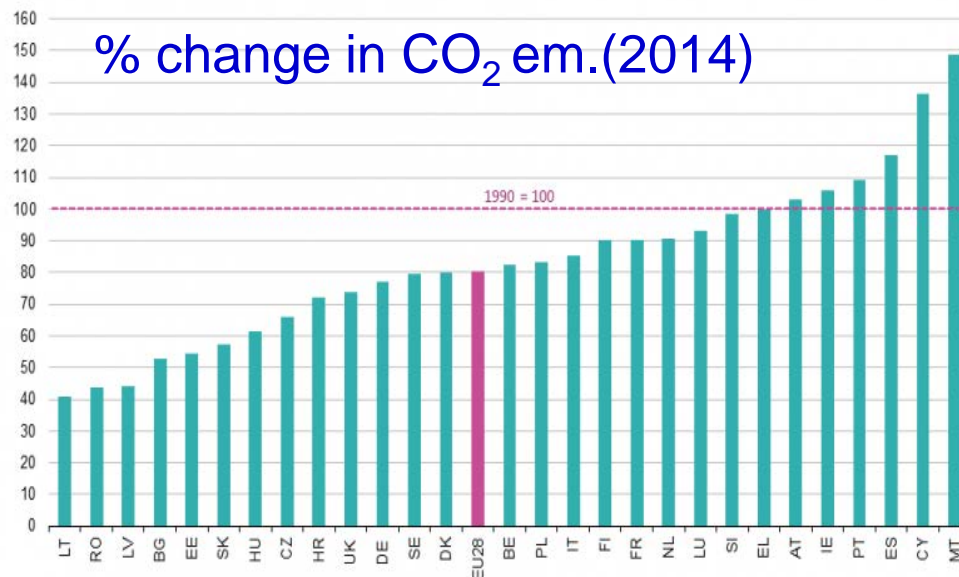


- scientific vs. political uncertainty

# Kyoto protocol – result (2012)

Into force in 2005

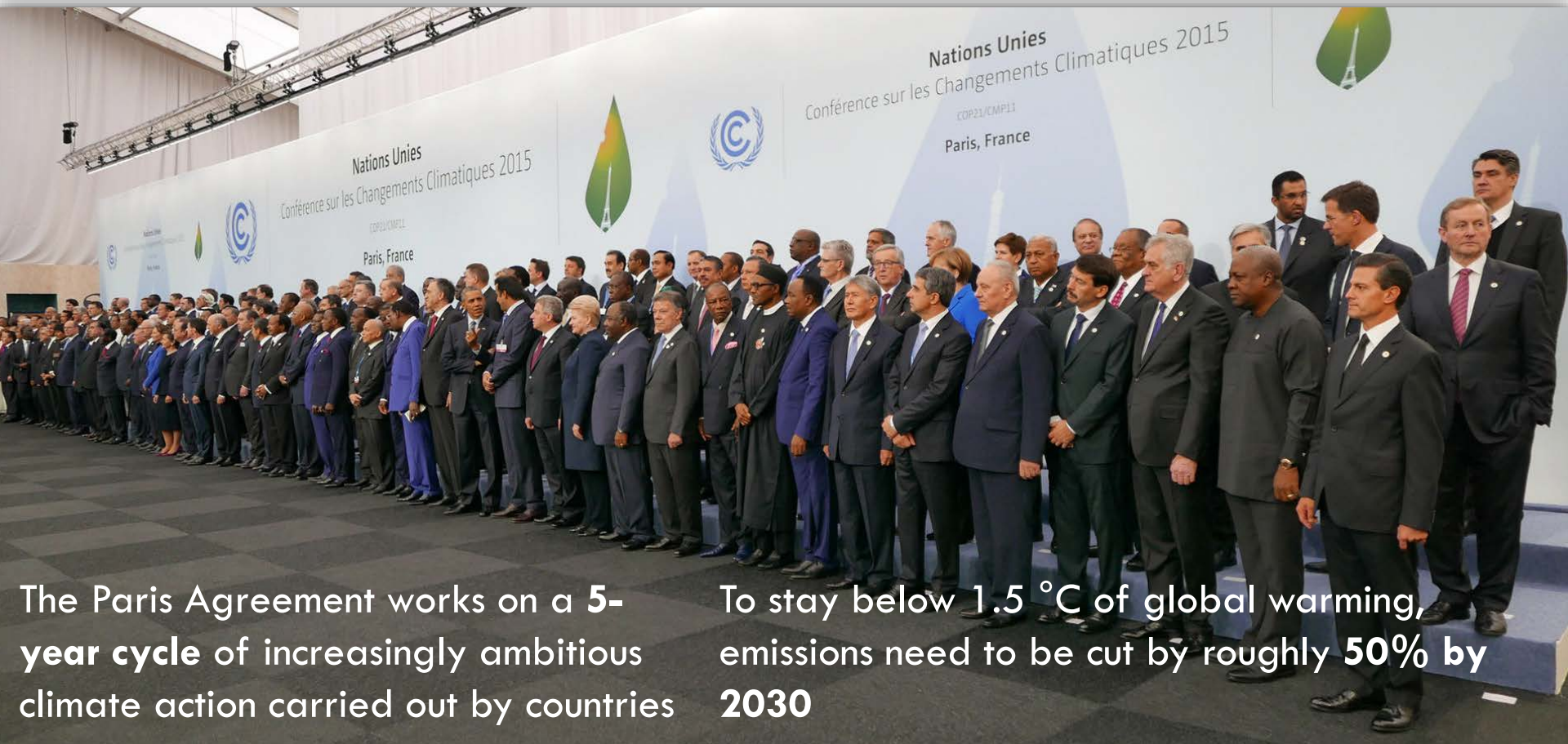
- industrial countries (Annex I countries with Kyoto targets) **reduced their emissions for 24.2 % !** (much more than promised target 5.2 %)
- however, emission in other countries have risen so fast, that global CO<sub>2</sub> emissions **increased by 32 %** from 1990 to 2010 ☹️
- extension of the Kyoto Protocol until 2020
- certain countries (the EU and a few other countries) have committed themselves to further reducing CO<sub>2</sub> emissions.
- EU e.g. by 20-30% compared to 1990
- Average – 18% - generally achieved



# Paris treaty (2015)

- continuation of the prolonged Kyoto protocol (2020)
- aim: **Limit the temperature rise not more than 2 °C compared to pre-industrial era, ideally below 1.5 °C**
- came into force in November 4th 2016

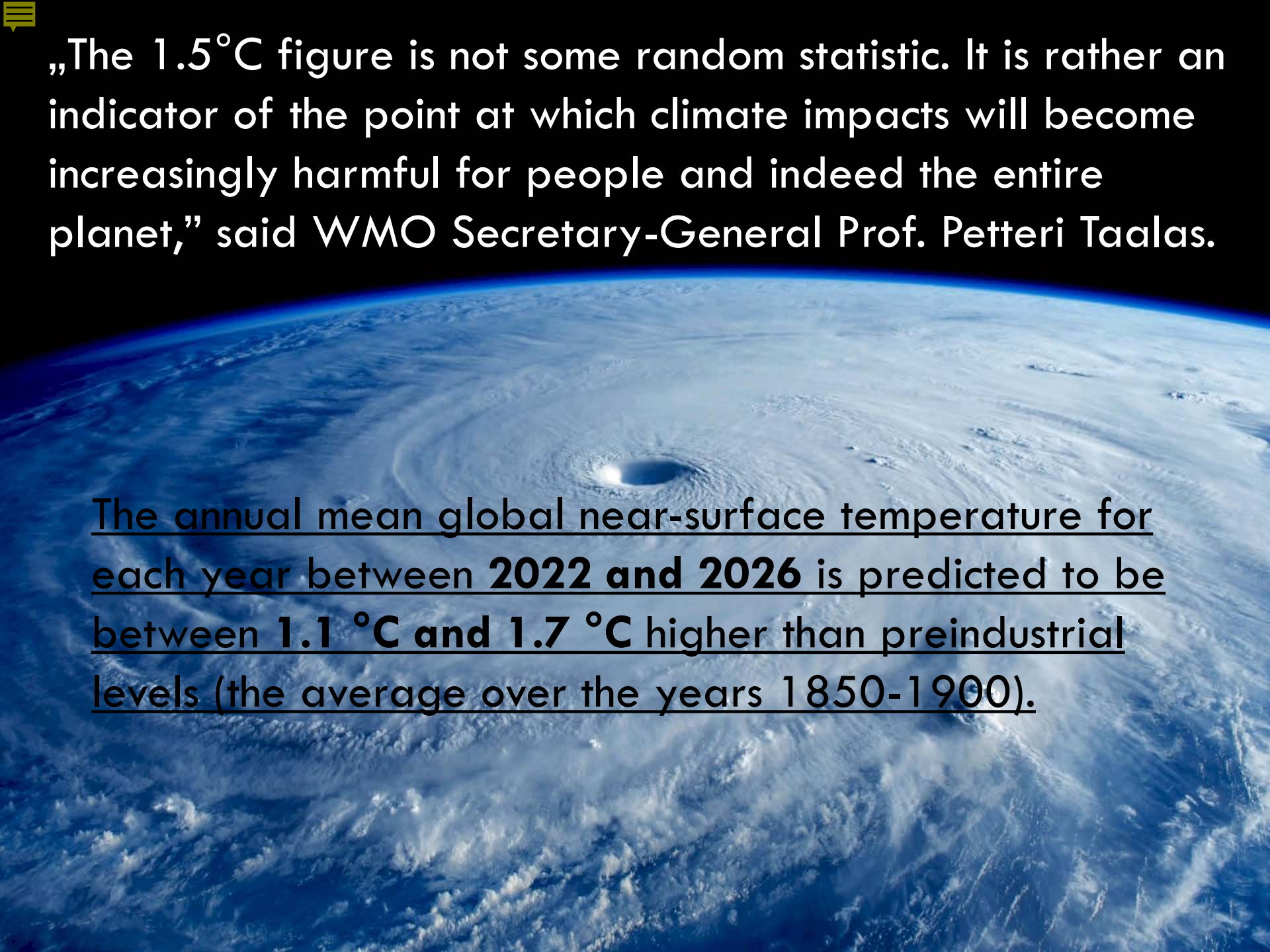
Shift in the rhetoric!



The Paris Agreement works on a **5-year cycle** of increasingly ambitious climate action carried out by countries

To stay below 1.5 °C of global warming, emissions need to be cut by roughly **50% by 2030**

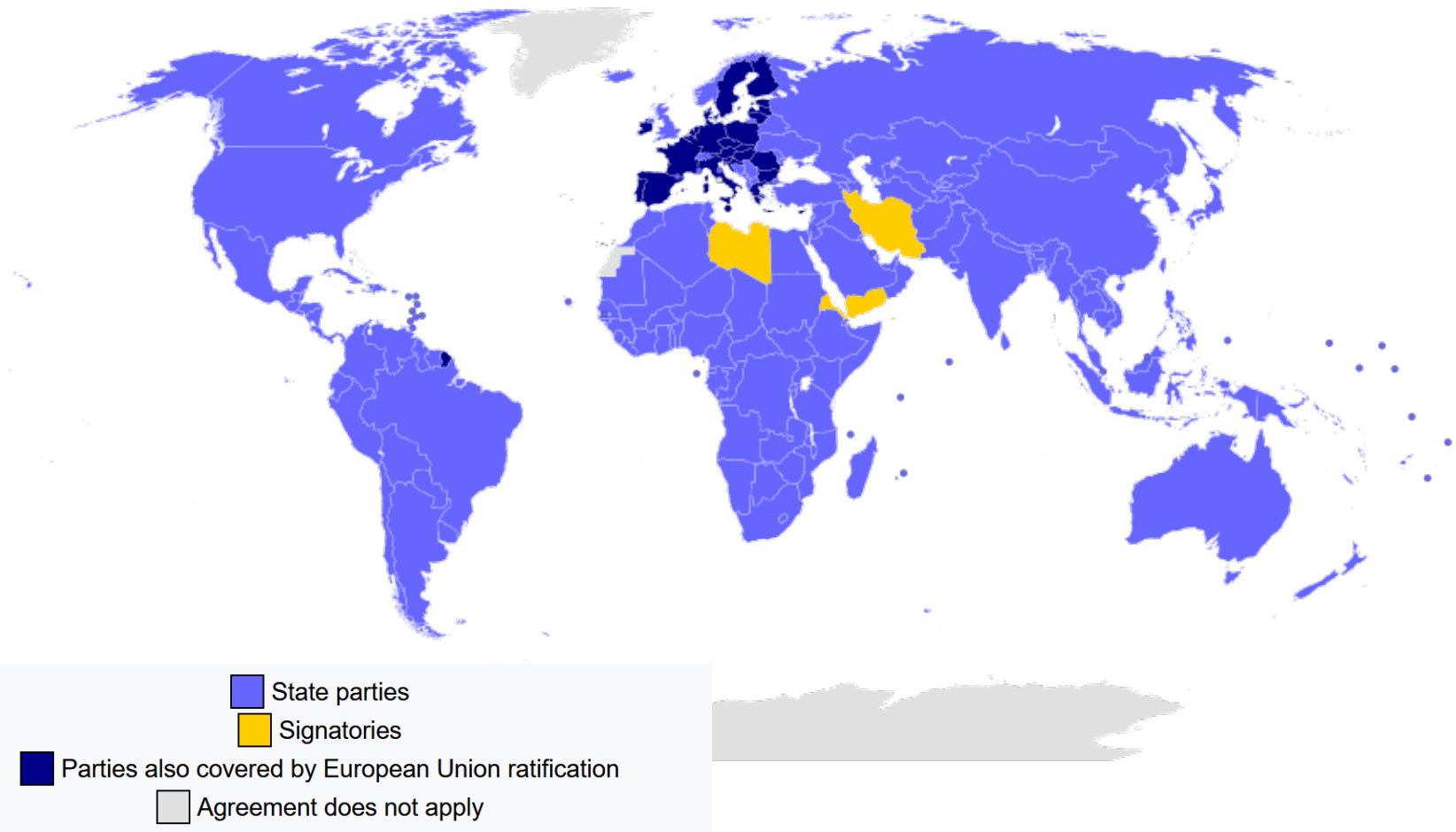




„The 1.5°C figure is not some random statistic. It is rather an indicator of the point at which climate impacts will become increasingly harmful for people and indeed the entire planet,” said WMO Secretary-General Prof. Petteri Taalas.

The annual mean global near-surface temperature for each year between **2022 and 2026** is predicted to be between **1.1 °C and 1.7 °C** higher than preindustrial levels (the average over the years 1850-1900).

In contrast to the 1997 Kyoto Protocol, the distinction between developed and developing countries is blurred, so that the latter also have to submit plans for emission reductions.



# Solution

## Adaptation and mitigation

### Summary for Policymakers

Many options available now in all sectors are estimated to offer substantial potential to reduce net emissions by 2030. Relative potentials and costs will vary across countries and in the longer term compared to 2030.

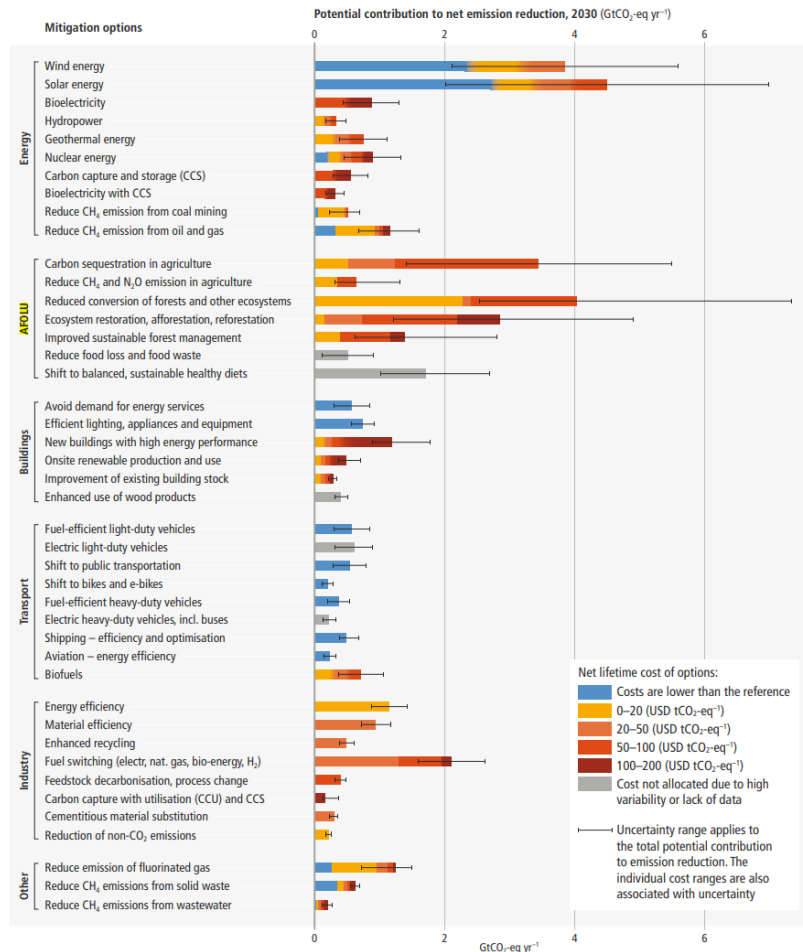


Figure SPM.7 | Overview of mitigation options and their estimated ranges of costs and potentials in 2030.

Mitigation options have synergies with many Sustainable Development Goals, but some options can also have trade-offs. The synergies and trade-offs vary dependent on context and scale.

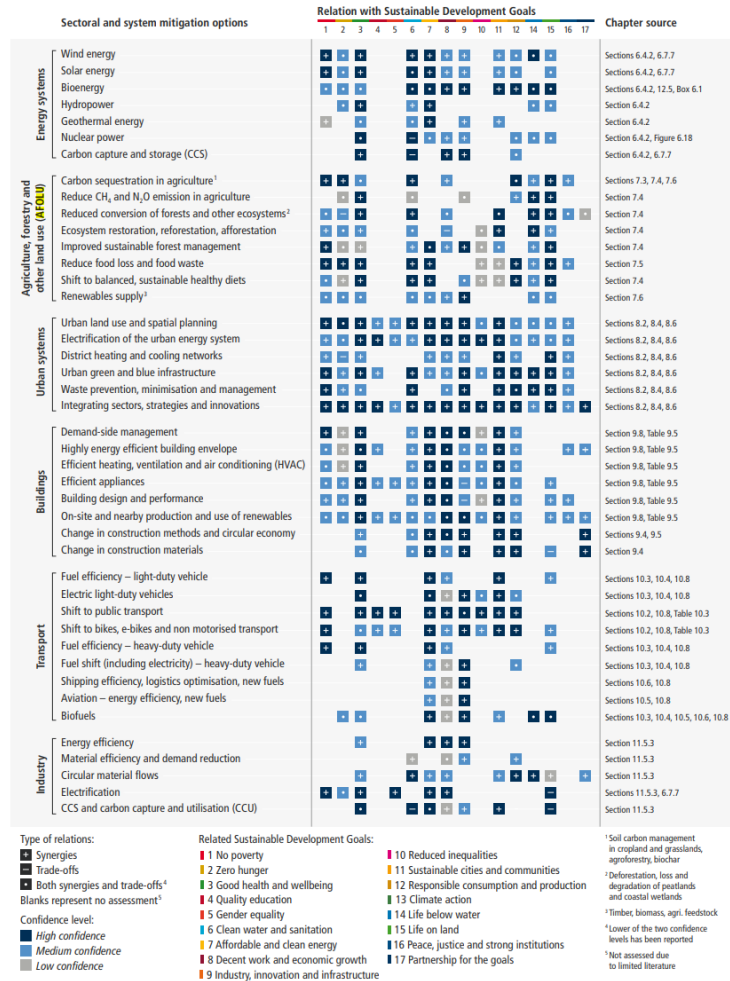


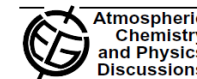
Figure SPM.8 | Synergies and trade-offs between sectoral and system mitigation options and the SDGs.

# How to decrease CO<sub>2</sub> emissions?

- decrease the fossil fuels consumption
  - increase efficiency of the industr. production
  - end the non-effective industr. production
  - save the energy and material
- economic tools to decrease CO<sub>2</sub> - [EU Emissions Trading System](#) (EU ETS)
- [bio-fuels?](#) Probably not...
- [Geo-engineering?](#)



Atmos. Chem. Phys. Discuss., 7, 11191–11205, 2007  
www.atmos-chem-phys-discuss.net/7/11191/2007/  
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## **N<sub>2</sub>O release from agro-biofuel production negates global warming reduction by replacing fossil fuels**

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# Do you know what is geo-engineering?

Nobody has responded yet.

Hang tight! Responses are coming in.

# Geo-engineering – types and opportunities

## Transforming Earth

It is now possible to identify the methods and locations where planetary geoengineering will have to take place

**T PLANT TREES**  
 Plant forests and regularly harvest them. Trees are a carbon sink as long as they are growing, and not allowed to rot.  
 Location: unused farmland

**BE BECCS (Bioenergy with carbon capture and storage)**  
 Suck out atmospheric CO2 by growing biofuel crops like sugar cane, burn them for energy, capture the resulting CO2, and bury it.  
 Location: the tropics, where growth is fastest

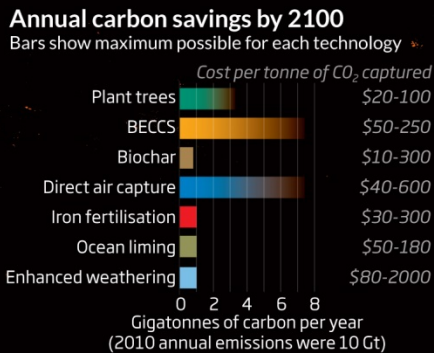
**B BIOCHAR**  
 Burn plant material without oxygen to make charcoal-like "biochar". This carbon store can then be buried in soil, where it acts as a fertiliser.  
 Location: anywhere with rich plant growth

**DA DAC (Direct air capture)**  
 Build shipping-container-sized boxes full of a chemical "sponge" that sucks CO2 out of the air, ready for burial. You may need 100 million of them.  
 Location: windy and dry areas. More wind means more air is driven through the boxes, increasing uptake

**IF IRON FERTILISATION**  
 Trigger photosynthetic plankton blooms in the ocean by dumping iron into areas that don't have much. If the plankton sinks, carbon is stored.  
 Location: iron-depleted regions of the ocean

**OL OCEAN LIMING**  
 Throw lime into the ocean. It reacts with dissolved CO2 to form carbonates. This may also help corals by reducing ocean acidification.  
 Location: coral habitats

**EW ENHANCED WEATHERING**  
 Crush common minerals like olivine to powder to increase surface area for reacting with CO2 and water.  
 Location: proceeds fastest in warm, wet conditions, so areas such as humid coasts and rivers are best



# Transform Earth

It is now possible to use various methods and technologies to capture and store carbon from the atmosphere. These methods have to take into account the need to protect biodiversity.

## T PLANT TREES

Plant forests and regularly harvest them. Trees are a carbon sink as long as they are growing, and not allowed to rot.

Location: unused farmland

## B BIOCHAR

Burn plant material without oxygen to make charcoal-like "biochar". This carbon store can then be buried in soil, where it acts as a fertiliser.

Location: anywhere with rich plant growth

## IF IRON FERTILISATION

Trigger photosynthetic plankton blooms in the ocean by dumping iron into areas that don't have much. If the plankton sinks, carbon is stored.

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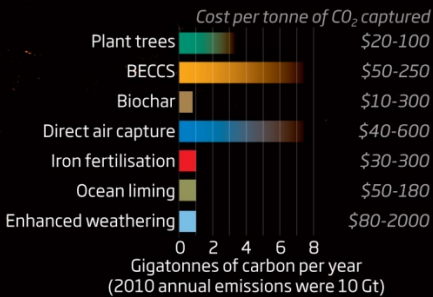
Throw lime into the ocean. It reacts with dissolved CO2 to form carbonates. This may also help corals by reducing ocean acidification.

Location: coral habitats

According to the Convention on Biological Diversity (CBD), all the geo-engineering applications are banned

### Annual carbon savings by 2100

Bars show maximum possible for each technology



Gigatonnes of carbon per year  
(2010 annual emissions were 10 Gt)

# European Green Deal (December 2019)

## Striving to be the first climate-neutral continent



The European Commission adopted a set of proposals to make the EU's climate, energy, transport and taxation **policies fit for reducing net greenhouse gas emissions by at least 55% by 2030**, compared to 1990 levels and become first climate-neutral continent by 2050.



# An important initiatives of Green Deal are:

## CO JE FIT FOR 55



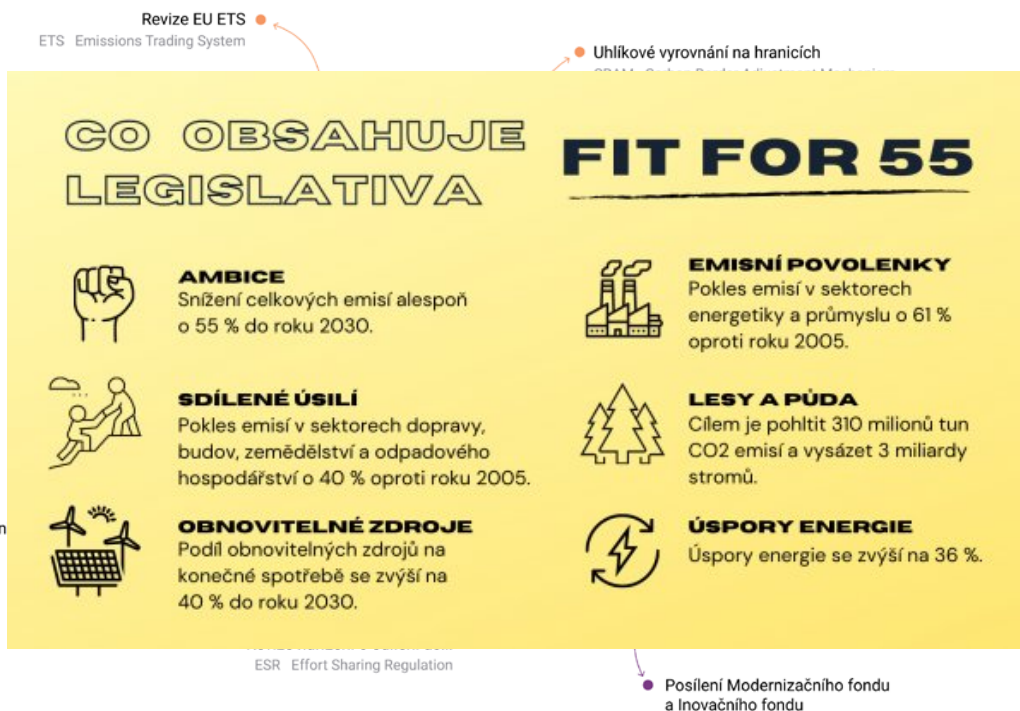
Soubor opatření pro přípravu dosažení 55% snížení emisí a současně **zajištění spravedlivé transformace** v celém hospodářství, společnosti i průmyslu.

### ŠIRŠÍ KONTEXT FIT FOR 55

- 2019 **Zelená dohoda pro Evropu**  
Evropská unie se hlásí k cíli klimatické neutrality do roku 2050.
- 2020–2021 **Evropský klimatický zákon**  
Evropský parlament a členské státy schvalují právní závaznost klimatické neutrality do roku 2050.  
Evropští lídři schvalují návrh Komise na průběžný cíl snížit emise o 55 % do roku 2030 (oproti roku 1990).
- 2021 **Fit for 55**  
Evropská komise vytváří návrh souboru opatření, která by měla zajistit snížení emisí o 55 % do roku 2030.

### PRINCIPY FIT FOR 55

- Přiměřenost a účinnost opatření**  
Široké využití tržních mechanismů a doplnění netržními opatřeními tam, kde by trh nefungoval efektivně.
- Znečišťovatel platí**  
Pokud firmy nesou náklady spojené s dopadem svých emisí, jsou motivovány k zavádění čistých technologií.
- Solidarita**  
Cílená a systematická podpora pro skupiny obyvatel, které mohou být opatřeními neúměrně zasaženy.





# What about CR?

**ČESKÁ REPUBLIKA 2030**  
SPOLEČNĚ – UDRŽITELNĚ

UDRŽITELNÝ ROZVOJ JE KLÍČEM K BUDOUCNOSTI ČESKÉ REPUBLIKY!

KLÍČEM K UDRŽITELNÉMU ROZVOJI JE STRATEGICKÝ RÁMEC ČESKÁ REPUBLIKA 2030. NA TĚTO WEBOVÉ STRÁNKĚ MÁTE K DISPOZICI AKTUÁLNÍ INFORMACE, STRATEGICKÉ PLÁNY A ZAPOJENÍ VŠECH.

ZAJÍMÁ VÁS, JAK NA TOM JSME? V TOM PŘÍPADĚ PRO VÁS MÁME PŘIPRAVENOU ZPRÁVU O KVALITĚ ŽIVOTA A JEJÍ UDRŽITELNOSTI!

- STRATEGICKÝ RÁMEC**  
Přečtěte si strategický rámec pro udržitelný rozvoj ČR.  
[pokračovat](#)
- ŽIJEME UDRŽITELNĚ**  
Aktuality ze světa udržitelného rozvoje a kvality života.  
[pokračovat](#)
- DOBROVOLNÉ ZÁVAZKY**  
Co můžete pro udržitelný rozvoj vy? Inspiračně se a zapojte se.  
[pokračovat](#)
- BADA VLÁDY PRO UDRŽITELNÝ ROZVOJ**  
Vědomostní a datový záznam.  
[pokračovat](#)

Adaptation

Mitigation

Ministerstvo životního prostředí

Hledání

Ministerstvo Témata Kontakty

Témata → Ochrana klimatu a energetika → Změna klimatu → Mitigace změny klimatu

**Politika ochrany klimatu v České republice**

Politika ochrany klimatu v České republice je součástí celostátního klimatického programu, který stanoví cíle ochrany klimatu v ČR z roku 2004. Definiuje hlavní cíle a opatření v oblasti ochrany klimatu na národní úrovni tak, aby zajišťovala splnění cílů snižování emisí skleníkových plynů v návaznosti na povinnosti vyplývající z mezinárodních dohod (Rámcová úmluva OSN o změně klimatu a její Kjótský protokol, Pařížská dohoda a závazky vyplývající z legislativy Evropské unie). Tato strategie v oblasti ochrany klimatu se zaměřuje na období 2017 až 2030, s výhledem do roku 2050, a měla by tak přispět k dlouhodobému přechodu na udržitelné nízkou-emisní hospodářství ČR.

Vyhodnocení Politiky ochrany klimatu v ČR bylo zpracováno a předloženo vládě v roce 2021 a aktualizace Politiky ochrany klimatu v ČR je v návaznosti na přezkum závazků v rámci Pařížské dohody naplánována do konce roku 2023.

Vyhodnocení ukazuje, že cíl pro rok 2020, odpovídající snížení emisí o 20 % oproti roku 2005, se s největší pravděpodobností podařilo naplnit. Cíle Politiky ochrany klimatu pro rok 2030 (snížení o 30 % oproti roku 2005) je možné die aktuálních scénářů dosáhnout jen při naplnění scénáře s dodatečnými opatřeními. Ve scénáři se současnými politikami a opatřeními chybí k jeho naplnění zhruba o 2,5 %. Rovněž dosažení indikativního cíle k roku 2040 předpokládá pouze scénář s dodatečnými opatřeními. Trajektorie snižování emisí však není v souladu s dosažením indikativního cíle snížení emisí do roku 2050 o 80 % oproti roku 1990 a ČR dosud nemá k dispozici scénáře, které by počítaly s dosažením klimatické neutrality.

Politika ochrany klimatu obsahuje celkem 41 opatření, od průřezových témat a politik, přes opatření v jednotlivých sektorech až po výzkum a vývoj, monitorování a opatření v oblasti mezinárodní ochrany klimatu a rozvojové spolupráce. 73 % opatření se podle vyhodnocení podařilo naplnit, 22 % opatření bylo plněno částečně a 5 % nebylo plněno vůbec.

Ministerstvo životního prostředí

Hledání

Ministerstvo Témata Kontakty

Témata → Ochrana klimatu a energetika → Změna klimatu → Adaptace na změnu klimatu

**Adaptace na změnu klimatu**

Adaptace na změnu klimatu je na národní úrovni řešena [Strategií přizpůsobení se změně klimatu v podmínkách ČR](#) (dále též "adaptační strategie"). Dokument byl připraven v rámci mezirezortní spolupráce, koordinátorem přípravy celkového materiálu bylo Ministerstvo životního prostředí. Adaptační strategie a její obsah vychází z Bílé knihy Evropské Komise „Přizpůsobení se změně klimatu: směřování k evropskému akčnímu rámci“ (2009) a je v souladu s [Adaptační strategií EU](#), přičemž reflektuje měřítko a podmínky ČR. Vytvoření a implementace adaptačních plánů a opatření je nedílnou součástí závazků přijatých v rámci [Rámcové úmluvy OSN o změně klimatu \(UNFCCC\)](#) a [Pařížské dohody](#).

Implementačním dokumentem adaptační strategie je [Národní akční plán adaptace na změnu klimatu](#) (dále též „akční plán“). Akční plán obsahuje seznam adaptačních opatření a úkolů, a to včetně odpovědnosti za plnění, termínů, určení relevantních zdrojů financování a odhad nákladů na realizaci opatření.

13. září 2021 byla Vládou ČR schválena první aktualizace adaptační strategie a akčního plánu. Na aktualizaci obou dokumentů se podílelo více než 170 odborníků z veřejných, vědeckých a neziskových institucí. Materiály se opírají zejména o odborné podklady zpracované rezortními organizacemi MŽP (ČHMÚ a ČENIA) s podporou Akademie věd ČR (zejm. CZECHGLOBE - Ústav výzkumu globální změny AV ČR, v.v.i.) a řady dalších vědeckých organizací.



# **SYSTEM CHANGE NOT CLIMATE CHANGE**

**„CHANGE OUR OWN  
PRACTICES  
OF HOW WE WORK  
WITH KNOWLEDGE“**